EXPLORING COMPENSATION FAIRNESS, WORK ENGAGEMENT, AND TASK PERFORMANCE IN MEDIA ENTERPRISES: THE MODERATING EFFECT OF EMOTIONAL INTELLIGENCE AND ARTIFICIAL INTELLIGENCE ADOPTION

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ABSTRACT

In the context of the rapid advancement of artificial intelligence (AI) technology, enhancing employee engagement and performance has emerged as a central issue in both management practice and academic research. Grounded in the Group Engagement Model (GEM), this study employs survey data from 311 employees in the Chinese media industry. Utilizing structural equation modeling (SEM), linear regression analysis, and interaction analysis, it examines the impact of the three dimensions of compensation fairness (CF) on the three dimensions of work engagement (WE) and task performance (TP), with a particular focus on the moderating role of emotional intelligence (EI) and the higher-order moderating effects of artificial intelligence adoption (AIA). The findings are as follows:

Firstly, all three dimensions of CF positively influence cognitive engagement (CE) and emotional engagement (EE). Distributive fairness (DF) and procedural fairness (PF) positively impact behavioral engagement (BE), and all three dimensions of WE positively affect TP. Compared with interactional fairness (IF) and DF, PF has a stronger positive impact on TP, which is mediated through WE. Secondly, a sequential transmission effect exists among CE, EE, and BE in their impact on TP, that is, CE influences EE, which in turn affects BE and TP. Thirdly, EI positively moderates the relationships between PF and CE, IF and CE, and IF and BE. The moderating effect of EI on the relationship between IF and EE is positively correlated with AIA, and the moderated-moderated mediation effects exist. Similarly, the moderating effect of EI on the relationship between IF and BE is also positively correlated with AIA.

These findings enhance our understanding of the impact mechanism of CF and elucidate the specific levers that managers can manipulate to improve both engagement and performance. Through interaction analysis, this study addresses recent calls for “precision HRM” by specifying

the conditions under which PF and IF have the strongest predictive power for WE. This goes beyond main-effect explanations and increases both theoretical precision and practical value. Finally, this study validates for the first time the applicability of GEM in the context of AI, expands the theoretical boundaries of GEM, enriches equity theory, and charts new directions for future research on organizational human resource management.

Keywords: Distributive fairness; Procedural fairness; Interactional fairness; Cognitive engagement; Emotional engagement; Behavioral engagement; Task performance; Artificial intelligence adoption; Emotional intelligence

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CHAPTER 1

INTRODUCTION

1.1 Background and Significance

Improving employee performance is a topic of common concern in both academia and organizational practice. Employee performance is closely related to their work engagement. High levels of employee engagement can effectively address issues of employee apathy and low enthusiasm, thereby positively impacting their task performance (Anggiani, 2022). Different from satisfaction, WE is a more complex concept in the field of organizational behavior and human resource development, and it is the development trend in the field of organizational behavior. As an important concept in the field of human resource management, WE has a far greater impact on performance than satisfaction (Kašpárková et al., 2018). As an embodiment of employees' attitudes, work engagement (WE) has a positive significance to employees' work behavior and performance (Kılınç et al., 2021). Therefore, WE has attracted the attention of many managers. The Kincentric report indicates that in 2021, employee engagement ranged from 65% to 69%, and dropped to 62% in the first quarter of 2022 (Kincentric, 2022). What factors affect employee engagement? The question needs to be explored.

The group engagement model (GEM) reveals that compensation fairness affects work engagement (Tyler & Blader, 2003). Compensation is what employees deserve in return for their work. It is very concerning for employees. It is closely related to other human resource management modules of the enterprise. It occupies an important position in the management of human resources of the enterprise, and compensation fairness is the focus of the attention of employees. Organizations can not only exchange resources with employees through compensation distribution but also release different signals to employees through different compensation distribution methods to guide employees' cognition, attitude, and behavior (Meyer et al., 2010). Unfair compensation reduces employees' work enthusiasm and leads to low work efficiency, which then affects the enterprise's performance and the maintenance of enterprise human resource advantage (Satata, 2021; Sanséau & Opoku, 2019a; Rasheed et al., 2020).

At present, the research on the relationship between compensation fairness (CF) and WE is gradually increasing. Still, insufficient attention is paid to the moderating effects on the relationship between them. Studies have shown that emotional intelligence (EI) has correlations with CF (Hall et al., 2009; Tung, 2018) and job involvement (Soltani & Sahabi, 2016; Acheampong & Agyapong, 2020; Mahipalan & Sheena, 2018). There are also studies indicating

that EI moderates the association between work resources and employee engagement (Lipson, 2020) and the link between job characteristics and job burnout (Salami & Ajitoni, 2016). Yet, it remains unclear whether EI similarly moderates the influence of specific dimensions of CF on WE. If so, is the moderating effect of EI on the relationship between CF and WE related to other factors, for instance, artificial intelligence adoption (AIA)? These questions warrant further investigation.

With the rapid development of artificial intelligence, digitalization is having a profound impact on the internal and external environment of enterprises (Makridakis, 2017; H. Li, 2022; M. Li & Zamira, 2022). The 2023 Global AI Adoption Index shows that approximately 42% of surveyed companies have actively deployed AI in their businesses, with Chinese companies having an AI adoption rate of up to 50%. 85% of Chinese companies indicated that they would accelerate AI adoption in the future, which was the highest proportion in the world (IBM, 2024). AI has an impact on employees' psychology and behavior, which can be categorized into negative disclosure effect and positive deployment effect, further influencing employees' performance levels (Luo et al., 2020). Although some studies have explored the impact of AI adoption on employee engagement and task performance (Prentice et al., 2023; Malik et al., 2023), few studies have explored the moderating effect of AIA on the impact of CF on WE, especially treating it as a higher-order moderating variable. At the same time, in the research on the impact of CF and WE on TP, existing studies often evaluate both CF and WE as a single dimension without subdividing them into different dimensions, resulting in an incomplete analysis. In this context, this article further expands on the GEM and analyzes in depth the specific path differences in the impact of the dimensions of CF on the dimensions of WE and their effects on TP, and explores the three-way interaction of EI and AIA.

1.2 Research Problems

Firstly, fairness and performance have always been hot topics of discussion in enterprise management practice and academia. Regarding the research on the relationship between CF and TP, existing literature often considers CF as a holistic dimension, and there are few studies on the impact of specific dimensions of CF on TP. The mechanism of the impact of CF on TP is not clear. Are there some important mediators or moderators? Some studies have explored the impact of CF on TP from the perspective of satisfaction (Gelbrich et al., 2015), but there is still a lack of an integrated framework to explore the impact of CF on TP from the perspective of WE.

Secondly, previous studies on the impact of CF on WE are mainly based on the theories of social identity and resource exchange. Social identity theory holds that there may be differences

in the impact of procedural fairness (PF) and interactional fairness (IF) on WE. However, the GEM did not validate the difference in the impact of DF, PF, and IF on WE. This paper attempts to test the GEM and provide overall empirical support for the model.

Finally, the GEM only considers the mechanism from CF to WE and does not discuss the possible conditional boundary of the model. Are there any variables that regulate the relationship between CF and WE? For example, EI and AIA. Do differences in EI lead to significant changes in the impact of CF (PF and IF) on WE? Does the difference in AIA lead to a significant change in the regulatory effect of EI on the relationship between IF and WE? Given the arrival of the AI era and the limitations of the GEM, it is necessary to revise and expand the GEM.

1.3 Research Questions

Based on the research background and significance, this study proposes the following research questions:

RQ1: Do the dimensions of CF (DF, PF, and IF) have significant impacts on WE (CE, EE, and BE)?

RQ2: Do the dimensions of WE (CE, EE, and BE) have significant impacts on TP?

RQ3: Do the dimensions of WE (CE, EE, and BE) play mediating roles in the impacts of the dimensions of CF (DF, PF, and IF) on TP?

RQ4: Does EI moderate the influences of the dimensions of CF (PF and IF) on WE?

RQ5: Are the moderating effects of EI on the relationships between IF and the dimensions of WE (CE, EE, and BE) related to AI adoption?

1.4 Research Objectives

The main research objectives are as follows:

（1）To explore the impacts of the three dimensions of CF (DF, PF, and IF) on the three dimensions of WE (CE, EE, and BE), verify the GEM.

（2）To explore the impacts of the three dimensions of WE (CE, EE, and BE) on TP, expand the GEM.

（3）To explore the impact mechanism of the three dimensions of CF (DF, PF, and IF) on TP, namely the mediating role played by the three dimensions of WE (CE, EE, and BE).

（4）To explore the moderating role of EI in the impact of CF (PF and IF) on WE, answer the conditional boundary of the GEM.

（5）To explore the conditional boundary of EI's moderating effect, that is, how the

moderating effect of EI on the relationship between IF and the dimensions of WE (CE, EE, and BE) is influenced by AIA, further expand the GEM.

1.5 Research Hypotheses

To answer this research question and fulfill its objectives, the following hypotheses are proposed:

H1a: Distributive fairness (DF) has a positive impact on cognitive engagement (CE).

H1b: Procedural fairness (PF) has a positive impact on cognitive engagement (CE).

H1c: Interactional fairness (IF) has a positive impact on cognitive engagement (CE).

H2a: Distributive fairness (DF) has a positive impact on emotional engagement (EE).

H2b: Procedural fairness (PF) has a positive impact on emotional engagement (EE).

H2c: Interactional fairness (IF) has a positive impact on emotional engagement (EE).

H3a: Distributive fairness (DF) has a positive impact on behavioral engagement (BE).

H3b: Procedural fairness (PF) has a positive impact on behavioral engagement (BE).

H3c: Interactional fairness (IF) has a positive impact on behavioral engagement (BE).

H4a: Cognitive engagement (CE) has a positive impact on task performance (TP).

H4b: Emotional engagement (EE) has a positive impact on task performance (TP).

H4c: Behavioral engagement (BE) has a positive impact on task performance (TP).

H5a: Cognitive engagement (CE) has a positive impact on emotional engagement (EE).

H5b: Emotional engagement (EE) has a positive impact on behavioral engagement (BE).

H5c: Cognitive engagement (CE) has a positive impact on behavioral engagement (BE).

H6a: Emotional intelligence (EI) plays a positive moderating role in the relationship between procedural fairness (PF) and cognitive engagement (CE).

H6b: Emotional intelligence (EI) plays a positive moderating role in the relationship between procedural fairness (PF) and emotional engagement (EE).

H6c: Emotional intelligence (EI) plays a positive moderating role in the relationship between procedural fairness (PF) and behavioral engagement (BE).

H7a: Emotional intelligence (EI) plays a positive moderating role in the relationship between interactional fairness (IF) and cognitive engagement (CE).

H7b: Emotional intelligence (EI) plays a positive moderating role in the relationship between interactional fairness (IF) and emotional engagement (EE).

H7c: Emotional intelligence (EI) plays a positive moderating role in the relationship between interactional fairness (IF) and behavioral engagement (BE).

H8a: The moderating effect of emotional intelligence (EI) on the relationship between

interactional fairness (IF) and Cognitive engagement (CE) is positively related to artificial intelligence adoption (AIA).

H8b: The moderating effect of emotional intelligence (EI) on the relationship between interactional fairness (IF) and emotional engagement (EE) is positively related to artificial intelligence adoption (AIA).

H8c: The moderating effect of emotional intelligence (EI) on the relationship between interactional fairness (IF) and behavioral engagement (BE) is positively related to artificial intelligence adoption (AIA).

1.6 Research Scope

Scope of Content: The scope of this study is limited to the field of enterprise human resource management. Salary management, performance management, employee motivation, and the maintenance of enterprise human resources are important components of enterprise human resources management.

Variables: The variables used in this study are in four categories: independent variables, dependent variables, mediating variables, and moderating variables.

（1）The independent variables: DF, PF, and IF

（2）The dependent variable: TP

（3）The mediating variables: CE, EE, and BE

（4）The moderating variables: EI and AIA

Scope of Population:

The research focuses on employees of Chinese media enterprises. The questionnaire respondents include employees from different job levels and departments in media enterprises.

1.7 Research Benefits

The benefits of this empirical research can be divided into two major parts .

（1）Theoretical benefits

Firstly, the relationships among CF (DF, PF, IF), WE (CE, EE, BE), and TP were explored, and the differences in the three-dimensional influence mechanism of CF were analyzed, which enriched the research results of CF to a certain extent and widened the theoretical research framework in the field of employee incentives.

Secondly, based on the GEM, this study validated the mediating role of work engagement

in linking CF to TP. This expands the GEM's theoretical scope and clarifies transmission pathways, addressing gaps in fragmented prior research.

Finally, this study introduced emotional intelligence (EI) and AI adoption (AIA) as boundary conditions within the GEM. This integration bridges psychology (EI) and technology (AIA) with organizational behavior, offering a micro-level lens to study AI-HRM interactions—a nascent area in academia.

（2）Practical benefits

Firstly, the research subdivides CF and WE and comprehensively and systematically clarifies the impact of the sub-variables of CF on the sub-variables of WE and TP. These analyses and explorations have implications for enterprise management. It has an important reference value in identifying, measuring, and pertinently improving a certain aspect of CF in management practice, which expands new management ideas and practices for enterprises to improve TP.

Secondly, the verification of the internal relationships among various dimensions of WE and their positive impacts on TP can help enterprise managers understand the internal mechanisms of WE, pay attention to the improvement of WE, and then improve TP.

Finally, the analysis and verification of whether EI and AIA play positive moderating roles in the relationships among different dimensions of CF and different dimensions of WE has important reference value for corporate managers to improve a certain aspect of CF for different employees in management practice. It can help enterprise managers to further understand the interaction of AIA and EI, promote the introduction of AI and efficient work patterns among employees, strengthen employee emotional regulation at work, and ultimately improve employee and organizational performance.

1.8 Definition of Terms

Compensation fairness (CF) refers to the degree of rationality and equality that employees perceive in the organization's compensation system. It includes DF, PF, and IF.

Distributive fairness (DF) refers to the degree to which employees feel fair about the distributive results of organizational remuneration.

Procedural fairness (PF) refers to the perception of fairness among employees regarding the process of formulating organizational compensation procedures.

Interactional fairness (IF) refers to the degree to which employees feel fairly treated in their interpersonal interactions with superiors during the compensation management process.

Task performance (TP) refers to the efficiency and effectiveness of employees in

achieving organizational goals and completing work tasks.

Work engagement (WE) reflects the effort, wisdom, emotion, and commitment of employees to the organization. It includes BE, EE, and CE.

Cognitive engagement (CE) refers to the degree to which employees think they should work hard for the organization.

Behavioral engagement (BE) refers to the degree to which employees make efforts for the organization in the actual work process.

Emotional engagement (EE) refers to the degree to which employees love their work and their psychological loyalty to the organization.

Emotional intelligence (EI) refers to the ability of individuals to evaluate, express, recognize, and use their own and others' emotions.

Artificial intelligence adoption (AIA) refers to the use of Artificial intelligence technology to understand and learn about external data and information, and to continuously upgrade to achieve specific work goals and tasks.

CHAPTER 2
LITERATURE REVIEW

Chapter 2 is divided into 4 parts, including theoretical concept, basic theories, relationships and hypotheses, and conceptual framework. The chapter explains the literature review and theoretical foundation of prior researchers' findings on compensation fairness, work engagement, task performance, emotional intelligence, and artificial intelligence adoption in the context of a broader level.

2.1 Theoretical Concept

2.1.1 Compensation Fairness

2.1.1.1 Concept of Compensation Fairness

Employee compensation and executive compensation have always been the focus of the attention of scholars in the field of human resources management. The relevant research literature on CF is increasing year by year. This part mainly reviews the research on the concept evolution, dimension division, and the consequences of CF, to lay a foundation for this research.

Fairness and efficiency have always been the focus of research in the fields of management and economics. Fairness is the value judgment and evaluation of something or behavior according to certain standards. Organizational justice is a concept that evolved from social exchange theory and equity theory. According to the fair exchange principle of social exchange theory, if both parties do not engage in a transaction with equal interests, it will cause great discomfort to the losing party (Homans & George, 1958). Based on the theory of social exchange, the theory of equity emerged gradually. The theory believes that individuals pay attention not only to absolute investment and income but also to relative pay and return in social exchange. When their input-output ratio is equal to that of others, they will have a sense of fairness. When they think that this ratio is not equal, individuals will have a sense of dissatisfaction and unfairness (Adams, 1965). The perceived organizational justice directly affects the behavior and attitude of employees and has a far-reaching impact on the sustainable development and healthy growth of enterprises.

Compensation refers to the various incomes received by the employee as a party in the employment relationship, which is the remuneration received by the employee from work (Milkovich et al., 2014). As an important aspect of organizational justice, compensation

fairness has a crucial impact on employees. The level of compensation fairness directly affects employees' work enthusiasm and work investment. Therefore, as an important focus of enterprise compensation management, compensation fairness has become an urgent problem to be solved in the practice of human resource management.

Compensation serves two functions: meeting people's basic material needs as a means of livelihood, and fulfilling self-esteem needs through the relative value of compensation, and the relative value of compensation is the meaning of the early perceived compensation fairness (Berkowitz et al., 1987). Perceived compensation fairness is the degree to which individual employees perceive the fairness of the distributive reward and punishment system in the enterprise (Salimäki & Jämsén, 2010). Perceived fairness is “any element of the environment perceived by individuals or collectives as fair according to previous norms or standards” (Rasheed et al., 2020).

Combining the previous studies on the meaning of CF, we can find that although different scholars have some differences in the details of the definition of the concept of CF, they have great consistency in the connotation, that is, they believe that CF is a subjective feeling of employees about the compensation they receive. At the same time, the positive significance of perceived compensation fairness has been unanimously affirmed by many scholars. In the process of enterprise development, compensation fairness is of great significance to motivate employees and mobilize their enthusiasm. When employees think that their compensation is unfair, they will feel dissatisfied at work, which hurts the improvement of individual employees and even the overall performance of the enterprise.

2.1.1.2 Dimension Division of Compensation Fairness

Based on the different division standards and methods, there are different ways to divide the dimension of CF in academia. With the continuous in-depth study of equity theory and the enrichment of the connotation of CF, the dimension division is gradually diversified.

(1) Single dimension view

CF is the fairness of distributive results; employees often compare their gains with others to see if they are fair (Stoffer, 1949). Equity theory focuses on the result of distribution, that is, the result of equity (Adams, 1965). There is a high correlation between DF and PF, and the effect of DF on individual employees is much higher than process fairness. Therefore, CF can be measured by a single dimension of DF (Folger, 1987).

(2) Two-dimensional division view

CF can be divided into information fairness and interpersonal fairness,

which are different from each other logically (Greenberg & McCarty, 1990). Some scholars argue that the perception of CF should be measured through two dimensions: DF and PF (McFarlin & Sweeney, 1992; Cropanzano et al., 2001; Tyler and Blader, 2003; Russen et al., 2021). Representative questions for DF include "To what extent do you perceive the fairness of the rewards you receive relative to your contributions?" Representative questions for PF include "Do you believe the performance evaluations conducted by the organization are fair?" (McFarlin & Sweeney, 1992). PF mainly emphasizes the fairness of the organizational distributive process (Cropanzano et al., 2001). Some scholars proposed that CF should be analyzed from two aspects: internal fairness and external fairness, in which internal fairness is mainly the fairness perception generated by the comparison between employees and other members of the organization, The comparison object of external fairness is the personnel outside the organization who are equivalent to their work (Milkovich, 1987; Shaw & Gupta, 2001; Zina, 2018; Harris et al., 2020).

(3) Three-dimensional division view

CF refers to employees' perceptions regarding equity in company practices concerning internal compensation, external compensation, and benefits(Berry, 2010). Many scholars hold that organizational justice consists of three dimensions, namely, distributive, procedural, and interactional justice (Triwibowo, 2016; Anggiani & Wiyana, 2021). Distributive justice is the judgment of whether the amount of compensation distribution received by employees is fair or not, that is, the result of comparing employees' contributions and contributions to work engineering and the income of others. Procedural justice refers to the judgment of employees on whether the formulation process of the enterprise compensation system is fair, that is, the formulation procedures and standards of the compensation system, relevant principles, and employees' right to speak. Interactional justice refers to whether employees are treated fairly during the implementation of compensation policy and refers to the fairness of the superior's attitude towards subordinate employees and communication methods.

(4) Four-dimensional division view

CF should be divided into external equity, internal equity, personal equity, and procedural equity (Wallace & Fay, 1988). Some scholars believe that CF should include distributive, procedural, informational, and interpersonal justice, and has a significant impact on employee performance, enthusiasm, and turnover behavior (Colquitt, 2001; Scott et al., 2014; Karam et al., 2019).

The research on the dimension division of CF is summarized as shown in the table. Generally speaking, at present, the more mature and quoted dimensions of CF are divided into three dimensions: DF, PF, and IF. The three-dimensional division method is adopted

in this study. DF mainly evaluates the absolute value and relative value of labor remuneration from the perspective of distributive results. Absolute value refers to the comparison of employees' pay and return. The relative value includes two aspects. One is to compare their current pay and return state with their past pay and return state. Second, compare your compensation return horizontally with others. Only when you are satisfied with the absolute value and relative value can you feel the fair distribution. PF is reflected in two aspects: one is the employees' cognition of whether the compensation policy-making procedure is fair. For example, whether the compensation structure and incentive measures are fair; Second, employees' awareness of whether the compensation decision-making process is fair, such as whether the compensation adjustment, performance appraisal, bonus, etc., are fair. IF mainly focuses on the fairness of interpersonal treatment perceived by people in the process of decision-making and system implementation.

Table 2.1 Representative Literature for The Dimension Division of CF

Dimension division	**Concrete content**	**Scholar/Researcher**
Single dimension	Fair distribution (or fair results)	Stoffer (1949), Adams (1965), Folger (1987)
Two dimensions	Distributive fairness and procedural fairness	Thibaut & Walker (1975), Folger & Konovsky(1989), Mcfarlin & Sweney(1992), Cropazano et al. (2001), Tyler and Blader (2003), Russen et al. (2021)
	Internal fairness and external fairness	Milkovich (1988), Shaw & Gupta (2001), Zina (2018), Harris et al. (2020)
	Informational fairness and interpersonal fairness	Greenberg (1990)
	procedural fairness and interactional fairness	Masterson & Lewis (2000),
Three dimensions	Distributive fairness, procedural fairness, and interactional fairness	Bies & Moag (1986), Niehoff & Moorman (1993), Triwibowo (2016), S. Kim et al. (2017), Jayus & Al (2021), Anggiani and Wiyana (2021), Kreitner and Kinicki (2013)
	Distributive fairness, procedural fairness, and institutional fairness	Shepppard (1992)

Dimension division	Concrete content	Scholar/Researcher
Four dimensions	External fairness, internal fairness, personal fairness, and procedural fairness	Wallace & Faye (1988)
	Distributive fairness, procedural fairness, interpersonal fairness , and informational fairness	Greenberg (1993), Colquitt (2001), Kcrnan & Hanges (2002), Jones (2003), Meyer (2005), Scott B A, Garza A S, Conlon D E, et al. (2014), Karam et al. (2019) , Robbins and Judge (2015)

2.1.1.3 Effects of Compensation Fairness

The research on the effect of CF mainly focuses on employee attitude and employee behavior. The variables involved include job satisfaction, compensation satisfaction, sense of responsibility, engagement, turnover intention, organizational commitment, task performance, organizational citizenship behavior, in-role behavior, deviant behavior, turnover behavior, and so on.

When employees perceive unfairness, reducing work enthusiasm and satisfaction is their basic response (Goodman & Friedman, 1968). Job satisfaction is an important indicator of employees' response to their work status, and a higher sense of fairness indicates that employees are adequately recognized within the organization, which positively affects their satisfaction (Heneman & Schwab, 1985). When employees believe they are treated fairly, they exhibit a positive attitude toward work, and demonstrate higher levels of organizational citizenship behavior and organizational commitment, thereby enhancing organizational citizenship behavior (Farh et al., 1997; Buttner & Lowe, 2017). Employees' selfless dedication to the organization largely depends on their perception of PF within the organization. Therefore, in the process of formulating organizational compensation systems, it is essential to respect and encourage employee participation in management decisions, which can effectively stimulate employees' sense of belonging to the organization, making them more willing to consider the organization's interests and exhibit organizational citizenship behavior (Lavelle et al., 2009). IF has a significant inhibitory effect on employees' deviant behaviors such as irresponsibility, avoidance of responsibility, and laziness, as it greatly reinforces the exchange relationship between leaders and employees during the implementation process (Murphy et al., 2003).

2.1.2 Work Engagement

In recent years, the issue of WE has attracted the attention of academia and industry. Improving the level of WE has gradually become one of the main means to enhance the competitiveness of enterprises. This part mainly summarizes the connotation, dimension division, influencing factors, and results of engagement.

2.1.2.1 Concept of Work Engagement

Employee engagement refers to the extent to which organizational members integrate personal emotions, abilities, and other resources with their work roles during the work process (Kahn, 1990a). It can be regarded as the reverse of job burnout, a continuous, positive, and work-related emotional and cognitive state of achievement (Maslach et al., 2001). It is the professionalism shown when undertaking a certain responsibility or engaging in a certain occupation(Saks, 2006). The definition of employee engagement in both theoretical and practical domains is ambiguous, and it can be defined as the degree of psychological state, characteristics, and behavioral involvement under different conditions. (Macey & Schneider, 2008). Engagement is a comprehensive concept based on job satisfaction, employee commitment, and organizational citizenship behavior. It is an important psychological link between employers and employees and an important indicator affecting enterprise performance (Markos & Sridevi, 2010). WE refers to positive and effective things related to carrying out work with vitality, dedication, and concentration (Schaufeli et al., 2006). This sense of participation is an individual's cognitive, emotional, and behavioral state toward organizational goals (Farndale & Murrer, 2015; Shuck & Wollard, 2010). WE refers to an individual's positive psychological state of work (Saks & Gruman, 2014). It is a positive attitude of employees toward the organization and its values (Sendawula et al., 2018). It is an emotional attachment of employees to work and organizational structure (Adrianto & Riyanto, 2020).

Through the above literature review and combing, it can be found that the connotation of WE has experienced an evolution process from simple to rich: first, the analysis of engagement has expanded from initial task performance to organizational commitment and organizational identity; Second, the manifestation of engagement has been enriched from only investigating the actual behavior of employees at work to the cognition and emotion of employees at work.

2.1.2.2 Dimension Division of Work Engagement

At present, there are great differences in the division of the structural dimensions of WE in academia. WE, as the reverse expression of job burnout, should be divided into three dimensions: vigor (the reverse of exhaustion), dedication (the reverse of cynicism), and

absorption (the reverse of inefficiency) (Maslach et al., 2001; Aktaş et al., 2021). WE can be distinguished from the perspective of rationality and sensibility. Intellectual engagement mainly refers to employees' efforts and investment in work after fully understanding the possible efforts and gains in the work process. Emotional engagement mainly refers to employees' attention and enthusiasm for their work roles (Hardaker & Fill, 2005). Saks (2006) divided engagement into two dimensions: job engagement and organizational engagement. Soane et al. (2012) divided work engagement into three dimensions: Intellectual, social, and affective engagement. Social engagement mainly refers to the extent to which employees can share common values with colleagues in their organizational environment. Some scholars divided WE into cognitive engagement, emotional engagement, and physical engagement (Huang et al., 2022; May et al., 2004). Some scholars argue that WE should be divided into behavioral, emotional, and cognitive engagement Farndale & Murrer, 2015; Shuck & Wollard, 2010). In the study, a three-dimensional nine-item engagement scale was adopted, including investment, dedication, and vitality.

Based on the research of Kahn (1990), Rich et al. (2010), Shuck & Wollard (2010), Farndale & Murrer (2015), and S. Park & Yun (2018), this paper analyzes three dimensions: cognitive engagement, emotional engagement, and behavioral engagement.

Table 2.2 Representative Literature for The Dimension Division of WE

Dimension division	**Concrete content**	**Scholar/Researcher**
Single dimension	Offer as a tribute	Conway et al. (2015); Ghafoor et al. (2011) Czarnowsky (2008); Harter et al. (2002); Maslach et al. (2001)
Two dimensions	Job engagement and organization engagement	Saks (2006)
	Reason and sensibility	Towers Perrin (2003); Hardaker and Fill (2005)
	Work and social networking	Jiang et al. (2015)
Three dimensions	Cognitive, emotional, and behavioral engagement	Kahn (1990); Shuck & Wollard (2010); S. Park & Yun (2018)
	Low exhaustion, low perfunctory, and high career effectiveness	Maslach and Leiter (2001)

Dimension division	Concrete content	Scholar/Researcher
	Dedication, absorption, and vigor	Schaufeli et al. (2006); Maslach et al. (2001); Shantz et al. (2013); Aktaş et al. (2021)
	Cognitive, emotional, and physical engagement	May et al. (2004); Rich et al. (2010); Huang et al. (2022)
	Intellectual, social, and affective engagement	Soane et al. (2012)
	Emotion, behavior, and characteristics	Macey and Schneider (2008)
	Sense of responsibility, commitment, and performance	Britt et al. (2001)
	Satisfaction, commitment, and involvement	Farndale & Murrer (2015)
Four dimensions	Self-confidence, loyalty, pride, and passion	Gallup (2005)

2.1.2.3 Influencing Factors of Work Engagement

Work engagement is affected by the employee's need on self-expression and self-employment (Reeve & Lee, 2014), job involvement behavior (Engelbrecht et al., 2017; Gorgievski et al., 2010; Hakanen et al., 2018), gender (Rothbard, 2001; H. J. Kim et al., 2009), age (Schaufeli et al., 2006) ,responsibility (H. J. Kim et al., 2009), intrinsic motivation (Sartono & Ardhani, 2015), individual organizational matching (Maslach et al., 2009), creativity (Yoo & Jeong, 2017), emotional (Yoo & Jeong, 2017), commitment (Elaine et al., 2014; Nazir & Islam, 2017), well-being (Guest & David, 2014; Jo & Lee, 2017; Hakanen et al., 2018), work motivation and work satisfaction (Sartono & Ardhani, 2015), performance (Rich et al., 2010; Guest & David, 2014; Yongxing et al., 2017; Sendawula et al., 2018), work-life balance (Pandita & Singhal, 2017; Jaharuddin & Zainol, 2019; Larasati & Hasanati, 2019; Ribeiro et al., 2023), corporate entrepreneurship (Ahmed et al., 2018; Dhanpat & Schachtebeck, 2019; Bakytgul et al., 2019), psychological contract (Francis & Kasekende, 2017; Naidoo et al., 2019), discretionary behaviors(Francis & Kasekende, 2017); innovation (Jonas et al., 2018), service climate (Fung et al., 2017; Bulent et al., 2017), service quality (Fung et al., 2017; Dharmaputra & Aruan, 2017; David et al., 2017), organizational citizenship behavior (Elaine et al., 2014; Shantz et al., 2013) , self-efficacy (Sofiah & Kurniawan, 2019).

2.1.2.4 Effects of Work Engagement

The research on the effect of WE mainly focuses on two aspects. First,

explore the impact of engagement improvement at the individual level of employees. Many studies have shown that dedicated employees have a more positive attitude toward work, better health, and better work performance (Llorens et al., 2007; Othman & Mahmood, 2019; W. Kim et al., 2019; Wang & Chen, 2020; Adrianto & Riyanto, 2020). Compared with non-dedicated employees, dedicated employees not only have stronger learning motivation but also have more altruistic behavior, and organizational commitment and are willing to pay more, and also gain more satisfaction and lower turnover intention (Gruman & Saks, 2011; J. Song et al., 2015; W. Kim et al., 2019; Yucel et al., 2023; Ribeiro et al., 2023). The second is to investigate the relationship between WE and organizational performance. there is a positive correlation between WE and organizational performance (Yongxing et al., 2017; Sendawula et al., 2018; Tensay & Singh, 2020).

2.1.3 Task Performance

2.1.3.1 Concept of Task Performance

Task performance is an important dimension of job performance. Job Performance can be divided into individual level, team level, and organization level. This study discusses job performance at the individual level. Since the 1960s, scholars have generally accepted the view of the multi-dimensional division of job performance, but based on the different division standards, there are still great differences in the specific dimensions of job performance. The performance indicator most directly correlated to employee performance is employee task performance, Employee task performance is considered by many scholars as the embodiment of the true meaning of performance (Vigoda, 2010; Le et al, 2001), It is the degree to which one's work successfully meets the requirements or expectations of the organization (Williams & Anderson, 1991), and it means that the holder provides products and services to the organization through direct production activities, which is direct work performance (Borman and Motowidlo, 1993), Task performance includes both direct and indirect behavior, Direct behavior refers to the completion of tasks assigned by the organization, Indirect behavior refers to the supply of relevant resources and services to organizations by employees within the enterprise (Borman, 1997). Task performance is a performance part closely related to the main content of the work, which can directly reflect the degree of completion of employees' work tasks (Le et al., 2001). It is an effective measure used to facilitate the production of products and the provision of services, not just as listed in the job description (Rotundo, 2002). Task performance is an evaluation of an employee's performance in their job responsibilities, capturing their subjective experience of being effective and progressing towards their goals (Fisher & Noble, 2004). Some scholars have also defined task performance as activities that transform raw materials into the

goods and services that are produced by the organization (Aguinis, 2013). Therefore, task performance is a performance within a role that requires professional knowledge and ability as essential elements. To sum up, this paper defines employee task performance as follows: Task performance refers to the efficiency of employees in accomplishing work tasks to achieve their organizational goals.

Table 2.3 Definition of TP

Scholar/Researcher	Viewpoints
Vigoda, (2010); Le et al. (2001)	Employee task performance is considered the embodiment of the true meaning of performance.
Williams & Anderson (1991)	It is the degree to which one's work successfully meets the requirements or expectations of the organization.
Borman & Motowidlo (1993)	The holder provides products and services to the organization through direct production activities, which is direct work performance.
Borman (1997)	Task performance includes both direct and indirect behavior. Direct behavior refers to the completion of tasks assigned by the organization, and indirect behavior refers to the supply of relevant resources and services to organizations by employees within the enterprise.
Le et al. (2001)	Task performance is a performance part closely related to the main content of the work, which can directly reflect the degree of completion of employees' work tasks.
Rotundo (2002)	It is an effective measure used to facilitate the production of products and the provision of services, not just as listed in the job description.
Fisher & Noble (2004)	Task performance is an evaluation of an employee's performance in their job responsibilities, capturing their subjective experience of being effective and progressing towards their goals.
Aguinis (2013)	Task performance refers to activities that transform raw materials into the goods and services that are produced by the organization.
Kim (2022)	Task performance refers to work behavior that directly affects task and organizational goals and is related to employee work efficiency, technical proficiency, and experiential learning.

2.1.3.2 Factors that Affect Task Performance

Task performance is influenced by the employee's personality types (Timothy et al., 2006; Bret et al., 2013; Bendersky & Shah, 2013), emotional intelligence (Pateria, 2015), effective organizational strategies (Pateria, 2015), employee values, workability (Blickle et al., 2013), educational level (Yang et al., 2022), superior-employee communication (Engle & Lord, 1997; Dulebohn et al., 2012), intrinsic rewards (Konstantinidis & Karagiannis, 2020), superior style (Gairola & Gairola, 2015; A. Lee et al., 2018; Gong et al., 2024), employees' satisfaction and happiness (Gairola & Gairola, 2015), job characteristics (including job skill diversity, task importance, task integrity, autonomy, and feedback) (Oldham et al., 1986), the atmosphere within the organization (Fu & Deshpande, 2014), organization of Human resource practice (Tian et al., 2016), participatory decision-making (J. S. Kim, 2022), emotional sharing (J. S. Kim et al., 2022), communication satisfaction (J. S. Kim et al., 2022). ESM(Enterprise Social Media) usage (Deng et al., 2020), family-work conflict (Karatepe & Osman, 2013; Ribeiro et al., 2023), and organizational support (Chu et al., 2024).

2.1.4 Emotional Intelligence

2.1.4.1 Concept of Emotional Intelligence

Mayer and Salovey (1997) improve people's self-awareness and control, as well as their ability to perceive and evaluate the emotions of others to a high level of intelligence, which opens up the space for the study of EI. Goleman et al. (2002) expounded on the important role of EI, which made the concept of EI widely spread. At present, there are mainly 3 views on the definition of EI:

Firstly, there is the ability perspective. EI is a type of intelligence akin to analytical intelligence, a collection of abilities enabling individuals to accurately and effectively process emotional information. EI refers to the ability of individuals to assess and express their own emotions, recognize and evaluate the emotions of others, regulate their own emotions, and utilize emotions to enhance performance (Ng et al., 2008). EI involves the capacity to identify, foster, and understand one's own emotions and those of others, comprising a set of skills for managing personal and others' emotions (Ingram et al., 2019). EI entails regulating emotions to facilitate emotional and intellectual growth, consisting of four dimensions: assessing and expressing one's own emotions, evaluating and recognizing others' emotions, regulating one's emotions, and leveraging emotions to enhance performance (Schlaegel et al., 2021). EI is the ability to perceive, acquire, and generate emotions to aid in thinking, understanding emotions, and effectively managing emotions, involving assessing and expressing emotions, identifying emotions, utilizing emotions to enhance performance, and regulating emotions (Treffers et al.,

2019). Emotional regulation is the ability to manage emotional responses and psychological stress (Fang He et al., 2018). EI is an individual capability enabling individuals to monitor their own and others' feelings and emotions and utilize this information to comprehend and regulate their own emotions and behaviors, thereby enhancing self-management and effectively managing relationships (Allen et al., 2021).

Secondly, there is the trait perspective. EI is composed of a combination of personality traits (Petrides & Furnham, 2010). It is a series of emotional characteristics closely associated with the output of work performance (Yokoyama et al., 2015). EI is related to behavioral tendencies involving the identification, processing, and utilization of emotionally laden information (Miao et al., 2018). Emotional regulation is the tendency to habitually use specific emotional strategies(De Cock et al., 2020). Emotional regulation is a trait unrelated to situational demands, indicating how individuals experience emotions, and whether and to what extent they exhibit emotional responses (Sirén et al., 2020).

Thirdly, there is the integrative perspective. EI is considered both an ability and a trait. It is the integration of emotional, personality, and interpersonal abilities that individuals use to meet external demands, comprising a series of skills and traits that help people adapt to social and emotional needs in life (Joseph & Newman, 2010; Walter et al., 2011).

Drawing on the research of Goleman et al. (2002) and Ng et al. (2008), based on the perspective of ability, this paper defines EI as an independent form of intelligence different from traditional intelligence and personality traits, which refers to the ability of individuals to evaluate, express, recognize, and use their own and others' emotions.

2.1.4.2 Effects of Emotional Intelligence

A large number of studies have confirmed that EI is of great significance to the performance improvement of individuals and organizations. Employees with higher EI can easily achieve career success, and there is a significant positive correlation between EI and job performance (Stein & Book, 2011; C.-S. Wong & Law, 2017; Miao et al., 2018). The higher the EI of employees, the more flexible they will be in dealing with conflicts among employees in the organization, which is conducive to the formation of good employee relations and the improvement of employees' perception of cohesion (Ramaswami & Singh, 2003).

EI has gradually become a factor that enterprises consider when recruiting new employees, and the positive effects of EI in other aspects have been gradually confirmed (Druskat et al., 2013). The improvement of EI can stimulate and release the original leadership of employees (Goleman et al., 2013). As an individual ability, EI plays a positive role in employees' career development. Employees with high EI can identify their complex state and

actively adjust their emotional state to provide favorable conditions for creativity and individual creativity (Sánchez-Ruiz et al., 2011). The survey found that the improvement of employees' resilience and EQ can reduce the level of job burnout and improve employees' engagement (Grover & Furnham, 2021; Ogungbamila et al., 2019).

2.1.5 AI Adoption

2.1.5.1 Concept of AI

The definition of AI has gone through several iterations, but there is no accepted definition (Łapińska et al., 2021). Different academic fields, such as psychology, computer science, cognitive psychology, and philosophy, are studied based on different AI concepts. There are three reasons why defining AI is so difficult: it is difficult to define human intelligence itself transplanted to machines, advances in AI make definitions change, and the stages and types of AI are easily confused(Kaplan & Haenlein, 2020).

In the various definitions of artificial intelligence, the following common elements include: objects involve machines and humans; the goal is for machines to help human perception, make decisions, and take actions (Prem, 2019); Essentially, it is a simulation of human consciousness and cognitive information processing. As shown in Table 2.1, the information systems and management disciplines have different conceptual understandings of AI. Among these definitions, the paper adopts the most frequently used definition of AI, which is the ability of the system to understand and learn external data and continuously upgrade to achieve specific goals and tasks (Haenlein & Kaplan, 2019). This definition also reflects a combination of the concepts of "artificial" and "intelligence", in which "artificial" mimics human-like cognitive tasks more transparently (Benbya et al., 2021) and "intelligence" is the ability to collect data from experience and address the uncertainty of future actions accordingly (Ågerfalk, 2020).

Table 2.4 Definition of AI

Scholar/Researcher	Definition
Russell and Norvig (1995)	Computational systems capable of handling human-oriented tasks in a human-like manner, such as problem-solving, decision-making, and reasoning.
Huang and Rust (2018); Kaplan and Haenlein (2019)	A system's ability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation.
Kok et al. (2009)	Machines mimic the ability of human-like behavior through processes

Scholar/Researcher	Definition
	such as learning, reasoning, and self-correction.
Poole and Mackworth (2010); Chen et al. (2020)	The ability to correctly interpret and learn external data.
Brynjolfsson and McAfee (2017)	The machine's ability to continuously improve performance, without humans explaining how to accomplish the tasks assigned to it.
Von Krogh (2018)	A broad collection of computer-aided systems for task execution, including but not limited to machine learning, automated inference, knowledge bases, image recognition, and natural language processing.
Haenlein and Kaplan (2019)	The ability to systematically understand and learn from external data and continuously upgrade to achieve specific goals and tasks.
Bolander (2019)	Technologies that mimic human intelligence or machines that perform tasks usually performed by humans.
Duan et al. (2019)	The ability of machines to learn from experience, adapt to new inputs, and perform human-like tasks.
Rai et al. (2019)	The ability of machines to perform our cognitive functions is associated with the human mind.
Paschen et al. (2020)	Information technology collects and processes the data and then returns the available information.
Mikalef and Gupta (2021)	The ability to systematically identify, interpret, make inferences, and learn from data to achieve pre-defined organizational and social goals.
Han et al. (2021)	Broad artificial intelligence refers to the intelligence that can solve any intellectual question that humans can solve, while narrow artificial intelligence means a specific intelligence, in which a computer performs better than a human in some narrowly specified tasks.
Issa, et al. (2022)	The ability of machines to understand and reproduce complex human behavior. It is a technology characterized by a range of unique abilities, including self-study, automation, autonomy, expansion, preregulation, and decision-making.
Choung, et al. (2022)	A machine-based system that can make predictions, suggestions, or decisions that affect a real or virtual environment for a given set of human goals.

2.1.5.2 Concept and Measurement of AI Adoption

Existing research generally understands AI adoption as a one-dimensional concept, that is, the application programs and functions of AI. The higher the intensity of artificial intelligence adoption, the more frequently the subject adopts artificial intelligence, and the greater the number of adoptions. The study found that the adoption and commercialization of AI are closely related to the definition of AI (Fredström et al., 2022). Therefore, the deep connotation of the intensity of AI adoption is different according to the different definitions of artificial intelligence. This paper defines the intensity of AI adoption as the frequency of using AI systems to understand and learn external data and continuously upgrade to achieve specific goals and tasks.

In the existing studies, the measurement methods of AI adoption are all subjective scores of enterprise personnel, but the scoring objects are divided into two types: use purpose and use intensity. First, in terms of usage, Issa et al.(2022) regarded the adoption of AI as a single-dimensional concept and developed a measurement scale of three items. Baabdullah et al. (2021) developed a 4-item measurement scale of AI practice for small and medium-sized enterprises. Pillai and Sivathanu (2020b) determined the measurement scale using artificial intelligence technology in talent acquisition, including four items. Braganza et al. (2021) identified the 5-item scale for employees using artificial intelligence at work.

In terms of the adoption intensity, Y. S. Lee et al. (2022) invited companies to rate the three AI technologies used in the production or development of products and services when measuring the intensity of AI adoption, Specific technologies include natural language processing (such as speech and pattern recognition and chatbots), computer vision (such as image marking and image recognition), and machine learning (e. g., recommendation and prediction), enterprises respectively evaluate the adoption degree of the three technologies (1= non-adoption, 2 = Test phase, 3= 0% – 5%, 4 = 5% – 25%, 5 = 25% – 50%, 6 = 50% +), finally, the maximum value of the three technologies is selected to determine the measurement score of enterprise AI intensity.

In addition, some studies have combined the above two methods. Kinkel et al. (2022) created the AI adoption intensity index to evaluate three different purposes: AI is used to analyze large amounts of data, support the planning and optimization of business processes, and the autonomous decision-making process. Each was measured by four options: 0 for no adoption, 1 for adoption in the pilot field, 2 for some areas, and 3 for all areas. Count the average intensity of AI adoption for three different purposes.

2.1.5.3 Influencing Factors of AI Adoption

The drivers of AI adoption are discussed in both individual and organizational aspects. This paper explores the drivers of AI adoption at the individual level. Common theories of AI adoption include the technology acceptance model (TAM) and the unified theory of acceptance and use of technology (UTAUT), and a few studies using stimulus-bio-response theory (SOR) (J.-C. Lee & Chen, 2022)and the Valence framework (Bedué & Fritzsche, 2021). TAM believes that the actual behavior of individuals is directly influenced by their intention to adopt new technologies, which is a direct result of perceived usefulness and perceived ease of use (S. S. Park et al., 2021). The UTAUT emphasizes environment where the technology is used is critical for acceptance of the technology (G. Cao et al., 2021; Hasija & Esper, 2022). The core structure of the UTAUT model is social impact, facilitation, performance expectations, and effort expectations (Venkatesh et al., 2003). Perceived risk (Song et al., 2022; Lee and Chen, 2022), trust (Pillai & Sivathanu, 2020a; Chatterjee et al., 2021; Rahman et al., 2021; Hsieh & Lee, 2021; Park et al., 2021; Liu et al., 2022; Lee and Chen, 2022; Bedué & Fritzsche, 2021), social impact (Upadhyay et al., 2021), technical quality (Yoon & Lee, 2021), user characteristics (Flavián et al., 2021; Blut et al., 2021), hedonic motivation (Upadhyay et al., 2021), and other factors can also influence individual attitudes and behaviors towards AI adoption, The study scenarios involved banking services, travel services, human resources, medical care, management decisions, etc.

2.1.5.4 Impact of AI Adoption on Employees

The psychological and behavioral impact of AI on employees is a topic of human resource management and organizational behavior, and also the research topic of this paper. Votto et al. (2021) reviewed all the literature in the field of AI-HRM, and the studies are mainly divided into two categories: one is the study of managerial HR information systems (Managerial), the other is the study of technical HR information systems (Technical). Managerial research mainly studies interpersonal relationships, involving topics including employee performance, satisfaction, and discipline management systems, while technical research mainly studies resource allocation and policy rules and practice, including recruitment information systems, compensation and welfare information systems, process policy practice, and staff training, etc. However, in the field of AI-HRM and OB, there are still few published studies on the impact of AI on employees, which also provides many possible directions for subsequent research.

(1) Qualitative research

In the qualitative studies published in top journals in the field of AI-HRM and AI-OB, fewer studies have directly discussed the impact of AI adoption on employees,

and more topics of AI adoption and organizational management. Kim et al.(2021) discuss the HRM management of emerging technologies, and Bailey et al.(2022) provide a new study of emerging technology, namely the relational perspective, not alone in technology as an entity, but with the dynamic change of the organization, which puts forward the perspective of the research model. In a few studies that directly discuss AI and employees, Malik et al.(2023) conducted a case study of an Indian multinational company and found that the use of an AI-assisted HR management system would promote employee work experience and further facilitate employee work participation, namely employee engagement. To some extent, engagement contributes to employee retention, organizational commitment, work performance, etc. Kelley (2022) interviewed 41 employees who used AI closely in 24 organizations in 11 countries, preliminarily studied various topics related to AI introduction, such as communication, training, and reporting mechanisms, and summarized the importance of these issues.

(2) Quantitative studies

In contrast, quantitative research is more abundant, but the literature published in top journals still focuses on the relationship between AI and employee learning, performance, and WE. several emerging studies explore the relationship between AI use and unethical behavior of employees; Luo et al. (2021)studied the impact of AI on employees' learning and performance; Tong et al. (2021) summarized the psychological and behavioral impact of AI on employees as "promotion effect" and "disclosure effect"; Tang et al. (2022a) studied the use of artificial intelligence from the perspective of role theory through the intermediary role of "role satisfaction" and "role ambiguity", which further affected employees' work performance, but Yam et al. (2023) using cognitive evaluation theory that the higher the contact with AI, The higher the work insecurity degree is, As an intermediary, It directly affects the degree of work exhaustion and work uncivilized behavior of employees.

2.1.6 Brief Comments

By combing the literature, it is found that the current research status in this field has the following characteristics: Firstly, the research on the connotation analysis of CF and WE is relatively abundant, and the corresponding measurement scales are relatively mature, which lays the foundation for the feasibility of this study. However, there is still no unified conclusion on the specific dimension division. Most literature chooses the appropriate dimensionality and measurement scale based on their own research needs. Secondly, although some literature studies the influence of CF on task performance, it is scattered, and the role mechanism is not clear. Few literature studies have examined the relationship among compensation fairness, engagement, and

task performance together. Finally, few studies have explored the conditional boundaries of the impact of CF on WE and TP, particularly the moderating effects of AIA and EI.

2.2 Basic Theories

2.2.1 Equity Theory

Equity theory was put forward by Adams. It is one of the incentive theories. This theory holds that fairness is the internal driving force of motivation. Applied psychology points out that human perception is closely related to human motivation. People not only care about their gains and losses but also pay great attention to the gains and losses of others. Whether employees are active or not depends not only on the absolute remuneration they receive but also on the relative remuneration they receive. When people find that there is no big difference between their gains and losses and those of others, they believe that it is fair and reasonable, and their mood is relatively comfortable at this time. When one's gains and losses are higher than those of others, it will bring an incentive effect, but if the difference is too large, it will bring emptiness or insecurity to people. When their gains and losses are lower than those of others, it will bring people unbalanced psychological hints, and even full to resentment and the bad results of inaction (Adams, 1965).

The essence of equity theory is to explore the ratio between individual investment and return, that is, a rational balance judgment between individual contribution and return.

With the in-depth study of equity by scholars, Adams's equity theory has gradually been criticized and revised by scholars. The justice judgment model came into being under this background. It holds that to obtain fair distributive results, individuals try to ensure the acceptability of result distribution by establishing distributive principles. The theory points out that employees will take the openness of the organizational compensation system, the interaction between managers and employees, and the participation of organizational compensation management as important reference information to judge whether the procedure is fair or not. The judgment of PF is guided by six fundamental principles, namely consistency, non-bias, accuracy, rectifiability, representativeness, and morality(Leventhal, 1980).

In addition, Leventhal et al. (1980) proposed the theory of distributive preference. Although the fairness preference theory is developed based on the justice judgment model, the theory emphasizes attention to the fairness of results, while the justice judgment model emphasizes attention to the procedural principles.

Individual judgments of the fairness of social resource allocation are based on both opportunity and outcome aspects. In organizational fairness research, attention should be given to

both outcome fairness and opportunity fairness in resource distribution(McWhirter & McWha-Hermann, 2021).

2.2.2 Fairness Heuristic Theory

Fairness heuristic theory was proposed by Lind et al. It is a new theory to elaborate and explain the formation mechanism of organizational fairness. The fairness elicitation theory emphasizes the following three aspects: first, the formation and use of fairness judgment; Second, it explains why people pay attention to fairness; Third, it discusses when the theory is formed and when it plays a role (Lind, 2001).

The primacy effect and substitution effect play an important role in the formation of a sense of fairness. From the perspective of the judgment stage, before the formal judgment is formed, it is not easy for people to obtain authoritative and reliable information as the basis, and the relevant information related to judgment is also called heuristic, which is used to determine the authenticity and reliability of the information. In the formation stage of perceived fairness, individuals generally look for information accepted or rejected by the organization. If accepted (valued by leaders, such as the right to speak), it means that individuals are valuable to the organization; On the contrary, if abandoned, individuals will feel worthless or unfair. In the later stage of the formation of the perceived fairness, the previous fair judgment information will have an impact on the individual's subsequent attitude and behavior, and subsequent fair judgment. The initial fair judgment comes from the initial available information, but this information has great shortcomings, such as being incomplete and inaccurate, so the theory formed by this fair judgment becomes the fair heuristic theory.

2.2.3 The Social Identity Theory

The Social Identity Theory was proposed and refined by Henry Tajfel, John Turner, and others. Social identity is an individual's recognition of their qualification within a group and the acknowledgment of the importance of this qualification in emotional and value aspects (H. E. Tajfel, 1978).

Social identity involves three steps: social categorization, social comparison, and positive distinctiveness. Firstly, social categorization is the process of distinguishing and integrating events and individuals. Individuals attempt to separate their group from others, emphasizing similarities and differences among group members. Secondly, social comparison involves comparing oneself with other groups, aiming to maintain distance between team members and members of other teams. Lastly, positive distinctiveness is primarily the process by which individuals use their group identity as a source of self-esteem. By comparing the abilities,

status, and power of one's group with other groups, a high level of self-esteem is formed if one perceives their group as superior, and vice versa, distancing themselves from that group (H. Tajfel & Turner, 1986).

Individuals reference relevant outgroups when evaluating their ingroup(Wright et al., 2017). When a specific social group category is activated, individuals perceive themselves and other members of that group as belonging to the same group for quick adaptation to new environments (Hornsey, 2008).

2.2.4 The Social Resource Exchange Theory

The Social Resource Exchange Theory, proposed by Foa, E., and Foa, U. (1974) as a branch of social exchange theory, primarily focuses on the exchange content, treating the exchanged content as resources.

The core of the Social Resource Exchange Theory revolves around the content and types of resources exchanged during interpersonal interactions. Exchange resources are anything that can be transmitted or exchanged between individuals through interpersonal communication (Foa & Foa, 1974). In the 1980s, they further categorized resources into six types: money, goods, information, services, status, and emotions. Individuals engage in exchanges using similar or identical types of resources, such as leaders and subordinates exchanging status for status or goods for goods (Foa and Foa, 1974). However, due to the limited types of resources members possess, they cannot quickly exchange resources like money and goods with leaders, but tend to exchange in alternative forms (Wilson et al., 2010).

The Leader-Member Exchange (LMX) theory, based on the Social Resource Exchange Theory, suggests that the quality of relationship development depends on the amount and type of resources invested and exchanged, emphasizing the content of the exchange (Liao & Hui, 2021). From this perspective, it is evident that when leaders take care of employees, employees are more likely to reciprocate to the organization, and vice versa. In other words, in such situations, employees are more likely to fulfill their job responsibilities, duties, and extra work for the employer who takes care of them. On the other hand, toxic leadership behavior has been proven to have adverse effects on both the organization and its employees(Rafferty & Restubog, 2011; Wu & Lee, 2016).

2.2.5 The Group Engagement Model

The Group Engagement Model (GEM) is a theoretical model proposed by Tyler and Blader (2003) to explain the cooperative behavior of employees in the collective (including organization and team). Firstly, the model integrates the contents of DF, PF, and IF; Secondly, the

model extends the perceived role of fairness from employees and leaders to group members; Finally, the model defines the impact mechanism of fairness on group engagement and collaborative behavior, namely the social identity mechanism and resource exchange mechanism (see Figure 2.1).

2.2.5.1 Social Identity Mechanism of the GEM

Social identity theory points out that when a person's self-concept matches the group classification, he or she will take the interests of the group as his interests(Ashforth & Mael, 1989). Social identity is considered to be an important leading factor of many prosocial behaviors, such as organizational citizenship behavior, help, and psychological engagement. The GEM believes that enhancing one's perceived group status and one's position in the group is an important basis for improving people's group identity. The higher the status of the group itself, the higher the status of the person in the group, and the higher the people's group identity. In this model, the former is called pride, and the latter is called respect.

The type of fairness includes not only the quality of decision-making concerned by predecessors but also the treatment in the process of interpersonal communication. The source of fairness not only includes formal organizational policies and guidelines but also can be implemented by the organization's agents, especially informal channels such as team leaders and team members. Based on this, they believed that a person's perception of fairness is determined by the formal quality of decision-making processes, the formal quality of treatment, the informal quality of decision-making processes, and the informal quality of treatment (Tyler & Blader, 2003).

A person's identification with the group is not unconditional. Social identity can not only bring benefits such as self-improvement to employees but also bring risks or costs, such as free riding by others. People open or close their conscious and unconscious social identity through the acquisition or interpretation of information clues. Perceived procedural justice is an important condition for people to open a group identity. When employees perceive high procedural justice, they will think that the risk of group identity is low, resulting in the social identity of the group, which leads to psychological and behavioral engagement. On the contrary, if organization members perceive low procedural justice, they will close their social identity with the group, resulting in lower psychological and behavioral engagement. The model believes that a person's psychological engagement is an important prerequisite for behavioral engagement (Tyler & Blader, 2003).

2.2.5.2 Resource Exchange Mechanism of the GEM

The GEM not only integrates the judgment of procedural justice but also

integrates the research of distributive justice. The model believes that, in addition to procedural justice, people consider whether they can obtain the desired resources in the group as an important clue to turn on or off group identity. When people perceive that the group distribution is fair or they have achieved favorable results, they will think that the group can provide positive aspects, and finally promote psychological and behavioral engagement through the opening of social identity (Tyler & Blader, 2003).

2.2.5.3 Comparison of the two mechanisms

The GEM believes that identity and resource exchange are two important mechanisms to explain employees' psychological and behavioral engagement. However, it believes that compared with the resource exchange mechanism, the social identity mechanism is a more important interpretation path. The reasons are as follows: first, procedural justice has a more lasting impact than distributive justice. The allocation event itself is often regarded as a one-time or discrete event, while the procedure is different. It affects many aspects of daily work. Secondly, the judgment of procedural justice does not depend on the result. The existing research found that even if people are not satisfied with the distributive result, as long as they believe that procedural justice exists, they will accept the distributive result without challenging it. Finally, the GEM believes that the resource exchange mechanism itself is the pre-mechanism of social identity, and it finally plays a role by affecting the social identity mechanism. Therefore, in contrast, the identity mechanism is a mechanism with stronger explanatory power.

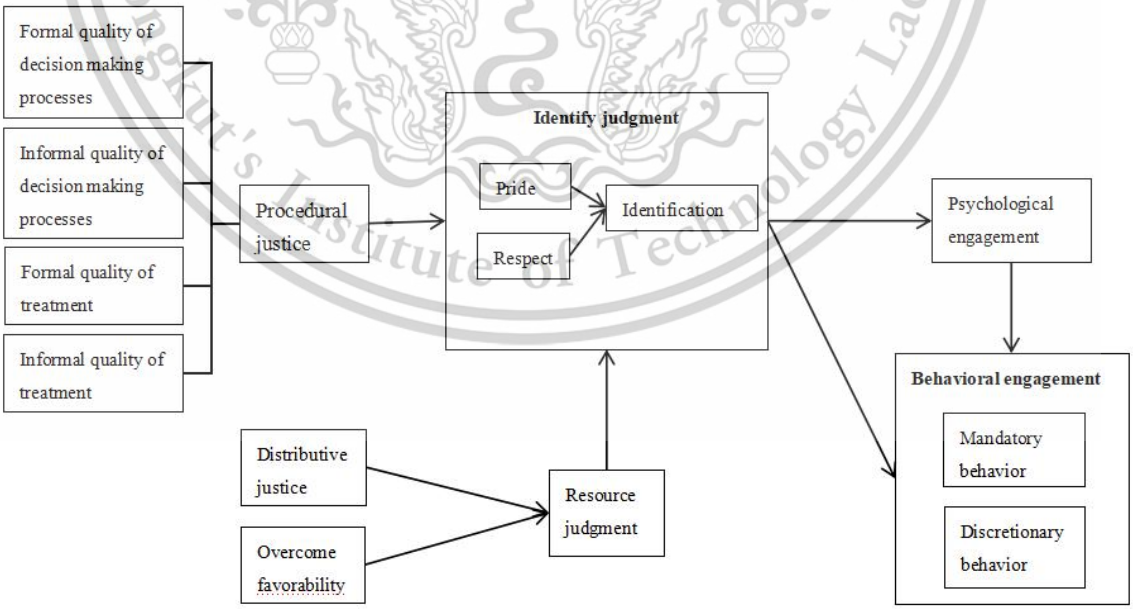


Figure 2.1 The Group Engagement Model

Source: Tyler and Blader (2003)

2.3 Relationships and Hypotheses

2.3.1 Relationship between Compensation Fairness and Cognitive Engagement

CF pertains to the perceived rationality and equity of an organization's compensation system as felt by its employees. This concept can be categorized into three dimensions: DF, PF, and IF (Kreitner & Kinicki, 2013; Triwibowo, 2016; S. Kim et al., 2017; Jayus & Al, 2021; Anggiani & Wiyana, 2021). DF is the judgment of whether the amount of compensation distribution received by employees is fair or not; it refers to people's assessments of the fairness of their outcomes when dealing with others (Tyler & Blader, 2003). PF is employees' perception of the fairness of the procedures that serve as the mechanism for making decisions about the allocation of outcomes, particularly formal procedures related to the decision-making process in a legal environment (Thibaut & Walker, 1976; Tyler & Blader, 2003). IF refers to the relational treatment that employees feel during the organizational compensation decision-making process, such as respect, trust, pride, and politeness demonstrated by the organization towards its employees (Cropanzano et al., 2002; Anggiani & Wiyana, 2021).

CE refers to the degree to which employees think they should work hard for the organization. It is a manifestation of organizational identification. According to the GEM, people's judgment of PF in the process of organizational management comes from four factors: formal decision-making quality, formal interpersonal treatment quality, informal decision-making quality, and informal interpersonal treatment quality. PF captures the quality of formal and informal decision-making, while IF captures the quality of formal and informal interpersonal treatment. When employees perceive high procedural and IF in the process of compensation distribution, they will strengthen their awareness of organizational fairness, promote the switching of employees from individual identity to group identity, and finally improve their engagement level (Jayus & Al, 2021).

The GEM believes that the impact of DF on CE is realized first through the resource exchange mechanism, and then through the social identity mechanism, while the resource exchange emphasizes the reciprocity and equivalence in the exchange process. The so-called reciprocity means that the process of social exchange requires mutual investment by both parties, not just one party investing in the other without cost and return. The so-called equivalence means that the investment difference between the two sides in the exchange process cannot be too large, and they are in a reciprocal relationship. Only in this way can the exchange

parties form a good social exchange relationship, rather than a simple economic exchange.

Relevant studies believe that people's judgment of distributive results depends not only on their psychological expectations but also on the comparison with similar and other people. When employees feel that the compensation distribution is high, they will feel the high investment of the organization, be provided with valuable resources, and feel the support brought by the organization. At this time, employees often consider whether they can obtain the desired resources from the organization as a signal. When employees can obtain the desired resources or feel the fairness of resource allocation, they will enhance their recognition of the organization, feel pride, and take the organization as an important part of themselves (Tyler & Blader, 2003), that is, the degree of CE is improved. Therefore, the following hypotheses are proposed:

H1a: DF has a positive impact on CE.

H1b: PF has a positive impact on CE.

H1c: IF has a positive impact on CE.

2.3.2 Relationship between Compensation Fairness and Emotional Engagement

EE is psychological engagement (Tyler & Blader, 2003). It entails employees investing their emotions, feeling a sense of pride in serving the organization, and demonstrating a willingness to remain with the enterprise for an extended duration, thereby reflecting employees' eagerness and dedication to their work (Soane et al., 2012). It is an important dimension of WE (Kahn, 1990; Rich et al., 2010; Shuck & Wollard, 2010; Farndale & Murrer, 2015; Park & Yun, 2018; Huang et al., 2022).

According to The GEM, a high degree of group engagement is caused by people moving from self-identity to group identity (Tyler & Blader, 2003). Only one person moves from the self-model (only focusing on whether his work task is completed) to the group model (making OCB and helping isometric behavior). It is possible to have the pro-organizational tendency of work engagement (Van Knippenberg et al., 2005). Changing from the individual self to the collective self is an important basis for mode transformation, and PF is a necessary condition for changing from the individual self to the collective self. When people feel that PF is high, they will think that it is safe to open the group model, which can not only bring a sense of belonging to the group identity but also reduce the possibility of being exploited by the group. This identification boosts their motivation and willingness to actively contribute to the organization (Poon, 2012), thus enhancing their emotional engagement. Furthermore, when employees perceive high levels of procedural and IF, they feel respected, proud, and identify with the

organization, thus ultimately increasing their engagement levels (Tyler & Blader, 2003; Jayus & Al, 2021). Based on these insights, the following hypotheses are proposed:

H2a: DF has a positive impact on EE.

H2b: PF has a positive impact on EE.

H2c: IF has a positive impact on EE.

2.3.3 Relationship between Compensation Fairness and Behavioral Engagement

BE refers to the degree to which employees make efforts for the organization in the actual work process. it is a high investment provided by employees to the organization because high employee engagement requires employees to invest their resources in time, energy, and other aspects. According to the social exchange theory, the prerequisite for employees to make such a high investment in the organization is to obtain equal resource investment from the organization, and compensation, as the most basic resource provided by the organization to employees, will inevitably be valued by employees.

The GEM suggests that the impact of CF on BE is not direct, but indirect. DF affects identity recognition through resource judgment mechanisms, while PF and IF directly affect identity recognition, involving cognitive engagement, which in turn affects emotional and behavioral engagement (Tyler & Blader, 2003). The fairer the organization, the more proactive and willing employees are to work and make efforts for the organization (Poon, 2012). Based on these insights, the following hypotheses are proposed:

H3a: DF has a positive impact on BE.

H3b: PF has a positive impact on BE.

H3c: IF has a positive impact on BE.

2.3.4 Relationship between Work Engagement and Task Performance

The impact path of CE on TP is mainly reflected in the following aspects: first, based on the social exchange theory, employees with high CE can sensitively perceive the recognition of the organization, which motivates them to contribute to the realization of organizational goals by improving their job performance (Schaufeli & Bakker, 2004). Secondly, CE positively affects employees' cognition and understanding of their work, and helps employees to realize that they should take a positive and reasonable approach to complete their work, which is of positive significance to TP. Thirdly, CE can significantly improve employees' sense of self-efficacy and enhance employees' ability to recognize themselves, which has a significant positive effect on their working state (Luthans & Peterson, 2002).

EE mainly refers to that employees do not complete tasks mechanically in the process of work, but invest certain emotions, feel proud of being able to serve the enterprise and work in the organization, and are willing to continue to work in the enterprise for a long time, which reflects the willingness and enthusiasm of employees to do work(Soane et al., 2012). The influence paths of EE on TP mainly include: firstly, EE affects employees' job satisfaction, which is conducive to employees' energy, focus, and willingness to contribute at work, and promotes employees to achieve more work goals. Secondly, employees with high EE actively help colleagues and show more altruistic behavior at work, which has a positive impact on relationship performance (Macey & Schneider, 2008). Thirdly, EE has an impact on employees' organizational commitment, helps stimulate employees' belief in long-term service to the organization, takes their work tasks more seriously and actively, and has a positive impact on the improvement of employees' task performance (Vance, 2006).

BE mainly refers to employees who devote themselves to work, are often aware of the rapid passage of time, and work hard to meet their own needs. BE reflects the extent to which employees "think and actually" contribute to the enterprise. The influence path of employee behavior engagement on task performance is mainly reflected in the following aspects: firstly, employee behavior engagement affects employees' work involvement and work input level. Employees with high engagement are more likely to identify with their work and devote more energy to completing the tasks assigned by the organization. Secondly, BE can stimulate employees to continuously self-study and improve their ability to achieve their goals, and the improvement of working ability has a positive impact on employees' career development and task performance.

As a motivational state full of positive energy, WE can stimulate employees to invest energy and resources to meet the realization of work roles (Kahn, 1990; Rich et al., 2010; Christian et al., 2011). Job involvement can promote individual job performance and even organizational performance. Employees with a high level of WE can not only achieve performance within their roles but also play an important role in achieving performance outside the organization. In addition, according to the perspective of resource conservation theory (COR), employees who can reasonably distinguish and arrange working hours and leisure time, that is, they can easily deal with psychological relief, do not deal with work affairs in off-duty hours to preserve resources, and can maintain a high-quality work input level in working hours, which can promote TP. WE leads to higher task performance by generating positive emotions and increasing motivation to perform job responsibilities and responsibilities(Ismail et al., 2019). In recent years, some scholars have conducted quantitative research through questionnaire surveys, and it has

been found that WE has a significant positive impact on job performance (Derakhshide & Kazemi, 2014; O'Donnell et al., 2012; Othman & Mahmood, 2019; Wang & Chen, 2020; Adrianto & Riyanto, 2020). Based on the above analysis, the following hypotheses are proposed:

H4a: CE has a positive impact on TP.

H4b: EE has a positive impact on TP.

H4c: BE has a positive impact on TP.

2.3.5 Relationship among Cognitive Engagement, Emotional Engagement, and Behavioral Engagement

CE is a manifestation of the employee's "should do" level, which has a positive impact on work performance by strengthening employees' understanding of work and stimulating their work motivation. EE is a manifestation of an employee's "want to do" level, which has an impact on work performance. The logic behind this level is that EE strengthens an employee's willingness to actively work and stimulates their enthusiasm for hard work and helping others; BE is a reflection of the level of 'truly doing' among employees, and the impact of this level on employee work performance is reflected in strengthening their enthusiasm for carrying out work behaviors while shaping their workability to further improve efficiency through dedicated work. The GEM suggests that identification judgment affects psychological engagement, which in turn affects BE. Identification judgment relates to CE, and psychological engagement is known as EE. From the above logic, it can be seen that there is a progressive impact relationship among the three dimensions of employee engagement, namely, CE has an impact on EE, which in turn affects BE, and then has an impact on employee work performance. Based on this, the following hypothesis is proposed:

H5a: CE has a positive impact on EE.

H5b: EE has a positive impact on BE.

H5c: CE has a positive impact on BE.

2.3.6 Moderating Role of Emotional Intelligence

2.3.6.1 The Moderating Role of EI in the Relationship between PF and WE

EI is different from traditional intelligence and personality traits. It reflects the ability of individuals to control their own and other people's emotions, distinguish their differences, and use this information to guide their thinking and action(Joseph et al., 2015). Since the concept of EI came into being, most scholars have explained the mechanism of EI on employee behavior from the aspects of emotional self-assessment, emotional assessment of others,

emotional use, and emotional regulation. As an individual difference variable regulating external stimuli and behavior performance (Jordan et al., 2002), EI affects the individual's perception of the surrounding environment, not only affecting the individual's behavior but also affecting the employee's behavior. EI also has a direct impact on organizational equity (Di Fabio & Palazzeschi, 2012). Employees with high EI are more sensitive to organizational motivation and positive atmosphere (Håkonsson et al., 2008). Employees with high EI can detect very subtle organizational signals and make very accurate judgments. At this time, higher levels of PF will motivate them to be more dedicated. EI plays a moderating role in the relationship between work resources and employee engagement (Lipson, 2020). Employees with high EI can adjust based on their emotional characteristics to reduce or weaken the individual's awareness, views, and feelings of "job burnout" (C. S. Wong & Law, 2002). Studies have shown that EI plays a moderating role between job characteristics and job burnout (Salami & Ajitoni, 2016) and between PF and contextual performance (Devonish & Greenidge, 2010).

Therefore, the following hypotheses are proposed:

H6a: EI plays a positive moderating role in the relationship between PF and CE.

H6b: EI plays a positive moderating role in the relationship between PF and EE.

H6c: EI plays a positive moderating role in the relationship between PF and BE.

2.3.6.2 The Moderating Role of EI in the Relationship between IF and WE

The GEM incorporates IF into PF, and their impact on WE is achieved through the identity mechanism, with resources having an impact on the recognition mechanism (Tyler & Blader, 2003). EI belongs to individual psychological resources to a certain extent. It is related to the realization of employees' work goals and the improvement of task performance. Its self-motivated component can encourage individuals to keep rising and promote success. Therefore, EI conforms to the definition of work resources by Hobfoll (1989) to a certain extent and can be classified as one of the work resources. With the help of resource conservation theory and the job requirements resource model, it can be seen that job resources can regulate the relationship between environmental factors and organizational results. Job resources play a

moderating role in the relationship between job requirements and job burnout, and EI can help individuals gradually recover their emotions; it can promote people's positive and optimistic attitude, which can help individuals deal with the adverse factors in the environment (Bakker et al., 2000).

Leaders with high EI show increasing validity and relative weight in predicting task performance and organizational citizenship behavior of subordinates (Miao et al., 2018). Individuals with high EI have better emotional control when coping with work stress or distress, and may effectively use coping strategies to improve their situation at work (Parke et al., 2015). Similarly, individuals with higher EI have better abilities for emotional motivation, and this intrinsic emotional motivation can help individuals to determine self-development and maintain a firm attitude in adversity (Joseph et al., 2015). Employees with high emotional intelligence can effectively manage their own emotions and more accurately perceive and evaluate their own and others' emotions. Therefore, when they feel fair treatment from others in the organization, they will work harder. Based on the above analysis, the following hypotheses are proposed:

H7a: EI plays a positive moderating role in the relationship between IF and CE.

H7b: EI plays a positive moderating role in the relationship between IF and EE.

H7c: EI plays a positive moderating role in the relationship between IF and BE.

2.3.7 Moderating Role of AI Adoption

AI adoption is linked to employee engagement (Wijayati et al., 2022). The impact of AI on employee psychology and behavior can be summarized as a negative disclosure effect and a positive deployment effect (Luo et al., 2021). It may have different effects because employees have different attitudes towards AI. On the one hand, employees likely have serious work insecurity or negative attitudes towards AI due to AI's "displacement effect" (Acemoglu et al., 2020; Yam et al., 2023). The higher the level of contact between employees and AI, the higher the level of job insecurity, directly affecting the degree of work exhaustion and uncivilized behavior of employees (Yam, K. et al., 2022). AI shows more powerful computational and analytical capabilities than humans, potentially hurting employees' self-esteem, further threatening the personal role identity (Lawless & Sofge, 2017; Tang et al., 2023), or because the introduction of AI and intelligent applications have blurred the employees' role cognition and

clarity, has brought negative effects on individual performance (Tang et al., 2023). On the other hand, AI improves the performance level and accomplishes more work tasks (Colangelo, 2020; Marr, 2018; McClean et al., 2021). Employees may be more proactive and hardworking in their work due to the "productivity effect" and "reinforcement effect" of AI (Acemoglu et al., 2020). The use of AI-assisted HR management systems promotes employee work experience and further promotes employee engagement (Malik et al., 2023). AI's excellent problem-solving and analytical skills improve employee performance, improve efficiency, enable employees to be more able to pursue work goals (Gregory et al., 2021), and promote positive employee behaviors (Alahmad & Robert, 2020; Esmaeilzadeh, 2021). Therefore, whether the adoption of AI has a positive or negative impact on WE is closely related to their EI. In the case of high levels of AIA, for employees with higher EI levels, the "productivity effect" will appear, and IF will have a greater impact on their engagement. Based on the above research, the following hypotheses are proposed:

H8a: The moderating effect of EI on the relationship between IF and CE is positively related to AIA.

H8b: The moderating effect of EI on the relationship between IF and EE is positively related to AIA.

H8c: The moderating effect of EI on the relationship between IF and BE is positively related to AIA.

Table 2.5 Literature Review on the Relationships among the Variables

Researches	Author
Relationship between Compensation Fairness and Work Engagement	Tyler & Blader (2003); Poon (2012); Triwibowo (2016)
Relationship between Work Engagement and Task Performance	Vance (2006); Christian et al. (2011); Rich et al. (2010); Soane et al. (2012); Wang & Sun (2016); Ismail, Iqbal & Nasr (2018); Derakhshide & Kazemi (2014); Michael et al. (2012); Othman & Mahmood (2019); Wang & Chen (2019); Ngwenya & Pelser (2020); Adrianto & Riyanto (2020)
Relationship between Compensation Fairness and Task Performance	Pierre & Felix (2017); Masterson (2000); Devonish & Greenidge (2010); Bechky (2003)
Moderating Role of EI	Wong & Law (2002) ; Devonish & Greenidge (2010) ; Parke et al. (2015); Joseph et al. (2015) ; Salami & Ajitoni, (2016) ; Miao & Humphrey (2018); Lipson (2020)
Moderating Role of AI Adoption	Prentice et al. (2020)

2.4 Conceptual Framework

This study constructs a conceptual model including CF (DF, PF, IF), WE (CE, EE, BE), TP, EI, and AIA. The model mainly tests the relationship and function logic of the following aspects: first, the impact of CF (DF, PF, IF) on WE (CE, EE, BE); Second, the impact of WE (CE, EE, BE) on TP; Third, the mediating role of WE (CE, EE, BE) between CF (DF, PF, IF) and TP; Fourth, EI plays a moderating role in the impact of CF (PF and IF) on WE (CE, EE, BE). Fifth, AI adoption plays a moderating role in the impact of IF on WE (CE, EE, BE). The theoretical model of this study is shown in Figure 2.2.

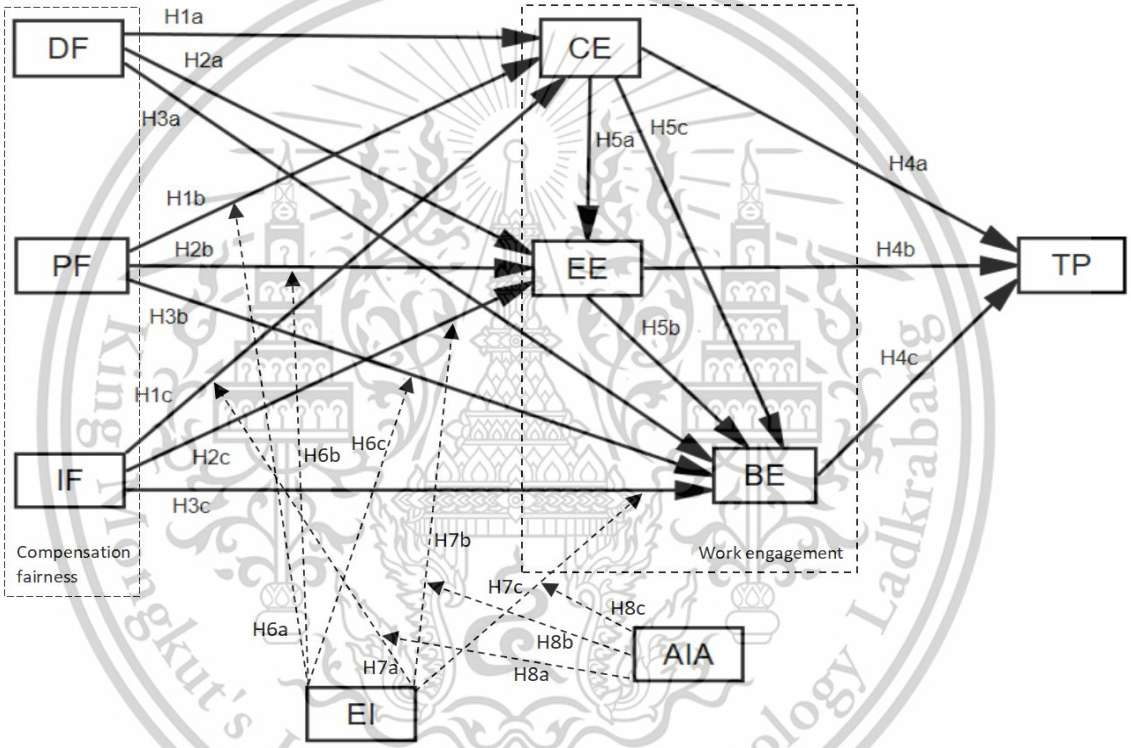


Figure 2.2 Conceptual Framework

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Research Design

A model or structure that drives an entire research agenda is a research design or strategy. It refers to the logical sequence that ties the empirical data to the initial questions of the analysis and, eventually, to its conclusions. This implies that to be able to make good decisions, it is essential to give careful thought to current research strategies. In social science research, two major types of research strategies are frequently used: qualitative and quantitative research strategies, or intensive and extensive research strategies. This thesis employs a quantitative analysis approach.

Based on the conceptual framework and hypotheses proposed in Chapter 2, this approach (quantitative) was proposed to test the moderating effects of EI and AI adoption, as well as the mediating role of WE between CF and TP. The quantitative approach allowed surveys to be employed in conducting questionnaires as a data collection tool. Finally, the quantitative technique makes it possible for robust and rigorous statistical analysis to be carried out, which assists in empirically testing the hypotheses and objectively achieving the aims of the research.

A flow chart overview of the processes involved in performing this quantitative analysis is shown in Fig. 3.1 below. The method of research design is classified into three significant stages. Research design is the first step and aims to develop and generate research hypotheses based on the relationship between variables (refer to the conceptual model in Chapter 2). A review of the published literature (Chapter 2) related to the main aims and objectives of the research study (Chapter 1) is required to generate a hypothetical framework.

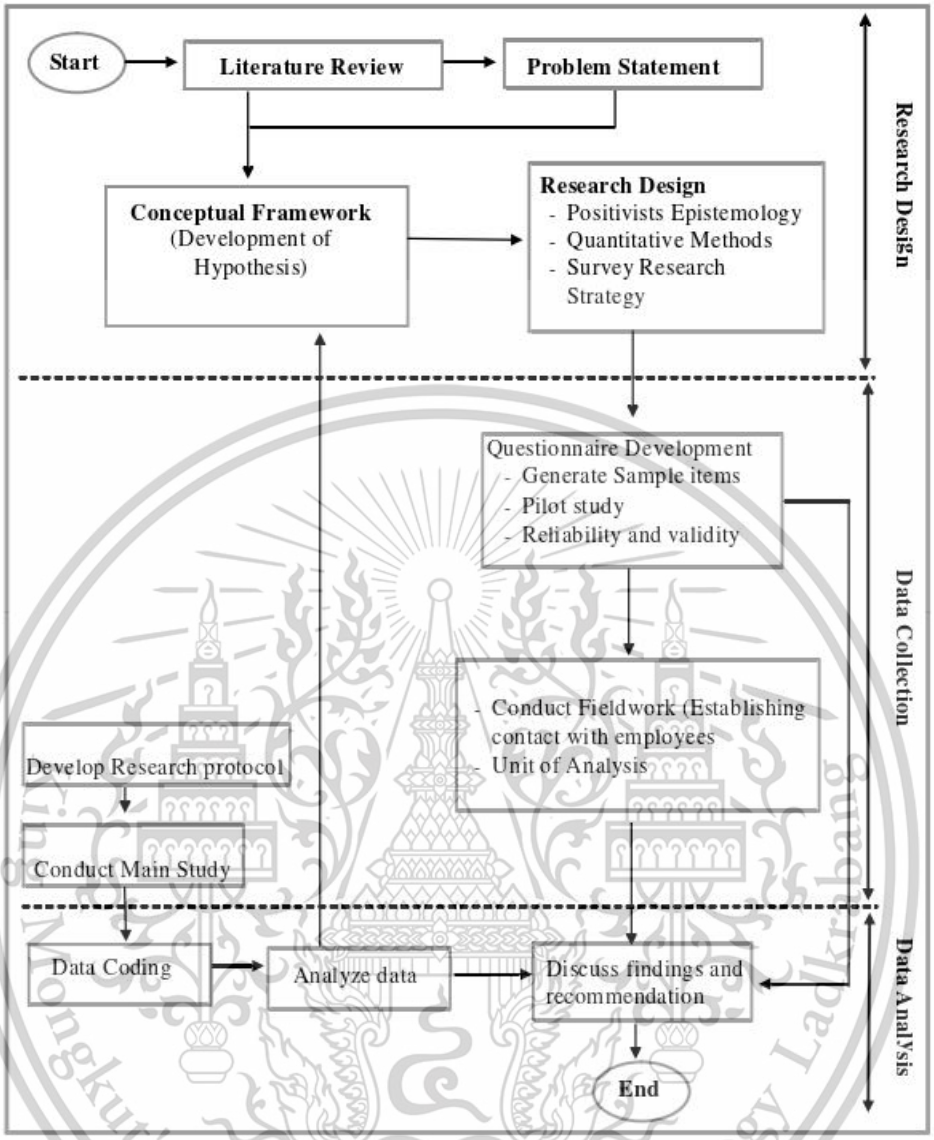


Figure 3.1 Research Design

The second phase includes 'study methodology' to confirm or evaluate the relationships between the hypotheses and the variables of interest to the study, after stating the research questions and hypotheses. This requires a method of data collection in the form of a survey design. The last stage is the quantitative data analysis, discussions, conclusions, theoretical and practical implications, and recommendations.

3.2 Population and Sample

3.2.1 Population

The population is a set of all elements to be studied in a research study. Researchers are required to specify the target population of their study to define which elements can be included in the study, as well as those that cannot be part of the study, in terms of the research problems. Thus, samples are selected from the population in an attempt to collect data that can be representative of the whole target population. The population of this research is the employees of media enterprises in China, who are involved in different position levels and departments of the enterprise. Employees in media enterprises are engaged in intellectual work such as information gathering, writing, processing, editing, and production in television stations, radio stations, newspapers, magazines, publishing houses, websites, and new media enterprises. They systematically analyze, apply, and innovate based on their knowledge, continuously adding value to or creating new value for media products. Although they may have certain differences, they all require the application of professional knowledge to produce media products creatively. For example, whether it's a newspaper editor or a television director, the process of selecting, processing, editing, and producing media products based on existing content requires innovation based on their knowledge and background. Additionally, the acceptance of media products by audiences largely depends on the employees' engagement, which is a common characteristic among them. Employees in media enterprises are crucial assets and represent the most important form of capital for these enterprises. They significantly influence the performance level of enterprises, serving as their primary competitive advantage and contributing to the shaping and maintenance of the media enterprise's brand. To survive and thrive in a competitive market economy, media enterprises must effectively manage their employees, as employees are the most critical factor in promoting enterprise development. The adoption rate of AI among employees in media companies varies greatly, which is very suitable for our research. Due to the continuous fluctuation of the workforce in the media industry, obtaining the population size is highly challenging.

3.2.2 Sample

Issues concerning sample size have generally been explored, but the question of what can be considered an appropriate sample size for statistical analysis has not been completely resolved (J. F. Hair et al., 2010). However, a minimum sample size is needed for statistical techniques to be used in data analysis, such as multiple regression analysis, confirmatory factor analysis, or structural equation modeling. Therefore, the precise size of an available sample

strongly influences "the analytical methods that can be used" (Reynolds et al., 2003). It is comforting for factor analysis to have at least 300 cases (Tabachnick et al., 2013). If solutions had many high-loading marker variables (above 0.80), a smaller sample size (e.g., 150 cases) might be adequate. Likewise, a minimum sample size of 200 is required to perform a maximum-likelihood-based estimation in structural equation modeling (J. F. Hair et al., 2010). The greater a sample's absolute size, the closer its distribution will be to the normal distribution and thus the more stable it will be (Saunders et al., 2009).

As for the determination of the number of samples, since we use SPSS statistical software for regression analysis to test the research hypothesis, it is necessary to make a minimum requirement for the number of survey samples. The number of samples for empirical research should be more than 100 (Anderson & Gerbing, 1988). When conducting hypothesis test analysis, the number of samples should be at least 5 times that of observation items (Gorsuch, 2014).

The selection of sample size is also a crucial part of the research methodology because an inadequate sample size leads to the failure of the study or may not be a true representative of the population (Bougie & Sekaran, 2019). The large sample size data creates a problem for a researcher in collecting and managing data, which causes extra costs and is time-consuming, which may neglect the actual purpose of sampling (Lyon et al., 2015).

There are a total of 34 observed variables in this study. To ensure a sufficiently valid sample size (at least 300), the target number of survey participants was set to be 10 times the number of observed variables, which is 340. This study employs a non-probability sampling method as the total population size is unknown.

3.3 Research Method

3.3.1 Literature Research Method

Firstly, this study systematically reviewed the previous relevant literature, identified the shortcomings and gaps in existing research in the field, and put forward the necessity and importance of this research. Secondly, in the research process of hypothesis and model construction, by analyzing existing literature, the causal relationships between relevant variables were clarified, providing a solid theoretical basis for the logical deduction of hypotheses. Finally, the measurement scales of the related variables in this study are also based on a literature review, and their effectiveness is guaranteed.

3.3.2 Questionnaire Survey Method

The research method of the questionnaire survey was mainly used in the data collection part of the study. Based on the theme, variables, and conceptual framework of this study, a preliminary idea for the questionnaire was formed by reviewing previous relevant research. Following the scientific procedures of questionnaire design and survey, the questionnaire was improved through small sample testing, optimized, and finalized, and distributed to the target employees of media enterprises to obtain the data needed for further empirical testing.

3.3.3 Statistical Analysis Method

In this study, the data collected from the questionnaire were analyzed using SPSS version 26.0 and AMOS version 23. SPSS is used for descriptive statistics, reliability and validity analysis, exploratory factor analysis, correlation analysis, and multiple linear regression analysis. The SPSS plug-in PROCESS, developed by Hayes, was used to help verify mediating effects and moderating effects. AMOS was used to conduct confirmatory factor analysis, Harman's single-factor test, model fit analysis, and preliminary analysis of mediation effects.

3.4 Research Instrument

The questionnaire is the research tool used in this study. The questionnaire was constructed by the study questions, and in light of the previously studied literature, concepts, theories, and models. The questions were set to evaluate all the variables of the study.

The questionnaire consists of two parts:

Part 1: Demographic information

This section is about personal information of the respondents, including their age, gender, marital status, level of education, position, and working age. It was conducted to capture the respondents' demographic details.

Part 2: Measurement of variables

The research questions and the conceptual framework were both taken into consideration when developing the questionnaire. The items developed for each variable were informed by the literature review.

3.4.1. Compensation Fairness

Different scholars have different understandings of the meaning and dimension of perceived compensation fairness. Due to the differences in dimension division, the measurement methods of compensation fairness are also different. Price & Mueller (1986), Balkin & Gomez-

Mejia (1990), and Moorman (1991) designed the measurement items of compensation fairness earlier. This paper holds that CF is the degree of rationality and equality that employees perceive in the organization's compensation system. Based on the scales developed by Sheppard (1992) and Triwibowo (2016), and combined with the research characteristics and interviews, this paper makes corresponding amendments and divides CF into three dimensions: DF, PF, and IF, with a total of 13 items for measurement.

DF refers to the extent to which employees feel fair about the distributive results of organizational remuneration. PF refers to the perception of fairness among workers regarding the process of formulating organizational compensation procedures. IF refers to the degree to which employees feel fairly treated in their interpersonal interactions with superiors during the compensation management process.

There are 4 measurement items of DF, 3 measurement items of PF, and 5 measurement items of IF. All items were asked forward with a 5-point Likert scale. From 1 to 5, 1 means "completely disagree" and 5 means "fully agree". The items are shown in the table below.

Table 3.1 The Items of CF

Variable	**Dimension**	**Items**	**Item code**
Compensation Fairness	Distributive Fairness	I think my workload is reasonable.	DF1
		I think my salary level is reasonable.	DF2
		I think my job responsibilities are reasonable.	DF3
		Overall, the reward I received is quite reasonable.	DF4
	Procedural fairness	The company's remuneration process is carried out according to clear rules and will not vary from person to person.	PF1
		Superiors collect correct and complete information when making compensation decisions.	PF2
		Superiors can make compensation decisions with an unbiased attitude.	PF3
	Interactiona l fairness	When a decision concerns me, my superior will discuss with me the basis and meaning of the decision.	IF1
		When decisions concern me, my superior treats me with respect.	IF2

Variable	Dimension	Items	Item code
		When the decision concerns me, my superior is more likely to consider my personal needs.	IF3
		When the decision is related to me, the superior will discuss it with me with a sincere attitude.	IF4
		Superior cares about my rights when decisions concern me.	IF5

3.4.2 Work Engagement

May et al. (2004) developed the three-dimensional scale of cognition, emotion, and physiological engagement. The scale has 13 items, and the internal consistency coefficient is 0.77. Rich (2010) developed an 18-item scale of WE, which is divided into three dimensions: CE, EE, and physical engagement. The reliability coefficient value of the scale is 0.858.

In this paper, WE reflects the effort, wisdom, emotion, and commitment of employees to the organization. Based on the research of May et al. (2004) and Rich (2010), combined with the research characteristics and interviews of this paper, WE is divided into three dimensions: CE, EE, and BE, with a total of 11 questions for measurement. CE is the degree to which employees think they should work hard for the organization. BE is the degree to which employees make efforts for the organization in the actual work process, and EE is the degree to which employees love and are loyal to the organization psychologically. CE includes 3 items, EE includes 4 items, and BE includes 4 items. All items were asked positively with a 5-point Likert scale. The items are shown in the table below.

Table 3.2 The Items of WE

Variable	Dimension	Items	Item code
Work engagement	Cognitive engagement	My work is full of meaning and value	CE1
		I believe that my work contributes to the achievement of organizational goals.	CE2
		I think it's my duty to do a good job	CE3
	Emotional engagement	I am proud to be a part of the company	EE1
		I speak highly of my company to others	EE2
		I would like to introduce the benefits of working here to	EE3

Variable	Dimension	Items	Item code
		people outside the company	
		I won't resign easily	EE4
	Behavioral engagement	I put a lot of energy into my work.	BE1
		I rarely get distracted at work	BE2
		I often work tirelessly at work	BE3
		I often do more than required	BE4

3.4.3 Task Performance

Task performance refers to the efficiency and effectiveness of employees in achieving organizational goals and completing work tasks. TP was measured using a scale compiled by J. L. Farh and Cheng (1999), which was designed based on the employee situation study of Chinese enterprises, so it was more localized and more suitable for the Chinese situation. The scale has 4 measurement items, which demonstrate their high reliability and validity. The items of the TP scale are shown in the table. All questions were asked with a 5-point Likert scale.

Table 3.3 The Items of TP

Variable	Items	Item code
Task performance	I have made a significant contribution to the overall work performance of the team.	TP1
	I am one of the best-performing employees on my team.	TP2
	I can always finish the work delivered by my superiors on time	TP3
	My work performance always meets the requirements of my superiors.	TP4

3.4.4 Emotional Intelligence

EI refers to the ability of individuals to evaluate, express, recognize, and use their own and others' emotions. Mayer and Salovey (1997) developed the multifactor EI scale MEIS, according to the emotional intelligence ability model. The main purpose of this scale is to measure individuals' perception of their own emotions, recognize and distinguish different emotions, understand emotions, and adjust their own emotions. The scale consists of four dimensions, each of which is divided into four items, a total of 12 items. The scoring method of the scale uses a combination of expert scoring, goal scoring, and consistency scoring. The test

results of the scale show that (Mayer, Caruso, and Salovey, 2000), its internal consistency coefficient is 0.96, and the Cronbach's alpha values of perception, discrimination, understanding, and management range from 0.81 to 0.96. Because the test results of the scale were questioned by many scholars, Mayer revised and improved the MEIS scale in 2000, and then formed the MSCEIT 2.0 scale. The scale consists of 4 dimensions and 141 items in total. The sample data are 2112 participants from 7 different countries and occupations. The scoring method of this scale is consistent with the MEIS scale. The Cronbach's alpha values of perception, discrimination, understanding, and management range from 0.76 to 0.91. O'Connor and Little (2003) pointed out that the test results showed that the scale had good aggregation, discrimination, and structural validity.

Wong and Law (2002) developed the EI scale according to the definition of EI by Mayer and Salovey (1997) and the ability model of EI. The scale consists of self-emotional assessment, others' emotional assessment, emotional regulation, and emotional use. The test results of the scale show that the scale has good internal consistency, reliability, and validity. As Wong is a Hong Kong scholar with a Chinese cultural background, this study selects Wong and Law's EI scale, modifies it according to the actual situation, and measures EI with 3 items. All items were asked positively with a 5-point Likert scale.

Table 3.4 The Items of EI

Variable	Items	Item code
EI	I can control my temper and handle difficulties rationally	EI1
	I often tell myself that I am a capable person	EI2
	I can keenly perceive other people's feelings and emotions	EI3

3.4.5 AI Adoption

AI adoption refers to the use of AI systems (such as Chat GPT) to understand and learn about external data and information and to continuously upgrade to achieve specific work goals and tasks. This paper uses the items of the questionnaire of AI-Usage used by Tang et al. (2021). The items are "I used artificial intelligence to carry out most of my job functions", "I spent most of the time working with artificial intelligence", "I worked with artificial intelligence in making major work decisions", and "I am proficient in using artificial intelligence tools in my work". This paper uses the five-point Likert scale (from 1= "completely inconsistent" to 5= "fully compliant") to invite targeted employees to score all the items according to the actual situation.

Table 3.5 The Items of AIA

Variable	Items	Item code
AI adoption	I used artificial intelligence to carry out most of my job functions.	AIA1
	I spent most of my time working with artificial intelligence.	AIA2
	I worked with artificial intelligence in making major work decisions.	AIA3
	I am proficient in using artificial intelligence tools in my work	AIA4

3.5 Data Collection

This thesis uses a closed-ended questionnaire approach and the Likert scale method. The close-ended questionnaire helps in predetermining the original responses that are deemed relevant for the study and also aids in guiding and making it relatively easy for the respondents to select particular answers. According to Leddy-Owen (2015), the closed-ended questionnaire offers the respondents the chance to give straightforward answers, which saves time and encourages a large number of respondents to participate in the research. The questionnaire is designed such that questions capture all the variables of interest to the study.

3.5.1 Pilot Survey

Before conducting a formal survey, it is crucial to assess whether the data collection instrument utilized for the research meets quality standards. The validity of the instruments is assessed to ensure that they meet the quality requirements. The Item of Congruence (IOC) is utilized to assess the content validity of the instruments. A group of three experts - academics and industry professionals who have expertise in HRM to assess the appropriateness and the significance of any needed improvements. The instrument calculation for the IOC between each question and variable was done. The questions, which had an IOC value greater than 0.5, are considered appropriate. The calculation method is shown below.

$$\text{IOC} = \frac{\sum \text{R}}{N}$$

Where:

R = Congruence value of each Question

N = the number of experts

1 = Congruent

0 = Uncertainty

-1 = Incongruent

The IOC ranges from -1 to +1. As a result, a question was deemed to be good the

closer it is to +1. Revisions were made to the questions with IOCs less than 0.6. Those with an IOC of less than 0.5 were not included in the questionnaire (Tongprasert et al., 2014). The IOC's range included:

+1 = The questions are discovered to be congruent with the content.

0 = These questions are uncertain whether they are congruent with the content.

-1 = The questions are found to be incongruent with the content.

The following are the criteria for the IOC's consideration:

A. Questions having IOC between 0.5 - 1.00 = Valid and can be used

B. Questions with IOC below 0.5 = To be revised

Before the pilot survey, two professors and one expert with extensive expertise and experience in HRM evaluated the questionnaire to ensure its consistency and validity. They looked at each detail to see if it was easy to understand and whether it satisfied the criteria or not. The results indicate that the IOC values of all items are greater than 0.6, which meets the requirements. (see Table 3.6).

Table 3.6 IOC value of the items

Variables	Item code	Item	expert1	expert2	expert3	IOC
DF	DF1	I think my workload is reasonable	1	1	1	1.00
	DF2	I think my compensation level is reasonable	1	1	1	1.00
	DF3	I think my job responsibilities are reasonable	1	1	1	1.00
	DF4	Overall, the reward I received is quite reasonable	1	1	1	1.00
PF	PF1	The company's remuneration process is carried out according to clear rules and will not vary from person to person	1	1	1	1.00
	PF2	Superiors collect correct and complete information when making compensation decisions	1	1	1	1.00
	PF3	Superiors can make compensation decisions with an unbiased attitude	1	1	1	1.00

Variables	Item code	Item	expert1	expert2	expert3	IOC
IF	IF1	When a decision concerns me, my superior will discuss with me the basis and meaning of the decision	1	1	1	1.00
	IF2	When decisions concern me, my superior treats me with respect	1	1	1	1.00
	IF3	When the decision concerns me, my superior is more likely to feel my personal needs	1	1	1	1.00
	IF4	When the decision is related to me, the superior will discuss it with me with a sincere attitude	1	1	1	1.00
	IF5	Superior care about my rights when decisions concern me	1	1	1	1.00
CE	CE1	My work is full of meaning and value	1	1	1	1.00
	CE2	I believe that my work contributes to the achievement of organizational goals.	1	1	1	1.00
	CE3	I think it's my duty to do a good job	1	1	1	1.00
EE	EE1	I am proud to be a part of the company	1	1	1	1.00
	EE2	I speak highly of my company to others	1	1	1	1.00
	EE3	I would like to introduce the benefits of working here to people outside the company	1	1	1	1.00
	EE4	I won't resign easily	1	0	1	0.67
BE	BE1	I put a lot of energy into my work.	1	1	1	1.00
	BE2	I rarely get distracted at work	1	1	1	1.00
	BE3	I often work tirelessly at work	1	1	1	1.00
	BE4	I often do more than required	1	1	1	1.00

Variables	Item code	Item	expert1	expert2	expert3	IOC
TP	TP1	I have made a significant contribution to the overall work performance of the team	1	1	1	1.00
	TP2	I am one of the best-performing employees on my team	1	1	1	1.00
	TP3	I can always finish the work delivered by my superiors on time	1	1	1	1.00
	TP4	My work performance always meets the requirements of my superiors	1	1	1	1.00
EI	EI1	I can control my temper and handle difficulties rationally	1	1	1	1.00
	EI2	I often tell myself that I am a capable person	0	1	1	0.67
	EI3	I can keenly perceive other people's feelings and emotions	1	1	1	1.00
AIA	AIA1	I used artificial intelligence to carry out most of my job functions	1	1	1	1.00
	AIA2	I spent most of the time working with artificial intelligence	1	1	1	1.00
	AIA3	I worked with artificial intelligence in making major work decisions	1	1	1	1.00
	AIA4	I am proficient in using artificial intelligence tools in my work	1	0	1	0.67

All ethical requirements were followed throughout all phases of the research. Before conducting the survey, we obtained the consent of the Science Ethics Committee of Hanshan Normal University.

Participants must read the written informed consent form before filling out the que stionnaire, and only after agreeing to it can they complete the questionnaire. The data collection is for this research only. Personal information was not shared with others. There are efforts to prevent participants from harming themselves and to respect their dignity in all areas. The pilot survey started in April 2024 and ended in May 2024. Its main purposes are twofold: firstly, test

the accuracy and intelligibility of the expression of the measurement items, and appropriately correct the investigation items that are inaccurate or cannot be accurately understood by the respondents; Secondly, the corresponding statistical method was used to test the reliability and validity of the pilot survey and delete the items that do not pass the reliability and validity test to ensure the reliability and validity of the formal sample measurement.

Employees of several enterprises in the media industry in China were selected for investigation. The survey process employed an online distribution and collection of questionnaires. In the pilot survey, 100 valid questionnaires were collected, meeting the minimum requirements (Comrey & Lee, 2013).

Based on the data obtained from the pilot survey, SPSS version 26.0 was used to test the reliability and validity of the questionnaire. The reliability of the measurement items of each variable in the questionnaire was tested in the following ways: firstly, the Cronbach's Alpha values method was used as the reliability index to measure the internal consistency of the terms. The Cronbach's Alpha values of all variables were greater than 0.7, which indicates that the internal consistency of the measurement terms is high, meeting the reliability requirements (Taber, 2018). Secondly, the pilot testing showed that the CICT values of all items were greater than 0.3. Thirdly, the measurement items of variables were drawn on the mature scale published in the international top journals, and fully considered the suggestions of experts in the field, so their content validity was guaranteed. Finally, the pilot testing showed that all variables had KMO values exceeding 0.7, making it suitable for factor analysis (Kaiser, 1974).

3.5.2 Formal Survey

Through the reliability and validity test of the pilot test, it is ensured that the designed questionnaire meets the requirements of the formal investigation. After adjusting the questionnaire according to the feedback and suggestions of the respondents, the formal questionnaire was issued. Although random sampling is highly representative, it encounters the problems of huge cost and unwillingness of respondents to cooperate in actual operation, and the feasibility is poor. To obtain more valid survey data at a lower cost, a non-random sampling method was adopted to conduct a questionnaire survey, mainly using convenience sampling and snowball sampling.

The population of this research consists of employees from media enterprises in China. All the respondents willingly participated in this study and were informed about the aim of the study. They were also assured of its anonymity, and their participation implied their consent. Questionnaires were distributed to the target population online ("Wenjuanxing", QQ, WeChat, e-mail,

and other channels) from May 2024 to July 2024, resulting in the collection of 342 questionnaires. The questionnaire was designed so that respondents could not submit it if they missed any item, ensuring no missing answers. Invalid questionnaires were excluded, such as those with short answer times, the same choice for all questions, outliers of the Mahalanobis distance test, or inconsistent responses to reverse-coded questions, leaving 311 valid questionnaires.

3.6 Statistical Data Analysis

After receiving the completed questionnaires from each participant, they were examined to ensure their accuracy, validity, and reliability. This required looking for and eliminating outliers and any values that didn't seem to match the rest of the data.

3.6.1 Descriptive Statistics

The variables used in the data had to have their mean, standard deviation, standard error, percentiles, skewness, kurtosis, maximum and minimum values, and other characteristics measured. The descriptive analysis was carried out to comprehend the data's characteristic behavior before commencing a detailed statistical analysis. The mean serves as the representative indicator of a dataset, while the standard deviation quantifies the dispersion trend of the sample data. A lower standard deviation signifies a higher degree of concentration in the data distribution, indicating a stronger tendency for participants to select the same option. Conversely, a larger standard deviation suggests that participants' choices for a given question are more dispersed. The calculation results of the mean and standard deviation do not adhere to a specific standard deviation; however, values that are either excessively low or high are illogical.

The skewness coefficient is a parameter that describes the degree to which a distribution deviates from symmetry. When the score distribution curve of test results exhibits perfect symmetry, the skewness coefficient is 0. If the peak of the distribution is on the left side of the symmetry axis (indicating a higher number of low-scoring individuals and a lower overall mean), it represents a positively skewed distribution, and the skewness coefficient is positive. Conversely, if the peak is on the right side of the symmetry axis (indicating a higher number of high-scoring individuals and a higher overall mean), it represents a negatively skewed distribution, and the skewness coefficient is negative.

The kurtosis coefficient indicates the degree of concentration in the distribution of sample data scores. A kurtosis value higher than 0 suggests a high degree of concentration in the data (with a low standard deviation). Conversely, a higher kurtosis value indicates a strong trend of dispersion in the selection results of the subjects.

Additionally, kurtosis and skewness coefficients can serve as reference standards for assessing whether the score distribution approximates normality. When the absolute values of kurtosis and skewness coefficients are less than 2, it can be considered that the data meet the prerequisite for an approximate normal distribution, thereby minimizing parameter deviation during analysis.

3.6.2 Normality Test

Normality testing is an essential step in statistical analysis. It not only ensures the effectiveness of statistical methods and the reliability of results but also provides an important basis for data processing and model selection. By conducting normality tests, we can better understand the characteristics of the data, select appropriate analysis methods, and thus improve the scientific rigor and credibility of the research.

To determine whether the data were statistically accurate, diagnostic tests were carried out. Normality testing was performed in accordance with the assertion by Greene (2012) that the error terms in a linear regression model should adhere to a normal distribution. The assessment of normality was subsequently carried out by examining the skewness and kurtosis of the data, as recommended by Hae-Young (2013). The P-P plots of all variables were analyzed to see if their data points coincide with the diagonal. Outliers were searched for and eliminated.

3.6.3 Reliability and Validity Analysis

SPSS was used to conduct validity and reliability tests in this study. Cronbach's Alpha was calculated to assess the reliability of various scales. The following criteria are used to evaluate Cronbach's alpha:

Table 3.7 Cronbach's Alpha Criteria

Cronbach's Alpha	External Consistency
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Source: Taber (2018)

There is a formula for developing Cronbach's Alpha (Taber, 2018). According to the criteria listed above, the coefficient of alpha ranges from 0 - 1, and the greater the Cronbach's alpha, the more reliable the questions are. In the interpretation of results, the Cronbach's alpha coefficient would be considered acceptable if it is above 0.70 (Taber, 2018). However, if it is below 0.7, it would be necessary to re-evaluate the questions of the questionnaire.

The corrected-item total correlation (CICT) indicates the internal consistency between the item and other items of the variable. The higher the coefficient value, the higher the internal consistency between the item and other items; the lower the coefficient value, the lower the internal consistency between the item and other items. According to the test standard, when CICT is less than 0.3, it is usually necessary to delete the measurement item to improve the convergence validity of the measurement. If the Cronbach's Alpha values increase after deleting an item, indicating that the internal consistency increases, the item is deleted.

The value for the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO-MSA) and Bartlett's Test of Sphericity (BTS) for determining data suitability for factor analysis were evaluated to see if they fall within acceptable thresholds. Exploratory Factor Analysis (EFA) was conducted using principal components and varimax with Kaiser normalization rotation methods to examine construct unidimensionality, ensuring the construct validity of the scales. Convergent and discriminant validity were evaluated through Confirmatory Factor Analysis (CFA) as proposed by Scott and Vokurka (1998). The t-value and factor loading are also used to evaluate convergence validity. Discriminant validity was also confirmed by comparing the square root of the Average Variance Extracted (AVE) values with inter-construct correlations.

3.6.4 Correlation Analysis

Conducting correlation analysis is crucial for several key reasons:

1. To preliminarily assess the relationships between variables. Pearson correlation can be used to observe whether there is an expected relationship between variables. If the correlation coefficient is negative or close to zero, it may indicate a mismatch with theoretical expectations, requiring re-examination of model assumptions or variable selection.

2. To preliminarily check multicollinearity. If two or more variables show extremely high correlations (e.g.,> 0.85 or 0.9), multicollinearity may exist, which could compromise the estimation accuracy and stability of SEM models.

3. To help determine the feasibility of the model. If variables show minimal correlation, constructing a path model might lack statistical validity or a theoretical foundation.

To assess the association among the study variables, Pearson's Correlation

Analysis was performed. The following lists the consideration criteria for correlation analysis.

Table 3.8 Levels of The Correlation Coefficient

Correlation Coefficient (r)	Levels of relationships
$r > 0.8$	Very high
$0.6 < r < 0.8$	Quite high
$0.4 < r < 0.6$	Moderate
$0.2 < r < 0.4$	Quite low
$r < 0.2$	Low

Source: Akram, Ajmal & Munir (2008)

The VIF (variance inflation factor) of the explanatory variables was analyzed to see if they are all less than 3, indicating that there is no obvious collinearity problem between the variables.

3.6.5 Structural Equation Modelling

CB-SEM (Co-variance-based structure equation modeling) was selected because it is more appropriate for application in studies designed for model testing and confirmation (Li et al., 2019; Huo et al., 2014; Hair et al., 2011). The conceptual model was tested by using Amos version 23, and the SEM with maximum likelihood estimation was used, checking if the fit indices of the resulting model meet the requirements. In addition, Confirmatory Factor Analysis (CFA) was performed to assess Harman's single-factor model, following the approach proposed by Sanchez & Brock (1996), to see if the fit indices of the model were all below a satisfactory threshold, in order to exclude common method bias. CFA is also used to evaluate the fit index of the measurement model.

3.6.6 Multiple Linear Regression Analysis

This study used PROCESS (plug-in SPSS) developed by Hayes (2017) to solve the model calculation and analysis of mixed mediating and moderating variables. This study has three independent variables (DF, PF, and IF) and three mediating variables (CE, EE, and BE), the dependent variable is TP, and the two moderating variables are EI and AIA. Therefore, compared with PROCESS, MODEL 6, MODEL 7, and MODEL 11 meet the requirements of the research model. The model was subjected to 5000 bootstrap analyses to estimate the confidence interval. Regardless of the mediating effect, the moderating effect, or the moderated-moderating effect, as long as the confidence interval does not contain 0, it means that the effect is established.

Since the theoretical model of this study is the mediation model with a moderating effect, this model is more complex than the general model. According to the regulatory path analysis method proposed by Edwards and Lambert (2007), the bootstrap method was used to verify the research hypothesis. The bootstrap method is a statistical technique that utilizes repeated sampling with replacement from the original sample. When a sample is generated, the product of a*b is estimated once. Hayes and Andrew (2009) recommend that this process be repeated at least 1000 times, preferably 5000 times. If we repeat it 1000 times, then there will be 1000 estimates of the indirect effect (a*b). These 1000 indirect effects will form their sampling distribution, so the standard error and confidence interval of the indirect effect can be generated. The bootstrap method can produce confidence intervals for indirect effects with statistical power, especially the bias-corrected bootstrap method (Briggs, 2006; Williams & Mackinnon, 2008). The study used α 5% level of significance, which denotes an $\alpha = 0.05$ level of statistical significance.

CHAPTER 4
ANALYSIS AND RESULTS

Data analysis is crucial in research studies, as it enables the cleaning and transformation of raw data into a format suitable for final decision-making. The primary objective of data analysis is to condense and restructure the extensive data collected, rendering it comprehensible and interpretable, thereby clarifying its relevance to the research problem. Consequently, the data were analyzed using quantitative analytical procedures.

This chapter presents detailed results of the various analyses conducted on the collected questionnaire data. The chapter is organized into nine sections. The first section is a descriptive statistic of the demographic variables used in the data. The second section contains descriptive statistics of the respondents' opinions regarding the study variables, including DF, PF, IF, CE, EE, BE, TP, EI, and AIA. The third section is to analyze the risk of common method bias. The fourth section is about the reliability and validity testing of the scale. The fifth section is a correlation analysis of the variables. The sixth section presents the findings of Structural Equation Modelling (SEM), including model fitness and influence path. The seventh section presents the relationship among CF, WE, and TP. The eighth section analyzes the moderating effects of EI. The last section analyzes the three-way interactions of EI and AIA. These analyses and results attempted to answer the research questions, wherefore, and fulfill the research objectives.

4.1 Socio-Demographic Information

The respondents included 141 (45.3%) males and 170 (54.7%) females. In terms of educational background, 59 respondents (19%) had a junior college education or below, 214 respondents (68.8%) had a bachelor's degree, and 38 respondents (12.2%) were postgraduates. Respondents aged between 16 and 29 years constituted 37.34 %, those between 30 and 39 years made up 23.7 %, and those over 40 years accounted for 38.96 %. In terms of position level, 155 respondents (49.84%) were frontline employees, 72 respondents (23.15%) were frontline managers, 59 respondents (27.01%) were middle managers, and 25 respondents (8.04%) were top managers. In terms of marriage, 136 respondents (43.73%) were unmarried, 168 respondents (54.02%) were married, and 7 respondents (2.25%) were divorced.

Table 4.1 Demographic Information

Variable	Items	Number	Percent

Variable	Items	Number	Percent
Gender	males	141	45.30 %
	females	170	54.70 %
Education	junior college or below	59	19 %
	bachelor	214	68.80 %
	postgraduate or above	38	12.20 %
Age	16 - 29 years old	115	37.34 %
	30 - 39 years old	73	23.70 %
	over 40 years old	120	38.96 %
Position level	Frontline employees	155	49.84 %
	Frontline managers	72	23.15 %
	Middle managers	59	27.01 %
	Top managers	25	8.04 %
Marriage	Unmarried	136	43.73 %
	Married	168	54.02 %
	Divorced	7	2.25 %

4.2 Results of the Descriptive Statistics

The P-P plots of variables such as DF, PF, IF, CE, EE, BE, TP, EI, and AIA show that the data points coincide with the diagonal lines, the absolute values of skewness of all variables are less than 1, the absolute values of kurtosis of all variables are less than 2, indicating that the collected data are basically in line with a normal distribution (see Tables 4.2). Thus, subsequent statistical analysis can be carried out.

Table 4.2 Results of the Descriptive Statistics

Items	Minimum	Maximum	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
DF1	1	5	3.360	1.041	-.616	.138	-.148	.276
DF2	1	5	3.150	1.003	-.423	.138	-.159	.276
DF3	1	5	3.520	.983	-.632	.138	.152	.276
DF4	1	5	3.290	.993	-.360	.138	-.134	.276
PF1	1	5	3.430	1.019	-.547	.138	-.115	.276
PF2	1	5	3.210	1.011	-.365	.138	-.168	.276
PF3	1	5	3.260	1.021	-.332	.138	-.339	.276
IF1	1	5	3.250	.975	-.500	.138	.021	.276
IF2	1	5	3.280	.982	-.469	.138	.014	.276

Items	Minimum	Maximum	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
IF3	1	5	3.120	.983	-.296	.138	-.175	.276
IF4	1	5	3.180	.976	-.445	.138	-.059	.276
IF5	1	5	3.210	.967	-.436	.138	-.082	.276
CE1	1	5	3.590	.848	-.204	.138	.073	.276
CE2	1	5	3.730	.768	-.320	.138	.313	.276
CE3	2	5	4.040	.776	-.437	.138	-.284	.276
EE1	1	5	3.510	.905	-.313	.138	.298	.276
EE2	1	5	3.470	.946	-.473	.138	.421	.276
EE3	1	5	3.450	.931	-.264	.138	.021	.276
EE4	1	5	3.580	.984	-.519	.138	.143	.276
BE1	1	5	3.880	.877	-.833	.138	1.014	.276
BE2	1	5	3.700	.882	-.569	.138	.454	.276
BE3	1	5	3.240	1.054	-.189	.138	-.416	.276
BE4	1	5	3.780	.838	-.258	.138	-.185	.276
TP1	1	5	3.720	.792	-.369	.138	.631	.276
TP2	1	5	3.590	.798	-.185	.138	.388	.276
TP3	1	5	3.960	.697	-.404	.138	.634	.276
TP4	1	5	3.810	.721	-.587	.138	1.100	.276
EI1	1	5	3.820	.740	-.371	.138	.575	.276
EI2	1	5	3.680	.798	-.207	.138	.217	.276
EI3	1	5	3.810	.697	-.237	.138	.336	.276
AIA1	1	5	2.810	1.044	-.093	.138	-.540	.276
AIA2	1	5	2.680	1.059	-.033	.138	-.612	.276
AIA3	1	5	2.420	1.019	.215	.138	-.479	.276
AIA4	1	5	2.780	1.057	-.137	.138	-.522	.276

4.3 Common Method Bias

Following the collection of responses for each questionnaire, precautions were taken to address potential issues related to common method bias. Initially, Harman's single-factor test, as outlined by Podsakoff et al. (2003), was conducted using exploratory factor analysis (EFA). The analysis revealed six separate factors with eigenvalues exceeding 1.0. Notably, the first factor explained 35.606 percent of the variance, below the 40% threshold (Howard et al., 2024). Subsequently, a confirmatory factor analysis (CFA) was performed to assess Harman's single-factor model, following the approach proposed by Sanchez & Brock (1996). The fit indices for the model were below satisfactory thresholds: $\chi 2(527) = 4680.101$, CFI = 0.469, GFI = 0.410,

AGFI = 0.333, TLI = 0.435, RMSEA = 0.159, SRMR = 0.1405. These outcomes indicated that the single-factor model was not acceptable. In conclusion, the comprehensive analysis suggests that the risk of common method bias within the study remains notably low.

4.4 Reliability and Validity of The Scales

Ensuring the reliability and validity of the scales involves multiple steps, including a thorough literature review and pilot testing. Feedback from these employees was gathered and guided revisions to the questionnaire. A two-step approach was followed to assess construct reliability, as proposed by Narasimhan & Jayaram (1998).

Firstly, Cronbach's α was computed to assess scale reliability, with all constructs yielding values greater than 0.70, indicating the reliability of the measurement (J. F. Hair et al., 1992). Additionally, all corrected item-total correlation (CITC) values exceeded 0.50, which is very good (Ganbat, 1979). All variables have CR values greater than 0.70 and AVE values greater than 0.50, exceeding the minimum standard (Fornell & Larcker, 1981a) (see Table 4.3).

Table 4.3 Reliability analysis

Construct	Number of items	Cronbach's α	CITC range	CR	AVE
DF	4	.844	0.650 - 0.710	0.845	0.577
PF	3	.847	0.642 - 0.769	0.852	0.659
IF	5	.950	0.838 - 0.890	0.95	0.792
CE	3	.835	0.635 - 0.765	0.841	0.641
EE	4	.909	0.729 - 0.821	0.911	0.719
BE	4	.837	0.603 - 0.741	0.845	0.579
TP	4	.850	0.673 - 0.713	0.847	0.585
EI	3	.785	0.570 - 0.676	0.791	0.56
AIA	4	.932	0.805 - 0.908	0.933	0.777

Secondly, Exploratory Factor Analysis (EFA) was conducted using principal components and varimax with Kaiser normalization rotation methods to examine construct unidimensionality. Results demonstrated that the relevant items predominantly loaded onto their intended constructs,

supporting construct unidimensionality (see Tables 4.4 - 4.5).

Table 4.4 EFA of DF, PF, IF, and TP

Items	Factor loadings			
	IF	**TP**	**DF**	**PF**
DF1	.232	.135	.802	-.009
DF2	.182	.106	.781	.255
DF3	.203	.148	.763	.212
DF4	.296	.027	.715	.262
PF1	.196	.171	.193	.820
PF2	.445	.135	.270	.702
PF3	.430	.079	.265	.702
IF2	.825	.096	.257	.227
IF3	.843	.084	.290	.210
IF4	.879	.148	.218	.175
IF5	.846	.122	.201	.243
IF1	.855	.145	.164	.178
TP1	.200	.786	.114	.025
TP2	.100	.821	.085	-.003
TP3	-.003	.827	.059	.175
TP4	.126	.824	.115	.152
Eigenvalue	4.313	2.834	2.829	2.106
Total variance explained (%)	75.510			

Table 4.5 EFA of CE, EE, BE, AIA, and EI

Items	Factor loadings				
	AIA	**EE**	**BE**	**CE**	**EI**
CE1	.160	.445	.190	.672	.175
CE2	.038	.272	.203	.823	.155
CE3	-.101	.249	.193	.758	.212
EE1	-.003	.829	.238	.211	.186
EE2	.004	.835	.241	.215	.124
EE3	.040	.829	.210	.209	.156
EE4	-.033	.725	.279	.276	.126

Items	Factor loadings				
	AIA	EE	BE	CE	EI
BE1	-.014	.259	.704	.299	.212
BE2	.009	.337	.762	.106	.213
BE3	.044	.111	.799	.277	.136
BE4	.085	.376	.680	-.008	.157
EI1	.000	.208	.187	.049	.768
EI2	.041	.135	.307	.185	.743
EI3	.071	.124	.085	.234	.836
AIA1	.910	.053	.033	.054	.002
AIA2	.950	-.012	.040	.007	-.016
AIA3	.894	-.009	.038	-.067	.013
AIA4	.885	.004	-.010	.050	.110
Eigenvalue	3.371	3.344	2.669	2.193	2.177
Total variance explained (%)	76.418				

Convergent and discriminant validity were evaluated through Confirmatory Factor Analysis (CFA) as proposed by Scott and Vokurka (1998).

The schematic diagram of the DF test in the results of the first-order variable confirmatory factor analysis is as follows. The fitting calculation results show that the chi-square was 26.16 and the degrees of freedom were 2. GFI= 0.964, IFI= 0.953; CFI= 0.953 and NFI= 0.949. For the factor loadings, DF2 had the highest factor weight of 0.80, DF4 was second in rank with a factor weight of 0.77, DF3 was third in rank with a factor weight of 0.75, and the last one was DF1 with a factor weight of 0.72 (see Figure 4.1). All factor loadings are greater than 0.5 (J. Hair et al., 2009). The factor weights were statistically significant at a p-value of 0.05.

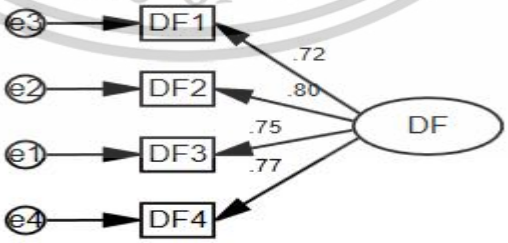


Figure 4.1 CFA of DF

The schematic diagram of the PF test in the results of the first-order variable confirmatory factor analysis is as follows. The fitting calculation results show that the chi-square was 0 and the degrees of freedom were 0 (implying a saturated model). GFI= 1, IFI= 1; CFI= 1 and NFI= 1. For the factor loadings, PF2 had the highest factor weight of 0.89, PF3 was second in rank with a factor weight of 0.83, and the last one was PF1 with a factor weight of 0.69 (see Figure 4.2). All factor loadings are greater than 0.5 (J. Hair et al., 2009). The factor weights were statistically significant at a p-value of 0.05.

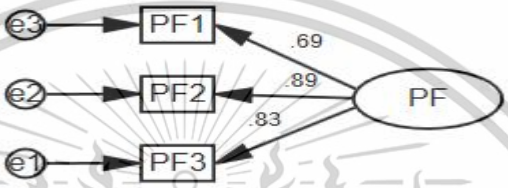


Figure 4.2 CFA of PF

The schematic diagram of the IF test in the results of the first-order variable confirmatory factor analysis is as follows. The fitting calculation results show that the chi-square was 45.136 and the degrees of freedom were 5. GFI= 0.943, IFI= 0.974; CFI= 0.974 and NFI= 0.971. For the factor loadings, IF4 had the highest factor weight of 0.92, IF3 was second in rank with a factor weight of 0.90, IF5 was third in rank with a factor weight of 0.89, IF2 was fourth in rank with a factor weight of 087, and the last one was IF1 with a factor weight of 0.86 (see Figure 4.3). All factor loadings are greater than 0.5 (J. Hair et al., 2009). The factor weights were statistically significant at a p-value of 0.05.

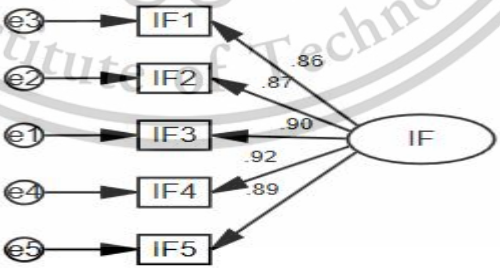


Figure 4.3 CFA of IF

The schematic diagram of the CE test in the results of the first-order variable confirmatory factor analysis is as follows. The fitting calculation results show that the chi-square was 0 and the

degrees of freedom were 0 (implying a saturated model). GFI= 1, IFI= 1; CFI= 1 and NFI= 1. For the factor loadings, CE2 had the highest factor weight of 0.91, CE1 was second in rank with a factor weight of 0.78, and the last one was CE3 with a factor weight of 0.70 (see Figure 4.4). All factor loadings are greater than 0.5 (J. Hair et al., 2009). The factor weights were statistically significant at a p-value of 0.05.

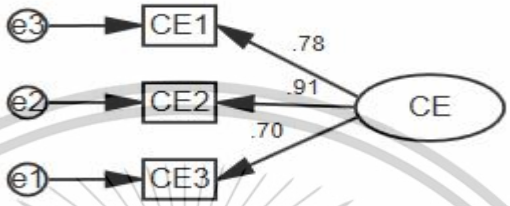


Figure 4.4 CFA of CE

The schematic diagram of the EE test in the results of the first-order variable confirmatory factor analysis is as follows. The fitting calculation results show that the chi-square was 12.48 and the degrees of freedom were 2. GFI= 0.981, IFI= 0.988; CFI= 0.988 and NFI= 0.985. For the factor loadings, EE2 had the highest factor weight of 0.89, EE3 was second in rank with a factor weight of 0.866, EE1 was third in rank with a factor weight of 0.865, and the last one was EE4 with a factor weight of 0.76 (see Figure 4.5). All factor loadings are greater than 0.5 (J. Hair et al., 2009). The factor weights were statistically significant at a p-value of 0.05.

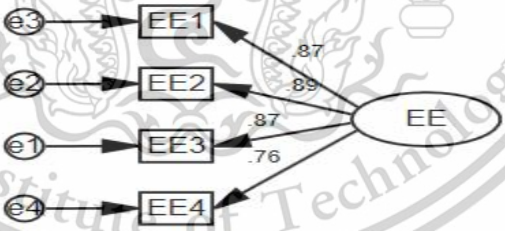


Figure 4.5 CFA of EE

The schematic diagram of the BE test in the results of the first-order variable confirmatory factor analysis is as follows. The fitting calculation results show that the chi-square was 14.362 and the degrees of freedom were 2. GFI= 0.979, IFI= 0.976; CFI= 0.976 and NFI= 0.972. For the factor loadings, BE2 had the highest factor weight of 0.85, BE1 was second in rank with a factor weight of 0.80, BE4 was third in rank with a factor weight of 0.73, and the last one was BE3 with

a factor weight of 0.65 (see Figure 4.6). All factor loadings are greater than 0.5 (J. Hair et al., 2009). The factor weights were statistically significant at a p-value of 0.05.

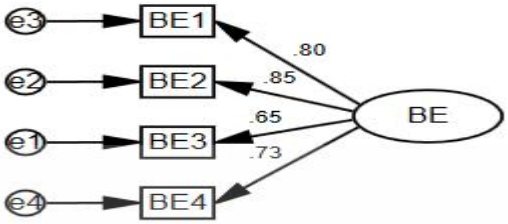


Figure 4.6 CFA of BE

The schematic diagram of the TP test in the results of the first-order variable confirmatory factor analysis is as follows. The fitting calculation results show that the chi-square was 88.773 and the degrees of freedom were 2. GFI= 0.875, IFI= 0.858; CFI= 0.857 and NFI= 0.856. For the factor loadings, TP4 had the highest factor weight of 0.87, TP3 was second in rank with a factor weight of 0.84, TP2 was third in rank with a factor weight of 0.68, and the last one was TP1 with a factor weight of 0.66 (see Figure 4.7). All factor loadings are greater than 0.5 (J. Hair et al., 2009). The factor weights were statistically significant at a p-value of 0.05.

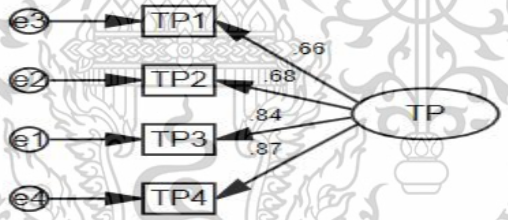


Figure 4.7 CFA of TP

The schematic diagram of the EI test in the results of the first-order variable confirmatory factor analysis is as follows. The fitting calculation results show that the chi-square was 0 and the degrees of freedom were 0 (implying a saturated model). GFI= 1, IFI= 1; CFI= 1 and NFI= 1. For the factor loadings, EI3 had the highest factor weight of 0.83, EI2 was second in rank with a factor weight of 0.76, and the last one was EI1 with a factor weight of 0.65 (see Figure 4.8). All factor loadings are greater than 0.5 (J. Hair et al., 2009). The factor weights were statistically significant at a p-value of 0.05.

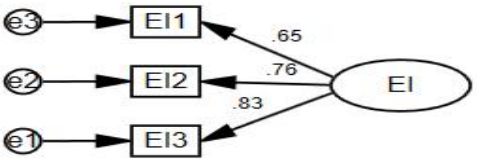


Figure 4.8 CFA of EI

The schematic diagram of the AIA test in the results of the first-order variable confirmatory factor analysis is as follows. The fitting calculation results show that the chi-square was 16.049 and the degrees of freedom were 2. GFI= 0.977, IFI= 0.987; CFI= 0.987 and NFI= 0.985. For the factor loadings, AIA2 had the highest factor weight of 0.97, AIA1 was second in rank with a factor weight of 0.89, AIA3 was third in rank with a factor weight of 0.84, and the last one was AIA4 with a factor weight of 0.82 (see Figure 4.9). All factor loadings are greater than 0.5 (J. Hair et al., 2009). The factor weights were statistically significant at a p-value of 0.05.

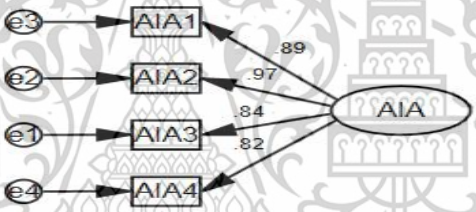


Figure 4.9 CFA of AIA

The schematic diagram of the CF test in the results of the second-order variable confirmatory factor analysis is as follows. The fitting calculation results show that the chi-square was 146.539 and the degrees of freedom were 51. GFI= 0.930, IFI= 0.967; CFI= 0.966 and NFI= 0.950. For the factor loadings, PF had the highest factor weight of 0.892, IF was second in rank with a factor weight of 0.822, and the last one was DF with a factor weight of 0.752 (see Figure 4.10). All factor loadings are greater than 0.5 (J. Hair et al., 2009). The factor weights were statistically significant at a p-value of 0.05. The CR value was 0.863, which is greater than 0.70, and the AVE value was 0.679, which is greater than 0.50, exceeding the minimum standard (Fornell & Larcker, 1981a)

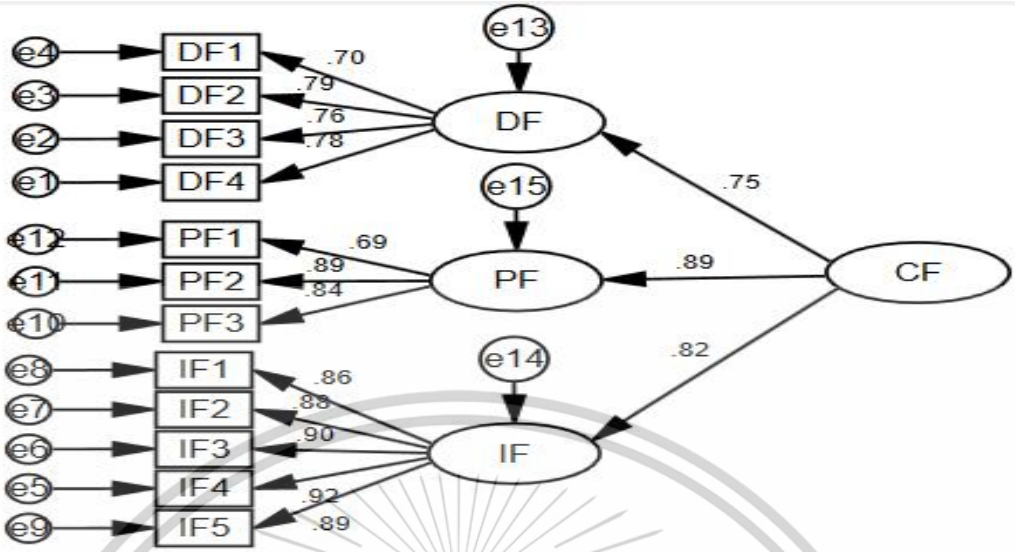


Figure 4.10 CFA of CF

The schematic diagram of the WE test in the results of the second-order variable confirmatory factor analysis is as follows. The fitting calculation results show that the chi-square was 108.814 and the degrees of freedom were 41. GFI= 0.940, IFI= 0.968; CFI= 0.968 and NFI= 0.950. For the factor loadings, EE had the highest factor weight of 0.89, CE was second in rank with a factor weight of 0.81, and the last one was BE with a factor weight of 0.79 (see Figure 4.11). All factor loadings are greater than 0.5 (J. Hair et al., 2009). The factor weights were statistically significant at a 0.05 level of significance. The CR value was 0.869, which is greater than 0.70, and the AVE value was 0.689, which is greater than 0.50, exceeding the minimum standard (Fornell & Larcker, 1981a).

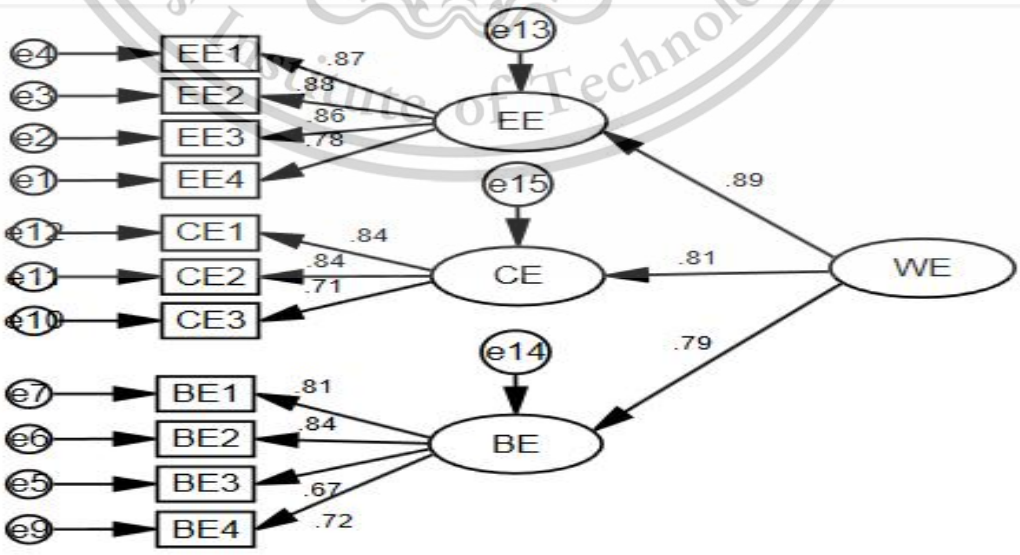


Figure 4.11 CFA of WE

Fit indices of the measurement models indicated acceptability, with $\chi 2(491) = 1028.644$, CFI = 0.931, GFI = 0.839, AGFI = 0.805, RMSEA = 0.059, NNFI = 0.921, IFI = 0.932, and SRMR = 0.0462 (see Tables 4.6 and Figure 4.12). Furthermore, all t-values exceeded 2.0, and factor loadings were above 0.50, demonstrating acceptable convergent validity (Fornell & Larcker, 1981a).

Table 4.6 Fit indices for the measurement model

Measurement	Statistics	Desirable range	References
Degrees of freedom	491		
Minimum fit function χ 2	1028.644		
Root mean square error of approximation (RMSEA)	.059	⩽ 0.08	
Non-normed fit index (NNFI)(TLI)	.921	⩾ 0.90	Hu et al. (1992) and
Comparative fit index (CFI)	.931	⩾ 0.90	Hu and Bentler
IFI	.932	⩾ 0.90	(1999)
GFI	.839	⩾ 0.80	
AGFI	.805	⩾ 0.80	
Standardized root mean squared residual (SRMR)	.0462	⩽ 0.05	

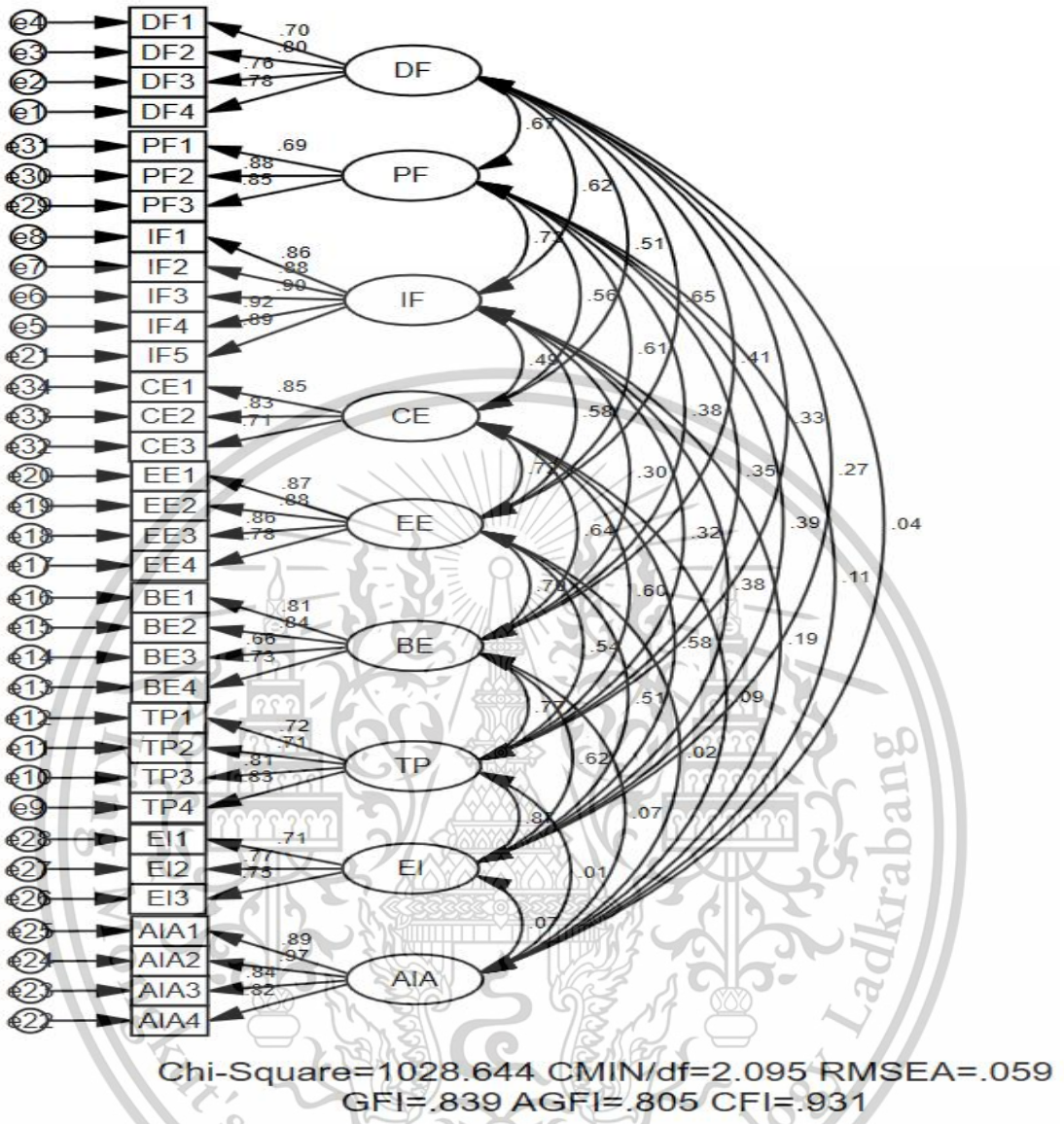


Figure 4.12 CFA of the measurement model

Discriminant validity was confirmed by comparing the square root of the Average Variance Extracted (AVE) values with inter-construct correlations (Fornell & Larcker, 1981c), The results showed that the square root of the Average Variance Extracted (AVE) values for all variables were greater than its correlation coefficient with other variables, indicating acceptable discriminant validity of the instruments (see Tables 4.7).

Table 4.7 Correlational matrix

Construct	Mean	SD	Skewness	Kurtosis	DF	PF	IF	CE	EE	BE	TP	EI	AIA
DF	3.33	.83	-.49	.47	.760[a]								
PF	3.30	.89	-.38	.11	.567**	.812[a]							
IF	3.21	.89	-.47	.38	.553**	.653**	.890[a]						
CE	3.79	.69	-.31	.11	.428**	.472**	.431**	.801[a]					
EE	3.50	.84	-.33	.57	.569**	.546**	.539**	.646**	.848[a]				
BE	3.65	.75	-.19	.34	.347**	.315**	.266**	.545**	.629**	.761[a]			
TP	3.77	.63	-.30	1.06	.286**	.314**	.298**	.526**	.498**	.666**	.765[a]		
EI	3.77	.62	-.20	.96	.226**	.328**	.331**	.478**	.438**	.509**	.704**	.748[a]	
AIA	2.67	.95	-.09	-.41	.029	.101	.199**	.066	.029	.077	.035	.081	.881[a]

Notes: [a] square root of AVE values. ** $p < .01$ (two-tailed).

4.5 Correlation Analysis of The Variables

From the correlation coefficients among the variables in Table 4.7, it can be seen that the correlation coefficients among the main variables, such as DF, PF, IF, CE, EE, BE, and TP have all reached a significant level of 0.01, In addition, AIA showed a significant positive correlation with IF ($r = 0.199$, $p < 0.01$). These laid the foundation for subsequent regression analysis.

The correlation values between all independent variables are below 0.7, suggesting the absence of potential collinearity among the explanatory variables. Additionally, regression analysis was performed, revealing variance inflation factors (VIF) for the explanatory variables — DF, PF, and IF — of 1.613, 1.949, and 1.906, respectively, all below 3, indicating no significant collinearity issues among the variables.

4.6 The Structural Model of Main Effects of The Latent Variables

Covariance-based structural equation modeling (CB–SEM) was selected as it suits the objective of theory testing and confirmation in this study, as recommended by Li et al. (2019) and Hair et al. (2011). The conceptual model underwent testing using Amos23 software, employing the structural equation modeling method with maximum likelihood estimation. The resulting model of main effects of the latent variables (see Figure 4.12) demonstrated satisfactory fit indices: $\chi 2(309) = 697.434$, CFI = 0.936, GFI = 0.860, AGFI = 0.829, NNFI = 0.927, IFI = 0.936, RMSEA = 0.064, and SRMR = 0.0458, adhering to the criteria set by Hu and Bentler (1999).

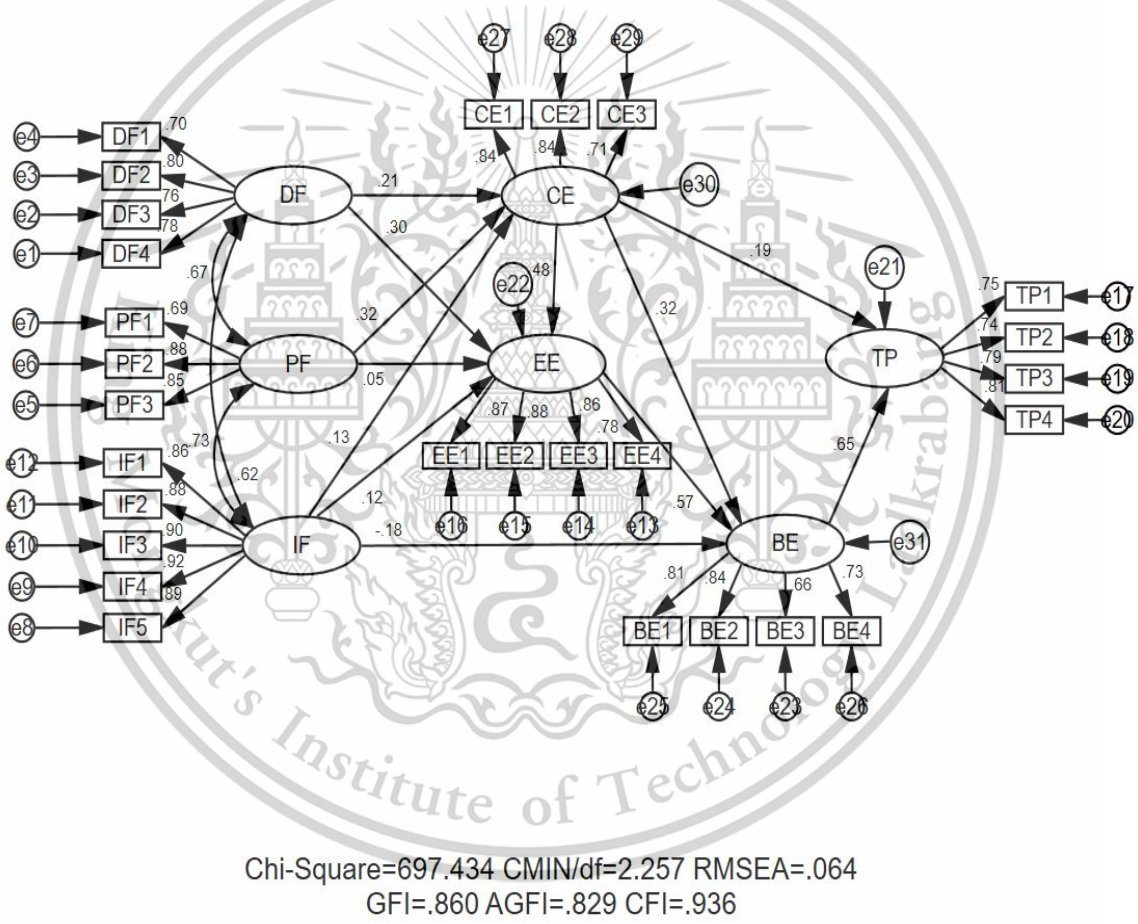


Figure 4.13 The structural model of the main effects of the latent variables

4.7 Analysis of the Relationship among CF, WE, and TP

The effects among variables were analyzed using Model 6 within the PROCESS procedure through linear regression analysis, utilizing 5,000 bootstrap samples and 95% percentile bootstrap

confidence intervals, following the methodology outlined by Hayes (2017), exceeding the 1,000-sample minimum. Results indicated that DF, PF, and IF exhibit significant positive correlations with CE (b_{DF} = 0.164, p = 0.002 < 0.05; b_{PF} = 0.203, p = 0.000 < 0.05; b_{IF} = 0.118, p = 0.024 < 0.05) (see Table 4.8). Thus, H1a, H1b, and H1c were supported.

Table 4.8 Direct effects

DV	IV	Coeff.	se	t	p	LLCI	ULCI	Std. coeff.	R-sq	F	p
CE	constant	2.195	.154	14.234	.000	1.891	2.498		.273	38.39 (3,307)	.000
	DF	.164	.052	3.175	.002	.062	.265	.196			
	PF	.203	.053	3.839	.000	.099	.307	.261			
	IF	.118	.052	2.268	.024	.016	.221	.152			
EE	constant	-.043	.188	-.226	.821	-.413	.328		.553	94.643 (4,306)	.000
	DF	.242	.050	4.876	.000	.144	.340	.241			
	CE	.513	.054	9.494	.000	.407	.620	.426			
	PF	.104	.051	2.038	.042	.004	.205	.111			
	IF	.140	.050	2.814	.005	.042	.238	.150			
BE	constant	1.261	.190	6.649	.000	.888	1.634		.442	48.311 (5,305)	.000
	DF	.016	.052	.301	.764	-.086	.118	.017			
	CE	.282	.062	4.552	.000	.160	.404	.260			
	EE	.481	.058	8.356	.000	.368	.595	.535			
	PF	-.023	.052	-.435	.664	-.125	.080	-.027			
	IF	-.107	.051	-2.100	.037	-.207	-.007	-.127			
TP	constant	1.306	.162	8.050	.000	.987	1.625		.486	47.936 (6,304)	.000
	DF	-.033	.042	-.798	.426	-.115	.049	-.044			
	CE	.189	.051	3.687	.000	.088	.290	.209			
	EE	-.007	.051	-.143	.886	-.108	.093	-.010			
	BE	.454	.046	9.914	.000	.364	.544	.546			
	PF	.016	.042	.397	.692	-.065	.098	.023			
	IF	.054	.041	1.320	.188	-.027	.135	.077			

The direct effects of DF, PF, IF, and CE on EE were all positively significant (b_{DF} = 0.242, p = 0.000 < 0.05; b_{PF} = 0.104, p = 0.042 < 0.05; b_{IF} = 0.140, p = 0.005 < 0.05; b_{CE} = 0.513, p = 0.000 < 0.05) (see Table 4.8). The total effect of DF, PF, and IF on EE were all significant (b_{DF} = 0.326, p = 0.000 < 0.05; b_{PF} = 0.209, p = 0.000 < 0.05; b_{IF} = 0.201, p = 0.000 < 0.05) (see Tables 4.9), thus, H2a, H2b, H2c, and H5a were supported, CE serves a partial mediating role.

Table 4.9 Total effects

DV	IV	Coeff.	se	t	p	LLCI	ULCI	Std. coeff.	R-sq	F	p
EE	constant	1.084	.166	6.534	.000	.758	1.410				
	DF	.326	.055	5.877	.000	.217	.435	.324	.421	74.51 (3,307)	.000
	PF	.209	.057	3.668	.000	.097	.320	.222			
	IF	.201	.056	3.580	.000	.090	.311	.215			
BE	constant	2.401	.182	13.201	.000	2.043	2.759				
	DF	.219	.061	3.595	.000	.099	.338	.241	.142	16.876 (3,307)	.000
	PF	.135	.062	2.166	.031	.012	.258	.160			
	IF	.023	.062	.379	.705	-.098	.144	.028			
	CE	.592	.052	11.429	.000	.490	.694	.545	.297	130.633 (1,309)	.000
TP	constant	2.803	.153	18.325	.000	2.502	3.104				
	DF	.095	.051	1.851	.065	-.006	.195	.126	.123	14.4 (3,307)	.000
	PF	.115	.052	2.186	.030	.011	.218	.163			
	IF	.086	.052	1.652	.099	-.016	.187	.122			
	CE	.475	.044	10.860	.000	.389	.561	.526	.276	117.939 (1,309)	.000
	EE	.373	.037	10.092	.000	.300	.446	.498	.248	101.841 (1,309)	.000

The direct effect of IF, CE and EE on BE were all significant (b_{IF} = -0.107, p = 0.037 < 0.05; b_{CE} = 0.282, p = 0.000 < 0.05; b_{EE} = 0.481, p = 0.000 < 0.05), but the direct effect of DF and PF on BE were all not significant (b_{DF} = 0.016, p = 0.764 > 0.05; b_{PF} = -0.023, p = 0.664 > 0.05)(see Tables 4.8), the total effect of DF, PF, and CE on BE were all significant (b_{DF} = 0.219, p = 0.000 < 0.05; b_{PF} = 0.135, p = 0.031 < 0.05; b_{CE} = 0.592, p = 0.000 < 0.05), but the total effect of IF on BE was not significant (b_{IF} =0.023, p = 0.705 > 0.05)(see Tables 4.9), thus, H3a, H3b, H5b, and H5c were supported, H3c was rejected. CE and EE serve full mediating roles in the relationship between DF and BE, as in the relationship between PF and BE.

The direct effect of CE and BE on TP were all significant (b_{CE} = 0.189, p = 0. 000 < 0.05; b_{BE} = 0.454, p = 0. 000 < 0.05), but the direct effect of DF, PF, IF, and EE on TP were all not significant (b_{DF} = -0.033, p = 0.426 > 0.05; b_{PF} = 0.016, p = 0.692 > 0.05; b_{IF} = 0.054, p = 0.188 > 0.05; b_{EE} = -0.007, p = 0.886 > 0.05) (see Tables 4.8). The total effects of CE and EE on TP were significant (b_{CE} = 0.475, p = 0.000 < 0.05; b_{EE} = 0.373, p = 0.000 < 0.05) (see Table 4.9); thus, H4a, H4b, and H4c were supported.

The total effect of PF on TP was significant (b_{PF} = 0.115 , p = 0.030 < 0.05), but the total effects of DF and IF on TP were insignificant (b_{DF} = 0.095, p = 0.065 > 0.05; b_{IF} = 0.086, p = 0.099 > 0.05) (see Table 4.9). the direct effects of DF, PF, and IF on TP were all not significant (b_{DF} = -0.033, p = 0.426 > 0.05; b_{PF} = 0.016, p = 0.692 > 0.05; b_{IF} = 0.054, p = 0.188 > 0.05) (see Table 4.8). But the total indirect effect of DF on TP was significant (BootLLCI = 0.046 > 0), the indirect effects of several paths were significant (DF → CE → TP, DF → CE → BE → TP, DF → EE → BE → TP, DF → CE → EE → BE → TP) (see Tables 4.10).

Table 4.10 The indirect effects of DF on TP

	Indirect effects				**Completely standardized indirect effects**			
	Effect	**BootSE**	**BootLLCI**	**BootULCI**	**Effect**	**BootSE**	**BootLLCI**	**BootULCI**
TOTAL	.128	.043	.046	.213	.170	.055	.063	.275
Ind1	.031	.016	.004	.065	.041	.021	.006	.088
Ind2	-.002	.021	-.045	.036	-.002	.027	-.062	.046
Ind3	.007	.029	-.050	.067	.009	.039	-.067	.087
Ind4	-.001	.008	-.015	.018	-.001	.010	-.021	.022
Ind5	.021	.011	.003	.047	.028	.015	.004	.061
Ind6	.053	.017	.022	.090	.070	.024	.029	.123
Ind7	.018	.010	.003	.041	.024	.013	.004	.054
Ind1 - Ind2	.033	.028	-.020	.092	.043	.038	-.025	.127
Ind1 - Ind3	.024	.036	-.046	.096	.032	.048	-.061	.130
Ind1 - Ind4	.032	.019	-.001	.074	.042	.026	-.002	.101
Ind1 - Ind5	.010	.013	-.017	.038	.013	.018	-.021	.052
Ind1 - Ind6	-.022	.023	-.067	.024	-.029	.030	-.091	.031
Ind1 - Ind7	.013	.012	-.010	.037	.017	.016	-.013	.051
Ind2 - Ind3	-.009	.033	-.078	.053	-.012	.044	-.104	.069
Ind2 - Ind4	-.001	.015	-.035	.026	-.002	.019	-.049	.033
Ind2 - Ind5	-.023	.024	-.073	.020	-.030	.032	-.099	.026
Ind2 - Ind6	-.055	.032	-.126	-.001	-.073	.045	-.175	-.001
Ind2 - Ind7	-.020	.024	-.070	.023	-.027	.032	-.095	.030
Ind3 - Ind4	.008	.029	-.049	.068	.010	.039	-.066	.089
Ind3 - Ind5	-.014	.033	-.082	.051	-.018	.044	-.109	.066
Ind3 - Ind6	-.046	.038	-.125	.025	-.061	.051	-.172	.032
Ind3 - Ind7	-.011	.033	-.078	.052	-.015	.044	-.106	.068
Ind4 - Ind5	-.022	.014	-.053	.000	-.029	.019	-.071	.000
Ind4 - Ind6	-.053	.022	-.097	-.011	-.071	.030	-.133	-.014

	Indirect effects				Completely standardized indirect effects			
	Effect	**BootSE**	**BootLLCI**	**BootULCI**	**Effect**	**BootSE**	**BootLLCI**	**BootULCI**
Ind4 - Ind7	-.019	.013	-.049	.001	-.025	.018	-.068	.001
Ind5 - Ind6	-.032	.021	-.073	.010	-.042	.029	-.102	.013
Ind5 - Ind7	.003	.009	-.017	.021	.003	.012	-.023	.027
Ind6 - Ind7	.035	.019	-.003	.074	.046	.027	-.004	.101

Notes: Ind1：DF → CE → TP, Ind2：DF → EE → TP, Ind3：DF → BE → TP, Ind4：DF → CE → EE → TP, Ind5：DF → CE → BE → TP, Ind6：DF → EE → BE → TP, Ind7：DF → CE → EE → BE → TP.

The total indirect effect of PF on TP was significant (BootLLCI = 0.016 > 0); the indirect effects of several paths were significant (PF → CE → TP, PF → CE → BE → TP, PF → CE → EE → BE → TP) (see Table 4.11).

Table 4.11 The indirect effects of PF on TP

	Indirect effects				Completely standardized indirect effects			
	Effect	**BootSE**	**BootLLCI**	**BootULCI**	**Effect**	**BootSE**	**BootLLCI**	**BootULCI**
TOTAL	.098	.042	.016	.178	.140	.059	.022	.249
Ind1	.038	.019	.007	.079	.055	.027	.010	.113
Ind2	-.001	.010	-.021	.020	-.001	.014	-.031	.028
Ind3	-.010	.030	-.067	.052	-.015	.043	-.097	.075
Ind4	-.001	.009	-.019	.017	-.001	.013	-.027	.024
Ind5	.026	.011	.007	.051	.037	.016	.010	.072
Ind6	.023	.013	-.002	.050	.032	.019	-.003	.074
Ind7	.023	.009	.007	.041	.032	.012	.011	.058
Ind1 - Ind2	.039	.023	-.004	.089	.056	.034	-.006	.127
Ind1 - Ind3	.049	.036	-.026	.118	.069	.052	-.037	.171
Ind1 - Ind4	.039	.023	.000	.091	.056	.034	.001	.131
Ind1 - Ind5	.012	.016	-.017	.048	.018	.023	-.023	.070
Ind1 - Ind6	.015	.022	-.024	.061	.022	.031	-.036	.087
Ind1 - Ind7	.016	.015	-.009	.049	.022	.021	-.012	.070
Ind2 - Ind3	.009	.033	-.060	.071	.014	.047	-.085	.101
Ind2 - Ind4	.000	.006	-.013	.013	.000	.008	-.018	.018
Ind2 - Ind5	-.027	.016	-.059	.002	-.038	.022	-.084	.003
Ind2 - Ind6	-.024	.018	-.067	.004	-.034	.027	-.097	.005
Ind2 - Ind7	-.024	.015	-.053	.005	-.033	.021	-.077	.007
Ind3 - Ind4	-.009	.032	-.070	.058	-.014	.046	-.100	.083

	Indirect effects				Completely standardized indirect effects			
	Effect	**BootSE**	**BootLLCI**	**BootULCI**	**Effect**	**BootSE**	**BootLLCI**	**BootULCI**
Ind3 - Ind5	-.036	.034	-.102	.033	-.052	.048	-.145	.047
Ind3 - Ind6	-.033	.033	-.096	.033	-.047	.047	-.140	.046
Ind3 - Ind7	-.033	.032	-.094	.032	-.047	.045	-.135	.045
Ind4 - Ind5	-.027	.015	-.060	-.002	-.038	.022	-.086	-.003
Ind4 - Ind6	-.024	.017	-.060	.009	-.034	.025	-.087	.012
Ind4 - Ind7	-.024	.014	-.056	.000	-.033	.021	-.080	-.001
Ind5 - Ind6	.003	.018	-.032	.039	.005	.025	-.047	.054
Ind5 - Ind7	.003	.010	-.018	.025	.005	.015	-.027	.034
Ind6 - Ind7	.000	.015	-.030	.029	.000	.021	-.043	.043

Notes: Ind1：PF → CE → TP, Ind2：PF → EE → TP, Ind3：PF → BE → TP, Ind4：PF → CE → EE → TP, Ind5：PF → CE → BE → TP, Ind6：PF → EE → BE → TP, Ind7：PF → CE → EE → BE → TP.

The total indirect effect of IF on TP was insignificant (BootLLCI = -0.055 < 0, BootULCI = 0.129 > 0), but the indirect effect of one path was significant (IF → EE → BE → TP) (see Tables 4.12).

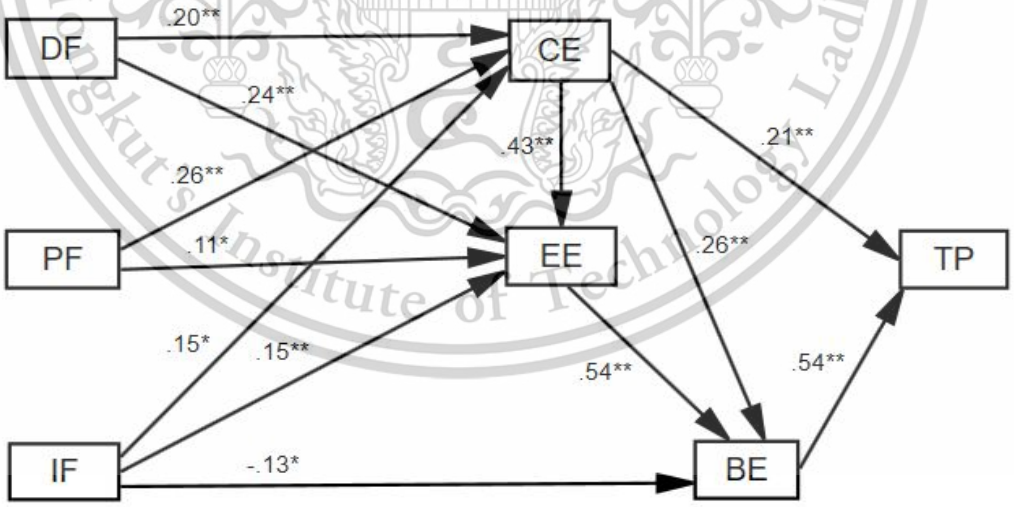
Table 4.12 The indirect effects of IF on TP

	Indirect effects				Completely standardized indirect effects			
	Effect	**BootSE**	**BootLLCI**	**BootULCI**	**Effect**	**BootSE**	**BootLLCI**	**BootULCI**
TOTAL	.031	.046	-.055	.129	.045	.065	-.079	.178
Ind1	.022	.015	-.004	.057	.032	.022	-.005	.082
Ind2	-.001	.013	-.021	.033	-.001	.019	-.031	.046
Ind3	-.048	.027	-.102	.005	-.069	.039	-.144	.007
Ind4	.000	.006	-.013	.013	-.001	.009	-.019	.019
Ind5	.015	.011	-.002	.040	.022	.015	-.004	.056
Ind6	.031	.012	.008	.056	.044	.017	.011	.079
Ind7	.013	.009	-.002	.035	.019	.013	-.003	.049
Ind1 - Ind2	.023	.022	-.023	.067	.033	.032	-.031	.097
Ind1 - Ind3	.071	.031	.011	.132	.101	.044	.015	.187
Ind1 - Ind4	.023	.018	-.006	.064	.032	.026	-.009	.093
Ind1 - Ind5	.007	.011	-.014	.032	.010	.016	-.019	.047
Ind1 - Ind6	-.008	.019	-.044	.032	-.012	.027	-.062	.046
Ind1 - Ind7	.009	.010	-.008	.033	.013	.014	-.012	.047
Ind2 - Ind3	.047	.030	-.011	.108	.068	.042	-.016	.150

	Indirect effects				Completely standardized indirect effects			
	Effect	**BootSE**	**BootLLCI**	**BootULCI**	**Effect**	**BootSE**	**BootLLCI**	**BootULCI**
Ind2 - Ind4	-.001	.009	-.015	.024	-.001	.013	-.022	.034
Ind2 - Ind5	-.016	.018	-.049	.022	-.023	.025	-.070	.031
Ind2 - Ind6	-.032	.018	-.069	.001	-.045	.026	-.099	.002
Ind2 - Ind7	-.014	.017	-.046	.024	-.020	.024	-.065	.034
Ind3 - Ind4	-.048	.028	-.103	.007	-.068	.040	-.144	.010
Ind3 - Ind5	-.064	.029	-.123	-.008	-.091	.042	-.174	-.011
Ind3 - Ind6	-.079	.032	-.143	-.017	-.113	.045	-.202	-.025
Ind3 - Ind7	-.062	.029	-.120	-.007	-.088	.041	-.171	-.009
Ind4 - Ind5	-.016	.013	-.046	.003	-.022	.018	-.065	.005
Ind4 - Ind6	-.031	.014	-.059	-.006	-.044	.019	-.085	-.009
Ind4 - Ind7	-.014	.012	-.044	.003	-.020	.017	-.062	.005
Ind5 - Ind6	-.015	.015	-.044	.016	-.022	.022	-.065	.022
Ind5 - Ind7	.002	.007	-.013	.017	.003	.010	-.018	.024
Ind6 - Ind7	.017	.014	-.013	.044	.025	.021	-.018	.064

Notes: Ind1：IF → CE → TP, Ind2：IF → EE → TP, Ind3：IF → BE → TP, Ind4：IF → CE → EE → TP, Ind5：IF → CE → BE → TP, Ind6：IF → EE → BE → TP, Ind7：IF → CE → EE → BE → TP.

The path relationships of the observed variables are shown in Figure 4.14.



Notes: ** $p < 0.01$，* $p < 0.05$

Figure 4.14 The structural model of the main effects of the observed variables

4.8 Analysis of the Moderating Effects of EI

4.8.1 Analysis of the Moderating Effect of EI on the Relationship between PF and WE

Model 7 （In PROCESS procedure) was utilized to test the moderating effect of EI, with TP as the outcome variable, PF as the focal antecedent variable, DF and IF as the covariates, CE, EE, and BE as the mediators, EI as the moderator, employing 5,000 bootstrap samples and 95% percentile bootstrap confidence intervals, following the methodological framework provided by Hayes (2017).

The results indicated that the moderating effect of EI on the relationship between PF and CE was positively significant (β = 0.144; p = 0.004) (see Table 4.13), which supports H6a. This moderation effect accounted for 1.7% of the variance in CE. As can be seen in Table 4.14, the best-fitting model with BE as the outcome variable is as follows:

$$\widehat{CE} = 2.908 - 0.408\ PF - 0.083\ EI + 0.144\ PF * EI + 0.147\ DF + 0.073\ IF$$

Table 4.13 Model 7 summary with CE as the outcome variable

DV	IV	coeff	se	t	p	LLCI	ULCI	R-sq	F（5,305）	p
CE	constant	2.908	.647	4.494	.000	1.635	4.181	.392	39.339	.000
	PF	-.408	.197	-2.074	.039	-.795	-.021			
	EI	-.083	.166	-.497	.619	-.410	.245			
	PF * EI	.144	.049	2.936	.004	.047	.240			
	IF	.073	.049	1.506	.133	-.022	.169			
	DF	.147	.048	3.081	.002	.053	.240			

Notes: PF as the focal antecedent variable, DF and IF as covariates, EI as the moderator.

Drawing on the approach outlined by Hayes (2017), we employed the Johnson-Neyman method to analyze and visualize the interaction effects. Johnson Neyman's method, or floodlight analysis (Spiller et al., 2013), can provide more information about moderation effects than spotlight tests because the moderating variables are continuous in this study. Initially, we scrutinized the moderating influence of EI on the relationship between PF and CE. Utilizing 5,000 bootstrap samples and a 95% percentile bootstrap confidence interval, we discerned that at EI values above the threshold of 3.544, there is no zero between the BootLLCI coefficient and the

BootULCI coefficient. Moreover, the slope exhibited a positive trend that intensified with increasing EI values (see Figure 4.15). These findings indicate that EI positively impacts the association between PF and CE.

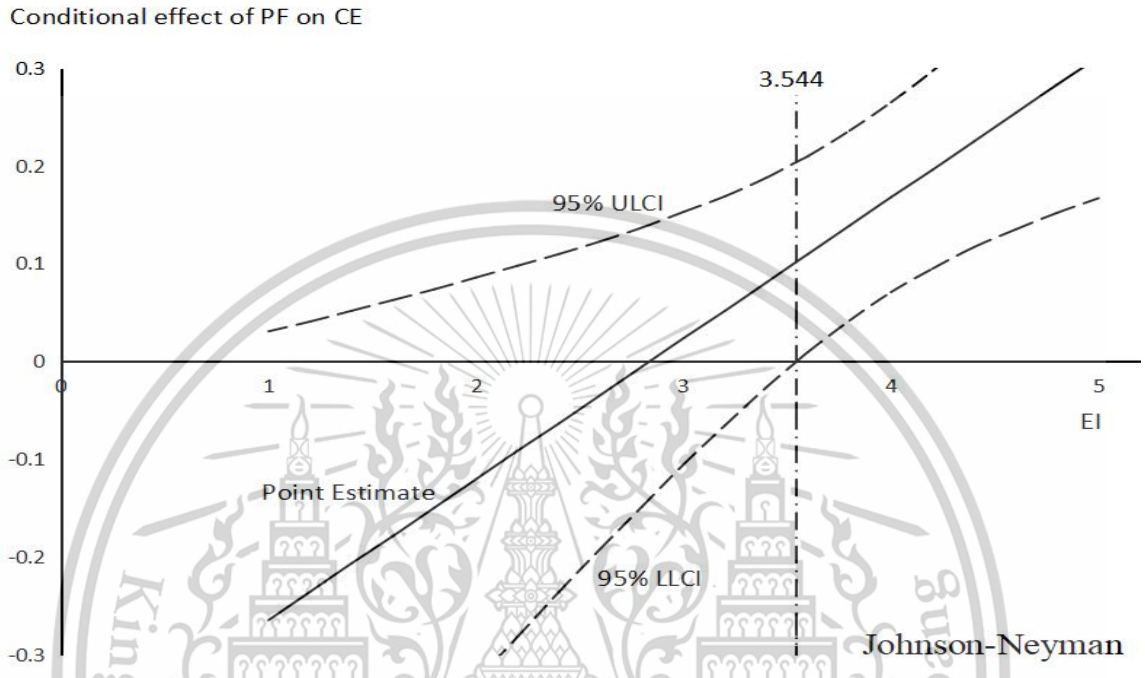


Figure 4.15 The conditional effect of PF on CE as a function of EI

Table 4.14 Conditional effects of PF on CE at values of EI

EI	Effect	se	t	p	LLCI	ULCI
1.000	-.264	.150	-1.764	.079	-.559	.031
1.200	-.235	.140	-1.675	.095	-.512	.041
1.400	-.206	.131	-1.572	.117	-.465	.052
1.600	-.178	.122	-1.453	.147	-.418	.063
1.800	-.149	.113	-1.313	.190	-.372	.074
2.000	-.120	.105	-1.148	.252	-.326	.086
2.200	-.091	.096	-.951	.342	-.281	.098
2.400	-.063	.088	-.713	.476	-.235	.110
2.600	-.034	.080	-.424	.672	-.191	.123
2.800	-.005	.072	-.070	.944	-.148	.137
3.000	.024	.066	.361	.718	-.105	.153
3.200	.052	.059	.882	.378	-.065	.169

EI	Effect	se	t	p	LLCI	ULCI
3.400	.081	.055	1.490	.137	-.026	.188
3.544	.102	.052	1.968	.050	.000	.204
3.600	.110	.051	2.157	.032	.010	.210
3.800	.139	.049	2.821	.005	.042	.236
4.000	.168	.049	3.398	.001	.071	.265
4.200	.196	.051	3.824	.000	.095	.297
4.400	.225	.055	4.088	.000	.117	.333
4.600	.254	.060	4.219	.000	.135	.372
4.800	.283	.066	4.261	.000	.152	.413
5.000	.311	.073	4.248	.000	.167	.456

Among respondents with low levels of EI (EI value < 3.544), the effect of PF on CE is not significant. For instance, when the value of EI was 3 (16th percentile), the effect coefficient of PF was 0.024 ($p = 0.718 > 0.05$), suggesting no significant positive impact of PF on CE. Conversely, among respondents with high levels of EI (EI value > 3.156), the effect of PF on CE was significant. For example, when the value of EI was 4 (50th percentile), the effect coefficient of PF was 0.168 ($p = 0.001 < 0.05$), indicating a significant positive impact of PF on CE. These results imply that the influence of PF on CE is positively associated with the level of EI (see Table 4.14 and Figure 4.3).

Whether EI moderated the mediation of CE between PF and TP was tested. The index of moderated mediation was 0.027. There is no zero between the BootLLCI coefficient and the BootULCI coefficient (LLCI = 0.006, ULCI = 0.051), indicating that EI moderates the mediation of CE between PF and TP.

The results indicated that the moderating effect of EI on the relationship between PF and EE was insignificant ($\beta = -0.039$; $p = 0.480 > 0.05$). There is zero between the BootLLCI coefficient and the BootULCI coefficient (LLCI = -0.146, ULCI = 0.069) (see Table 4.15), contradicting the prediction of H6b. The moderation explains only 0.1% of the variance in BE.

Table 4.15 Model 7 summary with EE as the outcome variable

DV	IV	coeff	se	t	p	LLCI	ULCI	R-sq	F（5,305）	p
	constant	-.370	.723	-.512	.609	-1.793	1.053			
EE	PF	.313	.220	1.424	.155	-.120	.745	.320	55.894	.000
	EI	.464	.186	2.496	.013	.098	.830			

DV	IV	coeff	se	t	p	LLCI	ULCI	R-sq	F（5,305）	p
	PF * EI	-.039	.055	-.707	.480	-.146	.069			
	IF	.150	.054	2.771	.006	.044	.257			
	DF	.329	.053	6.188	.000	.224	.434			

Notes: PF as the focal antecedent variable, DF and IF as covariates, EI as the moderator

The results indicated that the moderating effect of EI on the relationship between PF and BE was positively insignificant (β = 0.032; p = 0.564 > 0.05). There is zero between the BootLLCI coefficient and the BootULCI coefficient (LLCI = -0.078, ULCI = 0.143) (see Table 4.16), contradicting the prediction of H6c. The moderation explains only 0.1% of the variance in BE.

Table 4.16 Model 7 summary with BE as the outcome variable

DV	IV	coeff	se	t	p	LLCI	ULCI	R-sq	F（5,305）	p
BE	constant	1.250	.743	1.683	.093	-.212	2.712	.320	28.748	.000
	PF	-.065	.226	-.288	.773	-.509	.379			
	EI	.441	.191	2.307	.022	.065	.817			
	PF * EI	.032	.056	.577	.564	-.078	.143			
	IF	-.052	.056	-.936	.350	-.162	.058			
	DF	.213	.055	3.903	.000	.106	.321			

Notes: PF as the focal antecedent variable, DF and IF as covariates, EI as the moderator

4.8.2 Analysis of the Moderating Effect of EI on the Relationship between IF and WE

Model 7（In PROCESS procedure) was utilized, with TP as the outcome variable, IF as the focal antecedent variable, DF and PF as the covariates, CE, EE, and BE as the mediators, EI as the moderator, employing 5,000 bootstrap samples and 95% percentile bootstrap confidence intervals, following the methodological framework provided by Hayes (2017).

The results indicated that the moderating effect of EI on the relationship between IF and CE was positively significant (β = 0.112; p = 0.012 < 0.05) (see Table 4.17), which supports H7a. This moderation effect accounted for 1.3 % of the variance in CE. As can be seen in Table 4.10, the best-fitting model with BE as the outcome variable is as follows:

$$\widehat{CE} = 2.425 - 0.362\,IF + 0.044EI + 0.112\,IF * EI + 0.144\,DF + 0.152\,PF$$

Table 4.17 Model 7 summary with CE as the outcome variable

DV	IV	coeff	se	t	p	LLCI	ULCI	R-sq	F（5,305）	p
CE	constant	2.425	.562	4.318	.000	1.320	3.531	.388	38.619	.000
	IF	-.362	.176	-2.060	.040	-.708	-.016			
	EI	.044	.143	.309	.758	-.238	.326			
	IF * EI	.112	.044	2.524	.012	.025	.200			
	DF	.144	.048	3.001	.003	.050	.238			
	PF	.152	.049	3.089	.002	.055	.249			

Notes: IF as the focal antecedent variable, DF and PF as covariates, EI as the moderator

Adhering to the methodology delineated by Bauer and Curran (2005), we engaged the Johnson-Neyman technique to execute a simple slope analysis and visualize the interaction effects. Initially, we scrutinized the moderating influence of EI on the relationship between IF and CE. Utilizing 5,000 bootstrap samples and a 95% percentile bootstrap confidence interval, we discerned that at EI values above the threshold of 4.117, there is no zero between the BootLLCI coefficient and the BootULCI coefficient. Moreover, the slope exhibited a positive trend that intensified with increasing EI values. These findings indicate that EI positively impacts the association between IF and CE (see Figure 4.16).

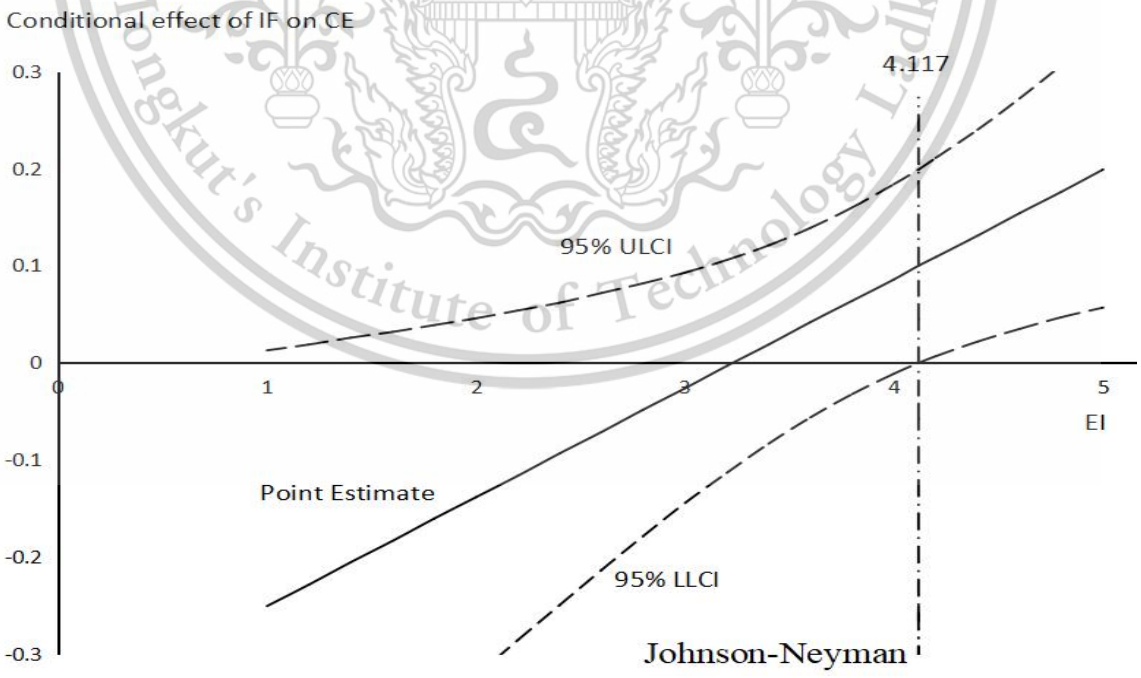


Figure 4.16 The conditional effect of IF on CE as a function of EI

Table 4.18 Conditional effects of IF on CE at values of EI

EI	Effect	se	t	p	LLCI	ULCI
1.000	-.250	.134	-1.871	.062	-.513	.013
1.200	-.228	.125	-1.815	.071	-.475	.019
1.400	-.205	.117	-1.749	.081	-.436	.026
1.600	-.183	.109	-1.673	.095	-.398	.032
1.800	-.160	.101	-1.581	.115	-.360	.039
2.000	-.138	.094	-1.472	.142	-.322	.046
2.200	-.116	.086	-1.339	.181	-.285	.054
2.400	-.093	.079	-1.177	.240	-.249	.062
2.600	-.071	.072	-.978	.329	-.213	.072
2.800	-.048	.066	-.731	.465	-.178	.082
3.000	-.026	.060	-.428	.669	-.144	.093
3.200	-.003	.056	-.060	.952	-.113	.106
3.400	.019	.052	.368	.713	-.083	.121
3.600	.042	.049	.840	.402	-.056	.139
3.800	.064	.049	1.315	.189	-.032	.160
4.000	.086	.049	1.749	.081	-.011	.184
4.117	.100	.051	1.968	.050	.000	.199
4.200	.109	.052	2.104	.036	.007	.211
4.400	.131	.055	2.370	.018	.022	.240
4.600	.154	.060	2.555	.011	.035	.272
4.800	.176	.066	2.677	.008	.047	.306
5.000	.199	.072	2.755	.006	.057	.340

Among respondents with low levels of EI (EI value < 4.117), the effect of IF on CE is not significant. For instance, when the value of EI was 3 (16th percentiles), the effect coefficient of IF was -0.026 ($p = 0.669 > 0.05$), suggesting no significant negative impact of IF on CE. Conversely, among respondents with high levels of EI (EI value > 4.117), the effect of IF on CE was significant. For example, when the value of EI was 4.4, the effect coefficient of IF was 0.131 ($p = 0.018 < 0.05$) (see Table 4.18 and Figure 4.4), indicating a significant positive impact of IF on CE. These results imply that the influence of IF on CE is positively associated with the level of EI.

Whether EI moderated the mediation of CE between IF and TP was tested. The

index of moderated mediation was 0.021. There was zero between the BootLLCI coefficient and the BootULCI coefficient (LLCI = -0.001, ULCI = 0.041), indicating that EI does not moderate the mediation of CE between IF and TP.

The moderating effect of EI on the relationship between IF and EE was insignificant (β = -0.009; p = 0.849> 0.05). There is zero between the BootLLCI coefficient and the BootULCI coefficient (LLCI = -0.107, ULCI = 0.088) (see Table 4.19), contradicting the prediction of H7b; the moderation explains 0.0% of the variance in EE.

Table 4.19 Model 7 summary with EE as the outcome variable

DV	IV	coeff	se	t	p	LLCI	ULCI	R-sq	F（5,305）	p
EE	constant	.003	.626	.005	.996	-1.229	1.235	.477	55.717	.000
	IF	.189	.196	.962	.337	-.197	.574			
	EI	.368	.160	2.303	.022	.054	.682			
	IF * EI	-.009	.050	-.191	.849	-.107	.088			
	DF	.326	.053	6.101	.000	.221	.432			
	PF	.162	.055	2.965	.003	.055	.270			

Notes: IF as the focal antecedent variable, DF and PF as covariates, EI as the moderator

The moderating effect of EI on the relationship between IF and BE was positively significant (β = 0.119; p = 0.019 < 0.05), which supports H7c (see Table 4.20). This moderation effect accounted for 1.2 % of the variance in BE. As can be seen in Table 4.20, the best-fitting model with BE as the outcome variable is as follows:

$$\widehat{BE} = 2.246 - 0.508\,IF + 0.188\,EI + 0.119\,IF * EI + 0.197\,DF + 0.062\,PF$$

Table 4.20 Model 7 summary with BE as the outcome variable

DV	IV	coeff	se	t	p	LLCI	ULCI	R-sq	F（5,305）	p
BE	constant	2.246	.637	3.524	.000	.992	3.499	.332	30.298	.000
	IF	-.508	.199	-2.547	.011	-.901	-.116			
	EI	.188	.163	1.154	.249	-.132	.508			
	IF * EI	.119	.050	2.368	.019	.020	.219			
	DF	.197	.054	3.624	.000	.090	.304			
	PF	.062	.056	1.107	.269	-.048	.171			

Notes: IF as the focal antecedent variable, DF and PF as covariates, EI as the moderator

The Johnson-Neyman technique was used to execute a simple slope analysis and

visualize the interaction effects. Initially, we scrutinized the moderating influence of EI on the relationship between IF and BE. Utilizing 5,000 bootstrap samples and a 95% percentile bootstrap confidence interval, we discerned that at EI values below the threshold of 3.231, there is no zero between the BootLLCI coefficient and the BootULCI coefficient. Moreover, the slope exhibited a positive trend that intensified with increasing EI values. These findings indicate that EI positively impacts the association between IF and BE (see Figure 4.17).

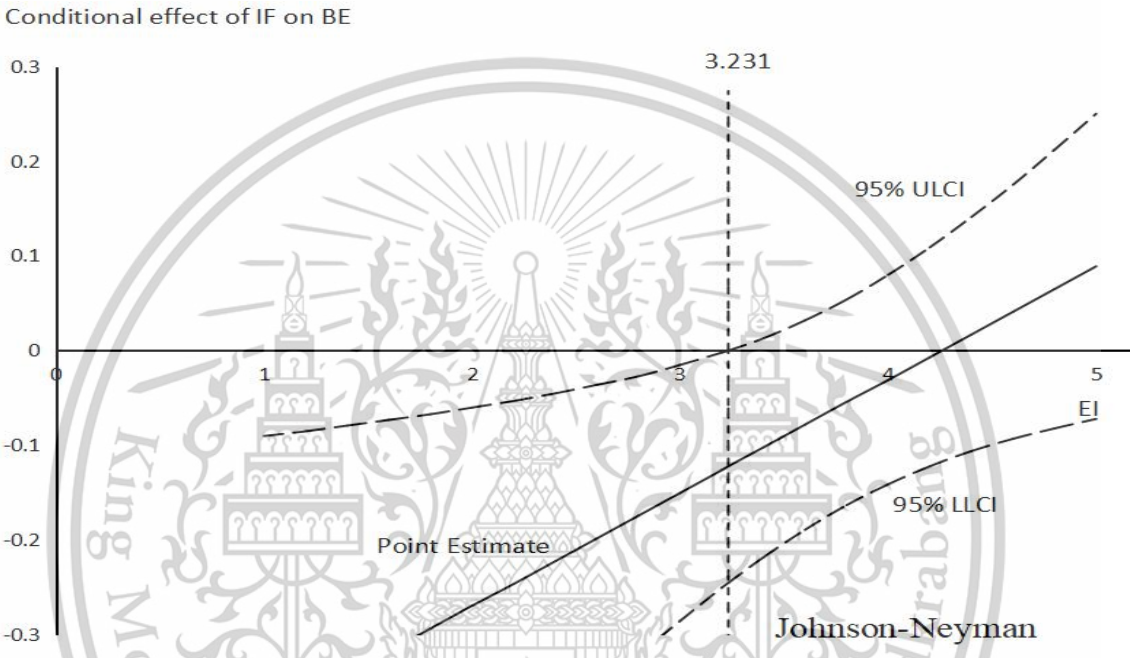


Figure 4.17 The conditional effect of IF on BE as a function of EI

Table 4.21 Conditional effects of IF on BE at values of EI

EI	Effect	se	t	p	LLCI	ULCI
1.000	-.389	.152	-2.563	.011	-.687	-.090
1.200	-.365	.142	-2.563	.011	-.645	-.085
1.400	-.341	.133	-2.562	.011	-.603	-.079
1.600	-.317	.124	-2.558	.011	-.561	-.073
1.800	-.293	.115	-2.549	.011	-.520	-.067
2.000	-.269	.106	-2.534	.012	-.479	-.060
2.200	-.246	.098	-2.509	.013	-.438	-.053
2.400	-.222	.090	-2.471	.014	-.398	-.045
2.600	-.198	.082	-2.413	.016	-.359	-.036
2.800	-.174	.075	-2.324	.021	-.321	-.027

EI	Effect	se	t	p	LLCI	ULCI
3.000	-.150	.068	-2.193	.029	-.285	-.015
3.200	-.126	.063	-2.003	.046	-.250	-.002
3.231	-.122	.062	-1.968	.050	-.245	.000
3.400	-.102	.059	-1.740	.083	-.218	.013
3.600	-.078	.056	-1.397	.163	-.189	.032
3.800	-.054	.055	-.988	.324	-.163	.054
4.000	-.031	.056	-.546	.585	-.141	.080
4.200	-.007	.059	-.115	.909	-.122	.109
4.400	.017	.063	.273	.785	-.106	.141
4.600	.041	.068	.601	.548	-.093	.175
4.800	.065	.075	.870	.385	-.082	.212
5.000	.089	.082	1.086	.278	-.072	.250

Among respondents with low levels of EI (EI value < 3.231), the effect of IF on CE is negative. For instance, when the value of EI was 3 (16th percentile), the effect coefficient of IF was -0.150 ($p = 0.029 < 0.05$), suggesting a significant negative impact of IF on BE. Conversely, among respondents with high levels of EI (EI value > 3.231), IF did not significantly affect BE. For example, when the value of EI was 4, the effect coefficient of IF was -0.031 ($p = 0.585 < 0.05$) (see Table 4.21 and Figure 4.5), indicating an insignificant negative impact of IF on BE. These results imply that the influence of IF on BE is positively associated with the level of EI.

Whether the mediation of BE between IF and TP was moderated by EI was tested. The index of moderated mediation was 0.000. There was zero between the BootLLCI coefficient and the BootULCI coefficient (LLCI = -0.019, ULCI = 0.006), indicating that EI does not moderate the mediation of BE between IF and TP.

4.9 Analysis of the Three-Way Interactions

The three-way interactions of EI and AIA were tested. There was no significant correlation between AIA and EI ($r = 0.08$, $p > 0.05$), which effectively avoided the problem of collinearity. Model 11 （In PROCESS procedure) was employed for analysis, with TP as the outcome variable, IF as the focal antecedent variable, DF and PF as the covariates, CE, EE, and BE as the mediators, EI as the primary moderator, AIA as the secondary moderator, utilizing 5,000 bootstrap samples and a 95% percentile bootstrap confidence interval, following the methodology outlined by Hayes (2017). The results showed that the moderating effect of EI on the relationship between IF and

CE was unrelated to AIA (β = 0.069; p = 0.232 > 0.05) (see Table 4.22), which contradicted H8a.

Table 4.22 Model 11 summary with CE as the outcome variable

DV	IV	coeff	se	t	p	LLCI	ULCI	R-sq	F（9,301）	p
CE	constant	.284	2.204	.129	.898	-4.053	4.620	.392	21.587	.000
	IF	.489	.696	.702	.483	-.881	1.859			
	EI	.549	.563	.975	.330	-.559	1.658			
	IF * EI	-.086	.174	-.491	.624	-.428	.257			
	AIA	.756	.751	1.007	.315	-.721	2.234			
	IF * AIA	-.299	.234	-1.281	.201	-.759	.161			
	EI * AIA	-.175	.190	-.919	.359	-.550	.200			
	IF * EI * AIA	.069	.057	1.197	.232	-.044	.182			
	DF	.136	.049	2.789	.006	.040	.233			
	PF	.153	.049	3.106	.002	.056	.250			

Notes: IF as the focal antecedent variable, DF and PF as covariates, EI as the primary moderator, AIA as the secondary moderator

The moderating effect of EI on the relationship between IF and EE is significantly positively related to AIA (β = 0.139; p = 0.03 < 0.05) (see Table 4.23), which supported H8b, and the "moderation of moderation" explains 0.8 % of the variance in EE.

Table 4.23 Model 11 summary with EE as the outcome variable

DV	IV	coeff	se	t	p	LLCI	ULCI	R-sq	F（9,301）	p
EE	constant	-4.951	2.438	-2.030	.043	-9.750	-.152	.489	31.950	.000
	IF	1.744	.770	2.263	.024	.228	3.260			
	EI	1.685	.623	2.703	.007	.458	2.912			
	IF * EI	-.405	.193	-2.100	.037	-.784	-.025			
	AIA	1.765	.831	2.125	.034	.130	3.400			
	IF * AIA	-.544	.258	-2.106	.036	-1.053	-.036			
	EI * AIA	-.468	.211	-2.223	.027	-.883	-.054			
	IF * EI* AIA	.139	.064	2.184	.030	.014	.264			
	DF	.311	.054	5.751	.000	.205	.418			
	PF	.164	.055	3.001	.003	.056	.271			

Notes: IF as the focal antecedent variable, DF and PF as covariates, EI as the primary moderator, AIA as the secondary moderator

Table 4.23 indicates that the best-fitting model with EE as the outcome variable is as follows:

$$\widehat{EE} = -4.951 + 1.744\,IF + 1.685\,EI + 1.765\,AIA - 0.405\,IF * EI - 0.544\,IF * AIA - 0.468\,EI * AIA + 0.139\,IF * EI * AIA + 0.311\,DF + 0.164\,PF$$

IF exerted a significant positive effect on EE. Notice that the regression coefficient for $IF * EI * AIA$ is statistically significant, meaning that there is evidence of a three-way interaction between IF, EI, and AIA, that is, the magnitude of the moderation by EI of the effect of IF on BE is contingent upon AIA levels.

The Johnson-Neyman method was employed to analyze and visualize the interaction effects. Utilizing 5,000 bootstrap samples and a bias-corrected 95% confidence interval, we observed that among respondents with middle levels of AIA (1.217 < AIA value < 4.527), the effect of IF on EE is not significantly moderated by EI. For example, when the value of AIA is 3, the moderating effect coefficient of EI is 0.012 ($p = 0.815 > 0.05$), and EI does not significantly positively moderate the impact of IF on EE. However, among respondents with high (AIA value > 4.527) or low (AIA value < 1.217) levels of AIA, EI significantly moderates the effect of IF on EE, that is, there are greater differences in the impact of IF on EE at different EI levels. For example, when the value of AIA is 1, the moderating effect coefficient of EI is -0.266 ($p = 0.046 < 0.05$), EI significantly negatively moderates the impact of IF on EE. When the value of AIA is 4.789, the moderating effect coefficient of EI is 0.260 ($p = 0.044 < 0.05$) (see Table 4.24 and Figure 4.18), EI significantly positively moderates the impact of IF on EE. This suggests that the moderating effect of EI on the impact of IF on EE is positively associated with the level of AIA.

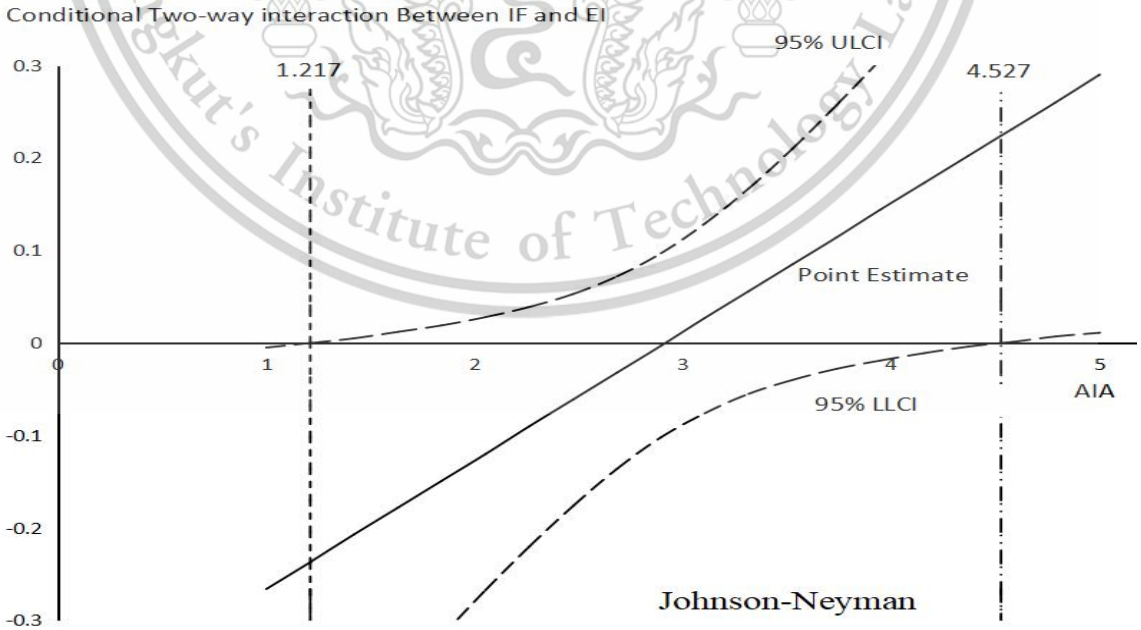


Figure 4.18 The conditional two-way interaction between IF and EI as a function of AIA, with EE as the outcome variable

Table 4.24 Test of conditional IF*EI interaction at values of AIA, with EE as the outcome variable

AIA	Effect	se	t	p	LLCI	ULCI
1.000	-.266	.132	-2.008	.046	-.527	-.005
1.211	-.237	.120	-1.969	.050	-.473	.000
1.217	-.236	.120	-1.968	.050	-.472	.000
1.421	-.207	.108	-1.917	.056	-.420	.005
1.632	-.178	.097	-1.845	.066	-.368	.012
1.842	-.149	.085	-1.743	.082	-.317	.019
2.053	-.120	.075	-1.594	.112	-.267	.028
2.263	-.090	.066	-1.374	.170	-.220	.039
2.474	-.061	.058	-1.052	.294	-.176	.053
2.684	-.032	.053	-.604	.546	-.136	.072
2.895	-.003	.051	-.053	.957	-.102	.097
3.105	.027	.052	.511	.610	-.076	.129
3.316	.056	.056	.988	.324	-.055	.167
3.526	.085	.063	1.339	.182	-.040	.210
3.737	.114	.072	1.579	.115	-.028	.257
3.947	.144	.082	1.740	.083	-.019	.306
4.158	.173	.093	1.850	.065	-.011	.357
4.368	.202	.105	1.925	.055	-.004	.408
4.527	.224	.114	1.968	.050	.000	.448
4.579	.231	.117	1.980	.049	.001	.461
4.789	.260	.129	2.019	.044	.007	.514
5.000	.290	.141	2.049	.041	.011	.568

The impact of IF on EE under different AIA and EI values was analyzed. In the case of AIA = 1.2, When EI = 3 (16th percentile), b = 0.376 (p = 0.006), IF significantly positively affects EE; When EI = 4 (50th percentile), b = 0.138 (p = 0.106), IF has no significant positive effect on EE; When EI = 4.333 (84th percentile), b = 0.059 (p = 0.555), IF does not have a significant positive effect on EE. In the case of AIA = 3, when EI = 3, b = 0.146 (p = 0.040), IF significantly positively affects EE; When EI = 4, b = 0.158 (p = 0.007), IF significantly positively affects EE;

When EI = 4.333, b = 0.162 (p = 0.011), IF significantly positively affects EE. In the case of AIA = 4.8, when EI = 3, b = -0.083 (p = 0.632), IF does not have a significant negative impact on EE; When EI = 4, b = 0.179 (p = 0.103), IF has no significant positive effect on EE; When EI = 4.333, b=0.266 (p = 0.022), IF significantly positively affects EE (see Table 4.25).

Table 4.25 Conditional effects of IF on EE at values of the moderators

AIA	EI	Effect	se	t	p	LLCI	ULCI
1.200	3.000	.376	.137	2.749	.006	.107	.646
1.200	4.000	.138	.085	1.622	.106	-.030	.306
1.200	4.333	.059	.100	.591	.555	-.137	.255
3.000	3.000	.146	.071	2.063	.040	.007	.286
3.000	4.000	.158	.059	2.709	.007	.043	.273
3.000	4.333	.162	.064	2.558	.011	.038	.287
4.800	3.000	-.083	.174	-.480	.632	-.425	.258
4.800	4.000	.179	.109	1.638	.103	-.036	.393
4.800	4.333	.266	.115	2.308	.022	.039	.493

In addition, with TP as the outcome variable, EE as the mediator, IF as the focal antecedent variable, DF and PF as covariates, EI as the primary moderator, and AIA as the secondary moderator, the index of moderated-moderated mediation was 0.049. There was no zero between the BootLLCI coefficient (0.006) and the BootULCI coefficient (0.100); the moderated-moderated mediation effects exist.

The moderating effect of EI on the relationship between IF and BE is significantly positively related to AIA ($\beta = 0.141$; $p = 0.03 < 0.05$) (see Table 4.26), which supported H8c, and the "moderation of moderation" explains 1.0 % of the variance in EE.

Table 4.26 Model 11 summary with BE as the outcome variable

DV	IV	coeff	se	t	p	LLCI	ULCI	R-sq	F（9,301）	p
	constant	-2.824	2.488	-1.135	.257	-7.719	2.072			
	IF	1.093	.786	1.391	.165	-.453	2.640			
	EI	1.518	.636	2.387	.018	.267	2.770			
BE	IF * EI	-.299	.197	-1.522	.129	-.686	.088	.343	17.474	.000
	AIA	1.754	.848	2.070	.039	.087	3.422			
	IF * AIA	-.544	.264	-2.062	.040	-1.063	-.025			
	EI * AIA	-.456	.215	-2.122	.035	-.879	-.033			

DV	IV	coeff	se	t	p	LLCI	ULCI	R-sq	F（9,301）	p
	IF * EI* AIA	.141	.065	2.174	.030	.013	.269			
	DF	.190	.055	3.446	.001	.082	.299			
	PF	.064	.056	1.156	.248	-.045	.174			

Notes: IF as the focal antecedent variable, DF and PF as covariates, EI as the primary moderator, AIA as the secondary moderator.

Table 4.26 indicates that the best-fitting model with EE as the outcome variable is as follows:

$$\widehat{BE} = -2.824 + 1.093\,IF + 1.518\,EI + 1.764\,AIA - 0.299\,IF * EI - 0.544\,IF * AIA - 0.456\,EI * AIA + 0.141\,IF * EI * AIA + 0.190\,DF + 0.064\,PF$$

The effect of IF on BE is positive. Notice that the regression coefficient for IF * EI * AIA is statistically significant, meaning that there is evidence of a three-way interaction among IF, EI, and AIA, that is, the magnitude of the moderation by EI of the effect of IF on BE is contingent upon AIA levels.

The Johnson-Neyman method was employed to analyze and visualize the interaction effects. Utilizing 5,000 bootstrap samples and a 95% percentile bootstrap confidence interval, we observed that among respondents with low levels of AIA (AIA value < 2.846), the effect of IF on EE is not significantly moderated by EI. For example, when the value of AIA is 2, the moderating effect coefficient of EI is -0.017 ($p = 0.828 > 0.05$), and EI does not significantly negatively moderate the impact of IF on BE. However, among respondents with high levels of AIA (AIA value > 4.527), EI significantly moderates the effect of IF on EE; that is, there are greater differences in the impact of IF on EE at different EI levels. For example, when the value of AIA is 4, the moderating effect coefficient of EI is 0.265 ($p = 0.002 < 0.05$), EI significantly positively moderates the impact of IF on BE (see Table 4.27 and Figure 4.19). This suggests that the moderating effect of EI on the impact of IF on EE is positively associated with the level of AIA.

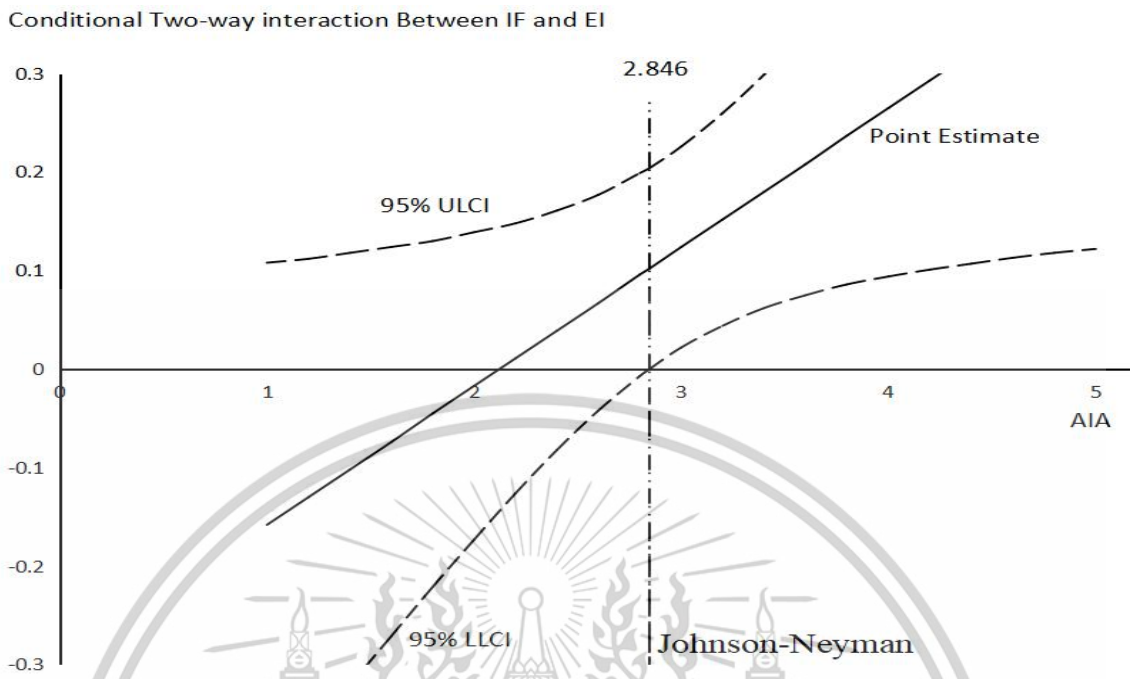


Figure 4.19 The conditional two-way interaction between IF and EI as a function of AIA, with BE as the outcome variable

Table 4.27 Test of conditional IF*EI interaction at values of AIA, with BE as the outcome variable

AIA	Effect	se	t	p	LLCI	ULCI
1.000	-.158	.135	-1.171	.242	-.424	.108
1.200	-.130	.123	-1.055	.292	-.373	.112
1.400	-.102	.112	-.913	.362	-.321	.118
1.600	-.074	.100	-.734	.463	-.271	.124
1.800	-.045	.089	-.508	.612	-.221	.130
2.000	-.017	.079	-.217	.828	-.173	.139
2.200	.011	.070	.158	.875	-.126	.148
2.400	.039	.062	.634	.526	-.082	.161
2.600	.067	.056	1.209	.228	-.042	.177
2.800	.096	.052	1.829	.068	-.007	.199
2.846	.102	.052	1.968	.050	.000	.204
3.000	.124	.052	2.387	.018	.022	.226
3.200	.152	.055	2.781	.006	.044	.260
3.400	.180	.060	2.995	.003	.062	.299

AIA	Effect	se	t	p	LLCI	ULCI
3.600	.208	.068	3.076	.002	.075	.342
3.800	.237	.077	3.082	.002	.086	.388
4.000	.265	.087	3.050	.002	.094	.436
4.200	.293	.098	3.003	.003	.101	.485
4.400	.321	.109	2.953	.003	.107	.535
4.600	.350	.120	2.903	.004	.113	.586
4.800	.378	.132	2.857	.005	.118	.638
5.000	.406	.144	2.814	.005	.122	.690

The impact of IF on BE under different AIA and EI values was analyzed. In the case of AIA = 1.5, When EI = 3 (16th percentile), b = 0.015 (p = 0.903), IF did not significantly negatively affect BE; When EI = 4 (50th percentile), b = -0.073 (p = 0.345), IF had no significant negative effect on BE; When EI = 4.333 (84th percentile), b = -0.102 (p = 0.259), IF did not have a significant negative effect on BE. In the case of AIA = 3, when EI = 3, b = -0.166 (p = 0.022), IF significantly negatively affects BE; When EI = 4, b = -0.043 (p = 0.476), IF did not significantly negatively affect BE; When EI = 4.333, b = -0.001 (p = 0.984), IF did not significantly negatively affect BE. In the case of AIA = 3.5, when EI = 3, b = -0.227 (p = 0.014), IF had a significant negative impact on BE; When EI = 4, b = -0.032 (p = 0.638), IF had no significant negative effect on BE; When EI = 4.333, b = 0.032 (p = 0.656), IF did not significantly positively affect BE (see Table 4.28).

Table 4.28 Conditional effects of IF on BE at values of the moderators

AIA	EI	Effect	se	t	p	LLCI	ULCI
1.500	3.000	.015	.120	.121	.903	-.221	.250
1.500	4.000	-.073	.077	-.945	.345	-.226	.079
1.500	4.333	-.102	.091	-1.131	.259	-.281	.076
3.000	3.000	-.166	.072	-2.298	.022	-.309	-.024
3.000	4.000	-.043	.060	-.714	.476	-.160	.075
3.000	4.333	-.001	.065	-.020	.984	-.129	.126
3.500	3.000	-.227	.092	-2.466	.014	-.408	-.046
3.500	4.000	-.032	.069	-.471	.638	-.168	.103
3.500	4.333	.032	.073	.446	.656	-.111	.176

In addition, with TP as the outcome variable, BE as the mediator, IF as the focal antecedent

variable, DF and PF as covariates, EI as the primary moderator, and AIA as the secondary moderator, the index of moderated-moderated mediation is 0.074. There was zero between the BootLLCI coefficient (-0.007) and the BootULCI coefficient (0.141), indicating the moderated-moderated mediation effects did not exist.

Demographic variables such as gender, age, education level, position level, and marital status were included as covariates in the models, and all path coefficients did not show substantial changes ($\Delta\beta < 0.02$) (Kline, 2023; Oster, 2019); In addition, the path coefficients of the latent variable structure model (see Figure 4.13) and the observed variable structure model (see Figure 4.14) have the same sign, and they are both significant or not significant at the 5% significance level. The coefficient size does not change by more than 0.25 (Edwards & Bagozzi, 2000). All of these indicate the robustness of the research results.

The hypothesis testing results of this study are shown in Table 4.29.

Table 4.29 List of supported and unsupported hypotheses

Hypothesis	**Description**	**Result**
H 1	Compensation fairness (CF) has a positive impact on cognitive engagement (CE)	Supported
H1a	Distributive fairness (DF) has a positive impact on cognitive engagement (CE)	Supported
H1b	Procedural fairness (PF) has a positive impact on cognitive engagement (CE)	Supported
H1c	Interactional fairness (IF) has a positive impact on cognitive engagement (CE)	Supported
H2	Compensation fairness (CF) has a positive impact on emotional engagement (EE)	Supported
H2a	Distributive fairness (DF) has a positive impact on emotional engagement (EE)	Supported
H2b	Procedural fairness (PF) has a positive impact on emotional engagement (EE)	Supported
H2c	Interactional fairness (IF) has a positive impact on emotional engagement (EE)	Supported
H3	Compensation fairness (CF) has a positive impact on behavioral	Partially

Hypothesis	Description	Result
	engagement (BE)	Supported
H3a	Distributive fairness (DF) has a positive impact on behavioral engagement (BE)	Supported
H3b	Procedural fairness (PF) has a positive impact on behavioral engagement (BE)	Supported
H3c	Interactional fairness (IF) has a positive impact on behavioral engagement (BE)	Not Supported
H4	Work engagement (WE) has a positive impact on task performance (TP)	Supported
H4a	Cognitive engagement (CE) has a positive impact on task performance (TP)	Supported
H4b	Emotional engagement (EE) has a positive impact on task performance (TP)	Supported
H4c	Behavioral engagement (BE) has a positive impact on task performance (TP)	Supported
H5	There is a progressive relationship between the three dimensions of work engagement (WE), namely, cognitive engagement (CE) has a positive impact on emotional engagement (EE) and behavioral engagement (BE), and emotional engagement (EE) has a positive impact on behavioral engagement (BE)	Supported
H5a	Cognitive engagement (CE) has a positive impact on emotional engagement (EE).	Supported
H5b	Emotional engagement (EE) has a positive impact on behavioral engagement (BE)	Supported
H5c	Cognitive engagement (CE) has a positive impact on behavioral engagement (BE)	Supported
H6	Emotional intelligence (EI) plays a positive moderating role in the relationship between procedural fairness (PF) and work engagement (WE)	Partially Supported
H6a	Emotional intelligence (EI) plays a positive moderating role in the relationship between procedural fairness (PF) and cognitive engagement (CE)	Supported
H6b	Emotional intelligence (EI) plays a positive moderating role in the relationship between procedural fairness (PF) and emotional engagement	Not Supported

Hypothesis	Description	Result
	(EE)	
H6c	Emotional intelligence (EI) plays a positive moderating role in the relationship between procedural fairness (PF) and behavioral engagement (BE)	Not Supported
H7	Emotional intelligence (EI) plays a positive moderating role in the relationship between interactional fairness (IF) and work engagement (WE)	Partially Supported
H7a	Emotional intelligence (EI) plays a positive moderating role in the relationship between interactional fairness (IF) and cognitive engagement (CE)	Supported
H7b	Emotional intelligence (EI) plays a positive moderating role in the relationship between interactional fairness (IF) and emotional engagement (EE)	Not Supported
H7c	Emotional intelligence (EI) plays a positive moderating role in the relationship between interactional fairness (IF) and behavioral engagement (BE)	Supported
H8	The moderating effect of emotional intelligence (EI) on the relationship between interactional fairness (IF) and work engagement (WE) is positively related to artificial intelligence adoption (AIA)	Partially Supported
H8a	The moderating effect of emotional intelligence (EI) on the relationship between interactional fairness (IF) and cognitive engagement (CE) is positively related to artificial intelligence adoption (AIA)	Not Supported
H8b	The moderating effect of emotional intelligence (EI) on the relationship between interactional fairness (IF) and emotional engagement (EE) is positively related to artificial intelligence adoption (AIA)	Supported
H8c	The moderating effect of emotional intelligence (EI) on the relationship between interactional fairness (IF) and behavioral engagement (BE) is positively related to artificial intelligence adoption (AIA)	Supported

CHAPTER 5

CONCLUSION, DISCUSSION, AND RECOMMENDATION

5.1 Conclusion

The rapid development of AI technology has had a profound impact on the behavior of employees. In the new era, how to improve employee engagement and performance is crucial for enterprise management. Due to unfair compensation management practices, employees perceive an imbalance between their inputs and rewards, resulting in a decline in work enthusiasm and even passive sabotage, which hurts employee performance and corporate development. Therefore, compensation fairness (CF) has become an important topic in enterprise management practice and academia. Current research mainly considers CF as a holistic variable, exploring its relationship with other variables such as work engagement and task performance. Few studies systematically sort out the relationship between various dimensions of CF and various dimensions of WE, especially the lack of integration and expansion of the influencing mechanism.

The GEM explored the impact mechanism of CF on employees' psychological engagement and behavioral engagement in a logical relationship, but it has not been empirically tested. Based on the GEM, this study employed quantitative approach with cross-sectional survey design and sampled 311 employees from Chinese media companies, employed statistical analysis methods such as structural equation modeling, multiple linear regression analysis, and interaction analysis, considering the moderating role of EI and AIA, systematically explored the complex impact mechanism of different dimensions of CF on different dimensions of WE and TP. The empirical research results and implications are mainly as follows:

This study found that the three dimensions of CF (DF, PF, and IF) have positive impacts on CE and EE. DF and PF have positive impacts on BE, but IF does not. All three dimensions of WE have positive impacts on TP. There is a progressive relationship among the three dimensions of WE, where CE has a positive impact on EE and BE, and EE has a positive impact on BE.

PF has a positive impact on TP, which is achieved through indirect effects, mainly through three paths: PF → CE → TP, PF → CE → BE → TP, and PF → CE → EE → BE → TP. DF has a significant indirect effect on TP, which is mainly achieved through four pathways: DF → CE → TP, DF → CE → BE → TP, DF → EE → BE → TP, and DF → CE → EE → BE → TP. In addition, there is another path with significant indirect effects: IF → EE → BE → TP.

EI plays positive moderating roles in the relationships between PF and CE, between IF and

CE, and between IF and BE, but does not play moderating roles in the relationships between PF and EE, PF and BE, and IF and EE. The moderating effect of EI on the relationship between IF and EE is positively correlated with AIA, with evidence of moderated-moderated mediation effects. The moderating effect of EI on the relationship between IF and BE is also positively correlated with AIA, without evidence of moderated-moderated mediation effects. The moderating effect of EI on the relationship between IF and CE is not correlated with AIA.

The results support and extend the theory of GEM to some extent. It clarifies the logical relationship between each variable in more depth and detail than previous research.

5.2 Discussion

This article divides CF into three dimensions, DF, PF, and IF (Triwibowo, 2016; Jayus & Al, 2021; Anggiani & Wiyana, 2021), and explores their impact on the three dimensions of WE. Simultaneously, it examined the moderating effects of EI and AIA on the relationships between the dimensions of CF and the dimensions of WE. The study results are discussed as follows:

5.2.1 Discussion on the Relationship between CF and CE

DF, PF, and IF all have a positive impact on CE. H1a, H1b, and H1c are supported. This result indicates that CF plays a crucial role in enhancing CE. Although existing research on the mechanisms underlying the influence of specific dimensions of CF on CE remains inadequate, scholars in management science have realized that CF has a significant positive impact on improving corporate loyalty (Tyler & Blader, 2003). These research perspectives often appear in qualitative research (such as GEM), and empirical research is still insufficient. From the three specific dimensions of CF, the standardized regression coefficients for their impact on CE are 0.196, 0.261, and 0.152, respectively (see Figure 2), indicating that PF has the greatest positive impact on CE, followed by DF, and IF has the least impact. This suggests that, from the perspective of CE, employees believe that a fair and reasonable compensation process can better make them feel that they should do their jobs well.

5.2.2 Discussion on the Relationship between CF and EE

The total effects of DF, PF, and IF on EE are all significantly positive; H2a, H2b, and H2c are supported. This confirms the stability of the GEM (Tyler & Blader, 2003). The standardized regression coefficients for their total effects on EE are 0.324, 0.222, and 0.215, respectively (see Figure 2). Indicating that DF has the greatest positive impact on EE, followed by PF, and IF has the least impact. This suggests that, from the perspective of emotional dedication, employees believe that a fair and reasonable salary level is more likely to increase

their willingness to do their job well. The direct effects of DF, PF, and IF on EE are positively significant, with standardized regression coefficients of 0.241, 0.426, and 0.111, respectively. The impact of CE on EE is positively significant, and the indirect effects of the three dimensions of CF on EE are also significant. These indicate that CE plays a partially mediating role in the relationship between the three dimensions of CF and EE, which means that CF may also have an impact on EE through other variables, such as job satisfaction.

5.2.3 Discussion on the Relationship between CF and BE

IF has direct and indirect effects on BE, with opposite directions and masking effects, so the total effect is insignificant. This indicates the mediating role of CE and EE, and IF may affect BE through other factors. The total effects of DF and PF on BE are significantly positive, and H3a and H3b are supported. The influences are formed through the mediating effect of CE and EE, as the direct effects of DF and PF on BE are not significant. This discovery provides partial validation for the GEM. According to the GEM, DF and PF influence psychological engagement through social identity and ultimately affect behavioral participation (Tyler & Blader, 2003). The standardized regression coefficients of DF and PF on BE are 0.241 and 0.160, respectively, indicating that DF has the greatest positive impact on BE. This suggests that, from the perspective of behavioral dedication, employees believe that a fair and reasonable salary level can better motivate them to truly put in the effort and do their jobs well through practical actions.

5.2.4 Discussion on the Relationship between WE and TP

CE, EE, and BE all have a positive impact on TP, with standardized coefficients of 0.475, 0.373, and 0.546, respectively. H4a, H4b, and H4c are supported. BE has the greatest impact on TP. CE comes second, with EE having the least impact. This is because BE is about doing a good job through practical actions, so it is more closely related to TP. Employees with high levels of dedication are more likely to identify with their work and invest more energy in completing tasks assigned by the organization (Luthans & Peterson, 2002). It is worth noting that CE has a direct positive impact on TP, indicating that EE and BE play partial mediating roles in the relationship between CE and TP. The impact of CE on TP may have other pathways, possibly due to the work cognition and understanding abilities of high cognitive dedication, which can improve employees' work efficiency and self-efficacy, thereby enhancing TP. The direct effect of EE on TP is not significant, indicating that BE plays a fully mediating role in the relationship between EE and TP. WE significantly increased TP, which is consistent with other related studies (Othman & Mahmood, 2019; Wang & Chen, 2020; Ngwenya & Pelser, 2020; Adrianto & Riyanto,

2020; Fidyah & Setiawati, 2020; Budiyati & Febriansyah, 2021; Pham et al., 2023), expanding the boundaries of the GEM.

5.2.5 Discussion on the Relationship among the Three Dimensions of WE

CE has a positive impact on EE. CE and EE both have positive impacts on BE. H5a, H5b, and H5c are supported. The standardization coefficients are 0.426, 0.545, and 0.535, respectively; the impacts are all strong. CE has a positive direct effect on BE, indicating that EE plays a partially mediating role in the relationship between CE and BE. CE is the manifestation of employees' "should do it", which is the cognition and motivation of employees towards work. EE is a manifestation of employees' willingness and enthusiasm to actively work. BE is the manifestation of employees' "truly doing", which is the time and energy invested by employees in actual work, and the behavioral manifestation of employees' active work. From the above logic, it can be seen that there is a progressive relationship among the three dimensions of WE, that is, CE has an impact on EE, and then affects BE.

5.2.6 Discussion on the Relationship between CF and TP

The total effect of PF on TP is significant, the direct effect is not significant, and the indirect effect is significant (standardized effect = 0.140, BootLLCI = 0.022). Its indirect effect is mainly achieved through three paths: PF → CE → TP (standardized effect = 0.055, BootLLCI = 0.010), PF → CE → BE → TP (standardized effect = 0.037, BootLLCI = 0.010), and PF → CE → EE → BE → TP (standardized effect = 0.032, BootLLCI = 0.011). The total effect of DF on TP is not significant, but the indirect effect is significant (standardized effect = 0.170, BootLLCI = 0.063), which is mainly achieved through four paths: DF → CE → TP (standardized effect = 0.041, BootLLCI = 0.006), DF → CE → BE → TP (standardized effect = 0.028, BootLLCI = 0.004, DF → EE → BE → TP (standardized effect = 0.070, BootLLCI = 0.029), DF → CE → EE → BE → TP (standardized effect = 0.024, BootLLCI = -0.079). The total effect of IF on TP is not significant, and the total indirect effect is also not significant (standardized effect = 0.065, BootLLCI = 0.063, BootULCI = 0.178), but there is a significant indirect effect on one path: IF → EE → BE → TP (standardized effect = 0.044, BootLLCI = 0.011).

From the above results, it can be seen that the total impact of PF on TP is greater than the total impact of DF on TP and IF on TP. Therefore, from the perspective of improving employee task performance, enterprise managers should analyze specific problems and not adopt a one-size-fits-all approach. They should attach importance to the fairness and rationality of their compensation system design and compensation management process so that employees can

clarify their job responsibilities, values, and meanings, generate a sense of achievement in their work, feel proud of their work, have enthusiasm for hard work, and take action.

5.2.7 Discussion on the Moderating Effect of EI

EI has a positive moderating effect on the relationship between PF and CE, and moderates the mediation of CE between PF and TP. EI has no moderating effect on the relationship between PF and EE. EI also has no moderating effect on the relationship between PF and BE. H6a is supported, but H6b and H6c are not supported.

EI has a positive moderating effect on the relationship between IF and CE, while EI does not moderate the mediation of CE between IF and TP. EI has no moderating effect on the relationship between IF and EE, but positively moderates the relationship between IF and BE. EI does not moderate the mediation of BE between IF and TP. H7a and H7c are supported; H7b is not supported.

This may be due to the high-level motivational effects of PF and IF in the compensation management system, and their positive impact on employees' understanding of job value is easily influenced by differences in personal traits such as EI, while their emotional investment in the work process is not easily influenced by differences in personal traits such as EI. However, their impact on employees' actual investment in the work process varies, which may be because the source of PF is the formal procedures of the organization, which have stability and universality characteristics; for each employee, the perceived differences are not significant. The study was conducted in China, a collectivist culture emphasizing harmony and conformity. High EI individuals in such contexts may suppress personal emotions to maintain group cohesion, diminishing EI's moderating role.

But IF is different; it is implemented by the organization's agents. They have a certain degree of discretion to implement interpersonal and information fairness in different ways and determine its degree. Therefore, in the process of compensation management, compared to PF, IF is more flexible and has a greater degree of differentiation, where employees can judge how much they are respected within their team or organization. Therefore, the positive impact of IF on BE is easily influenced by individual trait differences such as EI.

5.2.8 Discussion on High-order Moderating Effects of AIA

The moderating effect of EI on the relationship between IF and CE is not related to AIA ($\beta = 0.069$; $p = 0.232 > 0.05$), and H8a is not supported. The moderating effect of EI on the relationship between IF and EE is significantly positively correlated with AIA ($\beta = 0.139$; $p = 0.03 < 0.05$), supporting H8b. The moderating effect of EI on the relationship between IF and BE

is significantly positively correlated with AIA ($\beta = 0.141$; $p = 0.03 < 0.05$), supporting H8c.

This may be because CE is a cognitive level of dedication, while AIA has more influence on psychology and behavior. The moderating effect of EI on the relationship between IF and CE is not affected by the interference of technical application environments such as AIA. But EE and BE belong to the psychological and practical levels of dedication, and the positive moderating effect of EI on the relationship between IF and EE, as well as the positive moderating effect on the relationship between IF and BE, are easily interfered with by the application environment of technologies such as AI.

EI enhances employees' ability to interpret and respond to social cues, which is critical in environments where AI mediates interactions. High EI individuals are better equipped to navigate these hybrid human-AI interactions, preserving trust and perceived fairness, thereby sustaining EE and BE. AIA may introduce stressors (e.g., surveillance, reduced human interaction). EI helps employees regulate emotions and cope with these stressors, buffering negative effects on EE and BE. However, CE, which involves problem-solving and task understanding, is less directly tied to emotional regulation. AI often handles analytical or routine cognitive tasks. This reduces the cognitive burden on employees, making CE less variable. Even high EI employees may not need to engage deeply with these streamlined processes, diminishing EI's moderating role. Employees with high EI excel in adapting to new workflows, collaborating with AI tools, and maintaining motivation (EE/BE).

We have noticed that in a work environment with high levels of AIA, EI has a positive moderating effect on the relationship between IF and EE, and EI also has a positive moderating effect on the relationship between IF and BE. This means that employees with high EI levels place more emphasis on spiritual needs, and organizational managers should pay more attention to communication with them in the compensation management process to improve work willingness and enthusiasm. However, for employees with lower EI levels, the impact is minimal. This may be due to the widespread adoption of artificial intelligence technology, which has changed the way work is done and interpersonal interaction patterns. Employees with high EI levels are better able to adapt to these changes, enhance their love for work, and take action through effective emotional management. Therefore, organizational managers need to consider the individual characteristics of employees and the work scenarios embedded with technology and improve IF to enhance employees' dedication.

The moderating effects of EI on the relationship between IF and EE and the relationship between IF and BE are positively correlated with AIA, indicating that EI has greater value in the AIA work environment. Considering the positive and indirect impact of IF on TP, as

well as the existence of moderated-moderating mediation effects, in the increasingly embedded work environment of AIA, enterprise managers should raise awareness of IF. When salary decisions are closely related to employee interests, they should strengthen communication and interaction with employees, respect them, treat them sincerely, and even involve them in management and decision-making to meet their psychological needs. Hawthorne's research shows that interviewing employees and allowing them to freely express their views and opinions on organizational systems and vent their dissatisfaction can make them feel relaxed, boost morale, and ultimately improve work performance (Mayo & Routledge, 2004). In addition, through training and team-building activities, employees' emotional management skills can be improved, and their adaptability to AI technology embedded in the work environment can be enhanced, which helps to improve employees' emotional dedication and work efficiency.

5.3 Implications and Recommendations

5.3.1 Theoretical Implications

This paper incorporates EI, AIA, and TP into the GEM. Previous studies often take CF and WE as overall variables to explore their relationship and their impact on TP. Few studies explore the impact and differences of the three dimensions of CF on the three dimensions of WE. For the three dimensions of WE, there is also little exploration of their relationship and impact on TP from an empirical perspective. Although the GEM implies the three dimensions of CF and explores their logical impacts on EE and BE, it has not been empirically tested, nor has it explored the difference in the impacts of the three dimensions of CF on EE and BE, and whether these impacts are moderated by other factors. This paper analyzes how the three dimensions of CF affect the three dimensions of WE from a multi-level and multi-dimensional perspective, and also jumps out of the framework of the GEM to focus on the moderating roles of EI and AIA. Previous studies on the moderating factors of the relationship between CF and WE rarely considered high-order moderating factors. Based on the key question of whether the moderating effects of EI are affected by AIA, this paper constructs a theoretical model that is different from previous research. Essentially, AIA belongs to the work context (Yu et al., 2023). This paper predicts and verifies the significance of AIA as a boundary condition for EI to play moderating roles. It not only provides a better theoretical explanation for the impact mechanism of CF on WE but also provides a new theoretical thinking direction for the study of Equity theory and WE. It also expands the theoretical boundaries of the GEM and provides empirical evidence, so that the research model has a more accurate logical modification. This paper highlights the importance of employees' personal characteristics and work scenarios in the study of WE. Following the

perspective of this study, future research can further test the moderating effects of other personal traits, such as achievement motivation and personality tendencies, and can also test the moderating effects of work context, such as organizational belongingness and leadership management style. In terms of factors affecting engagement, there is still room for exploration. Overall, there is still a lot of important work to be done in studying how to improve employee engagement and work performance from the perspective of Equity Theory.

5.3.2 Practical Implications

For organizational managers, how to improve employee work engagement and work performance is an important task because it is related to the sustainable development of the enterprise. From the perspective of the operability of organizational management, improving employees' perception of compensation fairness is a good measure. However, the conclusion that different dimensions of CF have different effects on employee engagement and task performance highlights the complexity of employee needs and management practices. The effects of DF and IF on TP are relatively weak, but the effect of PF is stronger. Therefore, from the perspective of improving employee task performance, enterprise managers should pay more attention to PF, fully care about employees' needs before making compensation decisions, improve more reasonable performance appraisal methods, conduct compensation management according to clear rules, and make the compensation management process open and transparent, which can effectively improve employees' work enthusiasm and work efficiency. In addition, the moderating effects of EI and AIA in the path of IF on employees' emotional and behavioral engagement reflect the flexibility of the IF effect. Organizational managers need to "differentiate according to the individual" in compensation management. When AIA is highly embedded in the work context, the enhancement effect of AIA is more obvious for employees with higher EI levels, in this case, managers should care about employees' needs and rights, respect employees, and discuss with employees sincerely when decisions are related to employees, so that employees can understand the basis and significance of the decision, which can effectively motivate employees to love their work more and work harder. However, for employees with lower EI levels, the disclosure effect of AIA may be more obvious, and the high level of IF that takes effort to build may not produce the expected effect. This study unravels the black box of the transmission path of CF affecting TP and provides a useful reference value for how to improve employee engagement in corporate management practice.

5.4 Limitations and Future Research

Although this study has to some extent expanded the framework of GEM and equity theory, it has important reference value for the practice of enterprise human resource management. However, it is not without its limitations, and there are still some areas worth further research. Firstly, this study used cross-sectional data, which limits the ability to draw definitive conclusions about causal relationships. In the future, longitudinal research will be considered to enhance the scientific nature of the study. Secondly, are there any other variables related to CF that can affect WE and TP? That is to say, are there any mediating variables between CF and WE? Are these effects also moderated by personal traits such as EI and AIA? Additionally, besides TP, do CF and WE also affect other variables? These need to be further explored to expand the GEM. Finally, this study focuses on employees within the media sector in China; future research should systematically test whether these findings extend to workers in other Chinese industries or media employees in other countries, thereby bolstering external validity and gaining a more comprehensive understanding of the phenomenon.

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APPENDIX

APPENDIX A

Questionnaire

Dear Madam/Sir:

Thank you so much for taking the time out of your busy schedule to take part in this survey! This topic conducts an anonymous survey on exploring compensation fairness, work engagement, and task performance in media enterprises. The survey is for academic research only and does not involve any commercial use. We will keep the content page you fill in strictly confidential. The quality of the questionnaire you fill in directly determines the accuracy of our research results. Please answer every question carefully and accurately. Thank you for your support!

Part 1: Basic Information

Please mark with "√" the option that you think is most suitable below.

1. Do you work in a media enterprise?

(1) Yes (2) No（If your answer is no, there is no need to answer the following questions）

2. Your gender

(1) Male (2) Female

3. Your age

(1) 16-29 years old (2) 30 – 39 years old (3) 40 years old and above

4. Your marriage

(1) Unmarried (2) Married (with a spouse) (3) Widowed (4) Divorced

5. Your education

(1) Junior college or below (2) Bachelor (3) Master (4) PhD.

6. Your position level

(1) Frontline employee (2) Frontline manager (3) Middle manager (4) Top manager

7. Your experience in the enterprise

(1) Less than 1 Year (2) 1-3 Years (3) 4-6 Years (4) 7-9 Years (5) 10 Years or more

8. Enterprise age

(1) 5 years or less (2) 6-10 years (3) 11-15 years (4)16-20 years (5) More than 20 years

9. Enterprise type:

(1) State-owned enterprises or state-controlled enterprises (2) Private enterprises or private holding companies (3) Others (such as foreign-funded enterprises, joint ventures, etc.)

10. Enterprise size：

(1) Less than 10 people (2) 10-99 people (3) 100-299 people (4) 300-1000 people (5) More than 1000 people

11. What artificial intelligence tools do you use at work?

□ Writing Tools （Such As Grammarly, Jasper, Notion, And Metaso Writing Cat）

□ Image Tools （Such As Stable Diffusion, Midjourney, Promptthero, DALL-E2, Wenxinyige, Runway, Removebg, Tupscale, And Tencent ARC）

□ Video Tools （Such As Fliki）

□ Design Tools （Such As Galileo, Ulzard, And Palette. FM）

□ Conversational Tools （Such As GPT, Newbing, And Wenxinyiyan）

□ Office Tools （Such As Tome）

□ Translation Tools（Such As xunfei, Tencent Translation King, And Baidu Translate）

□ Content Detection Tools （Such As GPTZero）

□ Coding Tools（Such As Github Copilot）

□ Other Tools _____

□ Not Used

Part 2: Main Questions

Please select a number from the scale below that best describes your situation, and mark with "√" in the corresponding blank.

Variables	NO.	Questions	1	2	3	4	5
Distributive Fairness	DF1	I think my workload is reasonable					
	DF2	I think my compensation level is reasonable					
	DF3	I think my job responsibilities are reasonable					
	DF4	Overall, the reward I received is quite reasonable					
Procedural fairness	PF1	The company's remuneration process is carried out according to clear rules and will not vary from person to person					
	PF2	Superiors collect correct and complete information when making compensation decisions					
	PF3	Superiors can make compensation decisions					

Variables	NO.	Questions	1	2	3	4	5
		with an unbiased attitude					
Interactional fairness	IF1	When a decision concerns me, my superior will discuss with me the basis and meaning of the decision					
	IF2	When decisions concern me, my superior treats me with respect					
	IF3	When the decision concerns me, my superior is more likely to consider my personal needs					
	IF4	When the decision is related to me, the superior will discuss it with me with a sincere attitude					
	IF5	Superior care about my rights when decisions concern me					
Cognitive engagement	CE1	My work is full of meaning and value					
	CE2	I believe that my work contributes to the achievement of organizational goals.					
	CE3	I think it's my duty to do a good job					
Emotional engagement	EE1	I am proud to be a part of the company					
	EE2	I speak highly of my company to others					
	EE3	I would like to introduce the benefits of working here to people outside the company					
	EE4	I won't resign easily					
Behavioral engagement	BE1	I put a lot of energy into my work.					
	BE2	I rarely get distracted at work					
	BE3	I often work tirelessly at work					
	BE4	I often do more than required					
Task performance	TP1	I have made a significant contribution to the overall work performance of the team					
	TP2	I am one of the best-performing employees on my team					
	TP3	I can always finish the work delivered by my superiors on time					
	TP4	My work performance always meets the					

Variables	NO.	Questions	1	2	3	4	5
		requirements of my superiors					
Emotional intelligence	EI1	I can control my temper and handle difficulties rationally					
	EI2	I often tell myself that I am a capable person					
	EI3	I can keenly perceive other people's feelings and emotions					
AI adoption	AIA1	I used artificial intelligence to carry out most of my job functions					
	AIA2	I spent most of the time working with artificial intelligence					
	AIA3	I worked with artificial intelligence in making major work decisions					
	AIA4	I am proficient in using artificial intelligence tools in my work					

1- Strongly Disagree 2- Disagree 3- Neutral 4- Agree 5- Strongly Agree

APPENDIX B

The Ethics Committee Approval

Scientific Ethics Committee Consent Certificate

Project Name	Exploring Compensation Fairness, Emotional Engagement, and Task Performance in Media Enterprises
Project Leader	Yingming Qiu, Nuttawut Rojniruttikul

Declaration by the project leader:
I will consciously abide by the ethical principles of scientific experimental investigation, conduct data investigation in accordance with the ethical principles of scientific experimental investigation and accept supervision and inspection from the Science Ethics Committee of Hanshan Normal University at any time.

Review comments:

This plan meets the requirements of scientific ethics and agreed to conduct this research.

College Seal:

College of Literature and Journalism
Date: 16 APRIL 2024

University Seal:

Hanshan Normal University
Date: 18 APRIL 2024

APPENDIX C

NIDA Clinical Trials Network Certificate of Completion

NIDA Clinical Trials Network

Certificate of Completion

is hereby granted to

Yingming Qiu

to certify your completion of the six-hour required course on:

GOOD CLINICAL PRACTICE

MODULE:	STATUS:
Introduction	N/A
Institutional Review Boards	Passed
Informed Consent	Passed
Confidentiality & Privacy	Passed
Participant Safety & Adverse Events	Passed
Quality Assurance	Passed
The Research Protocol	Passed
Documentation & Record-Keeping	Passed
Research Misconduct	Passed
Roles & Responsibilities	Passed
Recruitment & Retention	Passed
Investigational New Drugs	Passed

Course Completion Date: 14 August 2023

CTN Expiration Date: 14 August 2026

Eve Jelstrom

Eve Jelstrom, Principal Investigator

NDAT CTN Clinical Coordinating Center

Good Clinical Practice, Version 5, effective 03-Mar-2017

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Work Experience	Lecturer, Hanshan Normal University, China, 2010 - Present

Published Papers:

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