A REVIEW OF MASLOW, HERZBERG AND VROOM IN THE CONSTRUCTION INDUSTRY OVER THE LAST 25 YEARS

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Motivation has been one of the most widely discussed concepts in general management. Although researchers in construction management have not been as enthusiastic about the subject, considerable efforts have been made to apply the concept both to construction operatives and professionals. This literature review aims to establish the relevance of motivation theories to the construction industry, and to research attempts to apply these theories both to blue and white collar construction workers. The paper details various past trends, predicts some future trends, and suggests certain areas in which future research on motivation in the construction industry should focus. Regarding the findings, coding has been done according to publication outlet, authors, nature of study, country of publication, target population, methodology and nature of study. Studies focused on the operative are more numerous, start earlier in time and cover more countries than the ones centred on the construction professional. Maslow (1943), Herzberg et al. (1959) and Vroom’s (1964) motivation theories have been mostly used and are still in use, while positivism and quantitative techniques have predominated over qualitative approaches.

Keywords: job satisfaction, motivation, operative, professional

INTRODUCTION

The topic of work motivation plays an important role in the management field and, indeed, has received much attention over the past several decades in both research journals and management periodicals (Steers et al. 2004). As it happens with other human resource issues, motivation is seriously under-researched by the construction research community and there is little evidence of cross-disciplinary learning from other relevant fields such as Human Resource Management (HRM), Industrial and Organisational (I/O) Psychology and Organisational Behaviour (OB).

Researchers in construction management have not been very enthusiastic about work motivation, but some efforts have been made to apply the concept both to construction operatives and professionals. In order to increase our knowledge and further deepen into the subject, it seems relevant to review the work that has been done and consider the state-of-the art in this area. Therefore, the research presented in this paper will address the following objectives: to review the empirical work published on work motivation in the construction industry and to highlight a number of issues that may deserve more attention in future research.

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The term motivation is not always used clearly. For example, in the literature of OB, I/O psychology and even that of construction management it may refer to either job satisfaction or to the motivation to perform. Both concepts are clearly linked and interchangeably used in practice, although there is a subtle difference between them (Bowen et al. 2008, Locke and Latham 2004).

Etymologically, the term motivation comes from the Latin word "motivus", "motive" in English. Vroom (1964: 6) suggests that it is "a process governing choice made by persons… among alternative forms of voluntary activity", while Pinder (1998) defines motivation as a set of energetic forces that originate both within as well as beyond an individual's being, to initiate work-related behaviour and to determine its form, direction, intensity, and duration. Most definitions are mainly concerned with factors or events that energise, channel, and sustain human behaviour over time. Secondly, job satisfaction describes or measures the extent of a person's contentment in his/her job (Bowen et al. 2008). It measures "what is" - the degree of job satisfaction, while motivation measures "why" - the explanation for the degree of job satisfaction. It is clear then that satisfaction versus choice, effort and persistence, do not necessarily have the same causes or effects, and may not affect one another.

The importance of motivation in the workplace is captured in the equation: Job performance = ability x motivation. This equation succinctly explains why the subject of motivation is a cornerstone in the fields of HRM, (I/O) Psychology and (OB).

Theories for predicting, explaining, and influencing a person's job motivation are numerous and they have been classified in different ways. The most common classification differentiates between content and process theories. Content theories aim to identify factors associated with motivation in a relatively static environment and focus on "what" motivates the individual, whereas process theories view job motivation from a dynamic perspective and look for causal relationships focusing on "how" motivation occurs (Ruthankoon and Ogunlana, 2003).

A comprehensive review of motivation theories is beyond the scope of this paper and is available elsewhere (Latham 2007). However, due to the impact and influence they have had in construction management research, Maslow's needs theory (1943), Herzberg's two-factor theory (Herzberg et al. 1959) and Vroom's (1964) expectancy theory should be highlighted. Maslow suggested that, as individuals develop, they work their way up a hierarchy based on the fulfilment of a series of prioritised needs, including physiological, safety and security needs, belongingness, esteem and self-actualisation. He argued that the first three needs on the list represent deficiency needs that people must master before they can develop a healthy personality, while the last two represent growth needs that relate to individual achievement and to the development of human potential (Steers et al. 2004). Maslow's as well as Herzberg's are clear examples of content theories.

Herzberg et al. (1959) concluded that while one cannot motivate others per se, it is possible to enrich a work environment so that it allows self-motivation. As Latham (2007) pointed out, his most controversial conclusion was that job satisfaction and job dissatisfaction, are two continua rather than being a continuum. That is, the opposite of job satisfaction is not job dissatisfaction but no job satisfaction. Herzberg argued that to enrich a job attention should be given to job content, recognition, responsibility, achievement, and opportunities for advancement. Contextual or hygienic factors such as working conditions, company policy, supervision, and salaries should only be considered as ways of minimising job dissatisfaction.
Vroom (1964) developed a cognitive theory based on personal expectancies, valences, choices and instrumentalities, and presented the first systematic formulation of expectancy theory as it related to the workplace. His theory is an example of process theory. He argued that employees tend to rationally evaluate various on-the-job work behaviours, choosing those they believe will lead to their most valued work-related rewards and outcomes. Thus, the attractiveness of a particular task and the energy invested in it will mainly depend on whether the employee believes his/her accomplishments will lead to valued outcomes (Steers et al. 2004, Latham 2007).

**METHOD**

To review empirical studies on motivation in the construction literature, a search was carried out in various online databases (Science Citation Index, Social Science Citation Index, Scopus) and in various international journal catalogues in the fields of construction, engineering and project management. Combinations of several keywords were tried to search for publications on motivation in the construction industry such as: work motivation, job attitudes, construction workers, construction professionals, construction industry, job satisfaction. Databases were also searched with the names of authors who have carried out extensive work in this area, i.e., Maloney and McFillen. This search resulted in a broad selection of a large number of works that included empirical, theoretical and conceptual papers, unpublished dissertations, books, book reviews and magazine articles.

In order to separate empirical studies from the larger pool the following selection criteria was established: the research paper is written in English language, the study is empirical in nature, it principally focuses on the subject of work motivation or job satisfaction and it employs Vroom's, Maslow's or Herzberg's motivation theories as the framework for research. Finally, the study covers papers published over the past 25 years, that is from 1984 until now. It was also decided to select refereed articles from journals and conferences, as these articles have gone through the peer review process and therefore achieved an acceptable quality. Two unpublished dissertations have also been selected. This method of selecting articles has also been employed by authors who have presented literature reviews (Dabke et al. 2008, Toor and Ofori 2008) and meta-analysis in management research.

A total of 34 works were found addressing the subject and fulfilling the required criteria. Among these, there were 25 journal articles, 1 unpublished PhD dissertation, 1 unpublished master thesis and 7 conference papers. Table 1 presents a summary of these empirical studies.

**MAIN FINDINGS**

It was found that empirical testing in work motivation in the construction industry dates back to the 70s, although the current decade has witnessed an increase in focus on job satisfaction. Whereas the focus in the 1970s and 1980 was on the motivation of operatives and construction workers, research in the 1990s and in the present decade has also explored the motivation of construction managers and white collar professionals.

From Table 1 we can also conclude that most empirical studies have been published in the Journal of Construction Engineering and Management followed by Construction Management and Economics. Other journals such as Building and Environment, Building Technology and Management and Engineering, Construction and Architectural Management, together with the ARCOM and CIB conferences.
proceedings have also played an important role. Most studies have been carried out in the USA and UK, followed by Thailand, Australia, South Africa, Nigeria, Canada and Iran.

It was also found that almost all of the studies are quantitative in nature, and use survey questionnaires to collect information. It is also evident that the studies included in this review are cross-sectional in nature, leading to a bias in static analysis.

As regards the frameworks which researchers have employed, almost half of them have chosen Vroom's (1964) expectancy theory, which was used first by Maloney and McFillen in the mid-1980s, when trying to discover ways to improve performance and productivity. The rest of the studies have chosen either Maslow's, Herzberg's or both theories at the same time. Their aim has been to identify motivating and demotivating factors and to establish their ranking in order to make international comparisons (Ogunlana and Chang 1998, Kaming et al. 1998, Olomolaiye and Ogunlana 1988, Olomolaiye and Price 1988, Asad and Dainty, 2005). Others have tried to test the original theory (Ruthankoon 2005, Ruthankoon and Ogunlana 2003, Chan 1993) while some have tried to discover the influence of certain variables such as age (Chileshe and Haupt 2007, Chan 1993, Torrance and Cathcart 1986), gender (Bowen et al. 2008, Gilbert and Walker 2001) or education (Torrance and Cathcart 1986).

Table 1 also shows that studies included in this review consider a wide range of workers: white collar workers such as site managers, project managers, site engineers, quantity surveyors, service and line managers, and blue collar workers. In the latter, the most thoroughly researched, we can include bricklayers, carpenters, steel fixers, millwrights, roofers, apprentices, etc. One study was also conducted on women in construction trades (Dabke et al. 2008).

Table 1: Studies on motivation and job satisfaction based on Maslow, Herzberg and Vroom.

<table>
<thead>
<tr>
<th>Author/s and year of publication</th>
<th>Country of study</th>
<th>Nature of study</th>
<th>Framework</th>
<th>Respondents</th>
<th>Research method/s</th>
<th>Publication outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowen et al. 2008</td>
<td>South Africa</td>
<td>Satisfaction levels and factors, influence of race and gender</td>
<td>Maslow</td>
<td>146 registered quantity surveyors</td>
<td>Quantitative: web-based online questionnaire survey</td>
<td>Constr Manag and Econ</td>
</tr>
<tr>
<td>Dabke et al. 2008</td>
<td>USA</td>
<td>Job satisfaction of women</td>
<td>Vroom</td>
<td>38 women in construction trades</td>
<td>Quantitative: postal questionnaire</td>
<td>J Constr Eng M</td>
</tr>
<tr>
<td>Aiyetan and Olotuah 2006</td>
<td>Nigeria</td>
<td>Motivation and performance relationship</td>
<td>Maslow, Herzberg, McGregor</td>
<td>74 management staff and operatives</td>
<td>Quantitative: questionnaire</td>
<td>Proceed. of ARCOM</td>
</tr>
<tr>
<td>Uwakweh 2006</td>
<td>USA</td>
<td>Motivation, satisfaction and performance</td>
<td>Vroom</td>
<td>201 construction apprentices</td>
<td>Quantitative: postal questionnaire</td>
<td>J Constr Eng M</td>
</tr>
</tbody>
</table>

66
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Country</th>
<th>Study Title</th>
<th>Sample Size</th>
<th>Research Methodology</th>
<th>Journal/Conference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asad &amp; Dainty</td>
<td>UK</td>
<td>Comparison of motives for 3 occupational groups</td>
<td>87 employees from 32 companies</td>
<td>Quantitative: structured questionnaire</td>
<td>Journal of Constr Research</td>
</tr>
<tr>
<td>Uwakweh</td>
<td>USA</td>
<td>Influence of foremen on apprentices’ motivation, performance and satisfac.</td>
<td>201 construction apprentices</td>
<td>Quantitative: postal questionnaire</td>
<td>J Constr Eng M</td>
</tr>
<tr>
<td>Hewage &amp; Ruwanpura</td>
<td>Canada</td>
<td>Motivational factors for workers</td>
<td>More than 50 workers from 2 companies</td>
<td>Quantitative: observation, interviews and questionnaire</td>
<td>Proceed. of CSCE</td>
</tr>
<tr>
<td>Ruthankoon</td>
<td>Thailand</td>
<td>Testing of Herberg’s Theory</td>
<td>344 professionals from 42 sites</td>
<td>Quantitative</td>
<td>PhD Dissertation</td>
</tr>
<tr>
<td>Zhou</td>
<td>Canada</td>
<td>Motivat. and performance relationship job satisfac./ outcomes relationship</td>
<td>57 construction management professionals from 2 companies</td>
<td>Sequential triangulation: industrial survey, in-depth interview</td>
<td>Master thesis</td>
</tr>
<tr>
<td>Ruthankoon and Ogunlana</td>
<td>Thailand</td>
<td>Testing of Herberg’s Theory</td>
<td>64 engineers and 61 foremen from 29 sites</td>
<td>Quantitative and qualitative: critical incident</td>
<td>Eng, Constr and Archit Manag</td>
</tr>
<tr>
<td>Uwakweh</td>
<td>Syria</td>
<td>Motivational score of craft workers</td>
<td>73 workers from one firm</td>
<td>Quantitative: questionnaire survey</td>
<td>Proceed. of CIB</td>
</tr>
<tr>
<td>Gilbert and Walker</td>
<td>Australia</td>
<td>Relationship between motivation and gender</td>
<td>58 white collar professionals</td>
<td>Quantitative: postal questionnaire</td>
<td>Eng, Constr and Archit Manag</td>
</tr>
<tr>
<td>Smithers and Walker</td>
<td>Australia</td>
<td>Influence of workplace environment on motivat.</td>
<td>58 white collar professionals</td>
<td>Quantitative: postal questionnaire</td>
<td>Constr Manag and Econ</td>
</tr>
<tr>
<td>Yisa et al.</td>
<td>Iran</td>
<td>Motivating and demotivating factors</td>
<td>57 site managers</td>
<td>Quantitative: postal questionnaire</td>
<td>Proceed. of ARCOM</td>
</tr>
<tr>
<td>Shoura and Singh</td>
<td>USA</td>
<td>Needs’ fulfilment and motivational levels</td>
<td>39 construction engineers of 1 company</td>
<td>Quantitative: postal questionnaire and qualitative field surveys</td>
<td>Journal of Manag in Engineer.</td>
</tr>
<tr>
<td>Kaming et al.</td>
<td>Indonesia</td>
<td>Motivating and demotivating</td>
<td>243 operatives on 27 high-</td>
<td>Quantitative: structured questionnaire</td>
<td>Building Environ</td>
</tr>
<tr>
<td>Authors</td>
<td>Country</td>
<td>Methodology</td>
<td>Sample Size</td>
<td>Instruments</td>
<td>Data Collection</td>
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<tr>
<td>Ogunlana and Chang</td>
<td>Thailand</td>
<td>Needs, motivators and demotivators</td>
<td>Maslow, Herzberg</td>
<td>rose projects from 7 sites</td>
<td>interviews</td>
</tr>
<tr>
<td>Zakeri et al.</td>
<td>Iran</td>
<td>Motivators</td>
<td>Maslow, Herzberg</td>
<td>335 operatives from 31 sites</td>
<td>Quantitative: structured questionnaire</td>
</tr>
<tr>
<td>Chan</td>
<td>Australia</td>
<td>Influence of age, experience, project size, and salary</td>
<td>Maslow, Herzberg, McClelland</td>
<td>23 project managers</td>
<td>Quantitative: postal questionnaire</td>
</tr>
<tr>
<td>Barrett</td>
<td>UK</td>
<td>Wants, gets and needs</td>
<td>Maslow</td>
<td>683 professionals</td>
<td>Quantitative: postal questionnaire</td>
</tr>
<tr>
<td>Young</td>
<td>UK</td>
<td>Drives for changing jobs</td>
<td>Maslow, Herzberg</td>
<td>73 managers from 3 contractors</td>
<td>Quantitative: interviews and questionnaires</td>
</tr>
<tr>
<td>Olomolaiye</td>
<td>UK</td>
<td>Motiv. and productivity relationship</td>
<td>Vroom</td>
<td>157 bricklayers from 12 sites</td>
<td>Quantitative: act. sampling observations, survey</td>
</tr>
<tr>
<td>Olomolaiye and Price</td>
<td>UK</td>
<td>Motivators and demotivators</td>
<td>Maslow, Herzberg</td>
<td>97 operatives from 12 sites</td>
<td>Quantitative: questionnaire survey</td>
</tr>
<tr>
<td>McFillen &amp; Maloney</td>
<td>USA</td>
<td>Motivational climate</td>
<td>Vroom</td>
<td>703 unionised workers</td>
<td>Quantitative: questionnaire survey</td>
</tr>
<tr>
<td>Olomolaiye &amp; Ogunlana</td>
<td>Nigeria</td>
<td>Needs, motivators, demotivators</td>
<td>Maslow, Herzberg</td>
<td>83 operatives from 7 sites</td>
<td>Quantitative: questionnaire survey</td>
</tr>
<tr>
<td>Olomolaiye and Price</td>
<td>UK</td>
<td>Satisfiers and dissatisfiers</td>
<td>Herzberg</td>
<td>97 operatives from 12 sites</td>
<td>Qualitative: survey</td>
</tr>
<tr>
<td>Nicholls &amp; Langford</td>
<td>UK</td>
<td>Testing of Herzberg’s theory</td>
<td>Herzberg</td>
<td>32 site engineers</td>
<td>Qualitative: survey</td>
</tr>
<tr>
<td>Maloney &amp; McFillen</td>
<td>USA</td>
<td>Influence of foremen on performance</td>
<td>Vroom</td>
<td>703 unionised workers</td>
<td>Quantitative: questionnaire survey</td>
</tr>
<tr>
<td>Torrance &amp; Cathcart</td>
<td>UK</td>
<td>Ranking of motivating factors, influence of age and education</td>
<td>Maslow</td>
<td>40 service managers and 23 line managers employed by a contractor</td>
<td>Quantitative: questionnaire survey</td>
</tr>
<tr>
<td>Maloney &amp; McFillen</td>
<td>USA</td>
<td>Valence, satisfaction,</td>
<td>Vroom</td>
<td>703 unionised workers</td>
<td>Quantitative: postal</td>
</tr>
</tbody>
</table>
FUTURE TRENDS

Although predicting future trends or suggesting areas on which research should focus is not an easy task, some insights and ideas can be taken from looking elsewhere, that is, to the wider context of HRM, OB and I/O psychology research. Our literature review has shown that works on motivation in the construction industry have used very few constructs from a wide range of possibilities. For example, no empirical studies have been carried out on goal-setting, social cognitive or organisational justice theories, although they had ground-breaking impact when initially promulgated. According to Latham and Pinder (2005) these last three theories now dominate the motivation literature and have overwhelmed behaviourism and expectancy theory. Future research could be carried out following these frameworks which seem to be common in other fields. Construction management researchers should also move from an overemphasis on employee cognition and behaviour to emotions. In fact, research on affect is blossoming and disciplines of HRM, OB and I/O psychology are currently undergoing an "affective revolution" (Latham 2007, Latham and Pinder 2005). According to this trend, the effects of mood and emotion on a person's performance and behaviour could also be explored in the field of construction.

A further related line of enquiry is to undertake studies focusing on a different level of analysis. Most of the studies reviewed in this paper have focused on motivation of individuals. However, during the last decades there has been a shift in organisations toward more group-based work. This change has been reflected in work motivation research by an increased attention in group settings (Ambrose and Kulik 1999). This tendency should also appear in the construction industry, where diverse groups of employees operate as an itinerant labour force working in teams in order to reach short-term project objectives in various settings. There are processes affecting teams, such as the specific ways in which members motivate and demotivate one another, that do not emerge when focusing on the individual motivation. Hence, Latham (2007:256) and Locke and Latham (2004:392) recommend the study of motivation on team effectiveness.

Considering the fact that by 2010 nearly half the workforce of most developed countries might be aged 45 or over, Kanfer and Ackerman (2004) have remarked the need of understanding the effects of aging and adult development on work motivation. The scarce research in this area represents a gap which could also be explored by the construction management research community.

Regarding the methodology used, we have seen that positivism and quantitative techniques have predominated over qualitative approaches and that survey questionnaires have been used the most to collect information. In this respect, the use of introspection as a method for studying and understanding motivation is recommended. Locke and Latham (2004:398) even suggest that "developing structured interviews might yield more accurate data than using questionnaires" because the researcher could check with the participants how they interpret the
questions and help them to introspect and, therefore, increase the answer's accuracy. It is also evident that the studies included are cross-sectional in nature without reference to time. Time-related referents have been rarely used in research published in OB literature (Latham 2007) despite the fact that almost everything managers and workers do is framed in terms of time: going to workplace, meeting deadlines, developing stress, etc. One suggestion to solve this problem is the use of "unobtrusive methods for collecting time-series data (e.g. use of diaries, videos, internet surveys)" (Latham 2007:254). On the other hand, motivation, being temporal in nature, could be examined through longitudinal studies. Further research could explore how the economic recession that most developed countries are undergoing nowadays affects motivation in the construction industry.

CONCLUSIONS

A motivated workforce is frequently pointed out as a sign of competitive advantage. Its importance in construction projects is undoubtedly relevant since, despite recent advances in technology and production management techniques, the construction industry remains one of the most people-reliant industrial sectors.

A review of motivation research in social sciences, management studies and construction management reveals a number of issues that need to be addressed in the construction industry. There is scope for the development and adoption of different research frameworks, new approaches and methods for understanding work motivation in construction. In this regard, research can benefit from the advances that have been made in HRM, OB and I/O psychology such as considering teams, time, life-span research and emotions.

The review presented in this paper only takes into account empirical research conducted on motivation and job satisfaction according to a restricted theoretical framework and time period. Although there exist some important and influential works in the area, which are descriptive in nature, employ different frameworks or were written before 1984, this review does not consider them due to the limited scope of this paper. But a similar review might be used for a comprehensive literature analysis, which would help to mark what has been done and what needs to be done in the future.

REFERENCES


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