

# Do Employee Incentives Foster Innovation in Organization?

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## Abstract

Employee innovation is one of the most critical factors which affects the overall growth of an organization. To get innovative ideas out of an organization's employees, incentives play a vital role. In this paper, different incentive structures from previous researches has been examined that are followed by top management for generating innovative ideas. Although most researches from the past found that a fixed wage or compensation based on performance induces a high level of innovation, but it is actually detrimental for innovation.

**Index terms**— innovation, incentives, motivation, organization.

## 1 Introduction

In every organization, innovation is facilitated through different channels and most talented individuals are always found to be the vital ones for the buildup of knowledge and renewal who are willing to generate new ideas in return of rewards or gains achieved for those (Henrique M. Barros, Sergio G. Lazzarini, 2012). Thus, providing incentives for the employees in the organization proves to be vital for creating the desire among the employees to innovate. To access new markets, companies need to explore and develop new products and processes; therefore, firm's resources and managerial talent need to be efficiently utilized (Holmstrom 1989, Aghion and Tirole 1994, Manso 2007). It has been found from previous researches, compensation based on pay-for-performance principle generates more impact for employee productivity; however, field research in psychology points out performance-based rewards are actually detrimental for innovative tasks (Ederer & Manso, 2013).

It is understandable that, every employee expects monetary incentives or any other rewards for their work, but not all types or structure of incentives are found to be effective in fostering innovation; hence the process of giving incentives must be taken into consideration for long term innovation, which will be more effective for the organization. Therefore, firms can design either short term rewarding mechanisms, e.g. profit sharing or long-term rewarding, e. g. promotion scheme for generating innovative ideas from the employees.

The key contribution of the paper is to show that incentive schemes that motivate innovation should be structured differently from standard pay-for-performance schemes used to induce effort or avoid tunneling. Innovation involves the exploration of new untested approaches that are likely to fail. Therefore, standard pay-for-performance schemes that punish failures with low rewards and termination may in fact have adverse effects on innovation. In contrast, the optimal incentive scheme that motivates innovation exhibits substantial tolerance (or even reward) for early failure and reward for long-term success. Under this incentive scheme, compensation depends not only on total performance, but also on the path of performance; an agent who performs well initially but poorly later earns less than an agent who performs poorly initially but well later or even an agent who performs poorly repeatedly. The paper also shows that commitment to a long-term compensation plan, The key contribution of the paper is to show that incentive schemes that motivate innovation should be structured differently from standard pay-forperformance schemes used to induce effort or avoid tunneling. Innovation involves the exploration of new untested approaches that are likely to fail. Therefore, standard pay-for-performance schemes that punish failures with low rewards and termination may in fact have adverse effects on innovation. In contrast, the optimal incentive scheme that motivates innovation exhibits substantial tolerance (or even reward) for early failure and reward for long-term success. Under this incentive scheme, compensation depends not only on total performance, but also on the path of performance; an agent who performs well initially but poorly later earns less than an agent who performs poorly initially but well later or even an agent who performs poorly repeatedly. The paper also shows that commitment to a long-term compensation plan, The key contribution of

this paper is to indicate that incentive schemes that motivate innovation should be structured in different forms than rather than following a standard pay-for-performance scheme. Innovation refers to the exploration of new untested approaches that are likely to fail (Manso, 2011). Therefore, standard pay-for-performance schemes that do not tolerate failures, with low rewards and termination may actually create negative effects on innovation (Manso, 2011). On the contrary, the optimal incentive scheme that motivates innovation exhibits tolerance or even reward for early failure and reward long-term success. An agent or employee who performs well in the beginning with poor performance at later point earns less than an agent who performs poorly initially but well later or even an agent who performs poorly repeatedly (Manso, 2011). In this paper, the analysis has been done on how the incentives programs should be structured and which one is the most effective in terms of generating innovative ideas according to previous researches based on the reviewed articles.

### 2 a) Research problem

In this modern era, with the rise of technological trends such as artificial intelligence, big data and machine learning, the traditional way of doing business no longer seems to make higher impact for companies. Therefore, adaptability with changing trends in every moment is vital concluding remarks that innovation is crucial for a firm's survival or growth in a sector.

According to Andersson, Freedman, Haltiwanger, Lane, & Shaw in 2009, highly skilled individuals will tend to be attracted to firms that provide appropriate rewards for their innovative efforts. So, to enhance the innovative works or to get the best out of the vital and creative employees, providing incentives as means of giving a monetary reward or verbal recognition has proved to be essential for every firm. Incentives can be provided in the short term or long-term mechanisms. Short term mechanisms can be defined as paying employees for performance, e.g. fixed wages for each contribution. Whereas long term mechanisms consist of the idea that managers tolerate initial failure, thus holds a focus on outcome over extended period of time for achieving long term success, finally giving reward for that.

So, there has been an issue for further research to determine how the differences in incentive structure can foster higher productivity among the employees for certain innovative outcomes. Therefore, it is evident that all incentive structures do not create the same stimulation among employees for generating new innovative strategies.

### 3 b) Research Question

In this paper, different structures of the incentive plan have been investigated and which structure is more fruitful and should be followed to motivate employees for innovative ideas has been determined. My research questions are:

1. How the structure of the incentive programs affects the motivation for innovation among employees?
2. Which incentive structure has proven to be more impactful for employee innovation in organization?

c) Thesis statement In this paper, I look to find out different employee incentive schemes based on the performance of the employees and the right incentive structure which has been found to have higher effectiveness for the innovative outcome. I hold a purpose to make a review on the selected articles and how the results have been drawn from laboratory experiments.

Hypothesis 1: Fixed wage or pay for performance scheme has a higher effect on employee innovation in organizations.

Hypothesis 2: Incentives on long term success or pay for promotion have a higher effect on employee innovation in organizations.

### 4 d) Organizational Innovation

Organizational innovation is a dynamic and iterative process of creating or modifying an idea and developing it to produce products, services, processes, structures, or policies that are new to the organization (Zhuang 1995; Ohria & Gulati 1996). It refers to an idea, new method, new service, new process, new technology, or a new strategy adapted by a firm which introduces something new to the firm (Mehmet Akif Demircioglu, 2016). The organizations, through innovation can maintain a continuous competitive advantage by mastering innovative activities e.g. multi-billion-dollar-a-year 3M (Anthony Read).

To maintain a distinct competitive edge in the marketplace, employee innovation in an organization is a critical component (Anderson, De Dreu, & Nijstad, 2004; Anderson et al., 2014; West, 2002). Furthermore, this advantage is heightened in a knowledge-based economy where intangible assets play an even more effective role in organizations' abilities to enhance competitiveness. Employees play a vital role in creating this competitive advantage because they are often on the front line with customers and view the opportunities for rapid change and improvement in processes and procedures that are not salient to either managers or other authorities (Craig, Markus, Paul D Johnson et al. 2016) Thus, understanding the process that motivates and enables individual innovation is an area of critical importance in our field (Scott & Bruce, 1994).

### 5 e) Incentives for innovation

While attempting internal innovation measure, after sorting ideas, defined roles and goals, and a definite marketing plan the next thing that should be conserved for employees is incentives which plays a vital role

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in motivating workers to create not only a short term innovative culture but also a long term sustainable culture (James Pasmantier, 2011). Incentives can be given in two ways: reward and recognition. According to James Pasmantier, 2011, the reward can be financial or non-financial: financial reward may influence personal Year 2020 ( ) gain among the employees, thus actually may prevent innovation culture but non-financial gain are great ways to motivate employees while incentive giving belongs to a part of a big group which is collaborating for company development.

The impact of monetary incentives on innovation by examining the relationship between principals and agents are often evaluated by the Agency theory (Bonner and Sprinkle 2002). Gelande (2006) observes that agency theory, is pivotal to assessing whether (and how) firms themselves can encourage innovation. Innovative activities are risky because they require employee effort and have uncertain outcomes and according to agency theory, a firm should provide incentives to induce employees to engage in innovative activities (Jensen and Mackling 1976; Holmstrom 1979; Baker 1992).

The impact of organizational incentives on firms financial performance has also been concentrated through agency based literature (Cadsby, Song, & Tapon, 2007; Dow & Raposo, 2005; Peng, Buck, & Filatotchev, 2003), including those organizations that are not profit-oriented. For example, in both nonprofit and for-profit hospitals, CEOs do not have an explicit incentive to concentrate on altruistic activities (Brickley and Horn, 2002). Every high skilled employee tends to focus on attractive rewards from an organization for their valuable efforts or else they will become entrepreneurs and commercially exploit their own projects (Zenger, 1994). Thus, there is no doubt how effective incentives are for employees and how much big role different rewarding schemes play in organizations' growth through employee innovation.

Innovation relies on individual creativity, and firms should reward talented individuals for their contributions (Froebel & Giannotti, 2009). However, while designing the incentive structure that motivate innovation, firms should expect uncertain outcomes as the innovation performance is difficult to monitor (H. M. Barros). Importantly, optimal performance may also require creativity and originality-in other words, innovation. Thus, it is important to consider a right kind of incentive scheme that is suitable for different kind of work profiles which require new approaches and adaptability (Manoso, 2017). To have the optimal incentive structure another aspect which is also taken in to consideration such as long term commitments, protection from failures, the threat of termination, and all these different aspects positive and negative-both ways affect the process of innovation.

## 6 f) Employee Incentive schemes

Performance-based pay: According to previous economics research, paying the agent or employee based on his performance induces the agent to exert more effort, improving productivity in simple routine tasks (Lazear, 2000; Fehr, 2004; Fehr, 1999). On the other hand, experimental and field research in psychology provides evidence that, in tasks requiring exploration and creativity, pay-for-performance or fixed wage according to performance may negatively affect performance. Graw (1978), Cullers (1978), John (1993) and Amabile (1996) summarizes their research findings stating that pay-for-performance encourages the repetition of work done in the past, but does not influence the exploration of new and untested approaches. These studies thus make remark that fixed monetary scheme should not be used in the tasks that require creativity and innovation of the employees because of their focus on a certain goal (Florian aderer, 2013). According to Laursen and Foss (2003) who examined the relationship between incentives and innovation the performance-based pay was positive with marginal statistical significance (10%).

Performance-based promotion: Performance-based promotion for innovation refers to rewarding employees longer-term with consideration to different scenarios in the beginning. The employees in the organization keep performing for their reward in the future that could be monetary or certain recognition. In contradictory to performance-based payment, performance-based promotion is likely to have a long-term nature, and this is consistent with the period of innovation activities of the employees (M. Barros & Lazzarini, 2012) For instance, CEO at IT firms are more strongly dependent on firms' innovation performance than on financial performance (Balkin, Markman, and Gomez-Mejia, 2000). It has been recognized by social psychology literature that promotion is closely related to long-term reward systems, which encourage employees to engage in long-term oriented behavior (Crowe & Higgins, 1997).

## 7 g) Different aspects in considering incentive structure

An organization's innovative outcome can be measured by the achievement of certain factors such as patents, intellectual property rights gain or financial gain for some time. An alternative explanation has been proposed by Holmstrom (1989) for why incentive schemes that motivate innovation must exhibit tolerance for failures. He states that performance measures for innovative activities are noisier, and therefore principals should rely on compensation packages with less sensitiveness to employee performance to motivate innovation. There are certain aspects that have both positive and negative impact on the incentive schemes for the innovation.

## 8 II.

### 9 Termination

The threat of termination refers to the situation where an employee has the idea of getting fired if his performance is unacceptable. According to Gustavo Manso (2017), the threat of termination discourages agents from shirking or exploring new actions motivating exploitation which means to get the reputation of wellknown techniques. Thus, a fear of losing job puts a barrier in front of the employee to find the unknowns for innovation. So the managers need to provide job assurance in order to motivate employees to innovate (Manso, 2017) III.

### 10 Long Term Commitments

Incentive contracts that foster innovation must be having a high tolerance to initial failure ??Holmstrom, 1989 and ??anso, 2007). Therefore, an employee if criticized for initial failures may be afraid to exert activities with high failure rate, similarly with rewards being given for the first-time success may encourage them to exploit the same skills rather than new ideas. So, an optimal incentive contracts for innovation must provide the agent with long-term commitment and protection from failure ??Francis, Hassan & Sharma, 2011). According to Kole (1997), long-term contracts encourage managers to stay with the firm and prevents them from taking myopic decisions. So, for projects requiring specialized knowledge with long development stages, firms offer long-term contracts with greater restrictions (Francis et. al, 2011).

### 11 IV. Protection from Earlier Failure

Innovation projects in a firm bear a high risk of failure, thus a principle can fire the agent if the agent fails to produce the required output. Golden parachute an aspect of the market of corporate control, provide the agent from termination, and it has been a matter of debate that it distorts managers incentives ??Francis, Hasan & Sharma, 2011). On the contrary, according to Lambert and Larcker (1985), Knoeber (1986) and Harris (1990), golden parachutes align managers' interest with shareholders who are responsible for terminating, thus helps to negotiate in the better way in a corporate takeover. Bruce, Lee and Shook (2009) find that firms who adopts golden parachutes perform significantly better than their competitors both in the short run and long run. Thus, while formulating incentive structure, tolerance to earlier failure can provide a more desired outcome in the process of organizational innovation a) Findings and analysis Henrique M. Barros & Sergio G. Lazzarini (2012) Henrique M. Barros & Sergio G. Lazzarini (2012) in their research based on a survey tried to find out relationship between incentives and innovation. To find out which kind of incentive scheme is more effective for innovation Barros & Lazzarini (2012) According to the estimates reported in column (2a), firms with high payment for performance (Pay-High) are slightly more innovative than firms with low performance-based pay ( $p < .10$ ). However, this effect becomes insignificant when the performance-based promotion variables are included (column (2c). The effect of the promotion variables, on the other hand, is highly significant, firms with either moderate (Promotion -Medium) or high (Promotion-High) levels of performance-based promotion are more innovative than firms with the lowest level of performance-based promotion ( $p < .01$ ). However, the coefficient of Promotion-Medium is higher than the coefficient of Promotion -High also indicating that with the increase of promotion related incentives the percentage of corporate revenue increases, as a result innovations also increases, thus it can support the second hypothesis.

### 12 b) Ederar & Manso (2017)

In a research to find out the evidence that tolerance to earlier failure and reward for long term success motivate innovation, Ederer and Manso (2017) recruited 379 participants to operate a computerized lemonade stand where the participants were given a choice between making minor adjustments to the business decisions. The experiment was designed in such a way that a certain set of product and location choices represented the optimal business strategy. Three participants group were created with different compensation schemes for the task.

The first group received a fixed wage in each period of the experiment, the second group got a standard pay-for-performance contract allotting them a fixed percentage of profits achieved during the experiment and the third group received contracts to motivate exploration basing their compensation on a fixed percentage of profits generated in the second half of the experiment.

After the experiment, it was determined that the participants under the exploration contract found the best location for the lemonade stand 80% of the time compared with 60% and 40%, respectively found by the participants under fixed wage and pay for performance contracts. With detailed analysis it was evident that participants under fixed wage contract did a significant amount of exploration but was not as systematic as their counterparts under the exploration contract. Also 82% of the participants under exploration contract used the table to monitor their operations whereas only 55% of those under fixed wage contract used that to tract business decisions and profits.

To measure the effect termination two new groups were introduced: Regular termination and golden parachute. Both groups were told if their profits in the first 10 periods fell below the threshold level the experiment would end early. It was found that 65% of participants in golden parachute termination discovered the best business

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location compared with only 45% of those in termination group without golden parachute scheme, thus indicating in the event of a failure, the promise of payment motivated the participants to take chances.

It can be summarized from the above outcomes that for participants under exploration incentive scheme, tolerance to earlier failure with payment for long term performance influenced the groups more to discover novel business strategies than those under fixed-wage and standard pay-for-performance incentive schemes. So, evidently it can support our hypothesis 2 and remarks can be taken that pay for performance with tolerance to earlier failure have higher positive impact on innovation. In the result analysis to compare the outcome from different incentive schemes, it was found that subjects under the fixed wage and pay for performance contracts were less likely to choose to sell lemonade at the school which is the highest profit location. In the final period of experiment where the subjects under exploration contract tend to sell more in school (Figure 2). In the exploration contract condition more than 80% of subjects choose to sell lemonade at the school, only 40% of subjects choose to do so in the pay-for-performance condition, and 60% choose to do so under the fixed-wage contract.

In the analysis of exploratory behavior subjects under the pay for performance explored less than the subjects under the fixed wage contract. In the exploration contract subjects tend to choose a location except the default location in 82% and 85% cases in the First 10 periods,, but under fixed wage contract subjects choose to do so only in 60% and 63% cases and only 51% and 48% for subjects in pay for performance contract. This indicates that earlier tolerance to failure in the exploration contract motivated the individuals to try for something new in the first 10 periods.

V.

### 13 Amount of Time and Effort in Evaluating Decision

To find out the amount of the time spent and effort made in evaluating decisions it was seen that subjects under fixed-wage attempted to minimize the time and effort to complete experiment as they had a mindset that their performance will not affect their compensation. Thus, subjects under fixed-wage spent only 24 seconds on average on the decision screen whereas subjects under exploration and pay for performance spent 31 and 30 seconds respectively indicating the effort for innovative thinking made in exploration contract were higher than fixed-wage conditions. In a situation where real efforts need to be made for innovative tasks, subjects under incentive scheme which tolerates earlier failure and rewards long term success look to explore more and discover better strategies than the subjects under fixed-payment or standard pay for performance incentive scheme. (Ederer & Manso (2013). Thus, both the researchers were successful in making causal relationship between incentive schemes and innovation performance, and from their findings it is also evident that tolerance to earlier failure is associated with innovation in long term incentive contracts.

### 14 Global

#### 15 a) Incentives with termination and Golden Parachute treatments

The threat of termination has adverse effects on innovation success and exploration activities, but golden parachutes alleviate these negative effects. Risk aversion further reduces innovation success, exploration activities, and performance in the termination treatment (Ederer & Manso, 2013). The threat for the termination in the earlier failure brings about a fear among the subjects, and resist them to explore more for innovative ideas.

Golden parachutes align interests of managers with shareholders by insulating the managers from the takeover market that could potentially lead to wealth transfer from shareholders to managers. In the event of termination golden parachute is provided to protect the managers. Even though in a high risky project, managers tend to pursue when they are provided with golden parachute (Francis, Hasan & Sharma, 2011).

Patents are a useful proxy for a firm's innovativeness: they can convey information about a firm's accumulation knowledge and regarded as an indirect measure for capturing innovation (Francis, Hasan & Sharma, 2011).

The log of count of patents was taken as Dependent variable and golden parachute program as independent variable. Bill Francis et al. 2011 found a unit change in golden parachute leads to 9% increase in log of counts of patents. Furthermore, it was found that a unit change in golden parachute leads to 14.1 increase in log of citations. Francis, Hasan & Sharma (2011) state that golden parachute may be a tool for protecting managers against failure, thus good for fostering innovation. When managers do not have to face the threat of termination, they might be more risk seeker and can be involved in high risk projects in the long run which increases firm's value. So a shield from the threat of termination creates a position for manager to invest more in innovation. This finding by the author can provide justification for second hypothesis of this paper that tolerance to earlier failure and giving long term reward will have higher positive impact on innovation.

### 16 VI. Conclusion

Fostering innovation in a firm not only requires employees commitments and hard desire towards achievement but also there must be the presence of the reward system which could be in form of monetary or recognition that

in the long run will motivate the employees for higher innovative ideas. In this paper, it has been analyzed how the right form of incentive schemes with right aspect could impact the innovation in the firm.

From the analysis of previous researches, it can be remarked that employees when are in fixed-wage contract for their performance tend to be less explorative and motivated towards unapproached strategies as they are just aware of a fixed reward for their particular achievement. But when the employees are considered for long term promotion in respect to their successful performance, they tend to make more efforts for the innovative outcomes. They may fail early, and the managers need to take it positively in the beginning and a tolerance to failure should be adapted. The application of golden parachute program has also proven beneficial as it pays them for their failed exploration and this feeling of the absence of threat of termination can even motivate them more to approach new ideas and strategies, which eventually fosters the innovation.

This study can contribute to few aspects from managerial perspectives. From the study the evidence of the relationship between employee compensation and organizational innovation has been found where it has evidence that compensation foster the innovation. This study can contribute in the decision process for the managers which involve choosing and following the right incentive scheme. Thus, organization looking to spur innovation can decide which innovative structure should be considered. As performance-based promotion is highly relevant for innovation, future research can be done about the effect of different other incentives schemes.

## VII. Limitations of the Research

In this paper there has no analysis been done on different other innovation types and how the incentive schemes affect them. For example, if a firm want incremental innovation which refers to upgrade or development of firms existing technology or process or radical innovation (exploration), different incentive scheme might have different impacts in different innovation types. Also the sustainability that can be brought out from the incentive schemes has not been assessed or analyzed in this paper marking another limitation of this particular research.<sup>1</sup>

**Two-stage Estimation of the Effect of Incentive Structures (Contingent Pay and Promotion) on Innovation (Percentage of Revenues Coming from New Products)**

Coefficients	Pay <sup>a</sup> (1a)	Promotion <sup>a</sup> (1b)	Innovation <sup>b</sup>		
			(2a)	(2b)	(2c)
Pay - Medium			0.318 (0.203)		0.021 (0.163)
Pay - High			0.221 <sup>†</sup> (0.113)		-0.244 (0.165)
Promotion - Medium				1.520 <sup>**</sup> (0.352)	1.391 <sup>**</sup> (0.313)
Promotion - High				0.982 <sup>**</sup> (0.166)	1.163 <sup>**</sup> (0.206)

Figure 1:

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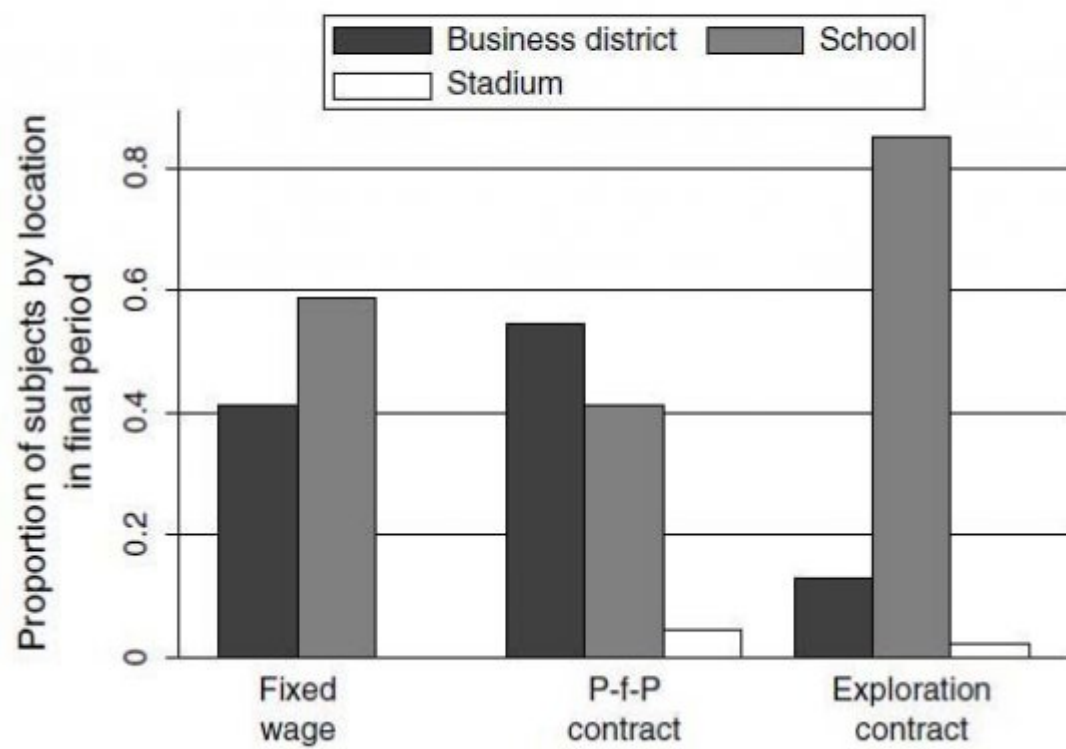
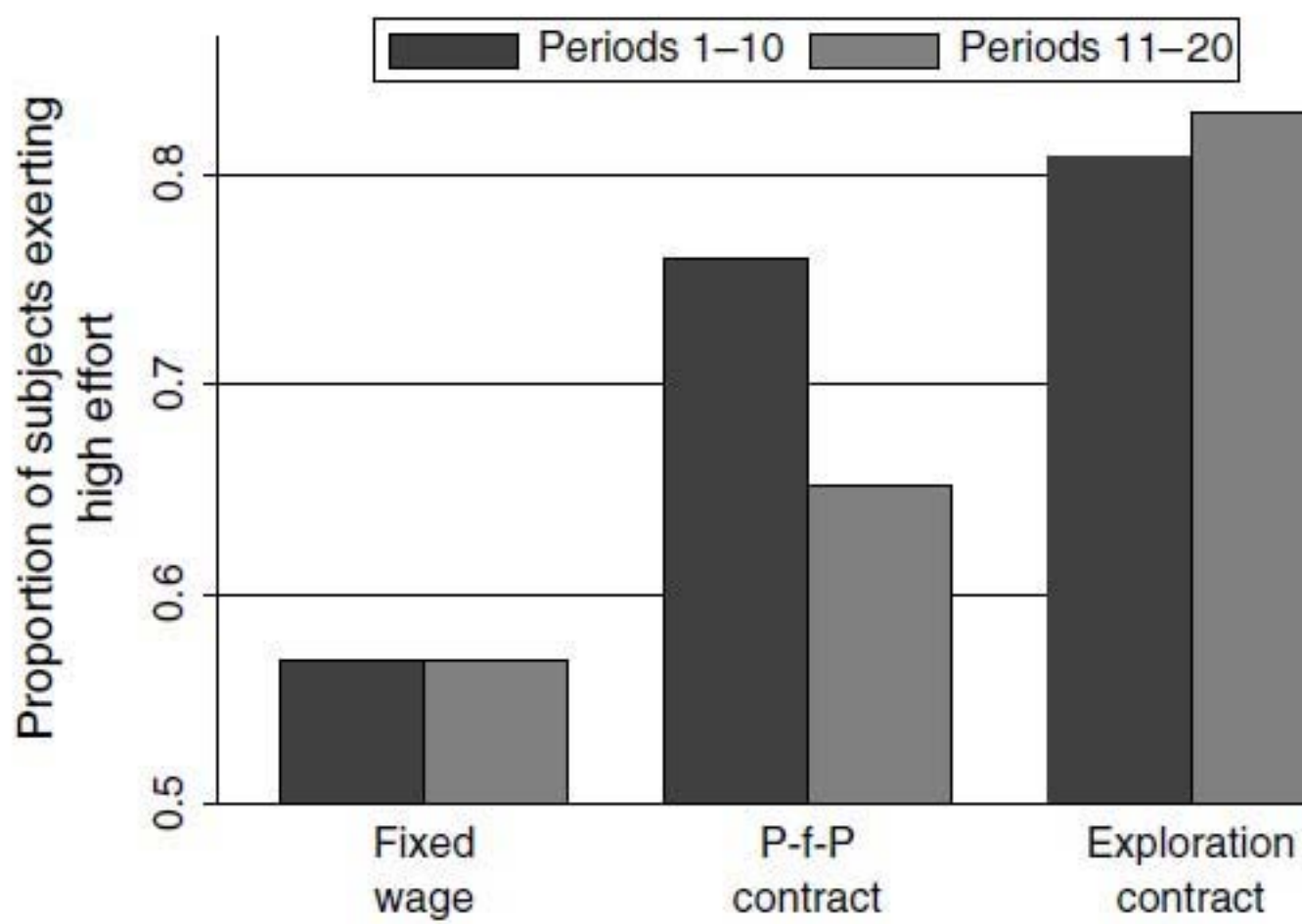


Figure 2:



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Figure 3: Figure 1 :



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