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The Influence Mechanism of Work Gamification in Internet Enterprises on Employees' Work-Family Conflict

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Abstract. Work gamification is widely implemented in internet enterprises. Its potential adverse effects on employees' work-family interface remain underexplored. This study tests a mediating model of work gamification and work-family conflict. The mediating mechanism is love of the job. The construct can capture the individual's deep emotional attachment to work. The study used the questionnaire data of 152 Internet practitioners to test through confirmatory factor analysis and regression analysis. Work gamification directly heightens work-family conflict, and love of the job serves as a partial mediator. This study provides a theoretical contribution to explain the unintended consequences of game-based management by integrating the emotional perspective and the social comparison perspective. Given the widespread use of gamification, understanding its spillover effects on family life is essential for employee well-being and organizational health. In addition, our results suggest that managers should carefully design gamification because excessive work love may blur the work-family boundary. Future research should explore moderating variables to mitigate this negative impact.

Keywords: Work Gamification, Work–Family Conflict, Love of the Job

1. Introduction

Work gamification is the incorporation of game-like elements within corporate management. The elements such as ranking list, badges, and role-based nicknames can construct a reward system analogous to that of video games with the aim of stimulating employee work motivation [1].

The Internet companies in China, such as Tencent, Alibaba, and Baidu, have adopted work gamification for years and have each developed a mature employee management system. The trend toward gamification in corporate management has become increasingly prominent [2]. In the early 1990s, the proliferation of Family Computers and arcade machines exposed children and young adults of that era to the world of video games. At the turn of the millennium, the advent of the online gaming era coincided with the nascent emergence of China's first cohort of internet companies. Those who grew up playing video games in their youth subsequently became the early driving force behind the construction of Chinese internet industry. Public data from Maimai's Data Research Institute, a Chinese professional networking platform, show that in 2021 the internet industry workforce was largely composed of young adults between 25 and 35 years old. The average age at

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major tech firms did not exceed 35. These post-90s employees, raised with video games, have indeed shown heightened work enthusiasm under gamified management practices [3].

However, work gamification entails both benefits and drawbacks for employees [4]. Just as video games allow players to maintain long-term contact, gamified work systems can cultivate similar addiction tendencies. This kind of pull will deepen employees' love for work, thus motivating employees to pay more time and energy. As work continues to encroach on personal life, potential work-family conflicts are set to the stage [5]. Therefore, this study explores the mediating effect of work gamification on work-to-family conflict through work love. The empirical samples are from employees in the Internet industry. This choice enhances the pertinence and representativeness of the research.

Data were collected through questionnaires and subjected to empirical analysis. The findings are discussed in terms of organizational implications and strategies for reducing work gamification's negative impacts.

2. Literature review

2.1. Work gamification

Work gamification applies game-like features to work contexts, aiming to drive competition and raise performance and efficiency. However, scholars have not yet reached a consensus on the definition of work gamification. Oprescu conceptualizes it as a way for organizations to apply game design mechanisms and elements to employees' workflows, aiming to provide employees with a game-like work experience [6]. Warbach defines gamification as a process of making an activity more game-like [7]. According to these academic views, it can be concluded that work gamification essentially refers to the introduction of game elements or mechanisms into the working environment.

Work gamification has varied organizational implications. Wei, Liu, and Ling examined the dual effects of work gamification on employees in the gig economy, first revealing its nonlinear impact on work engagement [4]. Lü further summarizes the application direction of work gamification in enterprise management, and proposes that human resource managers should make full use of the gamification elements embedded in work practice to stimulate employees' potential, retain high-performance talents, and enhance the overall performance and competitiveness of the organization [8].

2.2. Work-family conflict

Work-family (WFC) conflict arises when work and family roles impose incompatible demands. This is essentially a source of stress that affects individual mental health [9]. WFC has two dimensions: family interference with work and work interference with family.

Dunn critically examined the work-family boundary theory and enrichment theory. The author points out that the challenge of role transition is persistent in boundary management. Effective border management matters. It can curb conflict and lift well-being [10]. Yan and Zhang used bibliometric methods to analyze 1466 publications on work-family balance between 2000 and 2025 [11]. Some scholars contend that our grasp of work-family dynamics should move beyond a binary opposition and embrace a dual unity. They further urge future inquiries to look past mere balance and aim for self-actualization. Empirical efforts have also targeted specific occupational groups, for

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instance medical staff, teachers, and dual-earner couples. The resulting evidence shows that work-family conflict and its adverse outcomes are far from uniform across different jobs.

2.3. Love of the job

Inness et al. introduced love of the job (LOJ) as a construct based on Sternberg's triangular theory of love [12]. According to this theory, complete love is defined by passion, intimacy, and commitment. When we extend this perspective to the workplace, we regard love of the job as a more intense form of attachment. This construct includes task passion, closeness among coworkers, and loyalty to the organization. While organizational behavior research has introduced work engagement and job satisfaction to examine the employee-work nexus, these concepts are insufficient for grasping the profound emotional affinity that workers can feel. Hence, the development of the LOJ scale offers an empirical tool to gauge that deep-seated connection. In doing so, it fills an important theoretical void in the literature.

3. Theoretical foundations and research hypotheses

3.1. Social comparison theory

Social comparison is a common psychological phenomenon among the general public. Festinger systematically put forward the theory of social comparison, believing that individuals can recognize their own values and abilities and make accurate self-assessment only by comparing with others in society [13]. Because everyone, whether consciously or unconsciously, wants to know their status, ability and level, they make social comparisons with others. The theory holds that individuals evaluate their abilities by comparing with others, and on this basis, they decide how they should think and feel.

People tend to make social comparisons in the following three situations : (1) when they are uncertain about their thoughts or feelings ; (2) when they are in a high-pressure, novel or changeable situation : (3) when they are in an environment prone to competition. Achievement elements in the gamification of work, such as points, leaderboards and badges of honour, are likely to trigger social comparisons by placing employees in a competitive environment. When employees' work output is ranked and compared through various forms of gamification, they may increase their working hours to produce more work results, thereby improving their rankings and achieving greater success. This tendency may damage the work-life balance and lead to work-family conflict.

3.2. Affective events theory

Affective events theory (AET) concerns the sources, nature, and outcomes of workplace affective reactions [14]. The theory holds that workplace characteristics shape employees' attitudes and behaviors through event-triggered emotional responses. Emotional response can not only directly affect employees' behavior, but also indirectly shape behavior by affecting employees' work attitude. The theory systematically explains the emotional dynamics of the workplace through the event-emotion-attitude / behavior chain.

For example, when gamification elements are introduced into the work environment, employees may have different emotional responses to the event. People who are interested in gamification may be happy, so they love their work more and devote more time and energy to it. On the contrary, people who are not sensitive to gamification may remain indifferent.

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3.3. Love of the job as a mediator between gamification and work-family conflict

Work gamification, as a workplace event, may provoke distinct emotional reactions among employees, as informed by social comparison and affective events theories. Some employees may have a stronger love of the job and thus invest more time and energy, which may disrupt the work-life balance and thus trigger or exacerbate work-family conflicts. Other employees may not be more dependent on work. However, the achievement-based elements in work gamification can create an atmosphere of social comparison, prompting employees to invest extra time and energy to surpass others, which may directly lead to or aggravate the conflict between work and family. Therefore, the following assumptions are made :

Hypothesis 1: Work gamification indirectly exacerbates work-family conflict through love of the job.

Hypothesis 2: Work gamification directly exacerbates work-family conflict.

Drawing on the literature and proposed hypotheses, this study develops a conceptual model of the relationships among work gamification, love of the job, and work-family conflict (Fig.1.).

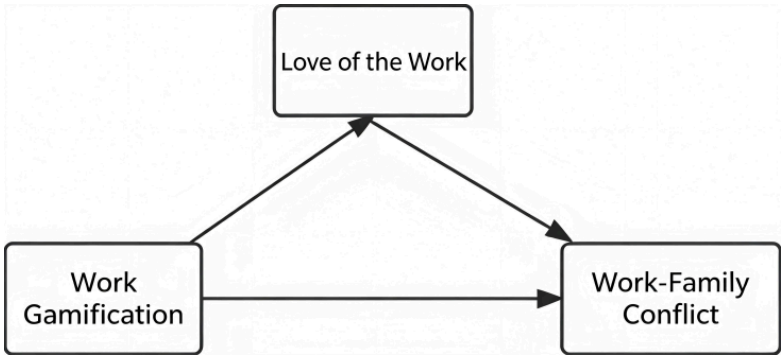

Figure 1. Mediation model

4. Research methodology

4.1. Sample and procedure

Data were collected via a questionnaire survey. Questionnaires were primarily distributed to employees of internet companies that had implemented work gamification, and basic information such as age was recorded to ensure the standardization and authenticity of the responses.

A total of 192 individuals participated in the survey. Excluding incomplete, patterned, or hurried responses, 152 valid questionnaires remained (79.2% effective response rate). The sample averaged 27.5 years in age, with 45.4% female and 54.6% male; 7.3% held educational qualifications below a bachelor's degree, 65.1% held a bachelor's degree, and 27.6% held a master's degree or higher; 73.7% were rank-and-file employees, while 26.3% occupied managerial positions.

4.2. Variable measurement

Work Gamification. Work gamification was measured via Wei, Liu, and Ling's scale [4]. Sample items include: "Please indicate the frequency with which you have encountered each of the following game design elements (e.g., leaderboards, ranking systems) in your work over the past two weeks." The Cronbach's α for this scale was 0.877.

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Work–Family Conflict (WFC). Employees' WFC was assessed using Carlson et al.'s scale [5]. Sample items include: "I often find it difficult to relax after work because of work-related matters." The Cronbach's α was 0.857.

Love of the Job (LOJ). LOJ was evaluated using the instrument developed by Inness et al. [12]. An example item is: "I love what I do in my work." This scale yielded a Cronbach's α of 0.892 in the present study. All of the above scales employed a seven-point Likert response format.

5. Empirical analysis

5.1. Method bias evaluation

Common method bias was assessed using Harman's single-factor test. The first unrotated factor accounted for 32.019% of the total variance, which is below the recommended 40% cutoff, suggesting that common method bias does not threaten the validity of the hypothesis testing.

5.2. Confirmatory factor analysis (CFA)

CFA was performed to test the discriminant validity of the three factors (Table 1).

Table 1. CFA

factor	X^2	df	P	Chi-square freedom ratio	GFI	RMSEA	RMR	CFI	NFI	NNFI
Three-factor Model (GA,LOJ,WF)	108.433	51	0.000	2.126	0.891	0.086	0.184	0.931	0.880	0.911
Two-factor Model (GA,LOJ+WF)	200.458	53	0.000	3.782	0.797	0.136	0.219	0.823	0.777	0.780
Single-factor model (GA+LOJ+WF)	298.700	54	0.000	5.476	0.718	0.172	0.324	0.710	0.672	0.646

Note: GA denotes work gamification, LOJ denotes love of the job, and WF denotes work-family conflict. The symbol "+" indicates that two factors were combined into one.

The three-factor model demonstrated a significantly better fit (χ^2 = 108.433, df = 51, χ^2/df = 2.126, CFI = 0.931, RMSEA = 0.086, NNFI = 0.911) than the alternative factor models, indicating that the three constructs which include work gamification, love of the job, and work-family conflict, exhibit satisfactory discriminant validity.

5.3. Descriptive statistics and correlation analysis

SPSS was used for correlation analysis (Table 2).

Table 2. Preliminary analysis

variable	M	sd	1	2	3	4	5	6
gender	1.454	0.500						
age	27.526	3.474	- 0.169*					
edu	4.197	0.576	0.170*	0.136				
job	1.395	0.747	- 0.128	0.573**	0.126			
GA	5.078	1.223	0.092	- 0.114	- 0.024	- 0.105		
LOJ	5.113	1.161	0.073	- 0.092	- 0.041	- 0.013	0.682**	

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Table 2. (continued)

WF	4.791	1.098	0.109	- 0.094	- 0.042	0.024	0.662**	0.770**

Note: *p<0.05, **p<0.01 (two-tailed tests). M = mean; sd = standard deviation.. GA denotes work gamification, LOJ denotes love of the job, and WF denotes work-family conflict. Edu denotes educational level.

Work gamification was significantly positively correlated with love of the job (r = 0.682, p < 0.01). Work gamification correlated positively with WFC (r = 0.662, p < 0.01). This finding provides preliminary support for hypothesis 2.

5.4. Hypothesis testing results

This study posits that the effect of work gamification on work-family conflict is mediated by love of the job. SPSS was employed to test this mediated model.

Table 3. Summary table of regression models

	WF					LOJ					WF				
	B	SE	t	p	β	B	SE	t	p	β	B	SE	t	p	β
constant	1.774**	0.287	6.180	0.000		1.827**	0.296	6.170	0.000		0.745**	0.262	2.838	0.005	-
GA	0.594**	0.055	10.811	0.000	0.662	0.647**	0.057	11.413	0.000	0.682	0.230**	0.061	3.745	0.000	0.256
LOJ											0.563**	0.065	8.714	0.000	0.595
R 2	0.438					0.465					0.628				
Adjust R^2	0.434					0.461					0.623				
F	F (1,150)=116.888,p=0.000					F (1,150)=130.254,p=0.000					F (2,149)=125.608,p=0.000				
	* p<0.05 ** p<0.01														

Three models were tested in the moderated mediation analysis (Table 3).

Work-family conflict = 1.774 + 0.594 × Work gamification

Love of the job = 1.827 + 0.647 × Work gamification

Work-family conflict = 0.745 + 0.230 × Work gamification + 0.563 × Love of the job

Both work gamification (p<0.01) and love of the job (p<0.01) exerted significant positive effects on work-family conflict, thereby supporting Hypothesis 1 and Hypothesis 2.

Table 4. Results of direct effects

Effect	SE	t	P	LLCI	ULCI
0.2297	0.0613	3.7451	0.003	0.1085	0.3510

Table 4 shows that work gamification exerted a significant positive direct effect on WFC (p < 0.01), confirming Hypothesis 2.

Table 5. Results of indirect effects

	Effect	BootSE	BootLLCI	BootULCI
LOJ	0.3644	0.0694	0.2317	0.5037

Table 5 shows the indirect effect analysis reveals that, with work passion as the mediator variable, the Effect size is 0.3644; the bootstrap 95% CI excluded zero, indicating a significant indirect effect and supporting Hypothesis 1.

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Based on the above findings, both Hypothesis 1 and Hypothesis 2 are supported by the data. The impact of work gamification on work-family conflict exhibits partial mediation: there is both a direct pathway and an emotional transmission pathway mediated by job satisfaction, with the latter playing a more significant role.

6. Conclusion

Drawing on social comparison and affective events theories, this study proposes a mediation model linking work gamification to WFC through love of the job. Through empirical analysis of valid questionnaire data from 152 internet enterprise employees, the following conclusions were drawn:

First of all, work gamification will directly and significantly increase the conflict between work and family. The achievement-oriented elements in gamification motivate employees to pursue higher achievements, which allows them to invest more energy and extend their working hours. This behavior in turn will reduce the focus on family life, resulting in conflict between work and family. It is worth noting that even after controlling the mediating variables of love of the job, the direct impact of work gamification is still significant. This shows that the impact of work gamification on WFC is not only achieved through the emotional path and other mediation mechanisms that are not covered in this study may also exist, such as increased workload and blurred work-life boundaries.

Secondly, work love plays a partial mediating role between work gamification and WFC. As an organizational event, gamification often triggers positive emotional reactions. These reactions prompt people to voluntarily invest time and energy in their work. This increase in work effort will eventually exacerbate work-family conflict. The indirect effect (0.3644) is greater than the direct effect (0.2297), indicating that the emotional-driven path is the main mechanism for gamification to influence conflict.

This work provides a new perspective on the consequences of gamification in the workplace. By choosing work-family conflict as the focus result, it reveals the deeper repercussions of this approach. These findings, in turn, provide an empirical basis for a more balanced evaluation of gamification 's bifaciality.

For organizations, the rational design of gamification features is a very important issue in daily management. When work gamification is put into practice, enterprises should give priority to creating a healthier working atmosphere and avoid using gamification scores as a single criterion for judging employee performance. At the same time, enterprises need to pay close attention to the emotional state of employees and provide more emotional support. For example, a sound leave system can be used as a practical measure to reduce work-family conflict. As for the limitations of the study, our cross-section method makes strict causal inference impossible. Although the proposed causal link is based on a theoretical defense, it is still reasonable that work-family conflict in turn weakens work enthusiasm or changes employees' perceptions of gamification. Future work using longitudinal tracking or empirical sampling may help clarify the direction of causality between these constructs.

In summary, this study provides preliminary evidence that gamification practice can indirectly enhance work-family conflict through work-related emotions. These findings have important theoretical and practical value for Internet companies to improve gamification design and relieve employee stress. We encourage more scholars to pay attention to this field. Joint efforts will push the research frontier forward.

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