The Impact of Commuting Happiness on Career Calling and Its Mechanism of Action

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Abstract: Career calling is a key focus in the fields of vocational psychology and management psychology. However, current research primarily centers on education, media, and corporate management, with relatively few studies examining the commuting domain. To explore the impact of commuting happiness on career calling and reveal its underlying mechanism, this paper surveyed 370 Chinese employees. The findings indicate that factors such as commuting happiness, job satisfaction, and environmental uncertainty influence the formation of career calling. A positive correlation exists between commuting happiness and career calling. Moreover, job satisfaction mediates the relationship between commuting happiness and career calling, while environmental uncertainty moderates the effect of commuting happiness on job satisfaction. This study highlights the significant influence of commuting happiness on career calling and offers recommendations for society, businesses, and individuals on how to manage and enhance career calling.

Keywords: Career calling, commuting happiness, job satisfaction.

1. Introduction

As work environments rapidly evolve, work has become an indispensable part of modern life, and career calling has garnered increasing attention. However, current research on career calling primarily focuses on fields such as education, media, safety management, corporate management, and university student education, with limited research on the commuting domain. This study aims to explore the impact of commuting happiness on career calling and to uncover its mechanism of action, providing theoretical support for enhancing employees' career calling [1]. Previous studies have identified various factors influencing career calling, such as demographic factors, personal characteristics, organizational environment, and national and societal needs. For example, Torrey and Duffy examined the impact of religious beliefs on individuals' career calling. Some scholars have found through demographic research that there is a positive correlation between employees' years of work experience, industry status, self-perception, and career calling, while factors such as gender, age, income, and education level show no significant correlation with career calling [2]. In terms of personal characteristics, Esteves and Lopes discovered that increasing personal challenges and structural resources can effectively enhance an individual's sense of career calling [3]. However, none of these studies have examined the impact of commuting on career calling.

In terms of the impact of commuting on work, Jachimowicz explored how commuting affects work-related outcomes. He found that when employees exhibit low levels of self-control or

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experience high levels of work-family conflict, an unpleasant commute may lead to job dissatisfaction, which could eventually result in quitting [4]. Birgitta Sandberg discovered that past commuting experiences influence current commuting behavior, while future and long-term happiness exert a more prolonged impact on commuting behavior [5]. Wu Weijiong et al. argued that recovery activities during commuting have a dynamic influence on work passion [6]. Amponsah-Tawiah, Emre, and Elci found that commuting stress reduces employee job satisfaction and performance while promoting aggressive behaviors, tardiness, and absenteeism [7]. However, these studies did not examine the relationship between commuting happiness and career calling.

This study investigates the influence of commuting happiness on career calling, along with its mechanisms of action and moderating factors. As illustrated in Figure 1, we first consider commuting happiness as the independent variable and career calling as the dependent variable. Based on selfdetermination theory, which posits that employees who fulfill their psychological needs for autonomy, competence, and relatedness will experience higher levels of happiness and life satisfaction [8], we propose Hypothesis 1: Commuting happiness has a significant positive impact on employees' career calling. Next, we explore the mediating role of job satisfaction. According to self-determination theory [9], if employees satisfy the three psychological needs of autonomy, competence, and relatedness, they will experience higher levels of happiness and life satisfaction. It can therefore be inferred that meeting these psychological needs during commuting can enhance job satisfaction. Accordingly, we propose Hypothesis 2: Job satisfaction partially mediates the relationship between commuting happiness and career calling. Lastly, we examine the moderating role of environmental uncertainty. Scholar Song J discovered that due to factors such as resource constraints, information asymmetry, and decision-makers' limited capabilities, companies and employees often find it challenging to accurately predict changes in the external environment. This leads to delays and errors in decision-making and actions [10]. Thus, we propose Hypothesis 3: Environmental uncertainty moderates the impact of commuting happiness on job satisfaction.



Figure 1: Hypothetical Theoretical Model

2. Research Methodology

2.1. Data Sample

The participants in this study were employees with work experience. The questionnaire was designed based on various scales, using the "Questionnaire Star" platform for distribution. It was randomly disseminated through online communication via WeChat. Prior to the survey, participants were

informed about the purpose and content of the study, and their participation was voluntary. The researchers assured the participants that the questionnaire would remain anonymous and only be used for academic research. Participants were asked to complete the questionnaire based on their true feelings. A total of 370 questionnaires were collected. The demographic characteristics of the sample are shown in Table 1. Through an analysis of gender, marital status, age distribution, work duration, and commuting methods, it was determined that the data from the questionnaires largely align with real-world situations and logical expectations.

Name	Ontion	Frequency	Percentage (%)	Cumulative	
ivanie	option			Percentage (%)	
Gender	Male	148	40.0	40.0	
Uclider	Female	222	60.0	100.0	
	Below 25	182	49.2	49.2	
1 ~~~	26-35	76	20.5	69.7	
Age	36-45	68	18.4	88.1	
	Above 45	44	11.9	100.0	
	Less than 1 year	158	42.7	42.7	
	1-3 years	60	16.2	58.9	
Years of Work	3-5 years	56	15.1	74.1	
	More than 5	06	25.0	100.0	
	years	90	23.9	100.0	
	Less than 20	110	29.7	20.7	
	minutes	110	29.1	29.1	
Commuting	20-40 minutes	108	29.2	58.9	
Time	40-60 minutes	92	24.9	83.8	
	More than 60	60	16.2	100.0	
	minutes	00	10.2	100.0	
	Walking	76	20.5	20.5	
	Bicycling	72	19.5	40.0	
Main	Driving	76	20.5	60.5	
Commuting Mathad	Bus or subway	136	36.8	97.3	
Method	other	10	2.7	100.0	
	Total	370	100.0	100.0	

Table 1:	Sample	Characteristics	of This	Study
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2.2. Variable Descriptions

Commuting Happiness refers to employees' overall evaluation of the quality of their commuting experience and function. It is measured using the Commuting Happiness Scale developed by De Vos et al., which includes three dimensions: intense positive emotions, calm positive emotions, and cognitive evaluations. The scale consists of nine items and is measured on a 6-point Likert scale (from 1 =strongly disagree to 6 =strongly agree) [11].

Career Calling is measured using the Chinese version of the Career Calling Scale developed by Zhang Chunyu [12]. This scale consists of 11 items and includes three dimensions: altruistic contribution, guidance and meaning, and value. It is scored on a 5-point scale, ranging from 1 = "completely disagree" to 5 = "completely agree," with higher scores indicating a higher level of career calling.

Job Satisfaction is measured using the Job Satisfaction Scale, which was adapted from the Michigan Organizational Assessment Scale developed by Cammann, Fichman, Jenkins, and Klesh. The scale consists of three items [13].

Environmental Uncertainty is evaluated using Colquitt's Environmental Uncertainty Scale [14].

3. Research Results

3.1. Descriptive Statistical Analysis

3.1.1. Reliability Analysis

The reliability test was conducted by calculating the Cronbach's alpha coefficient to assess the internal consistency of the scales. According to widely accepted academic standards, when the Cronbach's alpha coefficient exceeds 0.9, it indicates excellent reliability of the test or scale. A coefficient between 0.8 and 0.9 suggests good reliability, while a coefficient above 0.7 is considered acceptable. If the Cronbach's alpha coefficient is below 0.7, the data's reliability is considered questionable, and the questionnaire may need to be redesigned or adjusted.

As shown in Table 2, the Cronbach's alpha coefficient for Commuting Happiness is 0.906, for Career Calling is 0.911, for Job Satisfaction is 0.915, and for Environmental Uncertainty is 0.956. All four dimensions have a Cronbach's alpha value greater than 0.8, indicating that the questionnaire demonstrates a high level of reliability.

Dimension	Cronbach's a Coefficient	Number of Items	Sample Size
Commuting Happiness	0.906	9	370
Career Calling	0.911	5	370
Job Satisfaction	0.915	6	370
Environmental Uncertainty	0.956	8	370

Fable 2:	Reliability	Analysis
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3.1.2. Confirmatory Factor Analysis

This study involves four core variables: Commuting Happiness, Environmental Uncertainty, Job Satisfaction, and Career Calling. To verify the discriminant validity of these core variables, confirmatory factor analysis (CFA) was employed. After comparing three-factor, two-factor, and single-factor models, the four-factor model demonstrated the best fit for the data, with all indicators meeting the established standards. Moreover, the standardized factor loadings for each measurement variable exceeded 0.6 and were statistically significant, further confirming their strong measurement relationships. Thus, the four core variables—Commuting Happiness, Environmental Uncertainty, Job Satisfaction, and Career Calling—exhibit good discriminant validity.

Table 3: Discriminant Validity Analysis Results

Model	x2	df	x2/df	CFI	TLI	RMSEA	SRMR
Four-Factor Model: a, b, c, d	610.346	344	1.774	0.941	0.935	0.065	0.052
Three-Factor Model 1: a+b, c, d	1183.116	347	3.410	0.814	0.797	0.114	0.078
Three-Factor Model 2: a, b, c+d	940.651	347	2.711	0.868	0.856	0.096	0.069
Two-Factor Model: a, b+c+d	1430.192	349	4.098	0.759	0.739	0.130	0.097
Single-Factor Model: a+b+c+d	1947.139	350	5.563	0.645	0.616	0.157	0.109

Note: a represents Commuting Happiness; b represents Environmental Uncertainty; c represents Job Satisfaction; d represents Career Calling. Sample size = 370.

3.1.3. Descriptive Statistical Analysis

As shown in Table 4, the descriptive statistics for the sample data, including the minimum, maximum, mean, standard deviation, and variance for each variable, are presented.

Name	Sample Size	Minimum	Maximum	Mean	Standard Deviation	Variance
Commuting Happiness	370	1.444	5.000	3.239	0.882	0.778
Career Calling	370	1.000	5.000	3.196	1.026	1.053
Job Satisfaction	370	1.333	5.000	3.235	0.953	0.908
Environmental Uncertainty	370	1.250	5.000	3.455	1.259	1.586

Table 4: Descriptive Statistics

3.2. Correlation Analysis

In research, Pearson's correlation coefficient (r) is commonly used to quantify the correlation between variables. An r value between 0 and 1 indicates a positive correlation, while an r value between -1 and 0 indicates a negative correlation. An r value of 0 implies no linear relationship between the variables. A correlation coefficient $|\mathbf{r}| > 0.7$ indicates a strong linear correlation between two variables, while $|\mathbf{r}| < 0.3$ indicates a weak linear correlation.

As shown in Table 5, the correlation coefficient between Environmental Uncertainty and Commuting Happiness is 0.660, and the correlation between Commuting Happiness and Job Satisfaction is 0.618, indicating a strong positive relationship among these variables with statistical significance. Additionally, the correlation coefficient between Job Satisfaction and Career Calling is -0.428, showing a moderate negative relationship with statistical significance.

	Commuting Happiness	Career Calling	Job Satisfaction	Environmental Uncertainty
Commuting Happiness	1	0.500**	0.618**	0.660**
Career Calling	-0.500**	1	-0.428**	-0.507**
Job Satisfaction	0.618**	-0.428**	1	0.680**
Environmental Uncertainty	0.660**	-0.507**	0.680**	1

Note: n=370,*p<0.05、**p<0.01

3.3. Hypothesis Testing

3.3.1. Main Effect Analysis

To test the impact of Commuting Happiness on Career Calling, a linear regression analysis was conducted. The detailed results are shown in Table 6. The R^2 value is 0.250, indicating that the factor of commuting happiness explains 25.0% of the variance in career calling. Furthermore, the F value is 61.125, with a corresponding p value significantly less than 0.05, demonstrating that the model

passed the F-test, which suggests that commuting happiness has a certain impact on career calling. In conclusion, the regression coefficient of commuting happiness is -0.582, with a t value of -7.818, both statistically significant. This highlights that commuting happiness has a clear negative impact on career calling, thus confirming Hypothesis 1.

		0	Ct	4		
	Regression Coefficient	þ	Standard Error	t		
Constant	5.081		0.250	20.335**		
Commuting Happiness	-0.582	-0.500	0.074	-7.818**		
R ²	0.250					
Adjusted R ²	0.246					
F	61.125***					
Dependent Variable: Career Calling						

Table	6:	Main	Effect	Analysis
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Note: n=370,*p<0.05, **p<0.01

3.3.2. Mediation Effect Analysis

To test the mediating effect of Job Satisfaction between Commuting Happiness and Career Calling, a bias-corrected bootstrapping test was performed with 5,000 samples. The detailed results are shown in Table 7 and Table 8.

The test results confirmed that the mediation effect is both present and significant. The 95% confidence interval for the direct effect is [-0.629, -0.260], which does not include zero, and the 95% confidence interval for the mediation effect is [-0.318, -0.003], also excluding zero. Therefore, Job Satisfaction plays a partial mediating role in the effect of commuting happiness on career calling, confirming Hypothesis 2.

Variables	Career Calling		Job Sa	tisfaction	Career Calling	
variables	β	t	β	t	β	t
Commuting Happiness	-0.582	-7.818***	0.668	10.642***	-0.444	-4.75***
Job Satisfaction				_	-0.206	-2.381***
R ²	0.25		0.382		0.273	
Adjusted R ²	0.246		0.376		0.	261
F	61.125***		113.255***		34.178***	

Table 7: Regression Analysis of Commuting Happiness on Career Calling

Note: n=370,*p<0.05, **p<0.01

Table 8: Mediation Effect Analysis of Job Satisfaction

Effect Type	Effect Value	Standard Error	LLCI	ULCI
Total Effect	-0.582	0.074	-0.729	-0.435
Direct Effect	-0.444	0.094	-0.629	-0.260
Indirect Effect	-0.138	0.080	-0.318	-0.003

Note: n=370,*p<0.05、**p<0.01.

3.3.3. Moderation Effect Analysis

Table 9. Woderation Effect Analysis						
	coeff	se	t	Р	LLCI	ULCI
Commuting Happiness	0.2972	0.0703	4.2294	0.000	0.1585	0.4359
Environmental Uncertainty	0.5961	0.0713	8.3630	0.000	0.4554	0.7368
Commuting Happiness×Environmental Uncertainty	0.6230	0.0715	6.5583	0.000	0.2583	0.5934

Table 9: Moderation Effect Analysis

In the statistical analysis of the mediation-moderation model, moderation effect analysis is used to test how a variable influences the relationship between two other variables. In this study, the moderation effect analysis is used to examine the degree to which Environmental Uncertainty moderates the relationship between Commuting Happiness and Job Satisfaction. Simply put, moderation effect testing helps researchers understand under what conditions the relationship between an independent variable and a dependent variable changes.

In moderation effect testing, statistical methods such as regression analysis or analysis of variance (ANOVA) are typically used to evaluate the influence of the moderating variable on the relationship between the independent and dependent variables. By testing whether the moderating variable changes the strength or direction of the relationship between the independent and dependent variables, researchers gain deeper insights into the relationships under different conditions, allowing for a more comprehensive explanation of the study's results. As seen in the moderating that the moderation effect is significant. Thus, Environmental Uncertainty plays a moderating role in the impact of commuting happiness on job satisfaction, successfully confirming Hypothesis 3.

3.3.4. Moderated Mediation Effect Analysis

To test the moderating effect of Environmental Uncertainty on different levels of Job Satisfaction, a bias-corrected bootstrapping test was conducted with 5,000 samples. The detailed data is shown in Table 10. At low levels of job satisfaction, the 95% confidence interval includes zero, indicating that the mediation effect is not significant at this level. However, when job satisfaction is at the average level, the 95% confidence interval no longer includes zero, showing that job satisfaction has a significant effect as a mediating variable, with an effect value of -0.060. When job satisfaction reaches a high level, the 95% confidence interval also does not include zero, confirming that the mediation effect of job satisfaction some variability at different levels, suggesting that Environmental Uncertainty has a moderating effect on the mediation process.

Mediating Variable	Environmental Uncertainty		Effect	SE	95%CI
Job Satisfaction	M-1 SD	2.66	0.1975	0.0482	[0.0886,0.2770]
Job Satisfaction	Μ	3.75	0.1279	0.0461	[0.0314,0.2068]
Job Satisfaction	M+1 SD	4.83	0.0583	0.0669	[0.0999,0.1571]

Table 10: Moderated Mediation Effect Analysis

4. Discussion

4.1. Research Significance

This paper explores the relationship between Commuting Happiness and Career Calling. The findings from this study demonstrate that commuting happiness affects career calling, job satisfaction plays a significant mediating role, and the moderating effect of environmental uncertainty is supported.

First, this study found that commuting happiness has a positive impact on career calling. Previous research on the factors influencing career calling has been limited to demographics, personal characteristics, and organizational environments, without investigating the domain of commuting. Based on Self-Determination Theory, the hypothesis was formulated, and the study employed a survey method to discover the importance of commuting happiness in influencing career calling. This finding not only validates Self-Determination Theory but also expands the research on factors influencing career calling, providing a new perspective to this area of study.

Second, the study found that job satisfaction plays a partial mediating role in the relationship between commuting happiness and career calling. Prior research has shown that job satisfaction has a significant influence on career calling, and there is a positive correlation between commuting happiness and job satisfaction. This study further confirms the mediating role of job satisfaction in the relationship between commuting happiness and career calling, and it analyzes the mechanism through which commuting happiness impacts career calling.

Third, the study found that environmental uncertainty moderates the mediating effect of job satisfaction in the relationship between commuting happiness and career calling. Previous studies have shown that environmental uncertainty moderates the relationship between commuting happiness and career calling. Furthermore, environmental uncertainty can moderate the relationship between commuting happiness and job satisfaction. Based on Self-Determination Theory, Hypothesis 3 was proposed, suggesting that environmental uncertainty moderates the relationship between job satisfaction and commuting happiness. The research results also validated this hypothesis, clarifying the boundary conditions under which commuting happiness affects career calling. Additionally, this result provides organizations with effective management strategies, suggesting that improving employee job satisfaction and career calling can be achieved by addressing environmental uncertainty.

4.2. Research Limitations

This study has certain strengths, but it also exhibits some limitations. For example, in terms of data, the sample size collected through the questionnaire is relatively small, and the participants are mostly concentrated among younger individuals. Additionally, the frequency of questionnaire distribution was limited. Regarding the research focus, while this study innovatively explored career calling from the perspective of commuting happiness, commuting happiness is only a small part of the commuting domain. Therefore, the impact of other aspects of commuting on career calling remains to be further explored by future scholars.

5. Conclusion

Commuting Happiness significantly influences Career Calling. The mediating effect of Job Satisfaction is also significant, making it an important mechanism through which commuting happiness affects career calling. Furthermore, the moderating effect of Environmental Uncertainty is supported; when environmental uncertainty is high, the positive effect of commuting happiness on career calling decreases.

While this paper provides valuable insights, there are areas for improvement. For instance, although the study innovatively examined career calling from the perspective of commuting

happiness, commuting happiness is only one aspect of the larger commuting domain. Further research is needed to explore the broader impact of commuting on career calling. Additionally, the sample size of this study, consisting of only 370 participants, may be a limiting factor. This number might not be sufficient to provide highly accurate or generalizable results. Increasing the sample size in future studies would likely yield more meaningful and reliable outcomes.

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