

# E-communication During Non-Working Time and Harmonious Work Passions: The Mediating Role of Work-Family Conflict

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**Abstract:** Background: With the development of the times, more and more new technologies appear in people's lives, and the emergence of cell phones, computers and other electronic communication devices has made the communication between people more convenient and diversified. Electronic communication refers to a way of communication with electronic information technology as the carrier. In the workplace, the use of cell phones, computers and other electronic communication devices for work communication has become a common phenomenon. In previous studies, e-communication during non-working hours has a positive impact on employees' job performance and job satisfaction. Based on the positive impact of e-communication during non-working hours on job satisfaction, one would realize that e-communication during non-working hours also has a positive impact on harmonious work passion. However, there are few studies on the relationship between e-communication during non-working hours and harmonious work motivation. Moreover, some studies have shown that e-communication during non-working hours can trigger work-family conflict, and work-family conflict can have a negative impact on harmonious work passion. Objective: This study intends to investigate the effect of e-communication during non-working hours on harmonious work passion and the mediating role of work-family conflict in between. Methods: This study uses hierarchical regression analysis to analyze the theoretical hypotheses of this paper based on conservation of resource theory. Conclusion: e-communication during non-working has a significant negative impact on harmonious work passion, while work-family conflict plays a mediating role between the two.

**Keywords:** E-communication During Non-Working Time, Work-Family Conflict, Harmonious Work Passions

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## 1. Introduction

New technologies appear in people's lives with the emergence of cell phones, computers, and other electronic communication devices. The way of communication between people has become more convenient and diverse. Electronic communication refers to electronic information technology as a carrier for communication. In the workplace, the use of cell phones, computers, and other electronic communication devices for communication has become common. This e-communication method overcomes the limitation of time and space, which greatly reduces the communication cost within the enterprise.

Existing literature pointed out that electronic communication makes the boundary between employees'

working hours and non-working hours blurred [1]. The intensity of employees' work is also gradually increasing during non-working hours. E-communication during non-working time (ECNT) refers to the work-related communication conducted by employees during non-working hours [2]. While electronic communication provides flexibility to some extent, it is still essentially a form of forced overtime. Related research showed that non-working e-communication has a series of negative effects on employees' life and work [3]. Therefore, a comprehensive understanding and reasonable treatment of ECNT is an issue that organizations need to pay attention to.

ECNT negatively affects employees' physical and mental

health [4], negative emotional reactions [2], and employees' job performance and attitudes. For example, the tendency is stimulated to leave and reduce employees' work engagement. In contrast, few scholars have conducted studies on the effects of ECNT on employees' passion at work. Passion at work is a tendency of an individual towards a preferred behavior [5]. In Vallerand's study, work passion was divided into a compulsive passion [5] driven by extrinsic motivation, and harmonious passion driven by intrinsic motivational tendencies based on self-determination theory. According to young people's work values, any work out of work hours makes them bored with their work and reduces their intrinsic motivation at work. This in turn reduces employees' harmonious work passion. Therefore, we investigate the effect of out-of-hours electronic communication on employees' harmonious work passion and the effect of ECNT on employees.

To understand the relationship between out-of-hours e-communication and employees' harmonious work passion, we introduce work-family conflict as a mediating variable to explain the influence mechanism of out-of-hour e-communication on employees' work passion from the

perspective of resource conservation theory. Resource conservation theory states that the individual's resources cannot be replenished promptly when individuals feel the depletion of their resources or face the threat of resource depletion. Then, the individual experiences psychological stress [6]. When employees communicate electronically with their colleagues or supervisors during non-working hours, the employees' roles are switched from family roles to work roles. The time for family roles is taken away, which makes the employees unable to assume responsibilities in the family. According to the role conflict theory proposed by Kahn [7], an individual conflict between the two roles increases the individual's psychological stress and accelerates the consumption of the individual's psychological resources. This reduces the individual's intrinsic motivation and harmonious work passion. Therefore, work-family conflict plays a mediating role in the relationship between ECNT and employees' work passion.

Based on this, we use the resource conservation theory as the basis to construct a model diagram to explore the mechanism of the impact of ECNT.

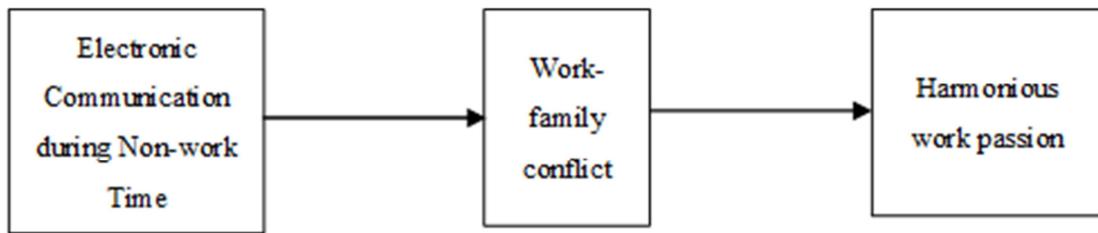


Figure 1. Theoretical model.

## 2. Theoretical Background and Hypothesis

### 2.1. ECNT and Work-Family Conflict

Resource conservation theory first emerged as an attempt to provide a new perspective on the question of "what is stress"[6]. The theory argues that individuals tend to preserve, protect, and acquire resources, and therefore, experience tension and stress when they are about to lose their resources or when they have already lost their resources. Specifically, individuals react to stress in three ways: (1) when there is a threat of loss of existing resources, (2) when there is an actual loss of existing resources, and (3) when effort has been expended without an actual increase in resources [6]. In this study, according to the resource conservation theory, employees are forced to communicate electronically with their superiors and colleagues during non-working hours leading to a conflict between their work and family and the impairment of their psychological and physical resources. The situation leads to stress and reduces their intrinsic motivation, and the reduction of intrinsic motivation leads to the reduction of employees' harmonious work passion.

ECNT occurs through QQ, WeChat, and other electronic communication software before and after work or during

holidays. ECNT means that employees need to switch from their home role to their work role, thus taking time away from their home role. ECNT is unpredictable and interruptive [7]. Thus, employees need to spend some effort to keep an eye on the electronic communication software, preventing them from disengaging from their work [8], thus making them not fully engaged in their home role. It occurs unexpectedly, which forces employees to interrupt their family role and switch to their work role, thus consuming the time for their family role. Therefore, the unpredictability and interruptions of out-of-hours electronic communication lead to work-family conflict among employees. In summary, this study proposes the following hypotheses.

H1: Electronic communication during non-working hours has a significant positive predictive effect on employees' work-family conflict.

### 2.2. Work-Family Conflict and Harmonious Work Passion

Work-family conflict was originally derived from Kahn's role conflict theory [9], which pointed out that work-family conflict was the conflict between individual work roles and family roles, thus causing individual pressure. Greenhaus and Beutell sorted out previous literature on work-family conflict [10]. Based on existing studies, work-family conflict could be viewed from three aspects: time, pressure, and behavior. Time-based conflict happens when the time devoted to a work

role conflicts with the performance of family-related responsibilities. Specifically, excessive work time conflict makes it difficult to fulfill family responsibilities. Stress conflicts occur when stress from work roles interrupts family responsibilities. For example, work-related irritability and anxiety interfere with family duties, and vice versa. When the roles in the two fields require different behavior patterns and the employees cannot timely transform different behavior patterns when switching roles, behavioral conflict occurs. For example, they are active at home, but they need to be calm employees at work. Therefore, according to the resource conservation theory, when employees have work-family conflicts, their psychological and physical resources are consumed, and employees have a certain pressure, which makes them feel tired. Psychological and physical resources are the main sources of internal motivation and harmonious work passion. Therefore, we hypothesize that work-family conflict reduces the harmonious work passion of employees.

H2: Work-family conflict has a significant negative impact on harmonious work passion.

At the same time, ECNT makes employees spend more family time for work so that they have no time to accompany their families, which leads to conflicts between employees and their families, namely, work-family conflict. Work-family conflict reduces employees' psychological resources. According to the resource conservation theory, when employees' resources are reduced, they have new pressures, thus reducing their internal motivation for work and their harmonious work passion. Therefore, we hypothesize that work-family conflict links the two variables of non-working time electronic communication and harmonious work passion, and thus plays a mediating role in the relationship between these two variables.

H3: Work-family conflict plays a mediating role between Electronic Communication during Non-work Time and harmonious work passion.

### 3. Research Methods

#### 3.1. Research Sample

The samples of this study are mainly from in-service employees, and questionnaires are distributed and collected online by using Wenxingxing. All items are self-evaluated by employees. To obtain data, the questionnaire is filled in anonymously. In the instructions of the questionnaire, the interviewees are assured that the relevant information is only used for academic research to reduce the psychological concerns of employees. In this study, a total of 300 questionnaires were issued and 220 were recovered. After excluding invalid questionnaires, 200 valid questionnaires were obtained, with an effective rate of 90.9%. The respondents are invited from the Internet, financial and other enterprises. Male accounts for 58.5% of the respondents and female accounts for 41.5%. 10% are under the age of 20, 41.5% between 20 and 25, 21.5% between 25 and 30, 15% between

30 and 35, and 15% above 35. 19.5% graduated high schools (technical secondary schools) or below, 40.5% of junior college, 21.5% have bachelor's degrees, and 18.5% of have master's degrees or above. 22% are employees, 42% are grassroots managers, 24% are middle managers, and 12% are senior managers.

#### 3.2. Measuring

The frequency measurement of ECNT developed by He and Yu was adopted [11], with 3 items in total. The items include the following: "A boss, a subordinate, a colleague, or a client, During non-working hours, communicate with me by phone, email, QQ or WeChat message, etc."; "I communicate with leaders, subordinates, colleagues or customers through phone, email, QQ or WeChat message, etc., during non-working hours due to work matters"; and "During non-working hours, I check work-related messages through email, QQ, WeChat, and other electronic communication media. A Likert 5-point scale is used. "1" to "5" indicates "never" to "very frequently". In this study, the Cronbach's  $\alpha$  coefficient of the scale is 0.89.

The work-family conflict scale developed by Richard [12] has two dimensions: work-family conflict and family-work conflict. Each dimension has 5 questions, and a total of 10 questions are included. In this study, the scale of work-family conflict is mainly selected with 5 items in total. The scale adopts a 5-point Likert scale. Subjects are asked to choose the most appropriate number from "totally disagree" to "totally agree" according to the description of the question. Cronbach's  $\alpha$  coefficient is 0.95.

The work passion measurement scale developed by Vallerand is adopted [13]. The intimidating work passion and harmonious work passion are two dimensions in this scale. In this paper, 7 items are selected from the dimension of harmonious work passion. A 5-point Likert scale from "strongly disagree" to "strongly agree" is used. Cronbach's  $\alpha$  coefficient is 0.79.

### 4. Research Results

SPSS and AMOS are used for data analysis to conduct the factor analysis and the discriminant validity test. Hierarchical regression analysis and Bootstrap method are adopted by using SPSS and SPSS PROCESS plug-in to test the research hypotheses [14, 15].

#### 4.1. Confirmatory Factor Analysis

The results of the confirmatory factor analysis is shown in Table 1. The fitting indexes of the three-factor model are CFI=0.97, GFI=0.951, and RMSEA=0.03, but the fitting indexes of the two-factor and single-factor models are relatively poor. The three variables in this study, namely, non-working electronic communication, work-family conflict, and harmonious work passion, have good discriminative validity.

Table 1. Confirmator Factor Analysis.

Model	$\chi^2$	df	RMSEA	$\chi^2/df$	CFI	GFI
Three-factor model	74.153	74	0.03	1.002	0.97	0.95
Two-factor model	74.216	76	0.12	0.977	0.87	0.95
Single factor model	74.457	77	0.17	0.967	0.83	0.94

Note: Single factor model (Electronic Communication during Non-work Time + Work-family conflict + Harmonious work passion);  
 Two-factor model (Electronic Communication during Non-work Time + Work-family conflict, Harmonious work passion);  
 Three-factor model (Electronic Communication during Non-work Time, Work-family conflict, Harmonious work passion)

4.2. Descriptive Statistical Analysis and Correlation Analysis

The results of the descriptive statistical analysis of this study are shown in Table 2. ECNT is negatively correlated with harmonious work passion ( $R=-0.895$ ,  $P < 0.05$ ), and significantly positively correlated with work-family conflict ( $R = 0.895$ ,  $P < 0.05$ ). There is a significant negative correlation between work-family conflict and harmonious work passion ( $R = 0.925$ ,  $P < 0.05$ ).

Table 2. Meanvalue, Standard Deviation And Correlation Coefficient Matrix of Variables.

Variable	1	2	3	4	5	6	7
1) The gender							
2) Age	0.089						
3) Qualifications	0.078	0.244**					
4) Title	0.015	0.225**	0.090				
5) Electronic Communication Not-work Time	0.009	0.316**	0.311**	0.197**			
6) Work-family conflict	0.038	0.255**	0.288**	0.208**	0.895**		
7) Harmonious Work Passion	0.031	0.308**	0.276**	0.180*	0.895**	0.925**	
The mean	1.42	2.78	2.39	2.26	3.823	3.816	3.7800
The standard deviation	0.494	1.184	1.001	936.	1.07606	1.07701	1.06185

\*\* . The correlation was significant at 0.01 confidence (double test).  
 \* . At a confidence level of 0.05, the correlation was significant.

4.3. Figures and Tables

In this study, gender, age, educational background, and professional title are taken as control variables. By using the Model 4 method of SPSS, a simple mediation model is constructed to test the mediating effect of ECNT and harmonious work passion. The specific test results are shown in Table 3. ECNT has a significant predictive effect on harmonious work passion ( $T = 25.406$ ,  $P < 0.001$ ), while it has a negative predictive effect on harmonious work passion. Therefore, H1 is not verified. The reason is that the employees do not often communicate electronically outside of working hours. When the mediating variable work-family conflict is included, the predictive effect of ECNT on harmonious work

passion was still significant ( $t=-11.166$ ,  $P < 0.001$ ), and H3 is verified. At the same time, ECNT has a significant positive prediction effect on work-family conflict ( $t=25.773$ ,  $P < 0.001$ ), and hypothesis H2 is verified.

In addition, we tested whether the mediating effect of work-family conflict between ECNT and harmonious work passion is complete. The specific results are shown in Table 4. The results show that the Bootstrap confidence interval of the direct effect of ECNT on harmonious work passion and the mediating effect of work-family conflict does not contain 0. The results indicate that ECNT has a direct impact on harmonious work passion but an indirect impact on harmonious work passion. Their direct effect and mediating effect account for 36.5% and 63.5% of the total effect, respectively.

Table 3. The Mediating Effect of Work-Family Conflict.

variable	Harmonious work passion		Work-family conflict	
	t	p	t	p
Control variables				
gender	0.674	0.501	1.362	0.175
age	2.105	0.037	1.009	0.314
Qualifications	0.700	0.485	0.352	0.725
Title	1.026	0.306	0.081	0.935
The independent variables				
ECNT	5.634	0	25.406	0
Intervening variable				
Work-family conflict	11.166	0		
R <sup>2</sup>	0.881		0.804	
F	237.515		158.829	

Note: t-value is a test of whether each independent variable has a significant effect, specifically whether it is significant; p-value indicates whether the effect of the variable is significant, when the p-value < 0.05, it means that the effect of the independent variable is significant; F-value is a variance test of the regression model as a whole; R2 and is an elaboration of the effect of the model fit

**Table 4.** Total Effect, Mediating Effect and Direct Effect.

	Effect of value	BootSE	BootLLCI	BootULCI	Relative effect value
The mediation effect	0.557	0.056	0.451	0.672	63.5%
Direct effect	0.320	0.056	0.206	0.427	36.5%
The total effect	0.877	0.036	0.805	0.946	

Note: BootSE indicates the standard error in Bootstrap test; BootLLCI indicates the lower confidence limit in Bootstrap; BootULCI indicates the upper confidence limit in Bootstrap; when the confidence interval does not contain 0, it indicates a significant effect

## 5. Conclusion

Using the resource conservation theory, it is proved that ECNT increases employees' work-family conflict and negatively affects employees' harmonious work passion through the influence of work-family conflict. Namely, work-family conflict plays a mediating role in the relationship between non-working electronic communication and harmonious work passion.

The study result reveals the influence of ECNT on employees' harmonious work passion. Although previous studies discussed the impact of ECNT, they mainly focused on the health and family of employees, and there was a lack of research on the impact of ECNT on employees' work passion. Few scholars have confirmed the impact of ECNT through empirical methods. With the proliferation of electronic communication methods, ECNT becomes common, and there is not enough research. This study empirically verifies the influence of ECNT on employees' harmonious work passion and expands the research on the effect of ECNT. Second, from the perspective of individual resource consumption and role conflict, we confirm the mediating effect of work-family conflict on ECNT and employees' harmonious work passion. Previous studies have confirmed that ECNT promotes work-family conflict, while work-family conflict reduces employees' harmonious work passion. However, few studies have examined work-family conflict as an influencing mechanism. Therefore, starting from non-working electronic communication, this study explores the influence of factors outside the work field on the work field.

The limit of this study is as follows.

Firstly, the data of the variables in this study were all collected at the same point in time. However, the effect between non-working electronic communication and employees' harmonious work passion does not occur immediately. Thus, there is a certain time difference between them, and the two variables occur in different fields. Therefore, the cross-sectional data in this study cannot reflect the real relationship between these two variables. Therefore, in future studies, we plan to collect data in two or more ways, with an interval between each time to improve the persuasiveness of the study.

Secondly, the subjects come from different industries, and their positions are also different. The frequency with which these employees communicate electronically outside of working hours varies. Therefore, in future studies, we can study employees in a certain industry or employees in the

same position to further verify this study.

Finally, the data of this study are all from the employees of Chinese enterprises. Therefore, the results of this study do not apply to foreign enterprises or foreign environments. Therefore, in future studies, we can conduct cross-cultural studies to verify whether the results of this experiment can be applied to employees from other cultural backgrounds.

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