

A Review of Research on Employee Incentive Mechanisms and Firm Performance from the Perspective of Behavioral Economics

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Abstract. This paper reviews the relationship between employee incentives and corporate performance from the perspective of behavioral economics. As the limitations of traditional material incentive theory gradually emerge, behavioral economics provides new theoretical support for the optimization of incentive mechanisms. This paper first explores the core concepts of behavioral economics, including loss aversion, intrinsic motivation, framing effects and social norms, and compares them with traditional incentive theories. By analyzing the additions and modifications of behavioral economics to incentives, it reveals how it affects incentive design, which in turn improves employee motivation and corporate performance. In addition, this paper demonstrates the successful application of behavioral economics principles in corporate incentives by combining practical cases and discusses the marginal effects and potential problems of incentives. Finally, this paper summarizes the effectiveness of the application of behavioral economics in the design of incentives and proposes directions for future research, such as personalized incentives, long-term incentive effects, cross-cultural research and technology-driven incentive design. The study shows that by scientifically designing incentive mechanisms, companies can more effectively motivate employees, improve overall performance, and achieve long-term sustainable development.

Keywords: Behavioral economics; employee incentives; firm performance; incentive design

1. Introduction

In modern enterprise management, the design and implementation of employee incentives are crucial for improving organizational performance and employee satisfaction. Traditional incentive theories mainly focus on material rewards, such as salaries and bonuses, believing that these incentives can directly increase employee motivation. However, with the complexity of the organizational environment and the diversity of employees' needs, traditional incentive theories gradually show their limitations, especially in dealing with employees' irrational behaviors and psychological needs.

Behavioral economics, an emerging branch of economics, is dedicated to the study of decision-making behavior at the intersection of psychology and economics. Its core theories, such as loss aversion, intrinsic motivation, framing effects and social norms, provide new perspectives for understanding and optimizing incentive mechanisms. The rise of behavioral economics has prompted companies to revisit the design of incentive mechanisms, shifting from purely material rewards to a multi-dimensional strategy that takes into account employees' psychological and behavioral motivations.

The purpose of this paper is to synthesize the relationship between employee incentive mechanism and enterprise performance from the perspective of behavioral economics. Through the core concepts of behavioral economics, the supplementation and modification of traditional incentive theories, the analysis of actual cases, and the discussion of the marginal effects and potential problems of incentive mechanisms, this paper will reveal how to optimize the incentive mechanism through the principles of behavioral economics, so as to enhance the performance of employees and the overall performance of enterprises more effectively. This not only helps enterprises to formulate scientific and reasonable incentive strategies, but also provides theoretical basis and practical guidance for future related research.

2. Theoretical Framework of Behavioral Economics

2.1 Core Concepts of Behavioral Economics

Behavioral economics breaks with the traditional economic assumption[1] of "perfectly rational human beings" by recognizing that human beings are often influenced by emotions, social preferences, and cognitive limitations when making decisions. Its core concepts include limited rationality, social preferences and temporal inconsistency.

Limited rationality refers to the fact that humans tend to rely on heuristics to simplify complex problems due to insufficient information, limited cognitive abilities, and time pressures that prevent them from making fully rational judgments during decision-making. This leads to decisions that may deviate from the optimal choice.

Social preferences, on the other hand, refer to the fact that people are not only concerned with their own economic gains, but are also influenced by factors such as fairness, reciprocity and social norms. For example, employees may exhibit irrational behaviors such as passivity in the face of unfair pay packages, even if it harms their own economic interests.

Temporal inconsistency reflects the human tendency to prioritize short-term interests over long-term interests, resulting in behaviors that deviate from the intended long-term goals. For example, an employee may choose to reduce work effort in the short term in exchange for immediate rest or relaxation at the expense of future promotion opportunities or performance rewards.

2.2 Comparison with traditional theories of motivation

Traditional theories of motivation are largely based on the rational economic man assumption that employees will make rational decisions to maximize their economic benefits based on a structure of material incentives and penalties. These theories include the incentive-reward model, expectancy theory, and agency theory. Expectancy theory, for example, assumes that employees will weigh the relationship between effort and reward, while agency theory emphasizes that incentives can be used to resolve conflicts of interest between business owners and managers.

However, behavioral economics questions this assumption based on complete rationality[2]. It states that employee behavior is not only driven by material incentives, but is also influenced by a variety of psychological and social factors. Compared to traditional theories, behavioral economics focuses more on employees' intrinsic motivations, such as a sense of meaning at work, personal fulfillment, and social identity. In addition, behavioral economics reveals phenomena such as framing effects and loss aversion in incentive design. For example, while traditional incentive theories tend to emphasize bonuses and pay raises, behavioral economics emphasizes that improper incentives may trigger reverse incentive effects, such as a sense of unfairness or a decline in performance due to excessive job stress.

2.3 Behavioral Economics in Management

Behavioral economics has been increasingly used in management, especially in the fields of employee motivation, decision making, and organizational behavior, which have achieved remarkable results. By introducing the concepts of behavioral economics, managers are able to design more humane and effective management programs to cope with the complexity of employee behavior.

In the design of incentive mechanisms, theories such as loss aversion and framing effects, which are commonly used in behavioral economics, are widely used. For example, studies have shown that employees are often more motivated to "avoid losses" than to "obtain rewards". Therefore, some enterprises have set up "loss incentives", such as giving a portion of the bonus to employees first and then deciding whether or not to take it back based on their performance, so as to enhance the work motivation of employees.

In addition, the concept of social norms in behavioral economics has been applied in team management and organizational culture. For example, instead of relying solely on material incentives, companies can use employees' sense of social belonging and fairness to motivate behavior by shaping collective culture and behavioral norms. This not only enhances employee motivation, but also increases team cohesion and cooperation.

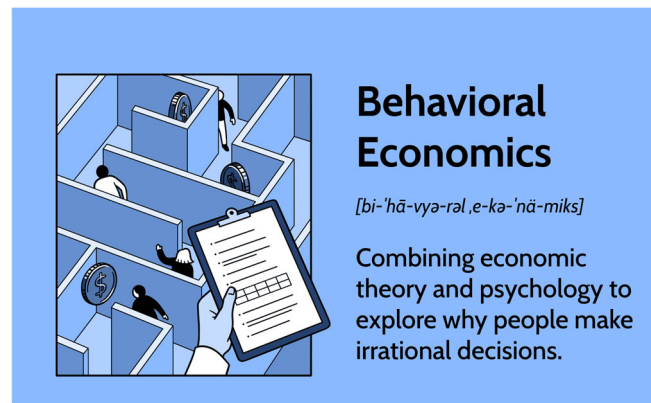


Figure 1 Behavioral Economics in Management

3. Traditional and Behavioral Economics Perspectives on Employee Incentives

3.1 Overview of traditional incentives

Traditional incentive mechanisms are based on the assumptions of rational economics and emphasize influencing employee behavior through material incentives, which usually include compensation systems, bonus schemes, performance appraisals, and promotion opportunities. These mechanisms rely heavily on extrinsic rewards and aim to motivate employees and improve organizational performance by providing clear financial rewards.

Compensation and bonuses are the most common traditional forms of motivation. Companies usually link compensation to employee performance and incentivize employees to work harder through year-end awards and performance bonuses[3]. Performance appraisals quantify the results of employees' work by setting clear goals and targets to determine the amount of their financial rewards. Promotion mechanisms, on the other hand, provide career development opportunities to motivate employees to obtain higher positions and corresponding benefits through hard work.

While these traditional incentives are effective in many cases, especially for positions with clear tasks and easily measurable performance, their limitations are becoming increasingly apparent. Traditional mechanisms often ignore employees' intrinsic motivation, emotional needs and sense of belonging, which can lead to diminishing incentives or dissatisfaction. Especially in creative and complex work environments, material incentives alone are not enough to sustainably increase employee engagement and satisfaction.

3.2 Behavioral Economics Complements and Modifies Incentives

Behavioral economics complements and amends the traditional incentive mechanism in that it introduces a wider range of psychological and social factors, making up for the shortcomings of traditional economics that ignores irrational employee behavior. Behavioral economics pays special attention to factors such as employees' intrinsic motivation, sense of fairness, situational influences, and social norms, providing a more flexible and comprehensive design of incentive mechanisms.

Behavioral economics emphasizes the importance of intrinsic motivation. Research has shown that employees' interest in the work itself, their sense of accomplishment, and the sense of self-worth they derive from the organization are often more powerful drivers of long-term work engagement than external material rewards. For example, some organizations enhance intrinsic motivation by

providing employees with challenging tasks that promote job autonomy and creativity. Behavioral economics' theory of fairness suggests that employees' perceptions of incentives depend not only on the rewards they receive, but also on their fairness relative to others. Employees often care about the balance between relative income and work contribution, and may reduce performance or adopt a negative attitude if they perceive incentives to be unfair. Behavioral economics also reveals the importance of situational influences. For example, framing effects suggest that the way incentives are presented (e.g., by describing rewards as "loss avoidance" rather than "gain") can significantly affect employees' behavioral responses. In addition, social norms and collective pressures can have a significant impact on employee behavior, and firms can reinforce the effects of incentives by shaping a positive organizational culture.

3.3 How Behavioral Economics Theory Affects Corporate Incentive Design

Behavioral economics, through an in-depth understanding of the irrational characteristics of human decision-making, prompts enterprises to be more refined and humane in the design of incentive mechanisms. It helps managers to identify potential psychological deviations in employee behavior and use them to optimize incentive strategies and enhance incentive effects.

Loss aversion theory has had a profound impact on the design of corporate incentives. While traditional incentives tend to focus on rewarding positive outcomes, behavioral economics emphasizes that people are more sensitive to "loss" than to "gain". Therefore, companies can set up "front-loaded bonuses" or "guaranteed incentives", for example, by paying out part of the bonus in advance and linking it to subsequent performance, so as to stimulate employees' sustained motivation and prevent them from losing the incentives they have already gained. The framing effect allows for greater flexibility in incentive design. Companies can influence employees' behavioral responses by adjusting the way incentive messages are presented. For example, stating performance goals as avoiding mistakes or losses rather than simply obtaining gains tends to motivate employees' efforts more effectively. Social preference theory suggests that employees' concerns about fairness and relative income significantly affect their performance. When designing incentive mechanisms, companies must consider pay equity among different employees and reduce competition and dissatisfaction among employees through transparent incentive rules and clear promotion mechanisms to enhance organizational harmony and overall performance.



Figure 2 How Behavioral Economics Theory Affects Corporate Incentive Design

4. A study of the relationship between employee incentives and corporate performance

4.1 Review of existing literature

The existing literature on the relationship between employee incentives and firm performance has accumulated a wealth of results[4]. Most of the traditional incentive theories focus on the effects of

material rewards on employee behavior, such as salaries, bonuses, and benefits, and studies have shown that such incentives can improve employee motivation and firm performance to a certain extent. However, with the complexity of the work environment, researchers have begun to focus on the limitations of material incentives, especially in high-level creative work and teamwork, where a single financial incentive is insufficient to sustain long-term performance improvement.

The rise of behavioral economics has provided new perspectives in the study of incentives. The literature suggests that the concepts of loss aversion, social preference and limited rationality in behavioral economics play an important role in the design of incentives. For example, Kahneman and Tversky's theory of loss aversion has received extensive empirical support, and studies have shown that designing incentives as avoiding losses rather than obtaining rewards can be more effective in motivating employees.

In addition, recent research has shown that intrinsic motivation and perceptions of fairness play an important role in incentives. Deci and Ryan's Self-Determination Theory reveals the critical role of intrinsic motivation in employees' long-term performance, while Adams's Fairness Theory states that employees' perceived fairness of incentives significantly affects their work attitudes and organizational performance.

4.2 How Incentives Influence Employee Behavior and Decision Making

Incentives play an important role in employees' behavior and decision-making by influencing their motivation, cognition and emotion. Traditional theories of incentives often assume that material incentives, such as pay and bonuses, can motivate employees to adopt behaviors that meet the firm's expectations by increasing their financial returns. However, behavioral economics suggests that the effectiveness of incentives is not only dependent on financial rewards, but is also influenced by psychological and social factors.

Intrinsic motivation plays a key role in employee behavior and decision making. Behavioral economics points out that employees not only pursue material benefits, but also want to gain a sense of achievement, belonging and self-worth. Therefore, incentives that enhance employees' autonomy, creativity and sense of meaning in their work will help increase their work engagement and innovation. For example, allowing employees to participate in the decision-making process or setting challenging tasks can significantly enhance their intrinsic motivation. A sense of fairness directly affects employees' work behavior. Employees tend to assess the fairness of incentives, and if they feel that incentives are unfairly distributed, they may develop negative attitudes, reduce work motivation, or even make irrational decisions, such as reducing work effort or intentionally failing to meet standards. Therefore, when designing incentives, companies must ensure fairness and transparency to prevent employees from perceiving unfairness. Behavioral economics emphasizes the influence of framing effects and loss aversion on employee decision-making. By designing incentives that focus on loss aversion rather than pure rewards, companies can more effectively influence employee behavior. For example, the establishment of a "loss reward" mechanism can make employees work harder to avoid losses. In short, incentives significantly affect employees' work decisions and organizational performance by influencing their psychological and behavioral motivations.

4.3 Multidimensional Consideration of Business Performance

The assessment of business performance is not limited to financial indicators, but should also consider multiple dimensions to fully reflect the health and growth potential of the organization. Traditional performance considerations have relied heavily on financial metrics such as profits, revenue growth, and cost control. However, behavioral economics emphasizes that business performance should also include the following key non-financial dimensions:

(1) Employee Satisfaction and Engagement

Employee satisfaction is an important aspect of measuring business performance. Employees with high levels of satisfaction tend to exhibit higher levels of work engagement and lower turnover rates,

thus positively impacting the long-term performance of the organization. Employee engagement and motivation not only boosts productivity, but also promotes innovation and teamwork, enhancing the overall competitiveness of the organization.

(2) Customer Satisfaction and Loyalty

Customer satisfaction has a direct impact on a company's market share and brand reputation. A high level of customer satisfaction is usually associated with the quality of service, product quality and effective customer relationship management provided by the organization. Customer loyalty translates into repeat purchases and positive word-of-mouth, which contributes to a company's sales growth and market expansion.

(3) Organizational Culture and Employee Welfare

The health of the corporate culture and the superiority of employee welfare are also important indicators for evaluating performance. A good corporate culture can enhance employees' sense of belonging and loyalty and create a positive working environment. At the same time, superior employee benefits can attract and retain talented people and improve the overall competitiveness of an organization.

(4) Innovation and market responsiveness

An enterprise's capacity for innovation and market responsiveness determines its ability to adapt to market changes and technological advances. Firms with a high degree of innovative capacity are able to introduce new products or services and maintain a competitive advantage, while a strong market responsiveness helps to adjust strategies in time to respond to market changes.

5. The Impact of Behavioral Economics on Incentive Design

5.1 Behavioral economics principles for incentive design

Behavioral economics provides some powerful principles for optimizing the design of incentives to make them more effective in motivating employees and improving performance. These principles include, among others, loss aversion, framing effects, social norms and time inconsistency[5].

Loss aversion is one of the core concepts of behavioral economics, referring to the fact that people are more sensitive to the feeling of loss than to the same level of gain. In the context of incentive design, this means that employees are more likely to be motivated by avoiding losses than by providing additional rewards. For example, companies can set up a "front-loaded bonus" mechanism, whereby a portion of the bonus is paid out at the beginning of the incentive period and recovered based on the subsequent performance of the employee, thus capitalizing on the employee's loss aversion and motivating them to work hard.

The framing effect describes the impact of how information is presented on decision making. In incentive design, employee responses can be significantly altered by adjusting the way the incentive message is presented. For example, describing a bonus as a "cost savings" rather than an "extra reward" may have a different incentive effect.

Social norms also have a significant impact on employee behavior. Behavioral economics emphasizes that employees are influenced by collective norms and social pressures at work. Companies can enhance employee motivation by shaping a positive organizational culture and rewarding behaviors that are consistent with team values. For example, publicly recognizing top performers can motivate other employees to follow suit, thereby enhancing overall performance.

Temporal inconsistency reflects an underestimation of future rewards and a tendency to choose immediate short-term rewards over long-term rewards. To counteract this problem, companies can design staged incentive programs that break down long-term goals into short-term goals and provide staged rewards to help employees maintain focus and effort on long-term goals.

5.2 Practical case studies

Practical case studies demonstrate how behavioral economics principles can be effectively applied to incentive design and significantly improve employee performance and organizational effectiveness. Below are two typical examples:

(1) Google's "20% Time" Program

Google's "20% time" program is an incentive mechanism based on the principles of behavioral economics. The program allows employees to spend 20% of their work time on projects that interest them and are not directly related to their daily work tasks. This mechanism encourages innovation and creative thinking based on the principles of intrinsic motivation and social norms. Data shows that the "20% time" program not only improves employee job satisfaction, but also promotes innovation within the company. For example, through this program, Google has developed successful products such as Gmail and AdSense. These innovative programs have contributed significantly to the company's business, with the number of Gmail users exceeding 1 billion in 2014, and AdSense becoming one of Google's main sources of revenue, which has greatly contributed to the company's growth.

(2) IBM's "Personal Development Bonus" program

IBM has adopted a "personal development bonus" program based on the principle of loss aversion, which is designed to enhance employees' career development and training participation. The program stipulates that employees can receive a certain amount of training bonus in advance after receiving a high score in the annual performance appraisal. If the employee fails to complete the training as expected, the bonus will be withdrawn. Studies have shown that the program has led to a significant increase in employee training participation. Data show that since the implementation of the program, IBM's employee training participation increased by about 30%, and employee satisfaction increased by 15%. This not only improves the skill level of employees, but also enhances the overall competitiveness of the company.

(3) Zocdoc's "competition incentive" mechanism

Zocdoc, an online medical appointment booking platform, uses "contest incentives" based on framing effects. The company set up quarterly sales contests to incentivize the sales team to achieve specific performance goals, and distributed bonuses based on the results of the contests. The contests are designed to emphasize relative performance, so that employees are not only focused on their individual goals, but are also influenced by the performance of their team. Data showed that the mechanism improved the performance of the sales team, with quarterly sales increasing by an average of 20%. The contest mechanism inspired employees to be competitive and work as a team by setting clear goals and a framework for rewards.

5.3 Marginal Effects of Incentives and Potential Problems

In the design and implementation of incentives, understanding their marginal effects and potential problems is critical to optimizing incentive strategies. Marginal effects refer to the marginal impact of an increase or change in incentives on employee behavior and organizational performance, while potential problems relate to possible negative effects or challenges.

In terms of marginal effects, initial incentives usually significantly increase employee motivation and performance. However, the marginal effect may diminish as the incentive continues or increases. For example, the initial period of offering high bonuses may result in a significant increase in employee performance, but the incentive effect may diminish over time as employees may gradually adapt to the rewards or even take them for granted. Research suggests that in some organizations, sustained high bonuses may lead to reward inertia, resulting in reduced performance gains and even "incentive fatigue".

In terms of potential problems, incentives may trigger some negative effects. For example, excessive focus on short-term performance goals may lead employees to adopt short-sighted behaviors in order to obtain rewards, such as cutting back on long-term work quality or neglecting teamwork. In addition, unfair or non-transparent incentives may trigger employee dissatisfaction and negativity, affecting the team atmosphere and overall morale. For example, if employees perceive that certain coworkers are unfairly rewarded, this may lead to decreased motivation and impaired teamwork.

Another potential problem is that incentives may intensify competition, especially in teamwork, where excessive individual incentives may weaken the spirit of teamwork and affect overall team performance. Therefore, when designing incentives, companies need to consider the marginal effects of incentives and avoid potential negative problems to ensure that incentives can continue to effectively improve employee performance and organizational effectiveness.

6. Summarize

6.1 Conclusion

In summary, behavioral economics provides a profound theoretical foundation and practical guidance for the design of employee incentive mechanisms. By combining the core principles of behavioral economics, such as loss aversion, framing effects, social norms and intrinsic motivation, companies can develop more precise and effective incentive strategies. These strategies can not only effectively enhance employee motivation and creativity, but also promote overall organizational performance in a complex work environment. Behavioral economics emphasizes the importance of psychological factors in motivation, especially how to enhance motivational effects by avoiding losses and changing the information framework. These principles help organizations to design incentives that satisfy the material needs of employees as well as touch on their intrinsic motivation, thus improving the comprehensiveness and durability of incentives. Practical case studies show that incentives that apply the principles of behavioral economics have achieved significant success in enhancing employee performance and corporate effectiveness. For example, Google's "20% Time" program and IBM's "Personal Development Bonus" program have not only increased employee job satisfaction and skill levels, but also brought about real business growth and innovation. The design of incentives also requires attention to their marginal effects and potential problems. As incentives continue to be implemented, their effectiveness may diminish and they may lead to employee dissatisfaction and short-sighted behavior. Therefore, companies should take these factors into consideration when developing an incentive strategy to ensure that incentives are long-lasting and effective in driving employee performance and contributing to organizational growth.

Overall, the application of behavioral economics theory to incentive design provides a more scientific and comprehensive perspective that helps optimize incentives and enhance employee engagement and overall organizational performance. Future research and practice can further explore how to flexibly adjust incentive strategies to achieve the best results in different organizational environments and cultural contexts.

6.2 Implications for Future Research Directions and Management Practices

Future research can further explore the application and development of behavioral economics in employee incentives in the following areas to address the changing organizational environment and employee needs.

(1) Personalized incentives

Future research can focus on exploring how to design personalized incentives based on individual employee differences, such as career stage, personal values and work motivation. By applying the principles of behavioral economics, customized incentive strategies can more accurately meet the needs of different employees, thus enhancing motivational effectiveness and employee satisfaction.

(2) Research on long-term incentive effects

Existing research has mostly focused on the short-term effects of incentives, and future research should focus on the long-term effects of incentives, including their sustained motivational effects on employees' career development and their contribution to long-term firm performance. This can help firms understand the long-term adaptability of incentive strategies and adjust incentives to maintain sustained effectiveness.

(3) Cross-cultural research: There may be significant differences in employees' behavioral motives and responses to incentives in different cultural contexts. Therefore, future research should explore the applicability of behavioral economics theories in different cultural environments and analyze the impact of cultural differences on the design and implementation of incentives, in order to develop more culturally adapted incentive strategies.

(4) Technology and data-driven incentive design: with the development of big data and artificial intelligence technology, companies can use data analysis to monitor and adjust incentives in real time. Future research should explore how to combine data-driven decision-making tools with behavioral economics theories to improve the scientific and dynamic adjustment of incentives.

(5) The application of behavioral economics in non-traditional work environments: for example, the impact of teleworking and flexible working on incentives has yet to be studied in depth. In the future, we can explore how to effectively apply the principles of behavioral economics in these new types of work environments in order to optimize the incentive mechanism and maintain the motivation of employees and the overall performance of the enterprise.

In management practice, enterprises should continuously improve the incentive mechanism according to these research directions, combine scientific theories and actual data, and constantly optimize the incentive strategy to cope with the fast-changing market environment and employee needs, so as to enhance the overall competitiveness and performance of the organization.

References

- [1] Liu J , Huang S , Li D ,et al.Addictive Incentive Mechanism in Crowdsensing From the Perspective of Behavioral Economics[J].IEEE Transactions on Parallel and Distributed Systems: A Publication of the IEEE Computer Society, 2022(33-5).
- [2] Yuan,Li,Hai,et al.Incentive Mechanisms, Entrepreneurial Orientation, and Technology Commercialization: Evidence from China's Transitional Economy[J].Journal of Product Innovation Management, 2008.
- [3] Erbas B C , Erbas C .Employee Incentive Mechanism Design For Technology Firms[J].Journal of Integrated Design & Process Science, 2004, 8(1):91-111.
- [4] Li D , Wang S , Liu J ,et al.Crowdsensing From the Perspective of Behavioral Economics: An Incentive Mechanism Based on Mental Accounting[J].IEEE Internet of Things Journal, 2019, PP(99):1-1.
- [5] Qing-Fu L .Review on the research of property and competition incentive mechanism for SOEs' operator perspective on human capital[J].Science-Technology and Management, 2012.