

# NON-MONETARY INCENTIVES AND RISKY CHOICES

**Shahriar Gias, Slippery Rock University**  
**Jeffrey Forrest, Slippery Rock University**

## ABSTRACT

*Incentive plays an important role in motivating managers to take risk and hence perform well. Several research works have already discussed monetary incentives in the domain of risk averse and risk seeking scenario. This paper examines the effect of non-monetary incentive and tested whether non-monetary incentive motivates managers to choose risky decision. Experiment was done with more than two hundreds subjects and the result does not support the hypothesis and found that non-monetary incentive does not motivate managers to take risky choices.*

## INTRODUCTION

Monetary incentives often motivate people to perform well. Even in experimental studies, subjects are usually given monetary incentives in order to motivate them to properly complete the experimental studies (Bonner and Sprinkle, 2002). However, a recent study conducted by Jeffrey and Shaffer (2007) shows that 78% of firms use tangible non-monetary compensation incentives, for instance vacations trip or electronics products, to motivate their employees. Previous research (Atkinson et al. 2003; Horngren et al. 2005; Zimmerman 2000) explores the positive links between both monetary and non-monetary incentives and improved managers' performance. According to Bonner and Sprinkle (2002), most of the published incentive related literature mostly focused on the motivational effect of incentives on task performance and simply ignores the research examining how incentives may influence managers' risk taking behaviors (Baird, et al. 2008). Bonner and Sprinkle (2002) specifies that higher payoff can either motivate managers to take high risk due to the potential for receiving greater rewards (via bonuses linked to the project performance) or it may lead to managers behaving in an even more risk averse manner due to the increased pressure associated with riskier projects. Based on that idea, Baird et al. (2008) examines the role of monetary incentives in inducing risk taking behavior in a project selection decision context. More specifically, Baird et al. (2008) study examines a project selection decision situation where managers have to decide whether to choose the less risky (safer) project that has a higher expectancy of achieving a desired performance and a lower reward, or to choose the riskier project that has a lower expectancy of achieving the desired performance but a higher reward.

However, very few research works examined the role of non-monetary incentives in the context of risk taking behavior. Managers may have a different mindset in terms of choosing riskier project or making critical investment decisions while the incentives plans are associated as non-monetary rather than monetary incentives. Given the fact that, the salary of the managers increases only by 3% for their better performance while sales of the company increases by 10% (Baker et al., 1988), the magnitude of monetary incentive in terms of motivating managers to take risk is lessening than before. Another study on sales management domain, Viswanathan et al. (2013) found that salespeople view cash and non-monetary rewards as distinct things and hence they put different efforts to achieve their sales target based on those two compensation elements. This result suggests the violation of standard economic theory where employees prefer more non-monetary incentives over monetary incentives. For example, a vacation trip to Hawaii cost \$1,000 is

considered more worthy incentive than the \$1,000 cash incentives.

Even though, monetary rewards such as cash that offers flexibility and hence allow individual to make choices according to their preference, is given up to receive potential non-monetary incentive for instance no cash rewards- vacation packages.

Therefore, non-monetary incentive plan and its inclusion to the compensation packages, is getting more attention both by academicians and managers. Therefore, this particular topic deserves some research attention. Very few research works have been done so far in the field of non-monetary incentives and risk taking attitude. I am interested to find out whether or not managers who receive non-monetary incentives choose more risky choices.

## LITERATURE REVIEW

### Economic Theory of Incentives

Economic theory provides theoretical justification of how people change their behavior in response to changes in monetary incentives (Fehr and Falk, 2002). It is often believe that managers in the firm make rational choices because most of their business decision is based on the analysis of present value of current and future earnings. However, Fehr and Falk (2002, p.688) states that “contract theory and principal – agent theory, for example, typically restrict their attention to the motives to achieve income through effort and to avoid risks”. According to their study, economic incentives may backfire and reduce the performance level of the managers. Kraft (2013) paper discusses growth of the firm and risk in terms of R&D expenditures and found that managers are less likely interested to invest in riskier research and development project because often the unsuccessful investment make their job unstable and make them vulnerable. Standard principle-agent problem (Holmström and Milgrom, 1987) shows that the pay- performance sensitivity is a production function where principle observes company performance in order to design the incentive packages (Kraft, 2013). In terms of standard principle-agent problem, risk aversion is a part of the manager’s efforts since it relates to manager’s remuneration package and job stability. Managers who are risk averse will be more reluctant to invest continuously on research and development (R&D) as well as product innovation project since greater uncertainty is associated with it. Lesser amount of investment in R&D and product innovation often affects long term profitability and eventually company performance. Kraft (2013) shows that manager in many companies face the risk to be fired if the desirable profitability is not achieved.

According to Baird et al. (2008), one of the major reason managers choose more certain project and hence less return project because they believe that stable earnings will be viewed positively by the shareholders, and hence reduce the likelihood that they will be dismissed. Also, Lee (2002) points out that managers always try to avoid the threat of losing employment and hence become more risk averse by selecting the project that have higher potential benefits over the potential costs involving with taking risk (Baird et al., 2008).

### Psychological Valuation of Incentives

Most of the decision managers make is based on the predicted probability of success and failure rate. If it is predicted that the project has higher probability of success rate, managers will be more interested to undertake that project if sufficient monetary incentives are offered. However, it is still not clear whether managers will choose a project that has low probability of success when non-monetary incentives are offered to them for choosing the project. One of the experiments done

by McGraw, et al. (2010) shows that the risky monetary choice was more popular than risky nonmonetary option at low probability but monetary outcome was preferred over non-monetary at high probability condition. Rottenstreich and Hsee (2001) show that our preferences depend on how our affective reactions associated with potential outcomes of a risky choice and hence affects play an important role in choosing potential risky choices. According to their analysis, some outcomes are relatively affect-rich and some are relatively affect-poor when monetary values are controlled. Also, affect rich can be seen more on hedonic goods whereas affect poor can be seen more on utilitarian goods (Rottenstreich and Hsee, 2001). Based on this view, I believe that between monetary and non-monetary incentive, monetary incentive is considered as affect-poor whereas non-monetary incentive is considered as affect-rich. According to Lopes's model, people high in "security motivation" tend to weigh the worst outcomes heavily, and people high in "potential motivation" tend to weigh the best outcomes heavily (Rottenstreich and Hsee, 2001). Similarly, managers who more concerned about stable job and steady salary will be high in security motivation and so less likely involve in any risk taking attitude even though there are monetary incentives are offered for taking such risk. On the other-hand, managers who weight non-monetary incentives more are likely to be high in potential motivation because they hope for the successful outcomes.

The qualitative factor associated with non-monetary incentives such as vacation trip to Hawaii, makes it more affect rich incentive and more desirable than the monetary incentive. According to Loewenstein et al. (2001), non-monetary incentives that are more like hedonic rewards are likely to be processed in a more affective reaction, and thus making it likely that their "value" is enhanced over and above the simple cash equivalent. Khan and Dhar (2006) paper discusses that it is often harder to justify hedonic experiences because often guilt closely associated with the consumption of hedonic goods and hence people always try to make their hedonic consumption justifiable or try to get licensed for to consume those luxury experiences. Similarly, managers find it easier to justify giving themselves a vacation that they earn through their non-monetary incentives than to justify spending the cash equivalence and hence avoid the guilt of experiencing the hedonic products (Viswanathan et al. 2013).

Viswanathan et al. (2013) paper tries to make a link between the construal level theory and non-monetary incentive by stating that construal level could lead to positive or negative associations in the context of money. Their study on salespeople explores that salespeople who construe money at a concrete level are likely to have specific and negative associations with it while those who construe it at the abstract level are likely to have positive associations about the happy things money can buy. Salespersons who chronically construe money concretely may thus prefer omissions because they don't have negative associations with it, while salespersons who chronically construe it abstractly might be indifferent between omissions and money (Viswanathan et al. 2013).

## **Social Approval and Social Reinforcement**

Fehr and Falk (2002) describes social approval as when people are the objects of others' admiration while disapproval when people are the objects of others' disgust and contempt. According to them, social approval makes manager proud and happy while disapproval causes embarrassment and makes him/ her unhappy. Traditionally, monetary incentives such as bonus is being used as a tool to make an employee more recognized in front of the society because it gives an indication of good performance of that employee. However, managers will be more easily shows their competence and reorganization in front of the society through the non-monetary

incentive. For example, it is easier to talk about the vacation that one earned for his/her good performance than to talk about the cash equivalence (Viswanathan et al. 2013). Accordingly, their study results found that concrete construal level thinking leads to a decreased valuation of money and an increased valuation of an ambiguous reward type.

### **Non-Monetary Incentive and Risk**

Baird et al. (2008) showed that managers do not consider the project which they perceive as a high risk project even if there is a possibility for them to gain a high reward because of the future uncertainty about their own job related risk. On the other hand, managers tend to select less risky projects even in monetary reward condition just to guarantee their position in the firm (Lee 2002, Baird et al., 2008). However, agency theory suggests that managers are inherently risk averse, prospect theory (Kahneman and Tversky 1979) postulates that decision makers will tend to be risk averse when deciding between alternatives that would yield potential gains, and risk seeking when faced with alternatives that are likely to result in losses in an attempt to minimize the loss (Baird et al., 2008). Therefore, prospect theory suggests that managers will be more risk averse in selecting project (Baird et al., 2008).

### **Mental Accounting and Non-monetary Incentive**

Mental accounting theories (Thaler 2004) suggest that people do not consider their incomes and assets collectively, but rather hold them in separate mental accounts and hence put non-monetary rewards in a separate bucket. According to Viswanathan et al. (2013), cash rewards are more likely to be considered part of the joint income of the household and bargained away without providing additional utility to the individual. On the other hand, this paper defined non-monetary rewards as less fungible and transferable which gives salesperson greater control over their allocation. In concrete terms, an extra \$500 in cash is much more likely to go into the household expenditure kitty directly, than vacation points that can potentially buy an iPad worth \$500. Their paper also states that non-monetary rewards are less likely to be bargained away in any negotiating process, thus enhancing the salesperson's individual utility (Viswanathan et al. 2013). Therefore based on the above extensive research works, it is quite clear that non-monetary incentive plays a different role than monetary incentive in the context of risk. Hence, it is assumed that:

*H<sub>0</sub>: Non-monetary incentives motivate managers to choose risky choices.*

### **Experimental 1**

**Method:** A total of 204 subjects were collected from Amazon Mechanical Turk who completed a short questionnaire. Two subjects were dropped from the analysis as they did not answer the full questionnaire as well as did not pass the attention check scenario. This study consisted of three conditions: monetary, non-monetary and ranking condition with a dependent variable, risk preferences. Participants were randomly assigned to one of these conditions. Participants in the monetary condition (n = 61) were asked to imagine the following scenario and answer the following two questions:

Suppose you will be hired for a five year by a major research firm after your graduation from a college. As you consider the next five years, you realize that you have two possible choices such as working on a long term project or working on a short-term project. You might work on a

difficult long-term project which, if a solution could be found, would resolve basic scientific issues in the field and bring high scientific honors. If no solution is found, however, you will have little to show for five years in the laboratory, and this would make it hard for you to get a job afterwards. You might also work on a series of short-term problems where solutions would be easier to find, but where the problems are of lesser scientific importance. You will have sound future career only if you have numerous short-term success. If you choose the long-term project and get successful research finding then you will receive \$10,000 as a monetary reward. On the other hand, if you choose short-term project then you will receive \$3,000 as a monetary reward for your successful research findings.

- Work on a long-term project
- Work on series of short-term projects

Participants in the non-monetary condition ( $n = 60$ ) were asked to imagine the same scenario as first condition except the incentive here for choosing the long-term project is Hawaii vacation and short term project is Florida vacation. Participants were asked to answer the following same two questions:

Suppose you will be hired for a five year by a major research firm after your graduation from a college. As you consider the next five years, you realize that you have two possible choices such as working on a long term project or working on a short-term project. You might work on a difficult long-term project which, if a solution could be found, would resolve basic scientific issues in the field and bring high scientific honors. If no solution is found, however, you will have little to show for five years in the laboratory, and this would make it hard for you to get a job afterwards. You might also work on a series of short-term problems where solutions would be easier to find, but where the problems are of lesser scientific importance. You will have sound future career only if you have numerous short-term success. If you choose the long-term project, you will receive a Hawaii vacation trip as a non-monetary reward for your successful research finding. On the other hand, if you choose short-term project then you will receive Florida vacation trip as a non-monetary reward for your successful research findings.

- Work on a long-term project
- Work on series of short-term projects

Participants in the last condition ( $n = 74$ ) were asked to imagine the same scenario as first condition except here, the participants were asked to rank their preferences in order rather than choosing one option between long term and short term.

Suppose you will be hired for a five year by a major research firm after your graduation from a college. As you consider the next five years, you realize that you have two possible choices such as working on a long term project or working on a short-term project. You might work on a difficult long-term project which, if a solution could be found, would resolve basic scientific issues in the field and bring high scientific honors. If no solution is found, however, you will have little to show for five years in the laboratory, and this would make it hard for you to get a job afterwards. You might also work on a series of short-term problems where solutions would be easier to find, but where the problems are of lesser scientific importance. You will have sound future career only if you have numerous short-term success.

Based on the above scenario, please rank the following four rewards according to your preference of potential reward on the basis of 1, 2, 3 and 4, where 1= highly preferred and 4 = least

preferable.

1. \$10,000

2. Hawaii vacation trip
3. Florida vacation trip
4. \$3,000

## RESULTS AND DISCUSSION

A chi-square statistical method was used to analyze the data. Here, choosing long-term project was considered as a risky preference whereas choosing short term project was considered as a riskless preference. This study revealed that chi-square is not significant at  $p\text{-value} = .79$  (table 1) and hence, there is no significant difference between the expected and observed result. Therefore, incentives both monetary and non-monetary do not play any significant role in motivating managers to choose risky options. Further, another separate analysis was conducted to find out,

| Table 1<br>CHI-SQUARE STATISTICS SECTION |                   |                    |       |
|------------------------------------------|-------------------|--------------------|-------|
| Incentives                               | Long-term Project | Short-term Project | Total |
| Monetary                                 | 26                | 35                 | 61    |
| Non-monetary                             | 27                | 33                 | 60    |
| Total                                    | 53                | 68                 | 121   |

whether or not there is any significant differences between the preferences of \$10,000 and a Hawaii vacation trip since subjects in both monetary and non-monetary conditions choose either \$10,000 or Hawaii vacation for the long-term projects. It was found that there is a significant difference between the monetary reward of \$10,000 and non-monetary reward of Hawaii at  $p\text{-value} = .00000$ . Similarly, a significant difference between the monetary reward of \$3,000 and non-monetary reward of Florida was also found with  $p\text{-value} = .0000$ . Interestingly, it can be noticed that people choose monetary incentives over non-monetary options in a riskier situation whereas in the low risk situation, they prefer more the non-monetary incentives over monetary incentives.

### Limitation and Future Research

One of the major limitations of this study is that it has used the simple chi-square statistical method to analyze the data. More advanced statistical tools can be used to analyze the data for better and more precise result. A bigger sample size will also contribute to test the proposed hypothesis. Future research can be done to address more hypotheses with number of experiments using advanced experimental method.

## CONCLUSION

It is well established that the incentives motivate managers to do well in their job and also motivate them to take judgmental risk in order to increase the risk versus return scenario. This study tries to find out whether non-monetary incentive motivate managers more than monetary incentive to undertake riskier choices such as riskier investment decision or increase research and development expenditures. However, the data does not support the hypothesis and it is found out that non-monetary incentives do not necessarily motivate managers to take the risk or at least it is not significantly different than the monetary reward in the context of risk taking scenario.

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**Received:** 24-Jul-2025, Manuscript No. AMSJ-25-16111; **Editor assigned:** 25-Jul-2025, PreQC No. AMSJ-25-16111(PQ); **Reviewed:** 20-Sep-2024, QC No. AMSJ-25-16111; **Revised:** 26-Sep-2025, Manuscript No. AMSJ-25-16111(R); **Published:** 15-Oct-2025