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Quantitative Evaluation of Different Incentive Needs of Different Generations of Employees and Design of Differentiated Incentive Countermeasures

Li Nie

Lyceum of the Philippines University, Manila 1002, Philippines.

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***Corresponding author:** Li Nie, Lyceum of the Philippines University, Manila 1002, Philippines.

Abstract

The purpose of this study is to explore the differences in motivation needs of employees of different generations, and to propose differentiated incentive countermeasures through quantitative evaluation and simulation experiments. Based on the sample data of Gen X, millennials and Gen Z, and combined with the indicators of employee incentive satisfaction, work efficiency, performance and teamwork, I analyze the performance differences in traditional (salary and stability), flexible (career development and autonomy) and innovative (challenge and social value) incentive situations. The experimental results show that Gen Z's performance efficiency (92% vs. 90%) and teamwork scores (87.7) are significantly higher in the flexible type (satisfaction 4.8) and innovative motivation (satisfaction 4.6), indicating that they attach importance to innovation, flexibility and social value; Millennials prefer flexible incentives (4.4 satisfaction) and 85% performance efficiency. Generation X had the highest levels of satisfaction (4.2) and productivity (78%) with traditional incentives, but was less able to work in teams (score 71). Research shows that generational differences have a significant impact on employee motivation needs and team effectiveness. Enterprises need to design differentiated incentive strategies according to different generational characteristics, such as providing innovative platforms and flexible working modes for Generation Z and strengthening stability guarantees for Generation X, so as to improve the overall organizational effectiveness. This study provides the theoretical basis and practical guidance for multi-generation employee management, and helps enterprises optimize incentive mechanisms and enhance competitiveness.

Keywords

Generational difference; Incentive demand; Teamwork; Differentiated incentive strategy; Employee performance

Introduction

With the continuous development and change of society, the employee groups in the workplace show obvious intergenerational differences, especially the values, working methods, and demand trends between different generations. In the human resource management of enterprises, employee motivation is a key factor to improve work efficiency and employee satisfaction, and its effect is often significantly affected by individual differences of employees. The traditional incentive mechanism treats the demand of employees in a single way, and fails to fully consider the

incentive effect deviation caused by the difference between generations, resulting in the effectiveness of incentive measures being greatly reduced. It is of great theoretical and practical significance to analyze the differences in motivation needs of different generations of employees and explore the different incentive countermeasures. The purpose of this paper is to establish a quantitative model of employee motivation needs based on generational differences by quantitatively evaluating the differences in work motivation, values, and expectations of employees of different generations. Through simulation experiments, different incentive strategies are designed and verified by experiments under multi-dimensional evaluation indicators, and differentiated incentive countermeasures for employees of different generations are finally proposed. This study not only provides a theoretical basis for enterprises to manage multi-generation employees, but also provides empirical support for formulating scientific and effective incentive strategies in practice. Through this study, it is expected to contribute new ideas to the research of incentive mechanisms in the field of human resource management, and provide practical reference for enterprise managers in the design and optimization of employee incentive schemes.

1. Motivation theory analysis

1.1 Overview of employee motivation theory

Employee motivation theory is an important part of the field of human resource management, aiming to stimulate employees' inner motivation by understanding and meeting their needs, so as to improve work performance and satisfaction. Classic incentive theories mainly include Maslow's hierarchy of needs theory, Herzberg's two-factor theory, and Vroom's expectation theory (Sun Rong, 2022). According to Maslow's hierarchy of needs theory, human needs present a ladder form, from physiological needs, safety needs, social needs, and respect needs to self-actualization needs, and with the satisfaction of lower level needs, higher level needs will become the source of motivation. Herzberg's two-factor theory proposes that motivating factors at work (such as sense of achievement and promotion opportunities) and health factors (such as salary and working conditions) jointly affect employees' work attitude and satisfaction (Zhu Guohua, 2018). Vroom's expectation theory emphasizes that employees' behavior is affected by the relationship between their expectation of reward and actual reward, and believes that employees' efforts depend on their value judgment of the reward after achieving the goal (Liu Chaoyong, 2015).

1.2 Analysis of the impact of intergenerational differences on employee motivation

With the changes of The Times, employees of different generations have significant differences in growth background, values, lifestyle, and other aspects, especially in the level of work motivation and incentive needs, the difference between generations is more prominent (Gui Zilin, 2022). Traditional "baby Boomers" (born 1946-1964) generally value stable career development and material rewards, while "Generation X" (born 1965-1980) is more concerned with work-life balance and pursuing career autonomy and challenge. In contrast, Millennials (born 1981-1996) and Generation Z (born after 1997) tend to pay more attention to the meaning of work, flexible working hours, and opportunities for innovation, and their needs for motivation are more diversified and personalized (Lin Fanjun, 2022).

1.3 Incentive demand model based on intergenerational differences

The incentive demand model based on intergenerational differences aims to construct an incentive demand framework that can accurately reflect the characteristics of intergenerations by quantitatively analyzing the differences in incentive demand of employees of different generations. The model combines the classical incentive theory with the change of modern employee values, and comprehensively considers multi-dimensional factors such as work motivation, compensation expectation, and job satisfaction. In the model, the incentive needs of employees of different generations are regarded as a dynamic weighted variable, which is jointly affected by their life cycle, social environment, and cultural background (Zhang Hao, 2024).

The core formula of the model can be expressed as:

$$D_i = \sum_{k=1}^{n} w_{ik} \cdot F_k$$

Among them,D_i represents the overall incentive demand of the generation i employees, w_{ik} is the weight of the Generation i employees to the k incentive factors, andF_k is the intensity of the k incentive factors (such as salary,

promotion opportunities, working environment, etc.). In the model, the weight w_{ik} changes with different generations, reflecting the degree of concern of employees in different generations to different incentive factors. Through the survey and data analysis of a large number of employees, we can determine the incentive demand of each generation of employees and build an accurate incentive demand prediction model.

2. Quantitative model of incentive demand difference

2.1 Model hypothesis and basic theoretical framework

In order to quantify the difference in incentive demand of employees of different generations, this study constructs a quantitative model of incentive demand based on the differences among generations. In this model, it is assumed that the motivation needs of employees across generations are influenced by a number of key factors, including but not limited to work motivation, reward expectations, work environment, career development opportunities, and personal values (Children and Children in Broad Sense, 2021). In addition, it is assumed that employees' motivation needs change dynamically in different work situations, and these changes are influenced by multiple factors such as individual characteristics, work experience, cultural background, and intergenerational differences (Niu Yanhuan, 2024). The specific assumptions include: different generations of employees pay different attention to incentive factors, and each generation group has a specific incentive demand model; Employees' motivation needs are influenced by internal motivation and external motivation. Employees' motivation needs are also influenced by their personal characteristics. Based on these assumptions, the model quantitatively analyzes the demand difference of employees of different generations under specific incentive factors, and provides a basis for the design of differentiated incentive countermeasures.

2.2 Quantification of intergenerational employee motivation needs

In order to quantify the incentive demand, we use the analytic hierarchy process (AHP) and weighted average method to disassemble the incentive demand into multiple levels of factors. Firstly, through surveys and interviews, the evaluation data of different generations of employees on various incentive factors are collected to identify the key factors affecting incentive demand. These factors include, but are not limited to, salary, job stability, career development, social responsibility, etc.

Secondly, we use the AHP method to weight the importance of each incentive factor and calculate the contribution of each incentive factor to the incentive demand of employees. Finally, based on the weighted average method, the weight of each factor is combined with the employee's evaluation score to get the overall incentive demand score of each generation of employees.

The quantification process of incentive demand can be represented by the following steps:

Factor identification: According to literature analysis and expert opinions, identify the main set of factors affecting employee motivation needs $F_1, F_2, \ldots, F_k$.

Weight allocation: Through AHP or expert scoring method, calculate the weight of each factor $w_1, w_2, \ldots, w_k$.

Scoring and weighting: The weighted score of each factor is calculated according to the employee's score on each factor, and the incentive demand score D_i of the employee is obtained.

Finally, the incentive need score is:

$$D_i = \sum_{k=1}^{n} w_k \cdot S_k$$

Where, $D_i$represents the incentive demand score of the employees of generation i, S_k is the score of the k incentive factor, w_k is the weight of the k incentive factor, and n is the total number of incentive factors.

2.3 Imperfect risk control system

2.3.1 Mathematical formula and derivation process of the model

In order to further clarify the mathematical expression of the quantitative model of incentive demand difference, this study derived a series of formulas to describe the quantitative process of incentive demand from multiple dimensions of intergenerational employee incentive demand. Assuming that the incentive demand of each generation of employees is affected by multiple incentive factors, and these factors are weighted and summed according to different

weights, the mathematical formula of the model can be expressed as follows:

$$D_i = \sum_{k=1}^{n} w_{ik} \cdot F_k$$

Among them:

D_i represents the motivation needs of the generation i employees;

w_{ik} is the weight of the KTH incentive factor for the generation i employees.

F_k is a score for the k type of motivator (e.g., salary, promotion opportunities, job challenge, etc.).

It is assumed that each employee's incentive demand will change in different periods or situations. Based on time and situation factors, time factor t and situation factor C can be introduced to further refine the model, and the following formula can be obtained:

$$D_{it} = \sum_{k=1}^{n} w_{ikt} \cdot F_{kt}(C)$$

Among them:

D_{it} represents the motivation demand of the generation i employees at time t;

w_{ikt} is the weight of generation i employees to the k incentive factors in time t;

$F_{kt}(C)$ is the score of the F motivator under scenario C.

3. Simulation experiment and analysis

3.1 Simulation experiment design

This study aims to verify the effectiveness of the quantitative model of incentive demand based on intergenerational differences, and analyzes the responses of employees of different generations under various incentive situations through a series of simulation experiments. The subjects were Generation X, millennials, and Generation Z, with 100 people in each group and a variety of backgrounds. Three incentive scenarios are designed: traditional, flexible, and innovative, and incentive factors and weights are set according to employee preferences. In the simulation process, the initial incentive demand value is set according to the intergenerational characteristics, and the weight is adjusted according to the incentive situation, and the incentive demand score is finally calculated. The simulation results were compared with the actual survey data by the cross-validation method, and the model parameters were adjusted to improve the accuracy. Three evaluation indicators were set up in this study, namely, satisfaction degree of incentive demand, difference degree of incentive demand, and adaptability of incentive strategy, in order to comprehensively understand the incentive demand of employees of different generations and provide data support for differentiated incentive countermeasures. The research assumes that employees of different generations have obvious differences in preferences for incentive factors, and their incentive demand scores show different trends under the same incentive environment.

3.2 Experimental results and analysis

In the simulation experiment, we quantitatively evaluated the satisfaction scores of employees of different generations under three incentive situations, and conducted an in-depth analysis of the differences in incentive needs based on the scores. The experimental data covered the satisfaction ratings of Gen X, Millennial, and Gen Z employees in the traditional incentive, flexible incentive, and innovative incentive scenarios.

Table 1. Result table of employee motivation demand

Employee Group	Traditional Incentive Satisfaction	Flexible Incentive Satisfaction	Innovative Incentive Satisfaction	Total Satisfaction Score
X Generation	4.2	3.6	2.9	3.57
Millennials	3.7	4.4	4	4.03
Z Generation	2.9	4.8	4.6	4.43

As shown in the table, employees of different generations have different satisfaction scores under the three incentive scenarios, and employees of different generations have significant differences in demand for incentive factors.

4. Evaluation of experimental results

4.1 Employee incentive satisfaction evaluation

According to the experimental data, the employees' incentive satisfaction score is evaluated from three perspectives: traditional incentive, flexible incentive, and innovative incentive. The results showed that Gen Z was the most satisfied with flexible and innovative incentives, while Gen X was the most satisfied with traditional incentives. The analysis shows that Generation X has the highest satisfaction under traditional motivation (4.2), indicating that they attach more importance to job stability and material returns; Millennials are most satisfied with flexible incentives (4.4), indicating a strong need for flexibility and career development. Generation Z's satisfaction with flexibility and innovation motivation is 4.8 and 4.6, respectively, reflecting their high demand for work meaning, social responsibility, and innovation opportunities. The experimental results show that intergenerational differences significantly affect the incentive satisfaction of employees, and enterprises should design differentiated incentive strategies according to the characteristics of different generations.

4.2 Employee incentive satisfaction evaluation

Table 2. Employee performance and efficiency results table

Employee Group	Traditional Incentive Efficiency	Flexible Incentive Efficiency	Innovative Incentive Efficiency	Total Performance Efficiency
X Generation	78	72	64	71.33
Millennials	72	85	80	79
Z Generation	65	92	90	82.33

The table shows the work efficiency and performance evaluation results of employees of different generations under three incentive situations, reflecting the impact of incentive measures on the actual performance of employees. The experimental data show that the performance difference between different generations of employees is particularly obvious in different incentive situations, especially in flexible and innovative incentive situations, where employees' work efficiency and performance are improved.

4.3 Evaluation of the impact of generational differences on team collaboration

Teamwork is essential in the modern enterprise, and the ways and needs of different generations of employees to work together are influenced by their upbringing, values, and work preferences. Through simulation experiments, this study evaluated the differences in the performance of different generations of employees in team cooperation, and analyzed the impact of generational differences on team cooperation efficiency, communication effect, and working atmosphere. Three key evaluation indicators are designed: team cooperation efficiency, team communication effect, and working atmosphere. It is assumed that the performance of different generations of employees in teamwork is affected by their working styles, for example, Generation X tends to rely on stable working styles, while Generation Z prefers open and flexible collaboration styles. The experiment selects multi-generation teams and uses these indicators to evaluate the team collaboration effect quantitatively.

Table 3. Specific data table of team collaboration evaluation of employees of different generations

Employee Group	Team Cooperation Efficiency	Team Communication Effectiveness	Work Atmosphere	Overall Cooperation Score
X Generation	75	70	68	71
Millennials	80	85	78	81
Z Generation	85	90	88	87.7

Generation X scored 71.0 for teamwork and tended to work independently with more traditional communication. Millennials scored higher on teamwork efficiency and communication effectiveness (80 and 85), but slightly lower on work atmosphere (78). Gen Z scored highest across all indicators, particularly in communication effectiveness (90) and work atmosphere (88), with a focus on interaction and mutual growth.

5. Conclusions

Through quantitative evaluation and simulation experiments on the differences in incentive needs of employees of different generations, this study draws the following conclusions: The satisfaction and work efficiency of employees of Generation Z are significantly higher than those of Generation X and millennials in flexible and innovative incentive situations, showing stronger collaboration ability and team interaction (total satisfaction 4.43, total performance efficiency 82.33). Gen X employees, on the other hand, are more inclined to traditional motivation, showing lower team collaboration efficiency (71.0) and communication effectiveness (70). These results show that intergenerational differences significantly affect employees' motivation needs and team cooperation performance. Enterprises should develop differentiated incentive strategies according to the characteristics of employees of different generations to improve the overall team effectiveness.

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