Exploring motivation of construction workers in Bosnia and Herzegovina

Development of employee-centric motivational model to improve productivity and quality of final construction works

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Abstract

Aim: The aim of this paper is to explore motivation of construction workers in Bosnia and Herzegovina (B&H). The specific objectives of this original (primary) research were to develop employee-centric motivational model to improve productivity and quality of final construction works. **Methods:** Research methodology was comprised from the quantitative research method utilizing two structured survey instruments (first for managers and second for non-managers), each consisting of 14 items (four for descriptive and ten for inferential statistics). A field survey was carried out in cross-sectional time-frame study manner utilizing convenience sampling methodology. The questionnaire responses were collected from 130 respondents; managers and non-managers, working for the Cengiz construction company and it is B&H and international subsidiaries and contractors and sub-contractors. The research site was confined at B&H highway corridor 5c, in the vicinity of Tarcin and Vlakovo construction sites. **Results:** Our results were grouped in three categories: general motivation, carrier motivation and business motivation. These types of motivational factors are applicable to Maslow's, Alderfers's, Herzberg's, Reinforcement, Equity and Expectancy theories of motivation. They are congruent with prioritized motivational factors from Hewage's model. In order to establish whether there were any statistical differences exist between groups of respondents the researcher conducted parametric statistical tests, by constructing index variables for each dimension. This process produced three types of variables: general motivation index, carrier motivation index and business motivation index. The newly constructed variables were tested for normality and their distributions were confirmed as normal. T-test confirmed that there was no statistically significant difference between genders. Only, on the carrier motivation dimension, some differenc-

es were detected. This conclusion was additionally supported by the Pearson product-movement correlation coefficients. Those never approached conventional degree of significance of $\alpha=0.05$, as the following result were attained ($t=-1.541$, $p=0.126<0.05$). Conclusion: In general, there seems to be suggestive evidence that flexible work hours and better worker-manager collaboration could be effective non-monetary factors for increase in motivation of construction workers, especially those who belong to 18 – 30 years age group. Hence, the recommendation for managers and supervisors would be to use communication and feedback to build trust between the employer and the employee, and to motivate employees in non-financial manner. This should have an immediate effect on the improved productivity.

Key words:

motivation, construction industry, productivity, quality, final construction works.

Introduction

In previous management approaches employees were thought of to be just one of inputs in the creation process of goods and services. Studies conducted by scientist Elton Mayo researched that money is not the only motivator. In additional the link was found between newly generated attitudes and employee behavior. In order to gain an insight into what motivates workers was the aim of many scientists following the publication of the Hawthorne Study results. (Dickson, 1973). Motivated workers are essential in our fast changing industries. Motivated and more productive employees are necessary to ensure growth, stability and survival in the 21st century construction industry. (Bedeian, 1993), (Smith, 1994).

The drive to attract and retain motivated employees is necessary in today's turbulent global economy. The most valuable resources are human resources and this is especially true in (relatively) low-tech, labor-intensive industries such as construction. In order to achieve effectiveness, managers and supervisors need to gain an insight into employees' motivational factors in the context of their performed roles. From various managerial tasks, the task to motivate has crystalized to be the most complex. One large problem is summarized in the fact that factors that motivate employees are in the constant flux. (Bowen & Radhakrishna, 1991). Research shows, that additional increase in income create the reverse situation in which money usually becomes less important motivational factor. (Kovach, 1987).

The study of the motivation of construction workers is limited to a relatively small body of knowledge. Although there is considerable research available regarding motivation and productivity, few researchers have provided a comprehensive analysis on the motivation of construction workers. (Borcherding & Garner, 1981). The research stated that productivity in construction has not improved compared to other industry sectors such as manufacturing. This trend has been echoed in publications throughout the past five decades, and suggested that motivation is one of the key factors impacting productivity.

Motivation Determinants in Construction Industry

In differentiation to physical (non-human) assets, human beings are made of, rather complex individual needs which must be managed. An effective employee management can bring immense organizational benefits. On the other hand, when the management is poor, the sum of these detrimental actions can seriously impair organizational growth and business' viability.(Mullins 1999). Even if the company possesses good managers, a good vision and goals, if it neglects its employees, sooner or later it will start facing various problems.

Motivation represents a main force which moves individuals to improve. It improves them physiologically and psychologically with the aim to reach one or more aims in order to fulfill their wishes and expectations. Motivation can have two forms: intrinsic or extrinsic. Self-fulfillment is an example of intrinsic motivator. It results in better employee performance. Monetary bonus, as the form of award is an example of extrinsic motivator, when employees exceed the established work standards. Many conducted studies, found direct relationship between workers' productivity and motivation. Highly motivated employees display maximum effort since they feel self-fulfilled in the process of accomplishing the given task, thus resulting in increased productivity.

Unsatisfied employees tend to generally produce poorer results in comparison with satisfied ones. Top management must ensure that employees satisfied in their jobs and that they will work in congruence with company's objectives.(Latham, 1994), (Egan, 1998). Construction is an industry with distinctive characteristics. These unique elements may have special effects on employees' motivation.It is important to note that even though a construction project

takes long time to complete, satisfaction at daily work is crucial in enhancing construction labor productivity (Smithers & Walker, 2000), thus affecting the quality of works. In the last twenty years, three revolutionary developments in the quality of construction management systems have been occurring (i.e. residential, commercial building construction, heavy civil construction, etc.). Primarily, the traditional hierarchical structure of management systems was gradually replaced by consensual management. On the second hand, there was the successful introduction of “systems approach” or “systems engineering” in order to deal with organizational and technical problems in managerial processes. (Dulaimi & Beckingsale, 2001). Finally, the management of construction teams was begun to be managed on a project basis in order to accomplish their strategies and objectives more efficiently.

It seems undisputable that the motivation techniques used in the construction industry have their roots in basic theories (Maslow’s & Herzberg’s, specifically). For example, the financial incentives used in the industry satisfy the hygiene and physiological groups posited by Herzberg and Maslow respectively, while the semi-financial and non-financial incentives confirm the importance of Maslow’s higher needs and Herzberg’s hygiene needs. However, direct application of these theories in the construction industry has not been made possible because of the industry’s peculiarities. For example, in applying Herzberg’s theory to labor only subcontractors, Yap (1992) could not confirm the existence of such a clear boundary between motivating and hygiene factors as proposed by Herzberg. He believed that those definitive categories do not adequately represent feelings of those currently employed in the construction industry and the boundaries between them are much vaguer than Herzberg proposed. Yet, most conceptual applications lack empirical verification.

Haseltine (1976) agreed with Schrader’s (1972) claims that most working people have their basic needs satisfied by being paid for the work that they do, and that they are only motivated by higher needs. Self-actualization needs are the highest in the Maslow’s hierarchy, though Schrader’s descriptive work holds that they are pertinent and frequently faulted in construction industry. Furthermore, the study conducted by Wilson (1979) on motivation of operatives sought to acquire knowledge of motivation in the construction industry using empirical approach. Wilson found that the greatest

motivator were safety and belonging needs.

In early 2001, ISO 9001:2000 became the global standard and total quality management (TQM) became the quality assurance (QA) standard for the construction industry. (Lam & Tang, 2000). In this quality standard the employees are to be treated by firms as if they were individuals with job descriptions, appraisal schemes and reward systems. This quality standard takes into consideration the inclusion of chances for people to meet their esteem and self-realization needs. (Lawler, 1973).

To conclude, in general the employees motivation methods can be categorized into the need-based, process-based or reinforcement based. (Newcombe, 1996). There are Maslow's Needs Hierarchy, Herzberg's Two-factor Theory, McGregor's Theory X and Theory Y, and Ouchi's Theory Z, which can be qualified as the typical need based theories focusing on the role of motivational drivers to getting the workers to complete the job tasks in a quality, productivity and timely fashion. Vroom's Expectancy Theory and ISO 9000's TQM standards are process-based approaches through which motivation translates into desirable work behavior. (Aina, 2014).

Development of The Employee-Centric Motivational Model

Employee motivation has always been a central problem for leaders and managers. The reality is that every employee has different ways to become motivated. Employers need to get to know their employees well and use different tactics to motivate each of them based on their personal wants and needs. The researchers tried to dwell into motivation of employees in construction industry. Maloney (1981) stated that specific theories for construction worker motivation had not been developed. Some researchers suggested five areas for further research: (1) Expectancy issues, (2) Instrumentality issues, (3) Valence issues, (4) Organizational constraints and (5) Satisfaction. Maloney believed that these areas are the starting points for the development of motivational theories for the construction industry. Vroom (1964) suggested that workers' level of motivation is influenced by either, positive or negative factors. Increase of positive factors and the decrease of negative factors will ultimately increase productivity.

Additional example is the expectancy theory model for motivation introduced by (Hewage & Ruwanpura, 2006)- a model that was

developed based upon the theories of Maslow, Adams, Vroom, and Smithers and Walker. Hewage's theoretical model for motivation considers 23 factors that affect the motivation level of a construction worker. Motivation level according to each factor is assessed based on effort to performance expectancy, performance to outcome expectancy, and valence, using a 7-point scale. The summation of the motivation level of each factor would give the final motivation level. Hewage used the aforementioned model to investigate the motivation level of construction workers in Calgary. Data collection for this study was done through a series of questionnaire surveys and interviews involving more than 100 construction workers. The most important factors for motivation were safety procedures in the site, tools and equipment, and the respect received from their coworkers and supervisors. (Hewage & Ruwanpura, 2006).

Characteristics of Construction Industry in B&H

The construction sector in B&H was well developed before the war. It was one of the most important export sectors. With the work force of approximately 100,000 in the late 1980s, it was one of the major sources of employment. The most important construction capacities were located in the Sarajevo region, even though other industrial centers had well organized capacities and construction materials production facilities. The construction industry's share in the total investment was approximately 50 percent and annual export revenue was nearly US \$500 million. In the aftermath of the 1992-1995 war, situation changed significantly. The financial crisis affected a number of companies to reduce their operations, or to cease existing completely. So far, only a small number of large projects have been identified: roads, hydro-electric power plants, underground garages and housing development. Important challenges remain in finding the financing for all future projects.

The Research Methodology

In order to aid the development of the employee motivation model appropriate for the construction industry in Bosnia and Herzegovina the research design for this study employed a descriptive survey method. Survey was conducted whereby the target population of the study was the managers and the employees of the Cengiz construction company- a Turkish construction company operating on the heavy civil construction project (highway corridor Vc) in Bosnia and Herzegovina. The survey covers general, career, and business motivation dimensions, with an attempt to ascertain which of these

dimensions is more important for people employed in the construction industry. The survey included personnel of both the main contractor and its sub-contractors. A preliminary set of semi-structured interview was carried with managers and employees at various levels of an organization in order to establish the motivators and its effect on construction productivity. In addition to the qualitative interview data, quantitative data were collected using structured questionnaires. A field survey was carried out, using convenience sampling methodology. The questionnaire responses were collected in a cross-sectional time frame manner from 130 respondents- managers and workers with different roles, responsibilities, and skills.

The Results:

General Group Characteristic

Out of 130 respondents, 87.7% (114) were male and 12.3% (16) were female. Majority of respondents, 33.8% (44) of the total were highly skilled personnel. Majority of female respondents have a 4-year college or university degree (7 respondents or 5.4% of the total; or 44% within total female respondents). Majority of men respondents are either highly-skilled or semi-skilled (48.5% of the total or 63 respondents; or 55.3% within total male respondents). Majority of respondents (73.8% of the total) were young, between 18 and 30 years of age). There were no respondents older than 60 years of age in the respondent group.

General Motivation

In case of observed workers in Bosnia and Herzegovina small number of respondents, (10% of the total) indicated their preference to be formally recognized. There were no apparent differences between age or gender groups. This conclusion matches the results from the study conducted by Özlen and Hasanspahic (2013) in which the authors stated that “the employees do not feel that their needs and wants are addressed by the company.

Career Motivation

When asked about their career preference in five years time, most respondents (45.4% of total or 59) chose other career than that offered in the questionnaire. Second preferred option was going to university or college (22.3% of the total or 29 respondents). Interestingly, men were the only ones choosing options to: change company (10% of the total; 13 respondents); change the industry (6.9%

of the total; 9 respondents); and starting own business (15.4% of the total, or 20 respondents). Women were choosing between two options: going to university, or they saw themselves somewhere else. When asked about the skills they are interested in developing, most respondents (36.2% of the total or 47) opted for development of skills other than those offered in the questionnaire. On the other hand, 28.5% of the total (37) chose educational skills as those that they would develop further.

Business Motivation

Results indicate that majority of respondents (84 or 64.4% of the total) had some motivational training in their academic or business organizations, which may have indirectly contributed to a pronounced belief that motivation can extremely increase the success in life- 108 respondents (83.1%) of the total, believes that motivation significantly or extremely significantly affects success in life. Given the heavy prevalence of males in the respondent group (which is expected in this industry), it comes as no surprise that results indicate men's preference for these options. Closer examination of results indicate that women concurred with men for the most part, except when it comes to their preference for mandatory training, where 31.25% (5) of all responding women chose mandatory training as one of the things that could improve working conditions or job satisfaction.

Statistical Results:

Statistical Differences

In order to establish whether there were any statistically significant differences exist between groups of respondents, the researcher conducted parametric statistical tests, by constructing index variables for each dimension. This process yielded three such variables: general motivation index, career motivation index, and business motivation index. The newly constructed variables were tested for normality, and their distributions were confirmed as normal (see normality plots, below).

Source: Author's own statistical calculations

T-test confirmed that there was no statistically significant differences between genders. Only on the career motivation dimension, some differences were detected, but those never approached conventional degree of significance of $\alpha=0.05$, as the following result were attained ($t=-1.541$, $p=0.126 < 0.05$). This conclusion is further supported by the Pearson product-moment correlation coefficients, which indicated that there was no significant correlation between respondents' gender and motivation (measured by the three motivational dimensions).

Conclusion

While attaining statistically significant results based on the data attained from the survey proved an elusive task, parametric testing proved existence of statistically significant differences in career motivation between observed age groups, where overall, the older group (31-40 years) seemed to have a better idea in which direction they wanted to develop their careers, as compared to younger group (18-30 years). Yet, given that the overall high proportion of respondents who did not choose any of the specific options offered in the questionnaire, suggests that further research into this specific motivational aspect is warranted, if one wants to explore the importance of career development opportunities as a motivational factor for construction workers in Bosnia and Herzegovina. Recommendation for managers would be to use communication and feedback to build trust between the employer and the employee. Companies could explore introducing flexible work hours and better worker-manager collaboration as non-financial motivators and introduce career development programs in order to motivate their employees to attain better performance.

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