FINANCIAL INCENTIVE PROGRAMS FOR AVERAGE-SIZE CONSTRUCTION FIRM

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ABSTRACT: Properly applied financial incentives are a powerful motivational tool that can inspire employees to improve their performance, thus increasing profits and strengthening the company. In light of such potential benefits it is unfortunate that the overwhelming majority of construction contractors do not offer financial incentives to their field workers. Research is performed to study many issues relating to financial incentive programs for small-to-medium-size construction companies located in the southeastern United States. The results of the study indicate that the contractors surveyed generally knew about financial incentive programs, used different types of them to increase productivity, rarely studied financial incentive programs, needed firm proof that programs are effective and efficient, and desired information on how to develop one for their own company. If a financial incentive program is to be developed it must have commitment from top management, be based on realistic productivity standards, be efficiently managed, and have worker support.

INTRODUCTION

The term "incentive" implies a diverse set of meanings. The literal definition states that an incentive is something that inspires action. In terms of the construction industry this definition is translated into attempts to increase production or performance in return for increased psychological or material rewards. There are many types of incentives; the major ones are financial and psychological.

Financial incentives use a monetary reward to stimulate increased performance or production. Employees are induced to work smarter and harder in the hopes of receiving financial compensation over and above their normal pay.

A simple example of a financial incentive is the offering of a portion of savings from work accomplished below estimated costs to those employees whose work resulted in the savings. In order for an incentive of this type to benefit the company and the owner as well as the employee, the parameters governing performance of the work must be clearly specified in advance.

Such definitions and examples are easy to understand in concept, but become much more complicated when put into practice. Careful planning, organization, and monitoring are required in order to achieve the desired results over a long period of time.

Psychological incentives, as opposed to financial incentives, are also a valid means of producing increases in production and/or performance. Typical psychological incentives offer workers recognition for their effort in a particular area, such as giving the title of "safe employee of the month" to

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a worker whose suggestion results in an improvement to the project's safety program.

Incentives of this type rely on increasing an employee's sense of satisfaction in his or her work, management's recognition that an employee's work is valuable to the business as a whole, and providing employees with the feeling that the project undertaken is inherently meaningful. Although psychological incentives are certainly a powerful motivational tool, they are beyond the scope of this discussion.

Financial incentive programs are structured plans for introducing incentive payments into a company's operations. Such programs, when thoughtfully developed and implemented, offer benefits that include improved worker productivity, increased company profits, less rework, and the creation of a work environment in which all participants realize the value of maintaining a personal interest in the outcome of a project.

In order for a company to receive optimum benefits from an incentive program, its managers must first define their needs and then, using these needs, develop the goals of the incentive program. These goals will shape the program to the unique requirements of the firm developing the program.

Incentives offered in an unstructured and arbitrary manner, such as sporadic discretionary bonuses, do not constitute an incentive program. While such measures may be marginally effective on a short-term basis, they are rarely, if ever, consistently effective over a long period of time.

It is generally accepted that programs combining elements of both financial and psychological incentives are those that produce the most consistently satisfactory results. The relative weight of either component within a specific program will depend on company goals, existing employee attitudes, and managerial capabilities at the time of a program's implementation.

RESEARCH SUMMARY

Under a grant from the Construction Industry Cooperative Alliance, research was conducted to do the following.

- Determine the factors common to successful incentive programs.
- Document the attitudes and perceptions of small- to medium-size contractors regarding financial incentive programs.
- Determine the extent to which such firms have implemented some form of financial incentives.
- Determine what type of incentives are currently in use by such firms.
- Determine what would motivate constructors who are currently not using incentives to implement them.
- Draw conclusions as to how financial incentive programs may be developed to address the needs and concerns of the small- to medium-size construction company.

In performing a literature search, it quickly became evident that other industries have made ample use of the motivation potential of financial incentive programs, while the construction industry has not. The next step in conducting the study was to identify construction companies that have implemented financial incentive programs, and to study these programs through interviews with the managers responsible for their development and/or use. Interview subjects were asked to describe their development process, program structure, and results since implementation. After the

J. Constr. Eng. Manage., 1992, 118(4): 667-676

interviews, the findings were compared, and the common elements summarized. The final stage of the study was a survey of southeastern United States constructors' practices, attitudes, and perceptions with regards to financial incentive programs, and was directed towards small- to medium-size firms. Survey findings are summarized in the following section.

Survey

Selection of survey participants was limited to constructors operating within the area served by the Construction Industry Cooperative Alliance (CICA), and by available funding. The final sample covered 11 southeastern states, and comprised building contractors from the Associated General Contractors (AGC) and Associated Builders and Contractors (ABC). Surveys were sent out with a cover letter and self-addressed envelope to 1,326 constructors.

The survey form consisted of five questions that form the subheadings in the following section of this article. The results of the survey were tabulated by subjective evaluation and summarization of the narrative responses, followed by a percentage analysis of the summarized groups of responses.

It was decided during the development stage that allowing respondents to answer in their own words might afford valuable insight not provided by preconceived multiple-choice answers. It was felt that the benefits of obtaining the subjects own words outweighed the difficulties presented in tabulating narrative responses objectively.

In compiling narrative responses into specific categories there always exists the possibility that subjective biases and interpretations on the part of the researcher may alter the intention of the respondent; while such occurrences probably cannot be eliminated completely, knowledge of their existence and careful analysis of responses can limit them. The writers feel that the introduction of personal biases were kept to the barest minimum in compiling the results of this survey.

The results were first summarized into groups of responses that were of an obviously similar nature. The result of this first categorization was a broad set of specific statements that of themselves did not clearly express the essential natures of the various responses.

A second review focusing on key ideas expressed within the various groups of responses was performed; this evaluation revealed underlying ideas common to the specific concerns of individual respondents. The results of this summarization are included in the following section.

Findings

The survey responses presented in this section have been condensed from the original responses. Complete responses are available from Clemson University's department of construction science and management. The total responses for specific questions may not equal the total number of surveys returned due to blanks left on survey forms, or more than one response to a question. Percentages may total slightly more or less than 100% due to rounding. A total of 152 responses were received for a 11.5% rate.

The first inference that can be made from the summarized results of the survey as a whole is that the relatively high response rate of 11.5% indicates that the subject of financial incentive programs is one that the industry regards with high interest. The number of respondents expressing favorable opinions of the subject, and desiring more information and guidance, when

J. Constr. Eng. Manage., 1992, 118(4): 667-676

coupled with the large number of requests for copies of the results support this conclusion. The findings will be presented by question, as shown in Table 1.

The results of this question showed (Table 1) that a substantial portion (50%) of the firms surveyed have an understanding that effective incentive programs must be based on quantitative evaluations of performance. Another large group (24%) thought that a subjective analysis of performance constituted a financial incentive program, and 4% did not know what such a program was. Fifteen percent of the respondents felt that financial incentive programs need only consist of profit sharing or distribution of project savings. Only two responses (1.4%) expressed unfavorable opinions of the concept of financial incentive programs. The remaining 5.4% of the responses consisted of isolated individual responses but were all favorable towards the implications of financial incentive programs; the ideas expressed indicated the possibilities of increased teamwork, motivation, and retention of competent craftsmen.

These results show that while basic understanding of the fundamentals of financial incentive programs does exist, there is definitely a need for efforts that will increase the industry's awareness of the goals and criteria of financial incentive programs.

The responses to this question showed (Table 2) that about 68% of the

TABLE 1. What Does "Financial Incentive Program" Imply?

Response category (1)	Number responding (2)	Percentage (3)
Incentives should be based on quantitative measurements of specified criteria	77	50.77%
Financial incentives are bonus or reward based on subjective criteria such as "job well done" or "more work than usual"	36	23.7%
Financial incentives are employee sharing of company profits or savings	23	15.1%
Various responses—positive implications	8	5.4%
Did not know, or did not address question	6	4.0%
A giveaway, or paying employee extra for what is already paid for through wages	2	1.4%

TABLE 2. What Is Your Firm's Policy towards Incentive Programs?

Response category (1)	Number responding (2)	Percentage (3)
Subjective bonuses or profit sharing	55	33.6%
No incentives or have discontinued program	39	23.7%
Incentives are given to management only	37	22.6%
Incentives are given to field workers only	0	0.0%
Incentives are given to all employees	19	11.6%
Incentives given to improve safety, quality, training, sales, or sub's performance	11	6.6%
Currently developing program	3	1.8%

respondents already offer some form of incentive. The majority of these were bonuses or profit shares given to management personnel, were based on job or company profitability, and were distributed only once or twice a year.

Incentives given on an annual or biannual basis may induce higher levels of performance by management personnel who regularly deal with the project as a whole, but they will not when applied to field workers. The reason for this is the field worker's perception of project duration is from the point of view of their specific trade. Incentives paid to field workers must relate to specific pieces of work in order to reinforce the link between achieving goals and receiving rewards for those achievements. Incentives offered at intervals short enough to create this link are far more effective in inducing higher productivity than are annual or biannual bonuses.

When asked if their company uses financial incentives to increase productivity, 57% of the respondents felt that their incentives do increase productivity and of this 57%, 64% judge their success by qualitative measures (primarily job profitability) as shown in Table 3. Although this response is encouraging and shows that there is a sizable group who are receiving benefits of some sort from financial incentives, there are problems in using such broad, long-term measures as job or yearly profits as a basis for financial incentives.

The negative responses to the question, as shown in Table 4, revealed that of the 43% of the respondents who do not use financial incentives to

TABLE 3. If Yes, How Do You Judge Their Success?

Response category (1)	Number responding (2)	Percentage (3)
Success judged by quantitative measurements such as job profitability or productivity standards	56	64.4%
Success judged by subjective analysis of performance	20	22.9%
Questionable success due to varying work conditions	5	5.7%
Unclear or no verbal response	6	7.0%

TABLE 4. If No, Why Not?

Response category (1)	Number responding (2)	Percentage (3)
Responses indicate lack of knowledge or understanding in vital areas of incentive program development, fairness, measurement motivation, variability	40	60.6%
Responses cite external blocks to use of incentives, i.e., company too small, no time, lack of work	12	18.1%
Responses indicate negative opinions of value of incentive programs	10	15.2%
Have not felt need	3	4.5%
Are currently working on program	1	1.5%

increase productivity, nearly 61% do not because they lack sufficient understanding of the subject. It was evident from the responses that these firms were interested in pursuing the development of financial incentive programs, if the proper knowledge were to become available to them.

Eighteen percent of the 43% negative response relied on reasons external to financial incentive programs themselves for not using incentives (i.e., no time, not enough work, company too small). The root of some of these problems could very well be poor productivity, which is one of the issues that properly applied incentives are specifically designed to address. Managers who are plagued with these problems would do well to consider financial incentives as a possible solution rather than as something out of their reach.

Fifteen percent of the negative response was based primarily on the idea that financial incentive programs are not a sound management tool for the construction industry. Such reasoning does not stand up in light of the 53% of the respondents who are increasing their productivity through the use of financial incentive programs.

In response to the question, "Has your company ever done any kind of formal study into financial incentive programs?" 93% responded negatively. The huge negative response to this question is interesting when compared to the favorable interest expressed in other parts of the survey. It would seem that such a favorable view of the subject would have stimulated more study.

A possible explanation of this lies in the nature of most small construction companies. Nearly all their operating time is spent performing their work, and time spent doing research is seen as time away from profitable activities. While this view may be correct in the short term, it is far from correct in the long term. Research such as this study is one of the primary means by which an industry is able to advance and to improve itself. Concentrating wholly on the short-term leads, over time, to stagnation and decline.

In order for researchers to draw more small firms into their work it is crucial that the results of that work be both available and beneficial. Studies that are performed, published in a journal, and then forgotten are useless; on the other hand, studies that actively attempt to involve firms, to make the results as widely known and accessible as possible, and to perform follow-up research can make a difference. Table 5 presents the results of those who answered yes to the questions that indicate what contractors can accomplish.

The response to the question shown in Table 6 that the two elements most necessary in convincing small construction companies to implement a financial incentive program are proof that it will work and guidelines as to how to use it; 70% of the responses asked for one or the other of these pieces of information. The results of this question clearly show the path that future research must follow.

Recommendation

In researching the subject of financial incentive programs, the following components appeared to be common to most successful ones. These fit together, much like the pieces of a jigsaw puzzle, to create a whole program. A program that lacks one or more is incomplete, and is not likely to succeed.

J. Constr. Eng. Manage., 1992, 118(4): 667-676

TABLE 5. Results of Those Who Answered Yes

Response (1)	Number responding (2)	Percentage (3)
We hired consultant to conduct study of our firm and to make recommendations; we then designed and implemented program based on those recommendations	1	9.1%
We surveyed what other firms have done and then chose program that suited our firm; results have been good	1	9.1%
We participated in graduate study of construction worker motivation, and are currently evaluating results to determine possible actions	1	9.1%
We have investigated and experimented with incentive programs, but have never settled on one that works for us	1	9.1%
Personal experience has taught me that tangible rewards improve performance	1	9.1%
We have tried some of the programs outlined in trade journals with temporary results	1	9.1%
Positive	1	9.1%
We have done informal studies both positive and negative results	2	18.2%
Experience has shown that incentive programs must be based on realistic goals, and must be handled with integrity in order to build credibility	1	9.1%
We are currently experimenting profit sharing and/or bonus program	1	9.1%

TABLE 6. What Would Convince You to Implement Incentive Program?

Response category (1)	Number responding (2)	Percentage (3)
Firm proof of validity and effectiveness of financial incentive programs	75	39.7%
Explanations of how financial incentive programs work and guidelines for their implementation	58	30.6%
Already have in one form or another	43	22.8%
More work or company growth	5	2.7%
Nothing could convince me to implement financial incentive program	4	2.1%
Not sure	3	1.6%
Program that would punish as well as reward	1	0.5%

Committed Management

A firm's top management must be 100% committed to implementing and maintaining a financial incentive program in order for it to be successful. Commitment from top management conveys to the entire firm a belief that the program has value and will work. Support of a program includes providing adequate resources, fully developing policies and procedures, and actively pursuing employee involvement.

In addition to providing initial support of the program, management must also maintain a high level of commitment throughout the duration of the project. Initial enthusiasm followed by increasing disinterest as other pressures become more prominent will undermine success.

A financial incentive program's potential for success is directly related to the strength of the firm's management. Although correctly implemented incentive programs can improve the efficiency with which management operates, they are not a cure for inadequate management techniques.

Realistic Productivity Standards

Realistic productivity standards of a quantitative nature must be established for each type of work covered by financial incentives. These standards are established by first carefully observing worker production over time, and then incorporating these observations into historical data for use in the estimating process. Standards must be regularly checked against field performance, and then updated with new data.

Defining exactly what rate of production is standard for any given task, determining why employees perform above or below this assigned standard, and calculating adequate rewards for "standard production" have been perennial questions for the construction industry. Accurate, or at least reasonably confident, answers to the aforementioned questions must be found before considering financial incentives as a means of increasing production or performance.

Adequate Quality-Control Program

The criteria that springs to mind when offering incentives are usually budget and schedule. A third criterion that is equally important and often overlooked is quality. A quality-control program that identifies specified levels of quality for each project and then assures that the work is adequately performed is an essential companion to a successful incentive program.

Quality problems are especially insidious to a construction company. Rework and the resultant loss of productivity are the immediate consequences of inadequate quality control, but there are more far-reaching problems that must be reckoned with. Excessive rework can affect the long-term success of a company through reduced morale among workers and decreased confidence on the part of both current and prospective clients.

Multiple Criteria for Incentive Payments

Assessment of progress should be tied to the criteria of budget, schedule, and quality in order to prevent improvement in one area at the expense of another. A typical result of overlooking any of the aforementioned criteria is the crew of workers who cut corners on quality to speed up completion. If incentive payments are tied to the estimated cost or schedule alone, this crew could be rewarded for shoddy work. Inspections will require that their work be redone, thus incurring rework and resulting in impact costs and delays to the project in addition to the cost of performing the original substandard work.

On the other hand, if incentive payments are tied to the estimate through time or cost, and to quality through satisfactory inspections (either in-house or external), then they are rewarded for exceeding the requirements of the project.

The idea of tying incentive payments to multiple criteria is an important one and is related to the idea of control. Through documented programs, management must be able to tightly control each of the criteria to which incentives are tied.

Effective Cost-Control Program

A cost-control program that allows a firm to accurately track a project's actual progress in quantifiable terms, and to compare these findings to the estimate, must be in place prior to installing a financial incentive program. A cost-coding system of insufficient detail to adequately identify all tasks must be part of the cost-control program, and all field supervisory personnel should be trained to competently use the coding system. Cost-control reports should be generated on a weekly basis.

Rewards for Group Achievement

Rewards tied to the success of the project as a whole will ensure that every worker has a personal stake in the success of the project. On the other hand, rewards given for individual achievement tend to result in each worker trying to benefit himself. However, there is no guarantee that this extra effort will, in fact, benefit the project. Judging success in terms of the whole project also tends to promote teamwork and a sense of pride in the work. Managers must be extremely sensitive to the effect of external constraints on the progress of a project. Workers who are expending extra effort on a project delayed by events outside their control can become severely demotivated. The possibility that progress could be delayed by weather, inspection schedules, change orders, etc. should be accounted for during the planning stages. If it appears that a project will be susceptible to an inordinate amount of delays of this nature, the incentive program should be designed to accommodate them.

Company Specific Program Guidelines

Establishment of a financial incentive program for any given firm should be based on the parameters appropriate to it. Programs are not usually interchangeable from one firm to another. The proper approach to program development is to define the firm's desired objectives and to then adapt proven principles to those objectives. Prerequisite management systems (i.e., cost control, quality control, etc.) should be well established prior to implementing a financial incentive program. An effective program will be flexible enough to meet the needs of a firm that grows and changes over time. Change is inevitable, and if a program cannot accommodate new types of work, varying work locations, differing management philosophies, or changing labor attitudes, it will stagnate and will not result in increased productivity.

Ease of Administration

A program should be simple to maintain and should not create its own bureaucracy. Programs that were difficult to administer have proven unsuccessful in the past.

A good point at which to begin planning the administration of an incentive program is with the cost-control system. If a firm's cost-controls adequately monitor the work, incorporating incentives will not be that great a burden. Computerized systems can greatly improve the ease with which these functions can be accomplished, and the advent of microcomputers simplifies the process even further.

Worker Ownership and Confidence

Successful incentive programs must be welcomed by the employees of a firm. A good way to ensure a receptive attitude is to encourage the workers to participate in developing, implementing, and maintaining the program. Such participation will inspire feelings of personal ownership and belonging on the part of field workers and will contribute greatly to the creation of an environment in which workers feel they play a vital role.

Maintaining open communication among field workers, supervisors, and managers is the best way to promote such an environment. If workers begin to see that their ideas are taken seriously, and that management listens to them, then they will see the firm as their own, and feel that they have played a significant part in the success of the project. Managers who remain isolated from their field employees will not be able to create such attitudes and will thus not ever be able to fully take advantage of their employees' abilities and creativity.

In order for workers to have confidence in a program, they must perceive it as fair, consistent, and having integrity. Rewards must be perceived as significant and be distributed as promised. Furthermore, the standards by which performance is measured must be attainable. Although an upward shift of standards is to be expected as skills improve, standards should not be drastically increased as soon as they are reached.

Incentive payments that have been promised but are delivered either erratically or not at all will produce a severe negative effect on productivity and should be avoided at all costs. Managers should analyze their projects carefully for any possibility of cash-flow problems that would interrupt incentive payments. If such possibilities do exist they should be eliminated or the incentives should not be offered.

Short Intervals between Incentive Payments

The period for which progress is measured prior to distributing incentive payments should be as short as possible in order to reinforce the link between performance and reward. If rewards are received too long after performance of the work, then the reinforcement is diminished or nonexistent. The need for adequate cost controls that enable management to pinpoint their job's progress at any given time is critical in assuring short intervals between payments.

CONCLUSIONS

Managers must truly be confident in their ability and committed to the long term in order to return substantial portions of company profits to their workers, but those who carefully consider the implications stand to gain a good bit more than they give.

In addition to confidence and commitment, a firm's managers will need a great deal of insight into both their construction operations and their workers' attitudes and motivations to successfully design a financial incentive program. A well-designed incentive program will more than return the initial investment and will strengthen a company well beyond simple financial measures.

J. Constr. Eng. Manage., 1992, 118(4): 667-676