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An Examination of the Motivational Factors Affecting Workers Productivity in the Jordanian Construction Industry

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Abstract

Construction productivity is of great importance to companies and researchers alike, and motivation is a well-known factor influencing workers' productivity. However, motivational factors are arguably unique to every country due to the different cultural, economy, and social-technological factors. Thus, the objectives of this study is to identify and evaluate the most influential motivation factors affecting labor productivity, and to assess the importance of these factors from the construction workers' perspective. A structured questionnaire survey was sent to multiple construction sites in two major cities, Amman and Aqaba. From the returned responses, sixteen motivational factors were identified and statistically analyzed by calculating the average, standard deviation, and the importance index of each factor. The five highest motivation factors were shown to be personal growth/career improvement; pay on time; decision-making ability; decent and respectful job, and rewards/promotions. Results from the study indicate that workers valued personal growth and improving their career more than having a higher pay and getting financial rewards. The study concluded that if organizations pay particular attention to these motivational factors it will increase workers' productivity, which will also improve project delivery and improve staff retention, which in return will improve the organizational standards.

Keywords
productivity, motivation, construction, operatives, Jordan

1. Introduction

Productivity is the prime element of living standards, possessing high levels of productivity is one of the key factors for project success (HM Treasury, 2001; Yi and Chan, 2013). Due to its critical state to construction projects success, productivity is one of the most discussed subjects within the industry, additionally it is one of most used indicators for evaluating construction projects performance and level of success, as it is the most flexible resource used in such (Yi and Chan, 2013). The term productivity is often defined in many ways. The simplest definition of productivity as described by Handa and Abdalla (1989) is the ratio of outputs of goods and/or services to inputs of basic resources, e.g. labor, capital, technology, materials, and energy. Since the construction industry is labor-intensive; it can be argued that the main resource of productivity is manpower (Jarkas, 2010). Thus, labor productivity is an important productivity measure, because of the large concentration of manpower needed to complete any given task.

The construction industry has been criticized globally for its suboptimal performance and low productivity where Jordanian construction industry is not exempted. This has resulted in higher construction cost and unemployment as most of the construction projects are executed by foreign firms. With issues concerning low productivity in construction sites getting considerable attention from organizations and researchers, studies have been conducted targeting labor productivity in which various factors were considered such as, weather conditions, material availability and shortage, technology, and managerial skills, however most of these studies did not consider that these important factors can be different depending on workers motivation, and the cultural differences.

In Jordan, construction management studies have examined many industry-related issues, which Sweis has been more influential. For example; construction delays (Sweis et al. 2008; Abu Hammad et al. 2010), construction productivity (Sweis et al. 2008; Sweis et al. 2009; Attar and Sweis, 2010), construction customer satisfaction (Sweis et al. 2013; Sweis et al. 2013; Sweis et al. 2015). However, most of these studies identified labor productivity as one of the challenges facing the Jordanian construction industry, and it is the cause behind well-known issues like project delays and project cost overruns, which in return causes loss in profits and clients' dissatisfaction. This issue of labor productivity can be mitigated by identifying and dealing with the factors. There has not been much research conducted in the area of worker's motivation. Therefore, the objectives of this study are:

(a) identify and evaluate the most influential motivation factors affecting labor productivity, and

(b) assess the importance of these factors from the construction workers' perspective.

2. Background on Motivation

Early assumptions on motivation were based around people seeking pleasure and comfort, while avoiding hard work and displeasure. These assumptions while making perfect sense, does not explain many human behaviour examples that we observe frequently. For instance, medical doctors who constantly check up on their patients, employees who work extra shifts to get ahead, and people who simply care and help one another, researchers who spend more quality time to ensure they contribute to existing knowledge are all being driven by the motivational force. Hence researchers realised that motivation cannot be contained under this limited view of human behaviour.

Griffin and Moorhead (2011) describe motivation as a force that causes a person to engage in a certain behavior or in a way of living. A good example on expressing motivation; much like a vehicle that requires fuel to run, in terms of human, each one needs a specific fuel to help us run and fill us with the desire to work, love, produce and ultimately achieve the desired goal. As it is with engines, every person is different to the other and they don't all run using the same fuel. Morrison and Burke (2007) stressed that in essence not everybody is motivated in the same way, what motives someone will not necessary motivate the other. In this respect, it is essential for construction organizations or managers to gain a clear understanding of the basic motivation factors to help them understand their employees' needs to fuel their desire to work to enhance productivity and project delivery. However, Freeman-Bell and Balkwill (1996) claimed that identifying the key motivational factors can be challenging as it is widely recognized as a complex issue with many key factors.

Well known authors like Maslow, Herzberg and later on Alderfer and McGregor, presented the idea that motivation is linked to 'the desire to achieve'; that is present within each one of us in form of needs. These particular needs if withheld can have a mobilizing effect, and if they are fulfilled, even partially can cause the person to seek new needs. Abraham Maslow's hierarchy of needs, as shown in Figure 1, is probably the most known human related motivation theory (Hollyforde & Whiddett, 2002). Gambrel & Cianci (2003) explained that Maslow's theory states that a person will satisfy basic level needs, before altering his behavior to seek higher-level needs starting from the basic needs and climbing until the person reaches self-actualization as demonstrated in Figure 1 below.

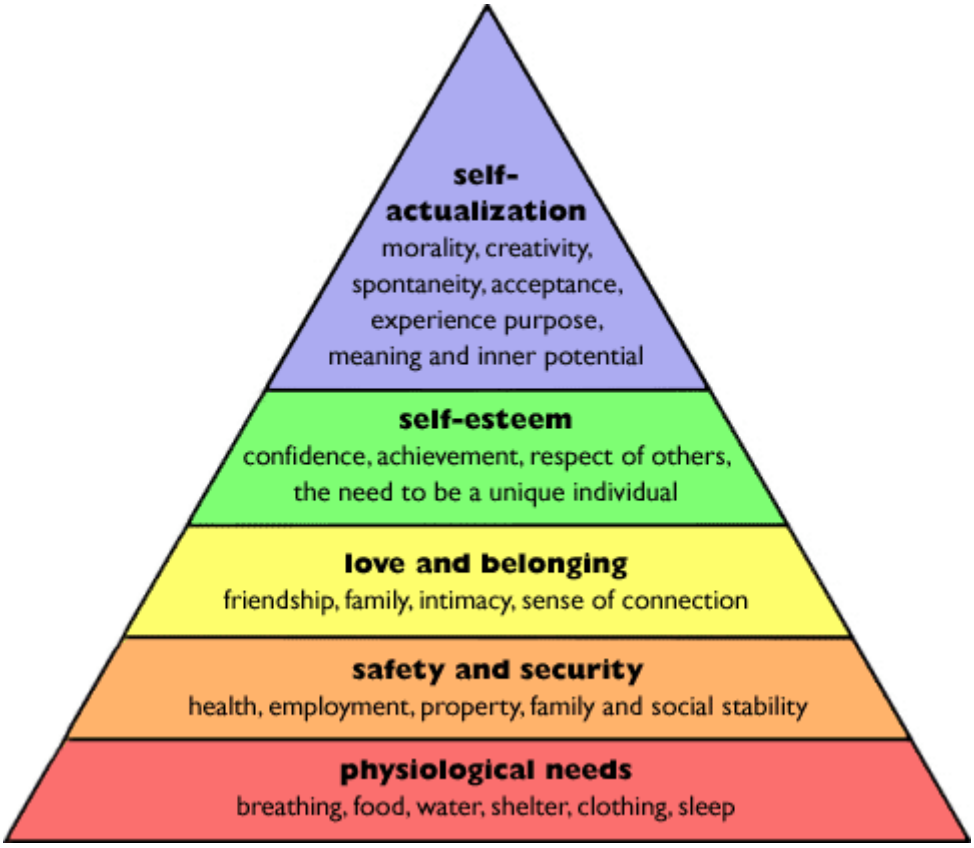

Figure 1. Maslow's hierarchy of needs (adopted from Maslow & Lewis, 1987)

In 1969, Clayton Alderfer introduced the ERG (Existence, Relatedness and Growth) theory, in which he accepts and expands Maslow's hierarchy system. The ERG theory introduces three basic needs. Existence needs - the need required for human existence, which is in essence similar to the physiological needs. Relatedness need, which represents the need to connect and socialize with other individuals, which is linked to the love needs from Maslow's hierarchy. Lastly, Growth needs, which represents Maslow's final level in the hierarchy; the need for self-actualization. In as such as the two theories are similar in an outside world, there are key important differences between the two as well (Griffin & Moorhead, 2011). Maslow's theory suggests that a person need to fulfil a lower need before advancing to a higher one, while Alderfer explained that it is not necessary to fulfill a specific need to advance to the next one. Moreover, Alderfer's theory suggests if a person is unable to achieve a specific higher need, the focus will shift on fulfilling the lower needs to remain motivated.

Again, Herzberg further developed Maslow's hierarchy of needs, where he presented his Two-Factor theory. The theory describes two factors that represents the lower and higher levels of human needs, namely "hygiene factors" and "motivators". Hygiene factors represent any given factor present within the work place, in which if not attended to will lead to dissatisfaction such as rewards, work environment, amount of pay and management style (Tyson, 2014). It is vital that such factors are not neglected to avoid dissatisfaction among employees. On the other hand; however, according to Herzberg (1964), attending to these factors will not necessarily achieve satisfaction. Herzberg argues that satisfaction and motivation can only come from within. Tyson (2014) also maintained that these factors would only stimulate the way towards satisfaction and ultimately motivation.

Douglas McGregor introduced Theory X and Theory Y in 1960 in his book "The Human Side of Enterprise". His main idea behind his theory was that manager's style of supervision was based on how they viewed their employees and hence presumably knew what motivated them). Thus, in essence both Theory X and Theory Y reflects the manager's point of view and not that of the employee (Kopelman et al. 2010). Theory X and Theory Y are in a way based on Maslow's hierarchy of needs, because both theories suggest that an employee's behavior and his motivation drive plays an important role in giving maximum output within the workplace. The basic assumption that Theory X presents, is that employees are lazy and would rather not work, which leads to managers following this theory to avoid trusting their

employees and would instead use punishing and controlling methods in attempt to motivate them.

Theory Y suggests that people are self-motivated to work and it is considered a duty that they must carry, it further suggests that people are responsible and can take charge of things when needed, because according to the theory they desire personal achievement rather than cash rewards or fear of losing their job. Additionally, Theory Y suggests that managers following that mentality will have trust in their employees resulting in a work friendly environment, which will lead to employees being motivated to work, and achieve goals either personal or the company's goals. Figure 2 below illustrates the motivation theories timeline.

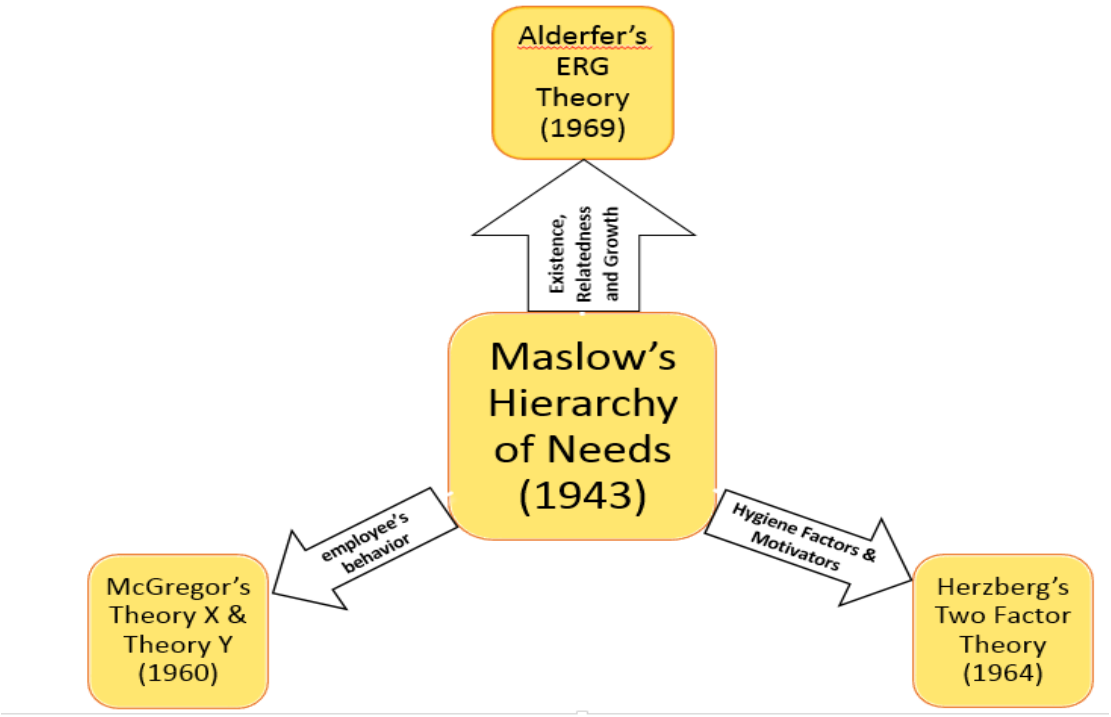

Figure 2. Motivation theories timeline

The theories propose valuable ideas for developing management plans to improve employee's motivation, which will in return, improve productivity levels in any given endeavor. However, Jordanian construction companies in general are yet to fully identify motivation as a vital factor, which is an issue considering the many challenges facing the industry currently.

3. Productivity in the Jordanian Construction Industry

In Jordan, the construction industry sector accounts for 5.5% of the Kingdom's gross domestic product (GDP) which is 2.8% higher than electricity and water sector, and 1.5% higher than agriculture sector (Central Bank of Jordan, 2016). The industry has been criticized for its suboptimal performance, this has resulted in higher construction cost and unemployment as most of the construction projects are executed by foreign firms. Additionally, the Jordanian construction industry is shown to lack the needed productivity levels (Hiyassat et al., 2016). Indeed, this is evident from the constant project time and cost overruns (Sweis et al. 2008; Abu Hammad et al. 2010; Mattarneh, 2015). To assess the challenges faced by the industry, several studies targeted many challenges facing the Jordanian construction industry and they classify them as: (1) Project delays (Al-Momani, 2000; Odeh & Battaineh, 2002; Assaf and Al-Hejji, 2006; Sweis et al. 2008); (2) Health and safety (El-Mashaleh et al. 2010; Alkilani et al. 2013); (3) Information Technology (El-Mashaleh et al. 2006; El-Mashaleh et al. 2007).

With multiple issues and challenges getting considerable attention from organizations and researchers alike, few studies targeted productivity, and research in the area of motivation is scant. Studies in the field of productivity focused mainly on external factors such as weather conditions, material availability

and shortage, technology, and managerial skills (Sweis et al. 2008; Sweis et al. 2013; Hiyassat et al., 2016). On the other hand, these studies did not consider that these important factors can be different depending on workers' motivation, and the cultural differences. There is a gap in literature as many complex aspects of productivity are yet to be explored fully, more specifically motivation. These factors are more eminent as the integral part of construction projects; thus, worth researching to give deeper understanding of the issue and to provide professionals and academics with empirical analysis and possible mitigating approaches going forward.

Few studies have been conducted in the area of productivity in Jordan, which Sweis has been very influential in most of the studies. Unfortunately, almost none of these studies focuses in the area of motivation. Nevertheless, there are some studies on motivation found in different countries instead. Table 1, below shows a summary of studies found in literature on motivation.

Table 1. Past studies on motivation

Country	Researchers	Key motivational factors
USA	McFillen & Maloney (1988)	• Feeling of accomplishment • Opportunities • Peer rewards • Feedback • Supervisor rewards
UK	Olomolaiye & Price (1989)	• Good relations with colleagues • Good supervision • The work itself • Good safety procedure
Indonesia	Kaming et al. (1998)	• Fairness of pay • Good relations with mates • Overtime payment • Bonus • Good safety programme
Thailand	Ruthankoon & Ogunlana (2003)	• Responsibility • Advancement • Growth possibility • Style of supervision
Turkey	Kazaz et al. (2008)	• Quality of site management • Material management • Pay on time • Systematic flow of work
Pakistan	Khan et al. (2013)	• Free lunch • Amount of pay • Eid bonus • Pay on time
Nigeria	Funso et al. (2016)	• Job security • Financial reward • Challenging work • Skill development

4. Methodology

This study targeted construction sites operating in Amman, Jordan's capital, and Aqaba the tourist coastal city. Two main reasons were behind choosing these two major cities: the projects under construction account for the most advanced construction technologies and techniques within the country; and these projects included the highest variety of skills present in the country, which would account for the accuracy of the data to be obtained through the survey.

To effectively identify the key motivational factors, a questionnaire survey was designed, in which it

included basic questions regarding participants' personal information specifically, job title, age, years of experience, working hours, and annual salary. These questions were developed to account for respondents' creditability and insure valid responses. Main part of the questionnaire included sixteen motivation factors that were derived from the motivation theories discussed earlier in the literature. In addition, the main motivation factors observed in previous studies were included in the questionnaire. The respondents were asked to indicate the importance of each factor using a Likert ranking scale where a low value of 1 represent 'not important', and the highest value 5, represented 'extremely important'. The questionnaire was piloted where comments and suggestions were taken which improved the validity and reliability of the study.

A total of 85 questionnaire surveys were handed out in person and sent through email targeting workers operating on construction projects in Jordan's two major cities Amman, and Aqaba. Data collected from the survey was then analyzed, where the sixteen motives were ranked per the average calculated mean, and the top six factors were identified. Moreover the "Importance Index" was derived for each factor using the formula below (Lim & Alum, 1995; Abdul Kader et al., 2005):

$$Importance\ Index = \frac{5n1 + 4n2 + 3n3 + 2n4 + 1n5}{5(n1 + n2 + n3 + n4 + n5)}$$

Where n_1 represents the number of respondents who answered with "Extremely Important", n_2 the number of respondents who answered with "Highly Important", n_3 the number of respondents who answered with "Moderately Important", n_4 the number of respondents who answered with "Low Importance", and n_5 the number of respondents who answered with "Not Important".

5. Analysis and Discussion

5.1 Sample of Population

The sample of population in this study comprises of site engineers, project managers, foremen, and skilled craftsmen with 10 to 15 years of experience. This indicates a cross survey among construction workers on site, additionally it accounts for the validity of the answers given by the respondents and thus the data acquired.

5.2 Motivation Factors

Sixteen main motivational factors were identified and ranked in this study. Table 2 presents the ranking and each motive's score was used to obtain the average mean. Thus, the importance level of each result can then be obtained and produce a numerical source for evaluation and comparison. From the results obtained in Table 2, the most impactful factors were shown to be personal growth/career improvement, pay on time, decision-making ability, decent and respectful job, and Rewards/Promotion in descending order.

From Table 1, it is seen that respondents in the surveyed sites valued both the extrinsic and intrinsic parts of motivation as a vital part for their work in the industry. It is of no news that money is regarded as an extrinsic part of motivation, while according to Herzberg theory career improvement includes both the extrinsic and intrinsic parts of motivation. There are four key motives affecting construction productivity according to Adjei (2009) which are; Career improvement; financial motives; work appreciation and work facilitation, this can be further supported from the results of the current study. Additionally, Jordan is a developing country with high living costs, at the same time the wages are fairly low. As indicated from this study so far money is not the only motive, but it is the very basic need that every human needs to live and advance, as described by the physiological needs illustrated by Maslow's needs system, these needs also provide self-esteem and recognition among other people. Therefore, these factors represent one of the aspects of the first level of the hierarchy of needs and the quest to fulfil it.

Table 2. Motives Ranking

Rank	Motives	Mean	Importance Index	Standard Deviation
1.	Personal Growth/Career improvement	4.60	0.92	0.69
2.	Pay on time	4.47	0.88	0.95
3.	Decision making ability	4.33	0.87	0.74
4.	Decent and respectful job	4.28	0.86	0.95
5.	Rewards/Promotion	4.2	0.84	0.73
6.	Pay amount	4.19	0.82	0.73
7.	High responsibility job	3.91	0.78	0.88
8.	Challenging tasks	3.83	0.76	0.75
9.	Work appreciation	3.81	0.75	0.84
10.	Team cooperation	3.72	0.74	0.62
11.	Good relationship with your superiors	3.63	0.72	0.78
12.	Good supervision	3.37	0.67	0.89
13.	Safe and comfortable environment	3.33	0.66	0.83
14.	Quality of equipment	3.33	0.65	0.83
15.	Job security	2.91	0.58	1.12
16.	Having fun and enjoying work	2.88	0.57	0.92

Despite Herzberg's theory that money is not a motivator, results from this survey as well as previous studies by Kaming et al. (1998), Abdul Kadir et al. (2005), Kazaz et al. (2008), and Khan et al. (2013) seem to indicate otherwise. In these studies, it was shown that money is a powerful motive, while low wages are a major discomfort to many operatives, hence with non-sufficient wages it is to be expected that construction operatives will not perform a challenging task competently. Moreover, it's well known that pay on time is one of the main cores of any work contract, where adequate facilities and good work environment can help in reducing the demotivation caused from low amounts of pay, having a delay in payment simply cannot (Kazaz et al., 2008).

Uncommonly, from the targeted construction sites "Rewards/Promotions" was the least ranked motivation factor among the top ranks. The ranking demonstrates that, while it is still a relatively high ranked motive, it is still not considered as the most important ones with regards with other motives, however this also indicates that being rewarded (not financially exclusive) or promoted is one of the motives that drives the construction operatives in the surveyed sites and hence leading a better productivity. Hence construction companies in Jordan should show work appreciation to avoid feelings of dissatisfaction among construction operatives, which essentially can result in a decrease in their productivity. Zakeri et al. (1997) speculated that being promoted and advance in the work progress, is one of the many ways for workers to feel they are being compensated for their effort and achievements. Promoting individuals, who do not deserve it, as far as abilities and competency at work, perhaps will bring about events of disrespect and hatred from other people. On the other hand, giving promotions demonstrates that the dominant part of the construction operatives acknowledges having an expanded obligation and prevalent position at work.

Interestingly the factor "Job security" was ranked as the 2nd lowest of the motivation factors in this study, one particular reason is the socio-economic state of the Kingdom, with the recent events in the Middle East, the construction industry has boomed, and companies are constantly on the lookout for construction workers, which explains why in this study it is ranked low, as construction workers are not concerned about the potentiality of losing their jobs.

It is evident that construction workers in the surveyed sites valued both intrinsic and extrinsic aspects of motivation, and both impacted them differently, hence to produce the best out of workers, construction managers need to consider the nature of the workers themselves and the actual work itself. An additional area of investigation is the workforce itself and the its cultural background; it is evident that an important part of workers motivation appears from their perceptions of their workplace and working environment, which appears to be moderated by their cultural background. Even though past motivation theories assess the importance of the intrinsic factors and their role in improving motivation, the role of culture and perception in influencing workers motivation needs to be further understood.

6. Conclusion

This study was conducted to provide evidence on the main motivational factors for productivity in the Jordanian construction industry. This ensures stakeholders understand and take into account the importance of motivation in the management of construction operatives' in the Jordanian construction industry. A quantitative research strategy was used where questionnaire was used. The survey targeted construction operatives in different construction sites present in two main and influential cities, Amman and Aqaba. Sixteen main motivation factors were identified, where "Personal Growth/Career improvement"; "Pay on time"; "decision making ability"; "Decent and respectful job" were the most influential motives for participants. In addition, the importance these factors were discussed. This study contributes to both existing literature and industrial enhancement. The construction sector in the Kingdom of Jordan is ever increasing, more and more management plans are being established to increase productivity in construction sites, results of this study can provide a basic aid for developing efficient management plans while considering operatives' motivation. Moreover, this research can be utilized as fundamental data to stimulate social awareness, build an appropriate systemic policy, such as introducing new system of rewards that aims at the personal growth aspect of motivation, where the team that achieved high productivity results will be respectfully rewarded through other means, and not just cash rewards. Again, the findings of this study can help to introduce a training program targeting managers and workers alike, with the aim to increase the awareness regarding motivation and its influence on productivity in construction sites.

Building on the results of this research, future studies should develop a management plan for improving productivity taking into consideration operatives' motivation. Moreover, future studies should look in analyzing other diverse factors affecting productivity in addition to motivation. Lastly replicate this study across other areas of the world, to include other motivational aspects such as culture, and its link to construction operatives' motivation. The authors suggest that future studies could consider developing a more concrete and systemic utilization plan model for motivation management taking into consideration the working environment.

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Biography

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