

Motivation and its Effect on Productivity of Workers in the Kenyan Construction Industry

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Abstract

Human resource today has a strategic role for productivity increase of any organization. Effective and optimum use of human resource could result to enhanced productivity. Therefore, this study examined motivation as one of the major factors that is responsible for construction productivity in Kenya. Questionnaires were used to obtain information from contractors registered by Ministry of Works in categories A to D. There was a response rate of 88%. The data was analysed using descriptive statistics. The null hypothesis was also tested. The study established that motivation impacts productivity although most of the respondents did not have motivation policy. The objectives of the study found out that motivation incentives existed with wage, fringe benefits and job security topped the list. Ninety seven (97%) of respondents stated that they did not have motivation policy in place. The hypothesis showed that there is a direct relationship between motivation and productivity. The study concluded that there was need for stakeholders to educate their management through seminars on the importance of motivating staff since it has a direct relationship on productivity. These seminars would discuss issues related to motivation theories and their application to the work force. It was recommended that physical measurements on construction sites should be undertaken to ascertain productivity levels.

Key words: motivation, productivity, workers, construction industry.

INTRODUCTION

Human resource is one of the factors of production. The other factors are land, capital, plant and equipment. Human resource plays an important role in co-ordinating and organizing the other factors in order to realize production. It is not enough to have production but also to improve productivity. The latter can be improved by a well motivated labour force.

PROBLEM STATEMENT

Improved productivity increases production. The two are very closely related. It has, however, been observed that productivity in the construction industry as well as in others is low resulting from demotivated workforce (Muhammed, 2008). Low productivity reduces the output hence negatively affecting the output which reduces profitability. It is therefore important that any enterprise should examine and take action on factors which affect the motivation of workforce e.g. work environment and pecuniary benefits among others (Giorgio, et al., 2008). It is for this reason that this study will undertake a survey to establish factors that after the labour force hence responsible for declining of productivity. Research and productivity ensures that human and natural resources are employed by means of the most

productive methods consistent with procedures and standards used in the development of a particular industry (Kazaz & Ulubeyi, 2008).

Motivation of workers is isolated as one of the prerequisites for achieving high level of efficiency and productivity in the construction industry (Giorgio *et al.*, 2008). This paper will seek to isolate motivation as one of the major factors that may cause decline of productivity in the construction industry. Motivation schemes will also be analysed. The objectives of the study were, to investigate whether motivation policies exist in the construction industry in Kenya, to investigate common motivation schemes used by employers to motivate their workers and to investigate the effect of motivation schemes on worker productivity. The null Hypothesis of the study was motivation of construction workers and the consequent productivity are unrelated and therefore any relation is deemed coincidental; while alternative Hypothesis was Lack of worker motivation is directly responsible for low levels of productivity in the Kenyan construction industry.

DEFINITIONS

The common terminologies used in this study are defined below. Motivation is the desire and willingness of a person to expend effort to reach a particular

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goal or outcome. It is also a combination of influences that cause someone to want to do a job or to complete a project as soon and as well as possible. Contractor is a person or a firm that has been awarded a project for the construction of a building, road or any other structure mentioned in the contract. A contractor could also be an employer. Employee is a person engaged by another person or a firm to undertake a job. Efficiency is optimal use of resources to realize the goal of the company while productivity is the effective and efficient utilization of all resources, labour, plant and materials. Incentives are tangible rewards that are given to those who perform at a given level.

MOTIVATION THEORIES

Maslow's Need Theory: Maslow's (1970) stated that human beings strive to satisfy the following needs in ascending order: physiological, safety, social or belongingness, esteem and self actualisation. The needs are graphically shown as a pyramid in hierarchical manner Figure 1.

Maslow made the following observations: A satisfied need is not a motivator. An employee gets motivated by a deficiency for one need. Lower needs must be satisfied before the higher needs. The needs network in an individual is complex. There are more ways of satisfying the higher order needs than the lower needs. It is worthy noting that needs in a real life situation as not clearly demarcated as stipulated by Maslows. There are overlaps of the needs which motivate an employee.

Other Motivation Theories

Mc Clelland's, Aldefer's, Herzberg's, Skinner's, McGregor's and Vroom's theories discussed below have been borrowed from Knootz, *et al.* (1984).

Acquired Need Theory by David Mc Clelland:

Mc Clelland stated that every one prioritizes needs differently and that nobody was born with the needs. They are acquired through life experiences. He identified three specific needs. The need for achievement is the drive to excel. The need for power is the desire to cause others to behave in a way that they would not have behaved otherwise. The need for affiliation is the desire for friendly close interpersonal relationships and conflict avoidance. The desire to fulfill the above needs serves as a motivator.

Aldefer's Erg Theory:

It emphasizes three needs which are existence, relatedness and growth. Aldefer was of the opinion that existence met the biological and safety needs, relatedness, the love needs and growth met esteem needs. Aldefer argued that the only basic need for man was existence and once it was satisfied then all the other needs might emerge spontaneous or independently to motivate human behaviour.



FIGURE 1
Maslow's need theory graphically shown .
Source: Koontz *et al.*, 1984, pp. 485

TABLE 1
Maslow hierarchy of needs

Low Level Needs	To Satisfy: Offer
1. Physiological Needs	i). Rest, refreshments and breaks ii). Physical comfort on the job iii). Reasonable working hours
2. Safety Needs	i). Safe working conditions ii). Job security iii). Compensation and security.
3. Social Needs	i). Friendly co-workers ii). Interaction with customers iii). Pleasant supervisor
Higher Level Needs	
4. Esteem Needs	i). Responsibility of an important job ii). Promotion to higher status iii). Praise and recognition from the boss
5. Self Actualisation	i). Creative and challenging work ii). Participation in decision making iii). Job flexibility and autonomy

Source: Maslow 1970

Hertzberg's Two Factor Theory:

It comprised of hygienic and motivation factors. Herzberg argued that the hygiene factor does not motivate but only guards against demotivation. The hygiene factor comprised of a conglomerate of components which are

working conditions, salary, job security and supervision. The above components have to be maintained for a healthy organisation. Once the hygiene factor has been met, then it is possible to motivate employees. Herzberg stated that motivation takes place in continuum.

Skinner's Positive Reinforcement Theory:

Skinner's theory stresses that good behavior should be acknowledged and bad behaviour should be overlooked. The theory sees punishment as a phenomenon that might bring feelings of rebellion and sabotage rather than improve behaviour. Managers who used positive reinforcement theory did not refer to mistakes made by employees. Positive reinforcement improves the performance of employees.

Mcgregor's Theory X and Theory Y:

In theory X Mcgregor considers an average employee hates work, avoids responsibility where they can, view managers as dictators and have to be forced to work. Further, Mcgregor's theory Y postulates that an average employee; sees work as a source of satisfaction, is committed to the goals of the organisation, seeks and accepts responsibility and feels that his/her intellectual capacity is under utilized. It is easier to motivate a theory Y employee than that of X because he has a positive attitude which is good for improving productivity.

Vroom's Expectancy Theory:

It dealt with what an employee expected to benefit after offering services i.e what an employee believed would probably happen if certain behaviour patterns were pursued. Salaries/ wages were stated to be an important issue. What would an employee expect to earn? The following are the basic factors that motivate employees: Challenge in work, participation in planning and decision making, job security, recognition and status, opportunity for advancement, independence in action, power, working conditions, money and other financial rewards.

Challenges in Motivation Schemes

These challenges includes; the needs of people being different, the needs change over time and motivation is a social behaviour, hence dynamic.

Suggestions for Implementing Employee Motivation Schemes

Considering the above theories, the following suggestions are made to managers to enable them implement employee motivation schemes. Managers actively and intentionally motivate subordinates. They should understand their own strengths and limitations before attempting to modify those of others. They should also understand that employees have different motives and abilities. Reward should be related to productivity and net

semerity or non-merit based conditions. Jobs should be designed to offer challenges and variety. Subordinates must clearly understand what is expected of them. They should foster an organisation culture oriented to productivity. Managers should stay close to employees and remedy problems as they arise.

Motivation and Productivity

Motivation is a tool for improving labour productivity. Motivation is directly related to productivity. Motivation of labour is a key contribution in maximizing workers' productivity (Kazaz et al., 2008). Research on the relationship between motivation and productivity in the construction industry has been conducted over the last 40 years mainly in Europe and United States of America (Khan, 1993). There is very little research if any particularly on the measurement of actual productivity on construction sites which has been undertaken in this area in the Kenyan construction industry.

A motivated employee is loyal hence supporting the actions and objectives of an organisation. Motivated employees contribute positively to their productivity (Bruce, 1962). Productivity is measured in terms of cost i.e work done at a reasonable price to the employer and a fair profit to the contractor (Oglesby et al., 1989). In this study, profitability to the contractors was used as a measure of productivity. This was as a reflection of improved output and minimizing of construction period.

Employee Motivation

Motivation is the set of processes that determine the choices people make about their behaviours (Kazaa & Ulubeyi, 2008). Motivation efforts must be directed towards improving company operations. A motivated employee is loyal implying that he supports the actions and objectives of the firm. Motivation plays an important role in enhancing construction labour productivity (Smithers & Walker, 2000). Motivation is whatever the behaviour, the drive pushing or pulling a person to act in a particular way (Hollyforde & Whiddett, 2002). Effective management requires an understanding of what motivates a workforce. It has been argued that bonus, payment by results, financial incentives are schemes of encouraging productivity (Hague, 1985). Ruthankoon and Ogunlana (2003) emphasize that construction is an industry, with unique characteristics which may have special effects on employee motivation. The transient nature of the construction industry with short term projects is a major factor (Price, 1992).

Incentives

Satisfying workers' needs can be viewed as distributing incentives when certain objectives are achieved. There are two types of incentives: extrinsic and intrinsic. The former are external such as work money apart from work whereas the latter refers to what the worker feels when performing a job. There is a direct and immediate connection between the work and the reward

in the latter. The power of incentives is immense and pervasive which is all the more reason it requires careful management (Mackenzie & Lee, 1998). Incentives are tangible rewards given to those who perform at a given level. Incentives are linked to safety, quality or absenteeism whereas reward follows successful performance. It is advisable to have workers contribute their ideas about what constitutes a reasonable level of performance (Wellington & Lydia, 2008). This makes workers to feel important and hence make them own the company's goals resulting to good performance.

Performance

Performance encompasses four main components namely productivity, safety, timeliness and quality. Productivity is measured in terms of cost implying that the project has been completed at a reasonable price to the employer with the contractor making a fair profit. Productivity is the ratio between inputs and outputs. It is important to specify the inputs and outputs to be measured when calculating productivity. Inputs such as materials, labour, equipment and capital are used in the execution of a construction project. Productivity is relevant to companies and other enterprises (Sumanth, 2001). Improved productivity reduces unit costs and serves as an indicator of good performance on the project.

The following are the benefits of improved productivity: decreased total cost, decreased time for production/completion, improved quality and Decreased inflationary pressures. Time is of essence. If a project is not completed on time, it becomes more expensive to the client due to increase in prices and opportunity costs. Quality should be maintained during the construction process. If quality is compromised, i.e. work undertaken does not comply with the specifications, then it will be expensive for the employer to carry out maintenance work in future. Building may also collapse during construction resulting to devastating consequences. For a project to qualify for success in performance, it must fulfill the criteria of cost, time and quality.

RESEARCH METHODOLOGY

Questionnaires were the most suitable method of data collection considering the nature of the data because it results in the reduction of bias and the method is cost effective (Gall, 1996). Data was collected using a questionnaire based on the issues raised in the objectives of the research. Construction companies in Nairobi region, Kenya, were adopted as a representative of the contractor firms in the Country. Gichunge (2000) noted that 72.2% of construction in Kenya took place in Nairobi and therefore the results would be representative of the whole country. A sample is simply a subset of a particular population. It becomes difficult if not impossible to carry out a study of the whole population because of the constraints of time and resources. The study made an assumption of a confidence level of 95%. This is interpreted to mean that the response achieved will be within either plus or

minus 5% of the true state of affairs in the construction industry. Table 2 shows the listing in terms of categories of contractors by the Ministry of Public Works.

TABLE 2
Categories of registered contractors

Category	No. of Registered Contractors	Contract Value in Kshs. in '000
A	26	Unlimited
B	19	100,000
C	40	75,000
D	51	50,000
TOTAL	136	

Source: Ministry of Public Works, Kenya, 2009

Pieces of papers were wrapped for each of the categories and placed in a box and shaken. The papers were picked randomly for each of them 15, 10, 5, 5 respectively totaling 35 (Table 3). According to Alreck and Settle (1995; p.89), normally a sample of less than 30 respondents will provide too little certainty to be practical. A total of 35 companies in construction were chosen using random sampling technique from the list provided by the Ministry of Public Works Categories A to D (Table 2). The said categories were expected to practise motivation of staff in their firms. Out of the 35 questionnaires delivered to various contractor offices within Nairobi, 31 were received that is, a 88 percent response which was above average and therefore can be considered adequate for analysis. The data was presented in tables and charts.

TABLE 3
Companies selected

Rank	Category	Number of Firms	Time/Period in Construction
1	A	15	Over 15 years
2	B	10	10 to 14 years
3	C	5	5 to 9 years
4	D	5	Less than 5 years
Total		35	

Source: Field Survey 2009

Data Analysis

The main objective of this study was to investigate worker motivation and how it can be applied through the use of various motivation schemes. It also seeks to investigate the effect of either the presence or the absence of motivation on construction productivity. The data has been analyzed using descriptive statistics.

Experience in Construction Business

Out of all the 31 contractors who responded to the questionnaires, 55% of the respondents had been in the construction industry for over 15 years and had considerable experience in the field of building construction. The next 35% of

the remaining 38% fell between 10 to 14 years, with 10% under 5 years stating that they were new in the business and had not yet been awarded big projects (Table 3). All the contractors were those dealing in building construction only.

All the contractor firms were registered with the Ministry of Public Works into categories from A to D depending on their financial strength and technical abilities. Categories A to D are ranked from a contract value worth of 50 million Kenya shillings to 100 million and above as state under Table 2.

Criteria by Contractors used in the Selection of Workers

Seventy Nine percent (79%) of the respondents interviewed had less than 20 permanent workers. They said that they recruit workers when they are about to start a new project or when the project is on-going and there arises a need to increase on the workers. The majority of the contractors, approximately 83% recruit workers based entirely on competence and skills. They said that trained workers in the various fields were preferred to those who were not formally trained because training improves quality of output. 17% were of the view that both experience and past project relations are the preferred basis for selection of their workers. They said that experience brings about skill hence enhancing quality and the past relationship between the workers and management provides a platform for a good working relationship and hence a channel for feedback. In regard to permanently employed staff, the respondents had recruited them through adverts stating the required skills say in artisanship with the necessary experience. Whenever new projects arose requiring expertise and skills, labour force would be acquired through recommendations from former employers or existing employees with similar skills. The respondents stated that unskilled labour was always available.

Availability and Retention Incentives of the Labour Force

In terms of availability, 97% of the 31 contractor firms used in this study, a total of 30 firms, said the most available resource in construction is labour and also agreed that this is the cheapest in terms of wage compared to the cost of

both repair and purchase of other factors of production (Figure 2). They said that as a way of retaining these employees they offered incentives like priority when hiring, the possibility of training through workshops, timely payment of salaries/wage and non-hierarchical communication.

Labour Turnover

On the level of labour turnover, 67% of the respondents said that their level of turnover was below 60%. They stated that the reason for this scenario was that they had good working relationships; used labour based contracts and offered good remuneration for the effort employed by the employees. They also stated that those who left the company did so because their employment had expired. Thirty Three percent (33%) of respondents, said that turnover was high and added that the reason for this was that the work was demanding and the workers usually found it hard to keep up.

Worker Motivation Policy

All the respondents agreed that worker motivation was a prerequisite for improved productivity as it brings about a positive impact on the level of production and consequently, raises the profits of the firm. 97% of the management said they did not have a policy in place and simply motivated their employees through what they called reasonable pay rates, timely payment, staff luncheons and non-hierarchical communication (Figure 3). Management however, apparently lacked understanding in the basic motivation theories. Although 62% of the managements were of the view that the above mentioned factors are highly effective in motivating the labourers, there was still a need for a deeper understanding of the motivation theories to enable them know which theories could best be applied for the motivation of the labourers. On the other hand 3% of the management had a fairly adequate understanding of the basic motivation theories and used a policy based on incentives and rewards to motivate their workforce. The management (62%) said that seminars to disseminate information on motivation theories and incentives were necessary.

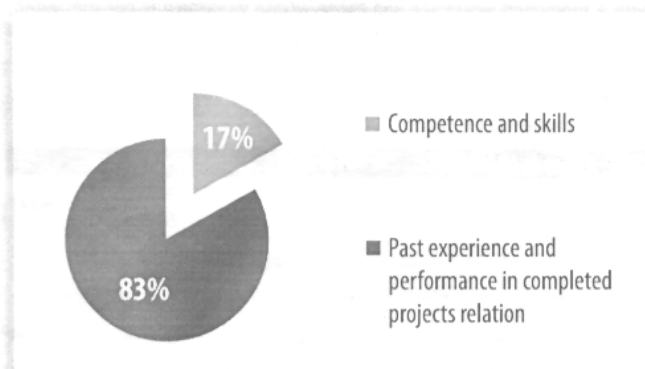


FIGURE 2
Criteria used in the selection of workers
Source: Field Survey 2009

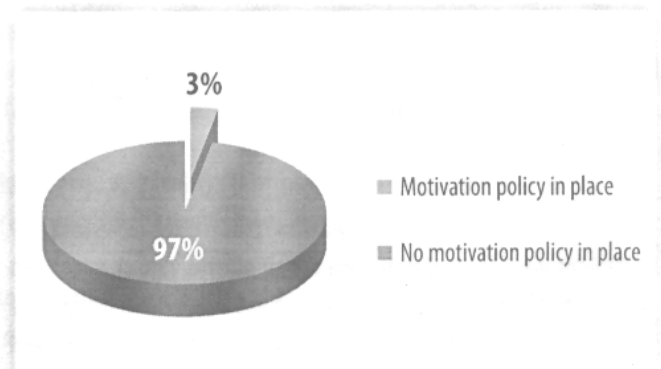


FIGURE 3
Motivation policy in place
Source: Field Survey 2009

Management considers an employee's wage as an important factor of motivation although this notion is not entirely true. If increased, this would motivate them to work harder. They were, however, of the opinion that if a labourer's wage is increased, he would be motivated.

Ranking according to importance by Management

Management was asked to rank the importance of 10 issues directed towards the labourers. The issues were ranked in order of importance using the scales 1 to 10 with 1 being the most important and vice versa (Table 4).

TABLE 4
Management ranking of issues of motivation incentives to the labour force

Ranking	Management	A	B	C	D	
1	Wage	17	6	3	2	28
2	The Fringe benefits they receive	16	5	2	2	25
3	Amount of job security they have	14	5	3	1	23
4	Appreciation and respect from management	15	3	2	0	20
5	Their chances for promotion	13	2	3	1	19
6	Amount of freedom they have at work	13	2	2	0	17
7	Friendliness of the people they work with	7	3	1	1	12
8	Getting a feeling of achievement from work	6	2	1	0	9
9	Appreciation and respect from co-workers	2	1	1	0	4
10	Opportunities they have to develop their skill and abilities	3	1	0	0	4

Source: Field Survey 2009

Table 4 shows that wage, benefits and job security top the list of incentives as the most important. The firms did not; however, seem to apply the various theories of motivation because these incentives cannot be applied to all the categories of workers uniformly.

TABLE 5
Productivity: Explained by profitability

Contractor Category as per M.O.W.	No. of Firms	Profitability Sustained over Three Years Period	Motivation of Staff a Reason for Sustainability of Profit	Demotivation of Staff Contributed to Unsustained Profitability
A	17	15	15	2
B	7	6	6	1
C	4	2	2	2
D	3	2	2	1
Total	31	25	25	6
	100%	81%	81%	19%

Source: Field Survey 2009

Overall 81% of the firms confirmed that productivity represented by profitability was a result of motivation of staff whereas 19% disagreed. An average of 87% of firms in both Categories A and B stated that productivity resulted from motivation whereas 59% average of the firms in both categories C and D stated the same (Table 5). This was an indication that motivation was considered more seriously in firms in Categories A and D hence higher productivity.

TABLE 6
Productivity: Explained by completion of construction within the contract period

Contractor Category as per M.O.W.	No. of Firms	Completion within Time over 3 Years Period	Motivation of Staff as a Reason for within Time Completion	Demotivation of Staff as a Reason of Delay in Completion Time
A	17	14	14	3
B	7	5	5	2
C	4	1	1	2
D	3	1	1	2
Total	31	21	21	10
	100%	68%	68%	32%

Source: Field Survey 2009

Sixty eight percent (68%) of the firms stated that completion within time resulted from motivated staff and 32% disagreed. The former scenario was a pointer that productivity represented by completion with time was affected by motivation of staff. Completion within time was higher in firms in Categories A and B (Table 6).

Motivation and Productivity

This research has shown a strong positive relationship between motivation and productivity. Productivity has a direct relationship with motivation meaning that for productivity to reach its peak the employees must be highly motivated. Management therefore should seek a deeper understanding of the motivation concepts so as to understand how to motivate their workers. They should also understand better the workers, their needs and wants so as to achieve effective workforce motivation. Ninety percent (90%) of the respondents stated that they had not undertaken physical measurements at construction sites to ascertain productivity levels.

Hypothesis Testing

A checklist was used in the field survey to help determine the extent to which firms actually motivate their workers knowingly or unknowingly so that from the productivity levels one can determine the difference between those firms with a motivated workforce and those whose workforce is not motivated. Tables 7, 8 and 9 presents the findings from the field.

TABLE 7
Sampling frequency distribution

Scores (Out of 9)	Number of Firms
1	4
2	6
3	7
4	5
5	2
6	3
7	2
8	2
9	0
Sample size	31

Source: Field Survey 2009

TABLE 8

The arithmetic mean and standard deviation of the scores

Score (x)	Frequency (F)	fX	x ²	fX ²
1	4	4	1	4
2	6	12	4	24
3	7	21	9	63
4	5	20	16	80
5	2	10	25	50
6	3	18	36	108
7	2	14	49	98
8	2	16	64	128
9	0	0	81	0
	n=31	ΣfX=115	Σx ² =285	ΣfX ² =555

Source: Field Survey 2009

$$\text{Mean score} = \frac{\sum fX}{n} = \frac{115}{31} = 3.70$$

$$\begin{aligned} \text{Standard Deviation} &= \sqrt{\frac{\sum fX^2 - X^2}{n-1}} = \sqrt{\frac{555 - 31(14)}{30}} \\ &= \frac{11}{30} = 0.4 \end{aligned}$$

TABLE 9

Mean and Standard Deviation

	N	Mean ()	Standard deviation
Total Score	31	3.70	0.4

Source: Field Survey 2009

The research hypothesized that motivation of construction workers and the consequent productivity are completely unrelated and therefore any relation should be deemed coincidental. The statistics shows that this statement is false and that the two actually share a positive relationship.

The null hypothesis was therefore proven false. Findings of this research paper prove that not only are worker motivation and construction productivity are related positively, but the relationship meaning that the higher the degree of motivation the higher the level of productivity from the workforce. The alternative hypothesis on the other hand was proved true; that the lack of worker motivation contributes to the declining levels of productivity in the Kenyan construction industry today.

CONCLUSION

The first objective of the study was to establish whether motivation policies exist in the construction industry in Kenya. It was established that 97% of the respondents did not have motivation policy in place. This showed that there was a great need to introduce worker motivation policies. The second objective was to investigate common motivation schemes used by employers

to motivate their workers. The study found out that wage, fringe benefits and job security were top on the list of schemes in use. It was, however, noted that the respondents did not seem to apply the various theories of motivation. It was only three percent (3%) of management who had adequate knowledge on incentives and rewards to motivate staff.

The third objective was to investigate the effect of motivation schemes on worker productivity. The research found that there was strong positive relationship between motivation and productivity. This was shown by sustained profitability by 81% of respondents for three years and by completion of projects by respondents (68%) with the construction period. The hypothesis confirmed that motivation of construction workers positively affected productivity hence proving the alternative hypothesis.

The study concluded that motivation affected productivity and that due to the fact that only 3% of management understood issues related to motivation it was necessary to undertake awareness seminars. These seminars would discuss issues such as motivation theories and their effect on productivity. Ninety percent (90%) of respondents stated that they had not undertaken physical measurements on construction site to ascertain productivity. It is recommended that studies should be carried out in this area.

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