

The Influence of the Change of Labor Relations on Willingness to Share in Sharing Economy Based on the Structural Equation Model

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Abstract: This paper aims to explain how the changes in labor relations under sharing economy affect the behavior of sharers. Based on the structural equation model(SEM), SPSS and AMOS in this paper are used to conduct statistical analysis on collected data and verify the influence mechanism. This paper concludes that the perceived changes in labor relations can not directly affect the willingness to share. The perceived changes in labor relations has a significant impact on relational psychological contract and transactional psychological contract respectively. The two-dimensional structure of psychological contract plays an intermediary role between perceived changes in labor relations and willingness to share and the transactional psychological contract has a more significant intermediary effect than relational psychological contract.

Keywords: Sharing Economy, Labor Relations, Psychological Contract, Willingness To Share, SEM.

1 INTRODUCTION

The emergence of sharing economy has triggered unprecedented changes in production relations and supply models, leading to the need for some theories to be revised and supplemented. In previous studies, the objects of research in the sharing economy are consumers, sharers, and sharing platforms, among which consumer-oriented research can be classified as consumer behavior and sharing platform-oriented research can be classified as organizational behavior. The role of sharers become special and the mode of sharing economy has prompted changes in the production relationship between the sharers' role and the sharing platform.

For the sharing platform, the sharer is the consumer because the sharer is consuming the information resources of the sharing platform such as server bandwidth, customer service line and so on. For general consumers, the sharer represents the sharing platform and provides services for them, and the service attitude of the sharer will affect the overall evaluation of the sharing platform by consumers. From this perspective, the sharer can be regarded as a member of the sharing platform organization. However, the sharer owns the means of production, that is, the sharer enters the organization with the means of production, which is quite different

from the traditional production relationship. Therefore, the sharer is not an employee in the strict sense for the sharing platform. There will be a new cooperative labor mode between the sharer and the sharing platform. Under this labor mode, the sharer's willingness to share will affect the management and stability of the sharing platform.

The concept of "psychological contract" was put forward by Argyris in 1960. The psychological contract theory focuses on the very clear and fixed strong production relationship between organizations and employees. However, the production relationship in the sharing economy shows that there is no strict employment relationship between sharers and sharing platforms, but there is still a weak production relationship between them. Under the new mode of sharing economy, whether psychological contract will affect sharing willingness and whether the change of labor relations in sharing economy will affect sharing willingness through psychological contract has not been verified. Therefore, this paper takes the online car sharers as the research object, and studies the sharers' willingness to share and the influencing mechanism based on the structural equation model.

2 MATERIALS AND METHODS

2.1 Perceived Changes in Labor Relations and Willingness to Share

Ren and Wang(2019) discussed the new changes in labor relations under the background of sharing economy compared with the traditional economy. Hoffman et al.(2016) advocated rebuilding the trust between enterprises and employees through the "alliance" strategy, and building a labor relations coordination mechanism conducive to mutual trust, mutual investment and common benefit. From the research at home and abroad, it is not difficult to find that the labor relationship between online car-sharing enterprises and sharers is different from the traditional form. The variable "perceived changes in labor relations" can be used to reflect the brand-new relationship between the sharer and the car-sharing enterprise, and to express the sharer's perception. In addition, employee dissatisfaction often leads to different levels of resistance or resistance psychology. Compared with traditional labor relations, sharers have more ways to express their dissatisfaction, such as commenting and sharing. The most direct trade-off for this labor relationship by sharers is the decrease in willingness to share. Based on this, this paper puts forward the hypothesis:

H1: Perceived changes in labor relations have a significant positive impact on willingness to share.

2.2 Perceived Changes in Labor Relations and Psychological Contract

The psychological contract of teachers in applied education is different from those in other fields. All these phenomena corroborate from the side that the change of perceived labor relations has a significant impact on the psychological contract. With the deepening of the relationship between the sharer and the platform, the psychological contract is also constantly strengthened. In addition, the three-dimensional structure of psychological contract is invalid under the background of sharing economy, and its two-dimensional structure includes relationship dimension and transaction dimension. The former is a broad, long-term and open responsibility, which pays more attention to future development and emotional exchange and

is more subjective. The latter is a concrete and short-term responsibility, which pays more attention to economic components, that is, the exchange relationship between material and society, which is in line with the core of psychological contract^[5]. Based on this, this paper puts forward hypothesis 2(H2) and hypothesis 3(H3).

H2-H3: Perceived changes in labor relations have a significant positive impact on relational psychological contract and transactional psychological contract.

2.3 Psychological Contract and Willingness to Share

Davenport and Prusak(1997) argued that willingness to share was related to people's personality, and some people were naturally willing to share and did not care about rewards. The organizational environment and the relationship between the organization and employees will have an impact on employees' psychology, which will lead to the fluctuation of employees' willingness to share. Lu and Chen(2012) found that relational psychological contract had the greatest influence on tacit knowledge sharing willingness and transactional psychological contract was negatively related to explicit/implicit knowledge sharing. For the sharing economy, economic benefits had been proven to be one of the driving factors for participation in sharing, and the sharing platform provided users with direct or indirect subsidies to improve their willingness to participate in sharing^[4]. Based on previous studies, this paper puts forward hypothesis 4(H4) and hypothesis 5(H5).

H4-H5: Relational psychological contract and transactional psychological contract have significant positive effects on willingness to sharing.

It has been clarified in the previous section that perceived labor relationship change may have some effect on both willingness to share and relational and transactional psychological contract, and it is highly likely that relational and transactional psychological contract also have significant effects on willingness to share. That is, on the premise that all the above five hypotheses may be established, this study reasonably speculates that psychological contract can be used as an intermediary variable, so this paper puts forward hypothesis 6(H6) and hypothesis 7(H7).

H6- H7: There is a mediating effect of relational psychological contract and transactional psychological contract.

The theoretical model of this study is shown in Figure 1.

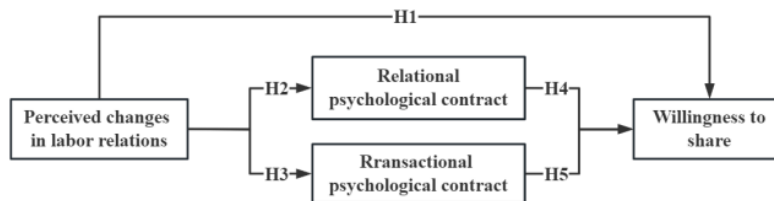


Figure 1: Theoretical model diagram.

3 RESEARCH DESIGN

3.1 Variable Measurement

In this study, Didi drivers were selected as the investigation object, and Likert 5 subscale was adopted. The questionnaire is divided into four parts. The first part is to measure the driver's perception of the change of labor relations with Didi Company. The second part is the psychological contract part, referring to the scale of Rousseau(2001) and Li(2006). The third part is the willingness to share, modified from the scale used by Hamari(2015). The fourth part is the basic information of the respondents: gender, age, education level, and frequency of driving online taxi. The details of the scale were shown in table 1.

Table 1: The scale design

Variables	Scale	References
Perceived changes in labor relations	Q11:I think I am a regular employee of Didi Company.	Yang(2010)
	Q12:I think I am a member of Didi Company.	
	Q13:I think Didi's staff is my superior.	
	Q14:I think other Didi drivers are my colleagues.	
Relational psychological contract	Q21:Didi Company provides a good communication channel.	Rousseau(2001) Li yuan(2006)
	Q22:Didi Company often listens to my opinions.	
	Q23:Didi Company doesn't set a threshold to prevent me from going to other online car platforms.	
	Q24:Didi's policy of protecting drivers' personal safety is effective.	
Transactional psychological contract	Q25:In front of the passengers, I will maintain the image of Didi Company.	Rousseau(2001) Li yuan(2006)
	Q31:The task reward provided by Didi Company is reasonable.	
	Q32:The task reward provided by Didi Company is stable.	
	Q33:The income provided by Didi Company is satisfactory to me.	
Willingness to share	Q34:The bonus offered by Didi Company is attractive.	Hamari(2015)
	Q41:I am willing to share my spare car.	
	Q42:If necessary, I will help my friends to be Didi drivers.	
	Q43:I will continue to be a Didi driver.	

3.2 Pretest and Data Sources

To ensure the validity of the questionnaire, a pretest was first conducted for this study, and questionnaires were distributed in the gathering communities of Didi drivers. The number of pretest questionnaires was 109, and the effective recovery rate was 90%. Among them, there were 107 male respondents, accounting for 98.2%, and 2 female respondents, accounting for 1.8%. This gender structure was consistent with the actual situation.

The results of pretest were shown in table 2, Cronbach's Alpha values of four variables: perceived labor relationship change, relational psychological contract, transactional psychological contract and willingness to share were 0.888, 0.825, 0.866 and 0.876 respectively. Each variable basically met the requirements without modification for the time being. However, after exploratory factor analysis, it was found that the answers to the third question, the fourth question and the fifth question of the relational psychological contract scale and the third question of the transactional psychological contract scale were scattered and could not express the research content, so they were deleted.

Table 2: The pre-test results

Model variable	Title number	α	Whether it reaches the standard
Perceived changes in labor relations	Q11、Q12、 Q13、Q14	0.888	yes
Relational psychological contract	Q21、Q22、 Q23、Q24、Q25	0.825	yes
Transactional psychological contract	Q31、Q32、 Q33、Q34	0.866	yes
Willingness to share	Q41、Q42、Q43	0.876	yes

The revised questionnaire was distributed again. The formal questionnaire took the form of network and offline, and finally 354 questionnaires were collected, of which 329 were valid, with an effective rate of 92.94%. In this study, SPSS and AMOS 21.0 was used as an analysis tool, and SEM structural equation was used to process the core data.

4 EMPIRICAL RESULTS

4.1 Reliability Analysis

Reliability refers to the reliability and consistency of measurement results. Huang(2009) and other scholars believed that it could measure the difference between the design of the content of the questionnaire and the actual views of the respondents. If a survey carries out the same test on the same subject several times, the result can explain whether the data has the same trend. There is a positive correlation between reliability and consistency.

Since this questionnaire adopted Likert5 subscale, Cronbach's alpha coefficient was used to measure reliability. According to scholars Shao and Yang, the alpha coefficient should be better than 0.6. Above 0.9 is "excellent", around 0.8 is "very good", 0.7 is "moderate", and above 0.5 is acceptable. The generally accepted standard in recent years is α greater than 0.7. SPSS 22.0 was used to analyze the reliability of the sample, and the results were shown in Table 3.

Table 3: Reliability analysis results

Variables	Item number	α
Perceived changes in labor relations	Q11	0.904
	Q12	0.904
	Q13	0.907
	Q14	0.908
Relational psychological contract	Q21	0.908
	Q22	0.909
	Q23	0.925
Transactional psychological contract	Q31	0.903
	Q32	0.960
	Q34	0.907
Willingness to share	Q41	0.920
	Q42	0.905
	Q43	0.920

From the above table, we can see that Cronbach's α coefficients were all greater than 0.9, so it could be seen that the measurement results of the four dimensions in the scale of this study were acceptable.

4.2 Validity Analysis

This scale used SPSS 22.0 to analyze the structure validity of the collected data according to the methods mentioned above. The specific results were shown in table 4.

Table 4: Validity analysis results

Variable	Estimate	KMO	Significance of Bartlett ball test
Perceived changes in labor relations	1.000	0.801	.000 Sig.< 0.001, the spherical hypothesis is rejected, and factor analysis can be done.
	1.215		
	0.938		
	0.772		
Relational Psychological contract	1.000	0.699	.000 Sig.< 0.001, the spherical hypothesis is rejected, and factor analysis can be done.
	1.254		
	1.040		
Transitional Psychological contract	1.000	0.666	.000 Sig.< 0.001, the spherical hypothesis is rejected, and factor analysis can be done.
	1.115		
	1.150		
Willingness to share	1.000	0.712	.000 Sig.< 0.001, the spherical hypothesis is rejected, and factor analysis can be done.
	0.874		
	1.082		
Whole sample		0.924	.000

According to the value of this table, it could be judged that it was suitable for factor analysis. The KMO values of the whole sample and each variable were all greater than or equal to 0.5.

Besides, the significant probability of Bartlett's spherical test statistical value was 0.000, less than 0.001, so the spherical hypothesis was rejected. It was proved that the correlation coefficient matrix of the factor was a non-unit matrix, and could extract the least factor while explaining most of the variance. Therefore, factor analysis could be done. The factor rotation matrix in the factor analysis show that the items under each variable were aggregated, and the items among different variables were separated, indicating that it had good structural validity.

4.3 Model Fitting Index

The results of model fitting index were shown in table 5. The absolute fitting index was mainly used to test the fitting degree between the model proposed in this paper and the sample data actually collected. Common measurement indicators including the ratio of chi-square to degree of freedom (X^2/df), goodness of fit index (GFI), root mean square of approximate error (RMSEA), and adjusted goodness of fit index (AGFI) in this study were 3.059, 0.079, 0.919 and 0.88 respectively, which all met the standard level. The relative fitting index was to compare the differences between the benchmark model and the model in the research . Non-normal fit index (NNFI, namely TLI) and comparative fit index (CFI) were 0.921 and 0.938 respectively, so the model proposed in this study and the sample data collected were in line with the index from the overall fit.

The reduced fitting index was the degree of simplification of the model mentioned above. It could be seen from the table 5 that the indicators included: PNFI, PGFI and PCFI, all of which were above 0.5 and met the standard level. This show that the simplification degree of the model proposed in this paper was acceptable. To sum up, the indexes in the model test of this study were all within the reasonable standard range and it was suitable for subsequent analysis.

Table 5: Model fitting index

	Fitting index	Standard level	The present study model	Is the study consistent with
Absolute fitting index	X ² /df	Between 2.0 and 5.0	3.059	yes
	RMSEA	Between 0.05 and 0.08	0.079	yes
	GFI	>0.80	0.919	yes
	AGFI	>0.80	0.880	yes
Relative fitting index	TLI	>0.80	0.921	yes
	CFI	>0.80	0.938	yes
Reduced fitting index	PNFI	>0.50	0.713	yes
	PGFI	>0.50	0.588	yes
	PCFI	>0.50	0.616	yes

4.4 Hypothesis testing

AMOS 21.0 was used to conduct path analysis in this paper. Of the seven hypotheses in this research model, six hypotheses (H2, H3, H4, H5, H6 and H7) reached the significance level

and were supported, while one hypothesis (H1) was rejected because it did not reach the significance level. The path analysis results were shown in table 6 and figure2.

Table 6: Sample hypothesis test results.

Assumption	Path	Path coefficient	Significance	Result
H1	Perceived changes in labor relations have a significant impact on willingness to share.	-0.103	Not significant	Not Established
H2	Perceived changes in labor relations have a significant impact on relational psychological contract.	0.536	*** significant	Established
H3	Perceived changes in labor relations have a significant impact on transitional psychological contract.	0.716	*** significant	Established
H4	Relational psychological contract has a significant impact on willingness to share.	0.619	*** significant	Established
H5	Transitional psychological contract has a significant impact on willingness to share.	0.550	*** significant	Established
H6	There is a mediating effect of relational psychological contract.	Compare to H1, H2 and H4.		Established
H7	There is a mediating effect of transitional psychological contract.	Compare to H1, H3 and H5.		Established

Note: *** means $p < 0.001$, ** means $p < 0.01$, * means $p < 0.05$.

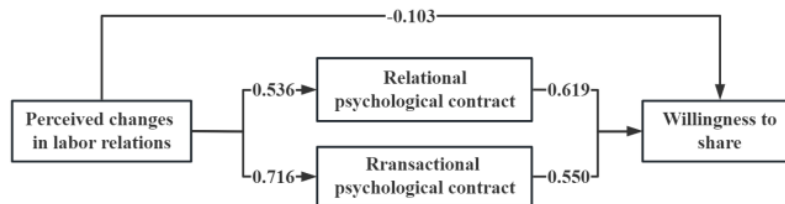


Figure 2: Model inspection diagram.

Specifically, in the model, perceived changes in labor relations had a significantly positive impact both on relational psychological contract and transactional psychological contract and the path coefficients were 0.536 and 0.716 respectively, so H2 and H3 were supported in this study. There was a positive correlation between two kinds of psychological contract and willingness to share and the coefficients were 0.619 and 0.550. The stronger the psychological contract, the higher willingness to share. Therefore, H4 and H5 were valid. Perceived changes in labor relations had no significant influence on the willingness to share so H1 was rejected. The perceived changes in labor relations could not directly affect the sharing intention, but through the two-dimensional structure of psychological contract with intermediary effect, in which transactional psychological contract has a more significant impact than relational psychological contract. H1 was rejected and H7 was supported.

5 CONCLUSIONS AND IMPLICATIONS

5.1 Research Conclusion

Hypothesis 1 is not tenable, which is reasonable. Didi emphasized the cooperative relationship with the sharers at the beginning of its business development. Many drivers could accept this brand-new labor relationship and shared their private cars, which show that the sharers' willingness to share was still high when they perceived the change of labor relations. Moreover, whether labor relations significantly affect willingness to share has not been confirmed in previous studies, suggesting that the relationship between the two may be weak or even negligible.

Hypothesis 2 and 3 are significant, which shows that the change of perceived labor relations has a significant impact on relational psychological contracts and transactional psychological contracts respectively. In the investigation and interview, it was also found that some sharers indicated the shift was attractive to them because of the greater degree of freedom in time and work under the sharing model. Therefore, hypotheses 2 and 3 are consistent with the theory and reality.

Hypothesis 4 and 5 are significant, but the path coefficient is weak. In the study of Chen(2012), the fit indicators of psychological contract and sharing willingness were good; however Zhao(2005) found that the psychological contract of civil servants would be different in the reform environment than before. Combining the results of several scholars and the research in this paper, it can be seen that both relational and transactional psychological contracts can have an impact on willingness to share.

Hypothesis 6 and 7 are both significant. The effect of perceived labor relationship change on willingness to share becomes significant after the introduction of relational and transactional psychological contracts as mediating variables, indicating that both relational and transactional psychological contracts can be used as fully mediating variables. Mapping to real life, that is, psychological suggestion and material reward. Psychological suggestion is embodied in that the online car-sharing enterprise uses some measures to make the sharer think that the online car-sharing enterprise regards him as a member of the company, creating an emotional connection between the sharer and the online car-sharing enterprise. The results in this study also indicate that material rewards are more attractive to the sharers than psychological hints.

5.2 Practical Inspiration

5.2.1 Strengthen the awareness of labor relations of sharers

It is suggested that online car rental companies need to clarify labor relations as much as possible, such as through electronic contracts. Once the labor relationship is confirmed, the sharers will have more trust in the online car-related enterprises, and they will be more inclined to formal employees and tend to be stable in psychological contracts, thus effectively improving the sharers' willingness to work and helping the online car-related enterprises to grow further.

5.2.2 Broaden information channels and improve material rewards

Abundant feedback channels are conducive to the stability and healthy positive construction of relational psychological contract. Positive psychological contract can reduce the negative emotions of sharers, and alleviate the tense relationship between sharers and online car companies. Once there is a conflict of interest, it can also effectively reduce the breach of contract or retaliatory extreme behavior of sharers.

This study found that most sharers pay more attention to material rewards, and the impact of transactional psychological contract on the willingness to share is much higher than that of relational psychological contract. In order to reduce negative behaviors that are not conducive to online car-sharing enterprises, the best countermeasure is to improve material rewards, which can enhance the stability of sharers.

5.2.3 Strengthen the circulation speed of information and enhance sense of participation of sharers

User operation is related to user experience, and network car companies need to further increase their investment in user operation. Especially when the most influential material rewards fluctuate, network car companies should comfort the sharers in official channels, large social platforms, media and other information circulation places in time, and try their best to reduce the impact on sharers' willingness to share in this way. On the other hand, they should strengthen the speed of information circulation, ensure the timeliness of information circulation in official channels, large social media platforms and other information circulation places, thus enhancing sharers' participation and their willingness to share.

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