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Research on Influencing Factors of Supply Chain Trust and Commitment Based on Transaction Cost and Social Exchange Theory

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Abstract

In the past, the literature often mentioned the relationship of trust and commitment, and believed that the lack of trust among supply chain members would lead to poor performance in transaction costs. Some studies believe that specific assets, behavioral uncertainty, and information sharing in the transaction cost theory have an impact on the trust level of supply chain partners. Other studies have pointed out the satisfaction of transaction partners and the reputation of partners in the market in social exchange theory. The degree and the cognition of both parties to the transaction will also affect the performance of the supply chain. This study attempts to integrate the above two theories and proposes an overall model of the factors affecting trust and commitment, and then uses the structural equation model (SEM) to carry out measurement models, structural models and the overall model is tested, and the research results indicate that the trust level is significantly related to the commitment level, while the manufacturer's investment in specific assets, the uncertainty of both parties' behavior, and the cognition level of both parties in the transaction in the theory of social exchange are all significantly related to the level of trust. Negative correlation; in transaction cost theory, partners' investment in special assets, information sharing, and social exchange theory, satisfaction with trading partners, trading partners' reputation and trust levels are significantly positively correlated, research results can provide supply chain management. As a reference, we will carry out partnership maintenance and management decision-making options.

Keywords

Supply Chain Management, Competitive Advantage, Trust, Commitment, Structural Equation Model

1. Research Motivation and Purpose

Supply chain management mainly seeks the synchronization and coordination of operations and procedures among supply chain partners to achieve the goal of improving supply chain performance and competitiveness. To achieve synchronization and coordination of operations and procedures, the first step is to start with the sharing of information between partners (Dai, 2013). It is pointed out that to achieve the goal of information sharing is related to the trust and commitment between partners, and some studies have pointed out that lack of trust between partners is one of the main factors leading to the failure of strategic alliances (Dai, 2013). Therefore, good supply chain performance is based on a high degree of trust between supply chain partners, basically. If there is a lack of trust between trading partners, it may result in a situation where each transaction between partners must be confirmed in detail (Li & Sun, 2007). Decision makers will also spend a lot of energy on analyzing the credit and reliability of the counterparty, resulting in a substantial increase in transaction costs, so understand the supply chain. The influencing factors of trust and commitment between partners will help companies understand the key connotations of supply chain management and improve performance and competitiveness (Li & Sun, 2007).

The main purpose of this research is to verify the relationship between the influencing factors of trust and commitment in the supply chain relationship and the relationship between the structure, from the perspective of transaction cost and social exchange theory, and aiming at the specific assets and behavioral uncertainty of the enterprise itself and its trading partners. Options such as information sharing, satisfaction, and reputation of trading partners provide a theoretical and practical basis for the influence of trust and commitment in supply chain relationships.

2. Conceptual Framework and Basic Assumptions

2.1. Research Hypothesis

1) Asset specificity and trust

Asset specificity refers to the physical assets or human resources invested for a specific trading partner. This investment will become a conversion cost. If it is transferred to other uses, its value may decrease or disappear. Williamson defines asset specificity as a durable investment that supports a specific transaction. The opportunity cost of this investment is relatively low in a feasible plan. These specific relationship investments include physical capital and human capital.

It is not easy to re-adjust the special assets that have been invested in order to trade, and it will cause potential cost problems (Ye & Xu, 2009). Therefore, Ik-Whan and Taewon believe that when manufacturers themselves recognize that the supply chain relationship with their partners must continue, and if a mistrust relationship arises, in order to improve transaction efficiency, they will

consider investment in special assets to try to reduce transaction costs. In other words, if the company has investments in special assets that are re-allocated due to transactions rather than to increase production, it indicates that it has doubts or lacks confidence in the trading partners, and the skepticism of the partners will reduce the degree of trust. Based on this, this research will test the following hypotheses:

H1: The company's specific capital investment is negatively correlated with the level of trust in its partners.

The impact of supply chain partners' specific asset investment on trust is even more clear. Although previous research has not found that it can be directly used to explain this relationship, it can be used to infer the positive impact of the particularity of partner assets on trust (Ye & Xue, 2011). For example, Weiss and Anderson believe that the particularity of the partner's assets will reduce the manufacturer's dissatisfaction with the trading partner. And the relationship between the partners is also affecting the commitment. The partner increases special investment in order to cooperate with the company, which proves that the other party is trustworthy, and it is also willing to make some concessions and sacrifices because of these investments (Ye & Xu, 2009). Therefore, the hypothesis of this research is as follows:

H2: The partner's specific asset investment is positively correlated with the level of trust in the partner.

2) Behavioral uncertainty and trust

The so-called uncertainty refers to the inability to predict the behavior or changes of partners in the external environment. Behavioral uncertainty is due to the difficulty of monitoring the performance of trading partners (Cao & Wang, 2011). Therefore, behavioral uncertainty raises the issue of evaluating whether to comply with the contract.

Recent studies have found that uncertainty has a great impact on management (Cao & Wang, 2011). The behavioral uncertainty generated by supply chain partners will reduce the level of trust in trading partners, because this behavioral uncertainty causes performance evaluation problems. There is a significant negative impact between the buyer's trust in the supplier and the uncertainty of decision-making. If the buyer feels that the supplier trusts him and feels that the supplier has a high commitment to each other's relationship, then the buyer's trust will improve (Cao & Wang, 2011). Therefore, the research hypothesis 3 is:

H3: Behavioral uncertainty is negatively correlated with the level of trust in partners.

3) Information sharing and trust

Information sharing has been pointed out as the most important factor in supply health management. The environmental uncertainty in the supply chain process will produce many shortcomings, ranging from extremely high inventory levels in the overall supply chain to out-of-stock products in other regions, causing the supply chain to fail to produce better performance (Shao, 2007). This

kind of supply-demand imbalance is often caused by the uncertainty of each manufacturer in the supply chain about the required information, so it produces the so-called bullwhip effect, which will further cause the supply chain's procedures to stop. The above recommendations, although the core focus is somewhat different, one thing is the same, that is, the entire supply chain partners lack key information that must be shared. For example, recent studies have pointed out that the sharing of information among supply chain partners in the semiconductor industry will ease financial pressures (Cao & Wang, 2011). In addition, many studies have pointed out that frequent and appropriate information exchanges between trading partners are closely related to high performance in the supply chain. Therefore, the hypothesis 4 of this research is:

H4: Information sharing is positively related to the level of trust between partners.

4) Information satisfaction and trust

The research of Anderson and Narus found that if companies can obtain satisfactory results from the partnership, their trust in the partnership will increase (Shao, 2007). Dwyer et al. also put forward the same view in the study of the development of the relationship between buyers and sellers. Therefore, if the benchmarking results of the two parties in the partnership are consistent with the previous expectations, mutual trust will increase (Ye & Xue, 2011). Batt pointed out that if you can understand the results of the partnership, and are satisfied with each other and can share with each other, the level of trust will increase. Therefore, this research proposes research hypothesis 5:

H5: The satisfaction of trading partners is positively correlated with the level of trust.

5) Partner reputation and trust

In view of the act of making sacrifices and showing concern for other circulation members, retailers and suppliers have formed a reputation in the industry. When the buyer feels that the seller has a good reputation, he is more likely to trust the seller (Ye & Xu, 2009). Having a good reputation has a positive effect on the buyer's credit, but it may not necessarily have a positive effect on the seller's goodwill. A good reputation is based on a reliable system and consistent behavior. This effect is easily transferred to the manufacturer and improves the seller's credit; on the contrary, tolerance is based on the behavior of showing concern and sacrifice to the members of the circulation (Shao, 2007). Houston and Johnson research pointed out that reputation has a great influence on speculation, and the cost of preventing speculation is very high, so trustworthy companies are attracted by trading partners (Ye & Xu, 2009). Therefore, if a supply chain partner has a high reputation in the market, it can be inferred that the partner is trustworthy. Therefore, the hypothesis of this research is as follows:

H6: The reputation of the partner is positively correlated with the level of trust.

6) Cognition and trust

Conflict is an important and inevitable element in the exchange relationship between organizations. Research by Anderson and Narus found that conflict can lead to unpleasant feelings between buyers and sellers, thereby affecting the distrust of partners (Wang et al., 2004). Moore used 339 different types of logistics companies as examples to explore the relationship between trust and commitment. The research results show that in the logistics relationship, the greater the conflict between buyers and sellers, the lower the trust in each other. Therefore, if a partner feels that there is a conflict in the business dealings, it will damage the process of trust establishment and reduce the degree of trust. Therefore, the research hypothesis 7 is:

H7: The conflict between trading partners and the level of trust are inversely related.

7) Trust and Commitment

Spekman believes that trust is very important and is seen as the basis of a strategic relationship, because distrust creates suspicion. On its own, distrust reduces the degree of commitment of the partnership (Wang et al., 2004). Achrol pointed out that trust is an important factor in determining the commitment relationship, and Morgan and Hunt also regard trust as the main determinant of relationship commitment (Zhang, 2009). When Kwon and Suh studied the supply chain relationship, the results showed that the level of trust is positively correlated with the degree of commitment (Zhang, 2009). Therefore, based on the above, this research has the following inferences:

H8: The level of trust has a positive effect on the degree of commitment.

2.2. Conceptual Framework

Based on the above research hypotheses, two main basic concepts have been constructed for this research framework: First, a successful supply chain relationship needs to be based on the commitments between supply chain partners, and trust is the key influencing factor for maintaining commitments; second In recent studies on supply chain relations, it is believed that in order to continuously increase the efficiency and effectiveness of supply chains, we should not only consider economic factors in transactions between partners, but also take social exchange factors into consideration. Based on the above-mentioned concepts and the aforementioned research hypotheses, the conceptual framework of this research based on transaction cost theory and social exchange theory to analyze the factors that affect the level of trust and commitment in the supply chain relationship is shown in Figure 1.

3. Research Methods

3.1. Measuring Tools

According to the conceptual framework of this research, there are nine variables to be measured in the model, which can be divided into seven exogenous variables
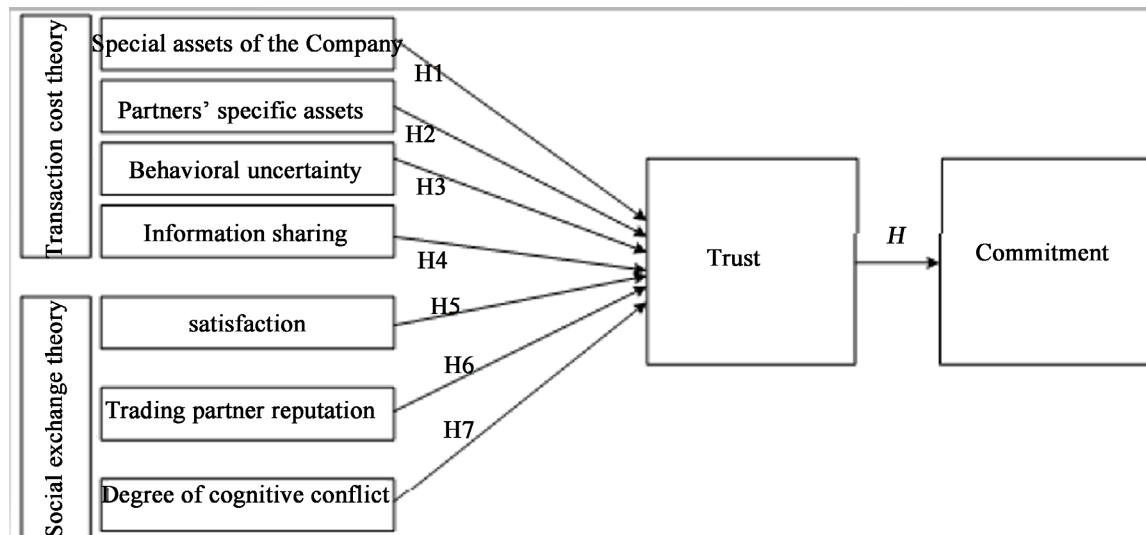
Figure 1. The level of trust and commitment.

(four transaction cost theory, three social exchange theory) and two endogenous variables (trust and commitment). Since each variable is a relatively abstract construct defined in the research, there is no single measurement index. Therefore, this study collects and organizes foreign documents, and the measurement items of each construct are used as measurement tools. Therefore, this measurement tool should have measurement content Validity, each item uses the Likert 7-point scale as a scale, 1 means "strongly disagree", 7 means "strongly agree", the measurement items in the measurement tool and the measurement of internal consistency reliability are explained as follows:

1) The company's special assets and partners' special assets. These two variables are mainly used to measure whether the company itself has invested in a specific resource, whether the operating procedures are tight, and the actual training has been invested in the supply partner and the supply partner to the company itself. Personnel of the other party, etc. Therefore, these two potential variables use the three items (measurement variables X1 to X6) as the questionnaire measurement tools, and the reliability coefficients of the questionnaire are 0.8302 and 0.8558 respectively (Table 1).

2) Behavioral uncertainty, this variable mainly measures the ability to predict the behavior of supply partners, whether it can confirm and predict the performance of the supply partner in the next business cycle, and understand whether the supply partner can quickly adjust the company's own specifications and other two observation items (X7, X8) As a measurement tool of the questionnaire, the reliability coefficient of the questionnaire is 0.7663.

3) Information sharing, this variable mainly understands whether to share common information technology (or software) with supply partners to promote communication with each other, and whether to share information on important issues. The measurement variable is (X9, X10), and the reliability coefficient of the questionnaire is 0.8830.

Table 1. Measurement reliability of each variable in this study.

Constructing Cronbach's α
Special assets of the Company (X1 to X3) 0.8302
Partner's special assets (X4 to X6) 0.8558
Behavior uncertainty (X7 to X8) 0.7663
0.8830 for information sharing (X9 to X 10)
Perceived satisfaction (X11 to X12) 0.9111
The reputation (X13 to X14) 0.8892
Cognitive conflict (X15 to X16) 0.8670
Trust (Y1 to Y9) 0.8579
Commitment (Y10 to Y11) 0.8112
Overall 0.9384

4) Satisfaction, this variable directly measures the degree of satisfaction with the supply partner and the overall relationship. The measurement variable is (X11, X12), and the reliability coefficient of the questionnaire is 0.9111.

5) Trading partner reputation. This variable directly measures whether the supply partner has a good and honest reputation in the market. The measurement variable is (X13, X14), and the reliability coefficient of the questionnaire is 0.8892.

6) The degree of cognitive conflict. This variable measures whether there is disagreement with the supply partner on key issues and whether there is a high degree of conflict. The measurement variable is (X15, X16), and the reliability coefficient of the questionnaire is 0.8670.

7) Trust is caring about the two characteristics of "honesty" and "goodwill" of supply partners. Kumar et al. used 10 questions to measure the above two characteristics, of which 4 questions measure honesty, 5 questions measure goodwill, and measure variables Is (Y1 to Y9), the reliability coefficient of this questionnaire is 0.8579.

8) Commitment, this variable is mainly defined as: The partnership that is willing to maintain performance due to a positive feeling towards the supply partner is mainly to measure the willingness to continue dealings with the supply partner. Kwon and Suh use whether they are willing to keep this supply partner and whether they are willing to continue to communicate as observational measurement items (Y10 to Y11), and the reliability coefficient of the questionnaire is 0.8112.

3.2. Sample Design

This study takes a manufacturing company as an example, selects 200 samples, sends the questionnaire to the person in charge of the company (chairman or general manager) by mail or personally, and asks him to forward it to the head of the company's procurement department who is actually responsible for contacting the supplier. Please answer the questionnaire based on the experience of

the most critical supplier with the company. The total number of questionnaires returned was 180, with a recovery rate of 78.25%. Excluding 4 invalid questionnaires with incomplete answers, 174 questionnaires were actually used for analysis. It can be seen from the sample distribution that the traditional manufacturing industry (54.2%) is the most interviewed in this study, and the nature of the product and technical support (31.6% and 25.9%) accounted for the majority of the surveyed manufacturers' identification criteria for key suppliers.

4. Empirical Research

4.1. Research Model

The relationship model in this study can be divided into measurement model (as shown in Figure 2 and Figure 3) and structural model (as shown in Figure 4). The variables are described as follows: exogenous observed variables are "X1 to X16", and exogenous potential variables are "ξ1 to ξ7" In addition, δ1 to δ16 are measurement errors of exogenous observed variable x, ε1 to ε9 are the measurement errors of exogenous observed variable η1, and ε11 to ε12 are the measurement errors of exogenous observed variable η2. The starting point of each arrow line between variables represents the dependent variable in the corresponding regression model relationship, and the end point of the arrow line represents the independent variable in the corresponding regression model relationship; The number on the arrow line is the coefficient matrix, λx is the regression coefficient (structural parameter) matrix of extrinsic potential variables and extrinsic measured variables, and λy is the regression coefficient matrix of intrinsic potential variables and intrinsic measured variables. γ is the coefficient matrix of regression relationship between internal and external potential variables; And β is that regression coefficient between the internal latent variable η2 and the internal latent variable η1, The measurement model of this study can be expressed as x = λxξ + δ and y = λyη + ε, and the structural model of this study can be expressed as η = βη + γξ + ζ by matrix equation.

4.2. Analysis and Evaluation of Fit Degree of Overall Model

There are many fitting indexes of the whole model, and each index has its own advantages and disadvantages in the leather model. These indexes can be classified into three categories: absolute fitting index, relative fitting index and simple fitting index. After preliminary analysis by Lisrel, the insignificant internal measurement variable Y10 is eliminated in this study. The relationship between extrinsic potential variable ξ5 and intrinsic potential variable η2 in the model is modified. The fitting indexes of the revised model are sorted according to the above classification as shown in Table 2, and the indexes are described as follows.

The value of χ2 in absolute fitting index is 538.55, the degree of freedom is 294, and the p value is 0.00, which shows that the hypothesis that there is no significant difference between theoretical model and observation model is rejected. The main reason is that χ2 is greatly influenced by the size of model and sample

Table 2. All the overall adaptation indexes of this study.

Absolute fitting index	Actual value	Evaluation criterion
1. Minimum Fit Function χ^2 with 294 d.f.	538.55 ($p = 0.00$)	$p \geq 0.01$
2. Goodness of Fit Index (GFI)	0.87	≥ 0.8
3. Adjusted Goodness of Fit Index (AGFI)	0.83	≥ 0.8
4. Root Mean Square Error of Approximation (RMSEA)	0.05	≤ 0.05
Relative adaptation index		
5. Normed Fit Index (NFI)	0.87	≤ 0.9
6. Non-Normed Fit Index (NNFI)	0.93	≥ 0.9
7. Comparative Fit Index (CFI)	0.94	≥ 0.9
8. Incremental Fit Index (IFI)	0.94	≥ 0.9
Simple fitting index		
9. Parsimony Normed Fit Index (PNFD)	0.71	≥ 0.5
10. Parsimony Goodness of Fit Index (PGFD)	0.66	≥ 0.5
11. Normed Chi-Square (538.55/294)	1.83	≤ 2

number, that is, the larger the model, the more samples it needs. Because many scholars think that when using real-world data to evaluate the model, The statistics of χ^2 are usually not of substantial help. Therefore, this study further evaluates the model with reference to GFI = 0.87, AGFI = 0.83 and RMS of approximate error of absolute fitness index. The appropriate index represents the degree to which the covariates/variances of the hypothetical model can explain the covariates/variances of the observed data, Similar to the concept of regression judgment coefficient R2, most scholars think that 0.9 is very suitable, and 0.8 to 0.9 is suitable. RMSEA is a fitting index which has been paid much attention in recent years, and less than or equal to 0.05 is a good fit.

In the relative fitness index, the NFI (normative fitness index) of this research model is 0.87, which needs to be less than 0.9. In addition, NNFI (non-normative fitness index) is 0.93, CFI (comparative fitness index) is 0.94, and IFI (value-added fitness index) is 0.94, which all reach the acceptable level of the model which needs to be greater than 0.9.

In the simple fitting index, PNFI is 0.71, PGFI (simple benign fitting index) is 0.66, both of which are higher than the standard passed by the 0.5 model, and the standard chi-square value is χ^2/d.f. = 1.83, which also reaches the standard of ideal fit for models less than 2. Based on the above indicators, the overall pattern adaptation in this study is reasonable.

4.3. Evaluation of the Internal Structure Fitting Degree of the Model

Bollen called the adaptation of internal structure as factor adaptation measure-

ment, and mainly made further tests on the internal quality of the model, including the evaluation of the measurement model and the evaluation of the structural model. In this study, the measurement model was divided into external and internal measurement variables for evaluation, which were described as follows:

4.3.1. Evaluation of Fitting Degree of Measurement Model

1) External variable evaluation

Figure 2 lists the load (non-standardized parameter estimation value), measurement error and T value of all external measurement variables relative to external potential variables. All T values in the figure are greater than 2.576, which indicates that all indicators are significant ($P < 0.01$ or better), and also indicates that the external potential variables formed by these external measurement variables are effective.

In addition, in order to understand the contribution of each evaluation variable to the construction of potential variables, Table 3 sorts out the standardized parameter estimation values of each measurement variable. From this estimation value, it can be seen that X5 is more effective than X6 and X4 in the construction of potential variables of "special assets of our company" Is more effective in construction, X7 and X13 have the same construction validity in terms of "behavioral uncertainty" potential variables, while X10 is more valid than X9 in terms of "information sharing" potential variables, and X11 is more valid than X11 in terms of "intuitive satisfaction" As far as the potential variable of "cognitive conflict degree" is concerned, X15 is more valid than X16.

Table 4 is the construction reliability and average variation extraction of intrinsic potential variables calculated by using the standardized parameters of measured variables on each potential variable and the measurement error of measured variables. It can be seen from the table that the construction reliability of seven intrinsic potential variables is greater than 0.7, of which "information sharing" reaches 0.8; Two variables such as "satisfaction with suppliers" and "reputation of suppliers" are as high as 0.9, which shows that the measurement variables in this part can provide credible construction measures for all potential variables. In addition, the average extracted variance value of each potential variable is greater than 0.5, which shows that the measure variable contributes more to each potential variable than the measure error. That is, measure variables are sufficient to reflect potential variables.

2) Internal variables

The MI index obtained by adjusting the residual error between variables and potential variables serves as a reference for model modification. After Y10 measurement variable is deleted, Figure 3 lists the load (non-standardized parameter estimation value), measurement error and t value of all internal variables relative to internal potential variables after correction. All t values in the figure are greater than 2.576, indicating that all indicators are of significant level ($P < 0.01$ or better). It also means that the internal potential variables formed by these internal
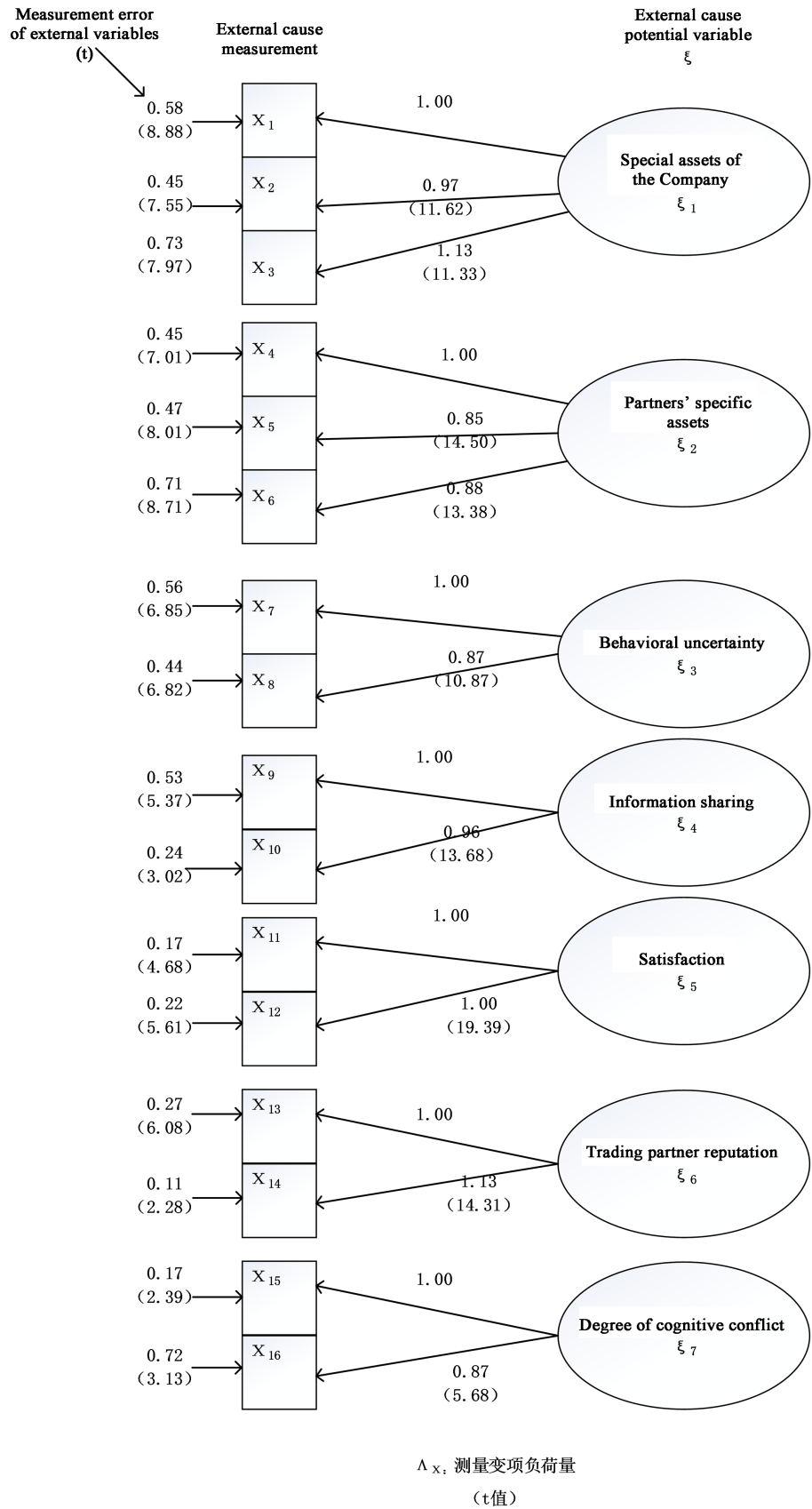
Figure 2. Path diagram of external dependent variable relationship.

Table 3. Parameter estimation of external potential variables to external measure variables.

Parameter	Non-standardized parameter estimation	standard deviation	T value	Standardized parameter estimation
λ_{x1}	1.00	---	---	0.73
λ_{x2}	0.96	0.08	11.61*	0.82
λ_{x3}	1.12	0.10	11.32*	0.80
λ_{x4}	1.00	---	---	0.86
λ_{x5}	0.84	0.06	14.50*	0.82
λ_{x6}	0.88	0.07	13.37*	0.77
λ_{x7}	1.00	---	---	0.79
λ_{x8}	0.88	0.08	10.89*	0.79
λ_{x9}	1.00	---	---	0.86
λ_{x10}	0.96	0.07	13.68*	0.92
λ_{x11}	1.00	---	---	0.93
λ_{x12}	1.00	0.05	19.37*	0.0
λ_{x13}	1.00	---	---	0.85
λ_{x14}	1.12	0.08	14.30*	0.94
λ_{x15}	1.00	---	---	0.95
λ_{x16}	0.86	0.15	5.69*	0.80

Note: $^{*}P < 0.01$.

Table 4. Construction reliability and average variation extraction of external potential variables.

Intrinsic potential variable	Construction reliability	Average variation extraction
Our company's formulation of suppliers Asset investment	0.76	0.51
Supplier's drafting of the company Asset investment	0.79	0.55
Uncertainty of behavior	0.72	0.56
information sharing	0.80	0.67
Satisfaction with suppliers	0.90	0.84
Supplier's reputation	0.90	0.82
Cognitive personal conflict	0.77	0.63

variables are valid.

In order to understand the contribution of each variable to the construction of potential variables, Table 5 collates the standardized parameter estimates of each

variable. From these estimates, it can be seen that Y7 is the most valid in the construction of "trust" potential variables, and Y12 is more valid than Y11 in the construction of "commitment" potential variables.

Table 6 shows the construction reliability and average variation extraction of external potential variables calculated by using the standardized parameters and measurement errors of variables in each potential variable. It can be seen from the table that the construction reliability of two external potential variables is greater than 0.8, which shows that the measurement variables in this part provide credible construction measurement for all potential variables. In addition, the average extracted variance of each potential variable is greater than 0.5, which also shows that compared with each potential variable, its variable contributes more than the measurement error, that is, the variable is sufficient to reflect the potential variable.

4.3.2. Structural Model with Appropriate Evaluation

This part mainly evaluates the structural relationship between "external potential variables" and "internal potential variables" formed by the studied variables, Figure 4 sorts out the structural regression coefficients and verified T values of

Table 5. Parameter estimation of internal variables due to potential variables.

Parameter	Non-standardized parameter estimation	standard deviation	T value	Standardized parameter estimation
λ_{y1}	1.00	---	---	0.68
λ_{y2}	1.04	0.15	7.43*	0.64
λ_{y3}	0.98	0.14	7.69*	0.67
λ_{y4}	0.93	0.14	7.08*	0.65
λ_{y5}	1.00	0.13	7.00*	0.80
λ_{y6}	0.92	0.16	6.31*	0.65
λ_{y7}	1.19	0.13	8.72*	0.82
λ_{y8}	0.87	0.13	7.49*	0.63
λ_{y9}	1.08	0.14	8.17*	0.72
λ_{y11}	1.00	---	---	0.81
λ_{y12}	0.87	0.07	11.64*	0.85

Note: The standard deviation is not listed as the reference index, which limits the estimation parameters. *$P < 0.01$.

Table 6. Construction reliability and average variation extraction of internal potential variables.

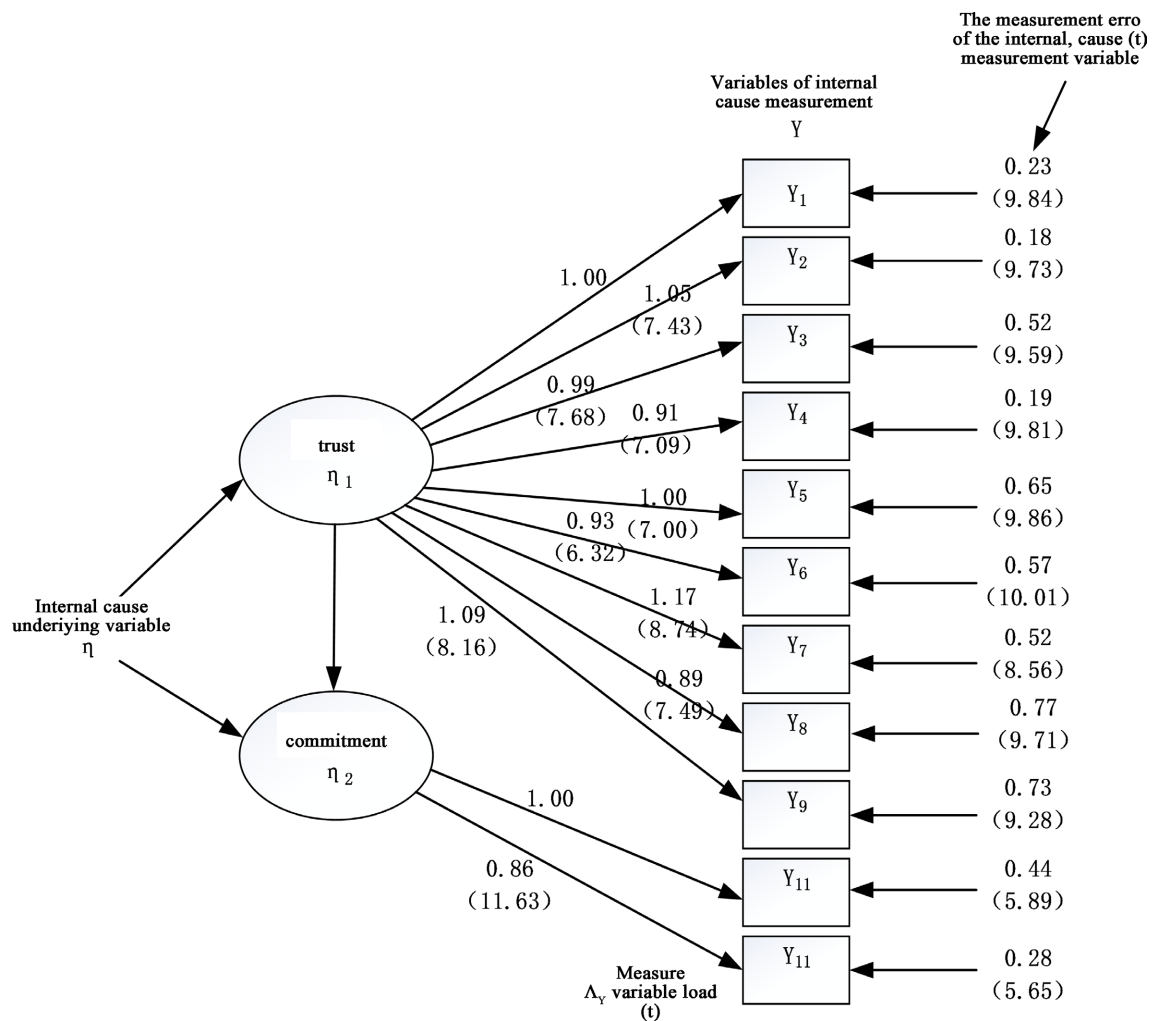| Internal potential variable	Construction reliability	Average variation extraction
Trust	0.88	0.50
promise	0.80	0.66

Figure 3. Path diagram of internal measurement variable relationship.

the seven "external potential variables", such as the special assets of the Company and the special assets of partners, which are modified to the two "internal potential variables", such as trust and commitment, respectively. In addition, The M1 index obtained from the adjustment of potential variables and the residual error between potential variables is used as the basis of model modification. From the modified structural relationship, it is found that there is a significant positive correlation between intuitive satisfaction and commitment.

Table 7 further lists the results of hypothesis testing in this study. The data show that the investment, behavioral uncertainty and cognitive conflict of our company's special assets are negatively correlated with trust level, while the investment, information sharing, satisfaction and trading partner reputation of our partner's special assets are positively correlated with trust level. However, the level of trust is positively correlated with the degree of commitment.

5. Conclusion

The main theoretical construction of this study believes that the factors composed

Table 7. Verification results of structural model hypothesis

Hypothesis verification	Variable relation	Regression coefficient of ML estimation	t-values
H1	The company's special asset investment is negatively correlated with the level of trust in partners	−0.37	−2.82*
H2	The special asset investment of partners is positively correlated with the level of trust in partners	0.29	2.46*
H3	The uncertainty of perceptual behavior is negatively correlated with the level of trust in partners	−0.39	−2.22*
H4	Information sharing has a positive correlation with the trust level between partners	0.57	3.945*
H5	Satisfaction with trading partners is positively correlated with trust level	0.47	4.00**
H6	The reputation of partners is positively correlated with the level of trust in them	0.36	2.40*
H7	Conflict with trading partners has a reverse relationship with trust level	−0.23	−2.0*
H8	Trust level has a positive relationship with commitment level	0.50	3.93**

*$P < 0.05$; **$P < 0.01$.

of transaction cost theory and social exchange theory will have an impact on the level of trust, and the level of trust has an impact on the degree of substantive commitment to supply chain partners, through literature analysis to establish the overall model of the conceptual framework shown in Figure 1, and further test it with SEM statistical techniques through questionnaire design, data collection, and analysis by LISREL software, deleting some insignificant variables and making slight corrections. After the structural relationship between variables, an acceptable overall structural model is obtained as shown in Figure 4. The research results support the integration of transaction cost theory and social exchange theory in this study, as a model hypothesis for trust and commitment influencing factors, and provide a systematic and relatively complete empirical model for excellent supply chain management.

Empirical data show that the trust level of supply chain partners has a positive and significant relationship with the degree of commitment. Commitment can promote the efficiency and effectiveness of trading partners. Commitment may be a key success factor in achieving supply chain integration, further verifying that trust is a key factor in supply chain integration and promoting performance between trading partners.

Among the several factor constructs of the transaction cost theory, empirical
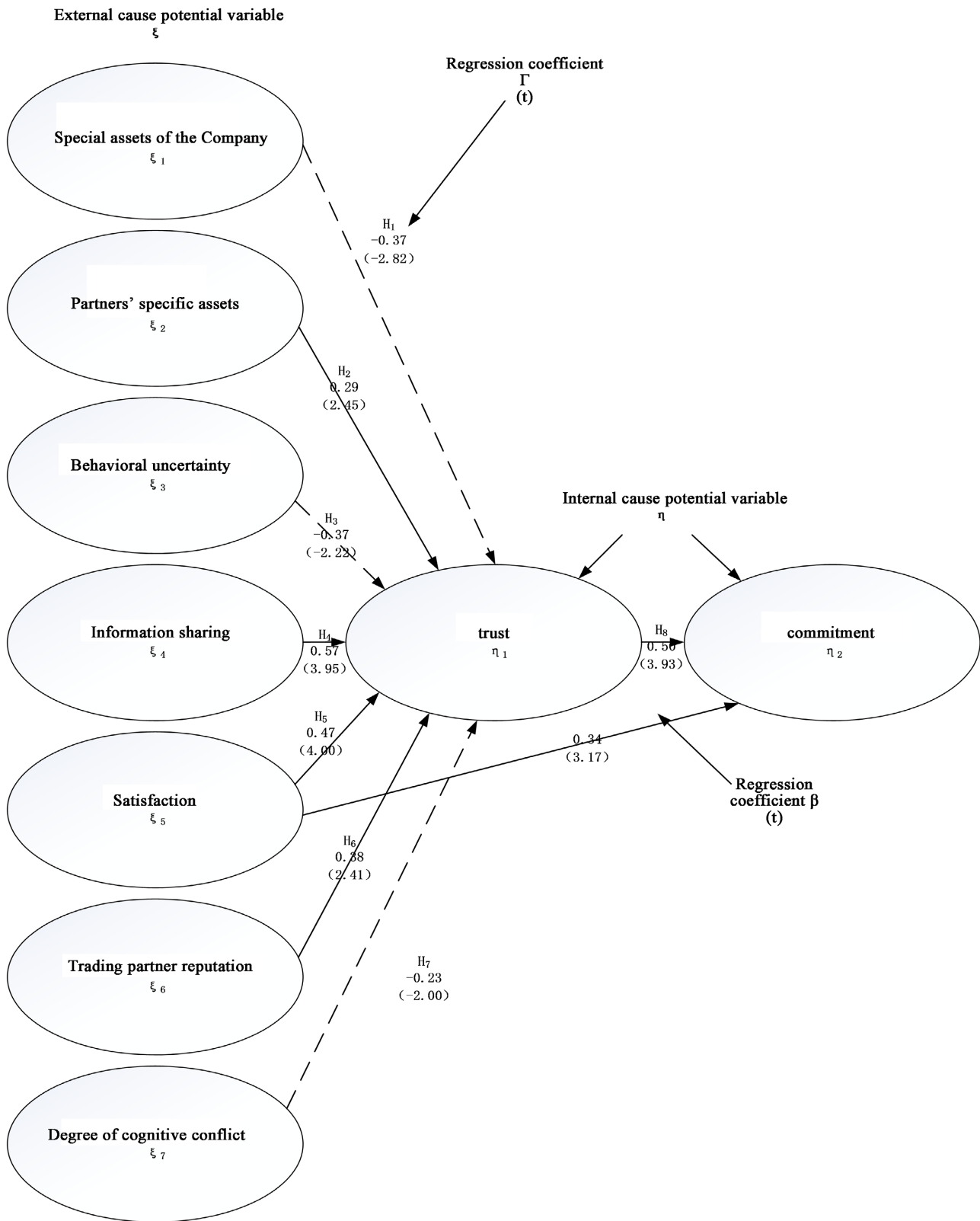
Figure 4. Relationship path diagram of structure model (Note: The dashed arrow represents the theoretical assumption of negative term relationship).

data shows that the company's negative correlation between the specific assets invested in a certain exchange and the level of trust in its partners has verified the basic hypothesis and also that is, if the manufacturer has a distrust relationship, if the transaction must continue, in order to improve the efficiency of the transaction, it will consider the investment of special assets in order to try to reduce its transaction cost. In other words, if the company has a special capital investment that is re-allocated due to a transaction rather than an increase in production, due to the perceived need for defensiveness, it also expresses doubts or lack of confidence in the trading partners, and the skepticism of the partners will reduce the degree of trust.

Conversely, the supply partner's investment in special assets is positively correlated with the company's level of trust. It represents that the partner increases the special investment in order to cooperate with the company's transaction, which is enough to prove that the other party is willing to make some concessions and sacrifices, and it also verifies Weiss & Anderson believes that the special assets of the partner will reduce the dissatisfaction of the manufacturer with the variable partner, and it is trustworthy.

In terms of perceived uncertainty in the behavior of partners, the company presents a negative correlation with their trust level, indicating that the uncertain behavior of supply chain partners will reduce the level of trust in trading partners, and the uncertainty of such behavior will cause Unable to predict the behavior or changes of partners, and it is difficult to monitor the results of the performance of the trading partners, which has caused performance evaluation problems, evaluation problems of whether to comply with the contract, and the same problems of adaptation. Of course, there are also many unnecessary problems. Transaction costs.

In terms of supply partner information sharing, the empirical results found that the degree of trust in supply partners is positively correlated, that is, the higher the degree of information sharing, the higher the degree of trust in supply partners, because the sharing of information will relieve financial pressure. It is also related to high performance in the supply chain. Therefore, through the empirical research of this research, we will further verify the close relationship between information sharing, trust and supply chain performance.

In the concept of several factors in social exchange theory, satisfaction with partners and trust show a positive relationship, that is, the higher the satisfaction with partners, the higher the degree of trust. This is similar to Dwyer et al. and Anderson, consistent with the results of Narus and other studies. It is further confirmed that if Klepper's behavioral results of both parties in the partnership are the same as previously expected, mutual trust will increase. Batt pointed out that if you can understand the results of the partnership and are satisfied with each other, you can also share with each other., The degree of trust will increase and other conclusions.

On the partner's reputation side, the level of trust is also positively correlated,

that is, the better the reputation of the supply partner in the market, the higher the level of trust. The empirical data of this research shows that it also directly affects the degree of commitment to the supply partner. Because reputation has a great influence on speculative behavior, and the cost of preventing speculative behavior is very high, trustworthy companies are more attractive trading partners. Therefore, if a supply chain partner enjoys a high reputation in the market, it can be inferred that the partner is trustworthy. It can be seen that a company with a good reputation and trustworthiness not only can easily increase the level of trust among trading partners, but also has a positive meaning for further commitments.

Finally, in terms of intuitive conflicts with trading partners, it can be found that the higher the conflict, the more significantly the lower the trust level in the supply chain relationship. However, this result also confirms the research findings of Anderson, Narus, Moore, etc., that is, conflict can lead to unpleasant feelings between buyers and sellers, which further affects the distrust of partners, that is, the higher the conflict, the further the damage to the process of trust establishment. It will reduce the degree of trust.

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Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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