

Key Driving Forces Identification of High-quality Development of Foreign Trade in the Context of "Ice Silk Road"

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ABSTRACT

With China's rapid progress, the goal of China's economic development has changed from "high speed" to "high quality". Accordingly, foreign trade should also pursue further "high-quality development" and explore ways and measures to achieve high-quality development. This paper constructs a structural equation model for high-quality development of foreign trade from four dimensions: trade competitiveness, new forms of foreign trade, trade facilitation and green trade construction. Combining the "Ice Silk Road" initiative, it identifies the key drivers of high-quality development of foreign trade in Jilin Province, China. The results show that trade facilitation brought about by trade system innovation is the biggest driving force for promoting the high-quality development of foreign trade in Jilin Province, China, and new forms of foreign trade formed by the development of cross-border e-commerce cannot be ignored.

Keywords: High-quality development of foreign trade, Key driving forces identification, Structural equation model, Ice Silk Road.

1. INTRODUCTION

As one of the themes of high-quality development, high-quality development of foreign trade helps to improve the quality and level of international circulation, and promote effective improvement in quality and reasonable growth in quantity of the economy. The Ice Silk Road is an important extension of the "Belt and Road" Initiative. As the forefront of the Ice Silk Road, the implementation of strategy brings an opportunity for Jilin Province to optimize the trade structure and improve the trade efficiency, which will provide a new platform for the high-quality development of foreign trade. Under the background of Ice Silk Road, this paper takes driving forces of high-quality development of foreign trade as research object, determining the impact of different driving forces and identifying the key driving forces, the results will be helpful to cultivate new advantages of trade competition and promote a leap-forward development of economy in Jilin Province, China.

2. MODEL CONSTRUCTION AND RESEARCH ASSUMPTIONS

Structural Equation Model (SEM) is a model construction method that uses a linear equation system to represent the relationship between latent variables and observed variables, as well as the internal relationships between latent variables. When analysing the high-quality development of foreign trade, there may be complex interactions between different driving forces, and these driving forces are difficult to measure directly, so structural equation model is used for this study.

2.1 Model Variables

This study sets up five latent variables, which are high-quality development of foreign trade, trade competitiveness, new forms of foreign trade, trade facilitation and green trade construction, of which high-quality development of foreign trade is the dependent variable. Based on referring to research literature and consulting to experts and scholars in

the industry, this paper constructs the following index system, as shown in "Table 1".

Table 1. Model variables

Latent variable	Observed variable		Variable Interpretation
High-quality development of foreign trade	Innovative development	Q1	Innovation in theory, system, technology and culture
	Coordinated development	Q2	Coordination of economic interests, social interests and environmental interests
	Green development	Q3	Meeting the needs of contemporary people 's development without damaging the interests of future generations
	Open development	Q4	Active open, two-way open, fair open, comprehensive open, win-win open
	Shared development	Q5	Achieving common prosperity
Trade competitiveness	Infrastructure development	Q6	Transportation infrastructure, communication infrastructure and energy infrastructure
	Competitiveness of export products	Q7	Ability to obtain the best market share and profit in foreign markets with lower costs
	Trade structure optimization	Q8	Structure of foreign trade commodities, structure of foreign trade methods, regional structure of foreign trade
	Management ability of local enterprises	Q9	Decision-making ability of the enterprise to the business strategy and plan
	Ice Silk Road	Q10	The shipping channel connecting the three major economic centers of North America, East Asia and Western Europe
New forms of foreign trade	Incentive policies for cross-border e-commerce development	Q11	Optimizing the list of retail imported goods, accelerating the formulation of intellectual property protection guidelines, establishing credit evaluation management systems
	Overseas warehouse construction	Q12	Bulk goods exported from China shipping by sea, land, air way sent to foreign warehouses, realizing local sale and local distribution
	Expansion on bonded maintenance service	Q13	Transporting goods with problems such as component damage, functional failure, quality defects, etc. into the bonded zone from abroad for testing and maintenance, and then reshipment out of the country
Trade facilitation	Foreign trade system innovation	Q14	Optimizing the international economic and trade environment, promoting the construction of smooth trade working mechanism, using new technologies and new channels to open up international market and improving the level of public services
	Trade control mechanism improvement	Q15	Implementing limited supervision, giving legal trade greater and maximum convenience.
	Foreign trade electronic platform construction	Q16	Realizing real-time information exchange and sharing between enterprises, between governments and enterprises
Green trade construction	Green technology innovation	Q17	Raw material innovation, processing and manufacturing technology innovation, recycling and reuse, waste disposal innovation, management innovation and portfolio innovation
	Green product development	Q18	Realizing standardization, internationalization, generalization, and institutionalization of green goods
	Green equipment construction	Q19	Achieving safety, energy saving, material saving and environmental protection by implementing green industrial equipment
	Green system formulation	Q20	Various institutional arrangements made around the green and sustainable development of social economy
	Greenization of foreign trade enterprises	Q21	Foreign trade enterprises implement green supply chain management

2.2 Model Construction

Based on the latent and observed variables that influence high-quality development of foreign trade,

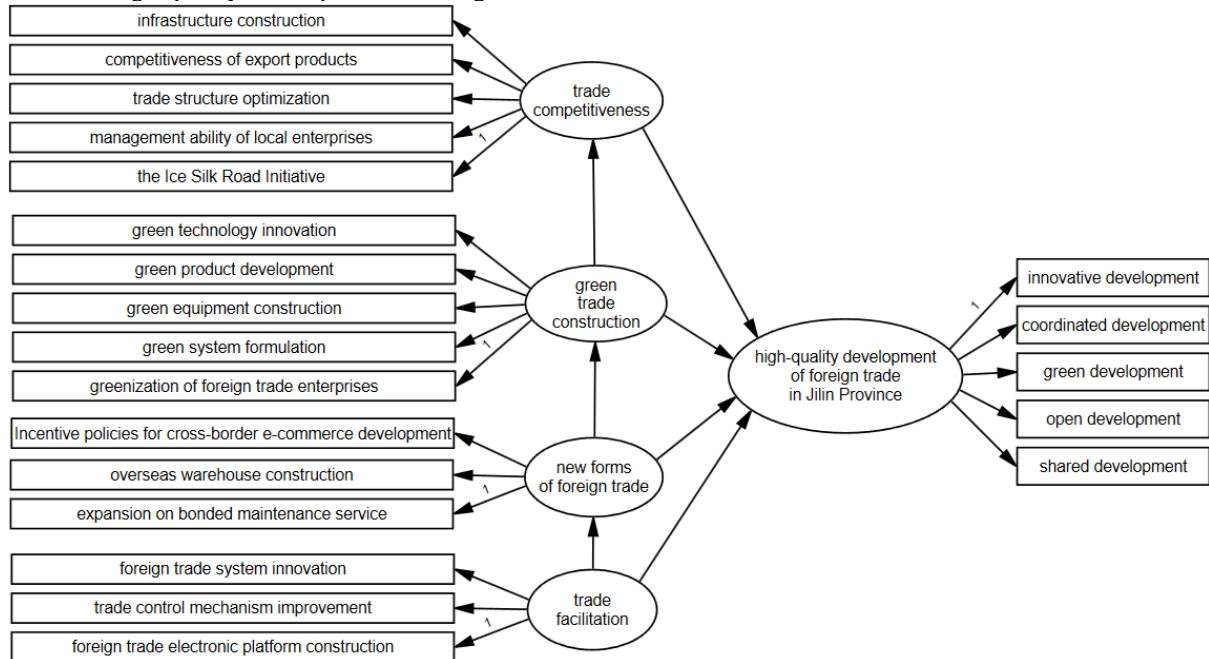


Figure 1 Conceptual model.

In this conceptual model, the high-quality development of foreign trade is affected by many factors at the same time. Meanwhile, there is a certain correlation among the four latent variables of trade competitiveness, new forms of foreign trade, trade facilitation and green trade construction. The conceptual model clearly describes the influence mechanism and path of high-quality development of foreign trade.

2.3 Research Assumptions

Promoting the construction of transportation and communication facilities can reduce the cost of trade, improve the efficiency of trade, increase the total volume of trade [1]. The optimization of foreign trade structure can coordinate the proportion between elements of foreign trade activities and make trade activities more reasonable [2]. The development of cross-border e-commerce can improve the efficiency of trade, reduce the circulation links and the waste of time [3]. The construction of overseas warehouses can reduce the cost of distribution and shorten the service cycle [4]. The improvement of foreign trade system can reduce transaction costs and provide guarantee the normal conduct of various trade activities. It is necessary to strengthen the transformation and

a Structural Equation Modelling is established, as shown in "Figure 1".

innovation of trade supervision concepts and models, implement the reform of "deregulation and service" [5], put an end to illegal trade, and create a good marketing environment. The construction of electronic platform for foreign trade can facilitate the exchange and sharing of information between enterprises and between governments and enterprises [6], and promote the development of foreign trade. Green trade construction can effectively reduce or even eliminate green barriers. People's concept of environmental protection is increasingly strengthened, and green goods are easier to promote trade [7]. The innovation of green technology and system will also better protect the environment, reduce the burden on the environment, and have better economic and social benefits [8]. The green reform of foreign trade enterprises will not only save costs, but also improve their competitiveness in the international market.

Based on the above literature research, this paper puts forward the relevant research hypotheses as follows:

- Hypothesis H1: There is a significant positive effect of trade competitiveness on the high-quality development of foreign trade, that is, the stronger the trade competitiveness, the more it can promote

the high-quality development of foreign trade.

- Hypothesis H2: There is a significant positive impact of trade facilitation on the high-quality development of foreign trade, that is, the more convenient the development of foreign trade, the more it can promote the high-quality development of foreign trade.
- Hypothesis H3: There is a significant positive impact of new forms of foreign trade on the high-quality development of foreign trade, that is, the more attention is paid to new forms of foreign trade, the more it can promote the high-quality development of foreign trade.
- Hypothesis H4: There is a significant positive impact of green trade construction on the high-quality development of foreign trade, that is, the better the green trade construction, the more it can promote the high-quality development of foreign trade.
- Hypothesis H5: Trade facilitation has a significant positive impact on the new forms of foreign trade, that is, the more convenient the development of foreign trade, the more it can promote the increase of new forms of foreign trade.
- Hypothesis H6: The new forms of foreign trade has a significant positive impact on the green trade construction, that is, the more attention is paid to the new forms of

foreign trade, the more complete the construction of green trade is.

- Hypothesis H7: There is a significant positive impact of green trade construction on the trade competitiveness, that is, the better the green trade construction is, the stronger the trade competitiveness is.

3. DATA ANALYSIS

This study adopts the method of distributing survey questionnaires for data collection.

3.1 Data Sources

According to "Table 1", a questionnaire containing 21 questions is designed. The questionnaire options use 5-point Likert scale method to express the influence degree of each factor, in which 1-5 respectively represent "very", "relatively", "average", "a little" and "no impact".

The questionnaire was distributed to the scholars in the field of foreign trade, the personnel from government related to foreign trade departments, and the personnel from enterprises related to foreign trade, etc. The questionnaires were distributed online. A total of 350 questionnaires were distributed and 299 valid questionnaires were recovered, with an effective recovery rate of 85.42%. The sample of the questionnaire is shown in "Table 2".

Table 2. Samples of questionnaire survey

Information	Item	Proportion (%)
Identity	Experts and scholars	4.3%
	Personnel from government related to foreign trade department	11.4%
	Personnel from enterprises related to foreign trade	73.3%
	Others	11.0%
Age	under 20 years	2.3%
	20-30 years	47.0%
	30-40 years	38.3%
	40-50 years	9.7%
	over 50 years	2.7%
Years of work related to international trade	under 3 years	42.5%
	3-5 years	28.7%
	5-10 years	20.1%
	over 10 years	8.7%

3.2 Descriptive Analysis

Through the statistics of the observed variables collected by the sample, as shown in "Table 3", it can be seen that the mean value of each observed variable is about 2, indicating that most people think that each observed variable has a very or relatively influence on its corresponding latent variable. The mean value of competitiveness of

export product is the lowest, 1.85, which means that most people think that competitiveness of export product has a great impact on trade competitiveness. The mean value of bonded maintenance service expansion is the highest, 2.38, which means that most people think that bonded maintenance service expansion has an impact or general impact on new forms of foreign trade.

Table 3. Descriptive statistical analysis of each observed variable

observed variable	mean value		observed variable	mean value		Observed variable	mean value	
	statistic	standard error		statistic	standard error		statistic	standard error
Q1	2.16	0.058	Q8	1.97	0.057	Q15	2.12	0.057
Q2	1.85	0.051	Q9	2.04	0.054	Q16	2.21	0.056
Q3	2.00	0.051	Q10	2.19	0.054	Q17	1.89	0.055
Q4	2.16	0.053	Q11	2.38	0.056	Q18	2.06	0.058
Q5	1.96	0.052	Q12	2.19	0.060	Q19	2.04	0.056
Q6	2.00	0.053	Q13	2.15	0.059	Q20	1.91	0.056
Q7	1.97	0.052	Q14	2.25	0.058	Q21	1.96	0.055

3.3 Reliability Analysis

Reliability analysis can test the reliability of the questionnaire survey results. This study mainly uses the Cronbach coefficient to analyse the reliability of the questionnaire. It is generally believed that if the Cronbach coefficient is between 0.6-0.7, indicating

that the reliability of the data is acceptable, if the Cronbach coefficient is greater than 0.7, indicating that the reliability of questionnaire is high. The reliability of the questionnaire results is analysed by SPSS 28.0 software. The test results are shown in "Table 4".

Table 4. Reliability test results

Latent variable	Number of items	Based on standardization items	Cronbach α value
High-quality development of foreign trade	5	0.844	0.926
Trade competitiveness	5	0.689	
Green trade construction	5	0.854	
New forms of foreign trade	3	0.632	
Trade facilitation	3	0.711	

In "Table 4", the overall Cronbach coefficient of the 21 observation variables is 0.926, far greater than 0.7, indicating that the questionnaire is reasonably designed, there is a good consistency between the various latent variables, and there is a significant correlation between the variables and the observed variables. Among each latent variable, the reliability coefficients of trade competitiveness and new forms of foreign trade are between 0.6 and 0.7, and the reliability coefficients of other latent variables are greater than 0.7, indicating that the survey data are reliable.

3.4 Validity Analysis

Validity analysis can test the validity of the questionnaire survey results, that is, the consistency between the measurement results and the research purpose. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett Test of Sphericity are usually used to analyse the validity of the questionnaire. It is generally believed that the validity of the questionnaire is higher when the KMO value is greater than 0.5 and the significance of Bartlett Test of Sphericity is less than 0.05. The validity of the questionnaire results is analysed by

SPSS 28.0 software. The results are shown in "Table 5".

Table 5. KMO and Bartlett test results

	KMO test	Bartlett spherical test
Test item	K	Significance
Statistics	0.946	0.000

It can be seen from "Table 5" that the KMO value of this questionnaire is 0.946, and the significance level of Bartlett's sphericity test is 0.000, indicating that the data obtained from the questionnaire have good validity and can be used for factor analysis.

4. MODEL TEST AND ANALYSIS

Through the path analysis, hypotheses are tested, then key driving forces for high-quality development of foreign trade are explored.

4.1 Model Fitness Test

The constructed structural equation model was fitted using AMOS 28. Combining the actual situation and relevant literature, the fitting index and test results are shown in "Table 6".

Table 6. Fitting index parameters of model

Fitting index	Model results	Ideal criteria	Accepted
CMIN/DF	1.441	1-3	Yes
AGFI	0.902	>0.90	Yes
GFI	0.928	>0.90	No
RMSEA	0.037	<0.05	Yes
RMR	0.040	<0.05	Yes
TLI	0.965	>0.90	Yes
IFI	0.972	>0.90	Yes
CFI	0.971	>0.90	Yes
PNFI	0.741	>0.5	Yes
PCFI	0.791	>0.5	Yes

From "Table 6", the model fitting index are all within the range of the adaptation standard, indicating that the model fit is good and this model can reflect the evaluation factors of high-quality development of foreign trade.

4.2 Test Results of Research Hypothesis

Based on the final results of model validation, the impact path of high-quality development of foreign trade is obtained, as shown in "Table 7". When P (significance level) is less than 0.05, the path is considered significant.

Table 7. Testing results of impact path

Hypothesis	Path	Standardized path coefficient	C.R.	P	Result
H1	High-quality development of foreign trade ← Trade competitiveness	0.270	2.120	0.034	Significant
H2	High-quality development of foreign trade ← New forms of foreign trade	0.950	3.013	0.003	Significant
H3	High-quality development of foreign trade ← Trade facilitation	0.850	2.090	0.037	Significant
H4	High-quality development of foreign trade ← Green trade construction	0.646	2.366	0.018	Significant
H5	New forms of foreign trade ← Trade facilitation	0.894	7.633	***	Significant
H6	Green trade construction ← New forms of foreign trade	0.903	8.028	***	Significant
H7	Trade competitiveness ← Green trade construction	0.847	7.230	***	Significant

a Note: *** represents P<0.001

From "Table 7", the significance levels of impact path of trade facilitation, new forms of foreign trade, green trade construction, and trade competitiveness on the high-quality development of foreign trade are all less than 0.05, that is, hypothesis H1-H4 can be accepted, indicating that trade competitiveness, trade facilitation, new forms of foreign trade, and green trade construction have significant influence on high-quality development of foreign trade. The stronger the trade competitiveness, the better the development of new

forms of foreign trade, the more convenient the trade environment, and the more perfect the green trade construction, the more conducive to the high-quality development of foreign trade.

In addition, the significance levels of impact path of trade facilitation on new forms of foreign trade, new forms of foreign trade on green trade construction, and green trade construction on trade competitiveness are under 0.05, that is, hypothesis H5, H6, and H7 are accepted, indicating that the

more convenient the trade environment is, the newer forms of foreign trade can be produced, the higher the level of green trade is, and the stronger the trade competitiveness is.

From the perspective of the driving forces for high-quality development of foreign trade, the path coefficients of trade facilitation, new forms of foreign trade, green trade construction, and trade competitiveness have decreased in turn.

Among the driving forces affecting the high-quality development of foreign trade, trade facilitation and new forms of foreign trade have a significant impact on high-quality development of foreign trade.

4.3 Analysis of Model Results

The impact of observed variables on latent variables that drive the high-quality development of foreign trade is shown in "Table 8".

Table 8. The impact of observed variables on latent variables

Latent variable	Observed variable	Standardized factor loading	t value	P
High-quality development of foreign trade	Innovative development	0.706	-	-
	Coordinated development	0.743	11.942	***
	Green development	0.706	11.372	***
	Open development	0.722	11.626	***
	Shared development	0.724	11.656	***
Trade competitiveness	Ice Silk Road	0.525	-	-
	Management ability of local enterprises	0.572	7.055	***
	Trade structure optimization	0.671	7.719	***
	Competitiveness of export products	0.522	6.659	***
	Infrastructure development	0.532	6.354	***
New forms of foreign trade	Expansion on bonded maintenance service	0.582	-	-
	Overseas warehouse construction	0.540	7.442	***
	Incentive policies for cross-border e-commerce development	0.658	8.578	***
Trade facilitation	Foreign trade electronic platform construction	0.633	-	-
	Trade control mechanism improvement	0.683	9.626	***
	Foreign trade system innovation	0.716	9.922	***
Green trade construction	Greenization of foreign trade enterprises	0.638	-	-
	Green system formulation	0.710	10.280	***
	Green equipment construction	0.753	10.789	***
	Green product development	0.708	10.275	***
	Green technology innovation	0.680	9.894	***

Among the observed variables of high-quality development of foreign trade, coordinated development has the greatest impact, followed by shared development and open development, and finally green development and innovative development. From the perspective of factor loading coefficients, there is no significant difference between the five observed variables, indicating that high-quality development of foreign trade requires balanced development in these five aspects.

Among the observed variables of trade competitiveness, trade structure optimization has

the greatest impact, followed by management ability of local enterprises and "Ice Silk Road" initiative, and finally, infrastructure construction and export product competitiveness. So, in order to improve trade competitiveness, attention should be paid to optimizing foreign trade structure, attracting foreign capital enterprises, combining the opportunities of "Ice Silk Road", focusing on cultivating and improving enterprise management capabilities, and strengthening infrastructure construction.

Among the observed variables of new forms of foreign trade, the impact of cross-border e-

commerce development incentive policies is the largest, followed by the expansion of bonded maintenance services, and finally the construction of overseas warehouses. All three factors have a significant impact on the new forms of foreign trade. In the process of developing new forms of foreign trade, it is necessary to supplement and improve e-commerce legal systems and policies, improve the efficiency of solving related issues, continuously expand bonded maintenance services, and promote the construction of overseas warehouses.

Among the observed variables of trade facilitation, system innovation in foreign trade has the greatest impact, followed by trade control mechanism improvement, and finally the construction of electronic platforms for foreign trade. In the process of improving trade facilitation, it is necessary to continuously innovate trade systems, improve trade control mechanisms, overcome barriers to trade development, and establish electronic platforms for foreign trade to promote shared trade matching.

Among the observed variables of green trade construction, green equipment construction has the greatest impact, followed by green system formulation, green technology innovation, green product development, and the greenization of foreign trade enterprises. To build green trade, the construction of green equipment is essential. The government should also give full play to its regulatory role in green trade, increase governance efforts, pay attention to the innovation of green technology, and create more green products. Foreign trade enterprises should also pay attention to the construction of green supply chains, and jointly promote the high-quality development of foreign trade.

In summary, the results show that trade facilitation is the biggest driving force for promoting the high-quality development of foreign trade, and among them, trade system innovation has the greatest driving force for improving trade facilitation. The new form of foreign trade is the second major driving force that affects the high-quality development of foreign trade. Among them, the development of cross-border e-commerce is an important cornerstone of the development of the new form of foreign trade. The construction of green trade is the third major driving force for promoting the high-quality development of foreign trade, helping to effectively break trade barriers. As a traditional driving force for the development of

foreign trade, trade competitiveness, although ranked low, cannot be ignored, and is an important foundation for the high-quality development of foreign trade.

5. CONCLUSION

From the research results of driving forces of high-quality development of foreign trade, we could find out that, trade facilitation is the biggest driving force for the high-quality development of foreign trade in Jilin Province, followed by new forms of foreign trade, with the impact of green trade construction and trade competitiveness decreasing in turn. Among them, the trade facilitation brought about by trade system innovation is the most important, and the new forms of foreign trade formed by the development of cross-border e-commerce cannot be ignored.

AUTHORS' CONTRIBUTIONS

Dan Liu was responsible for experimental design, Haiyan Wang and Yuanjun Wang collected and analyzed the data, Bing Yang and Yutong Zhao were responsible for model construction and analysis, Bei Zeng contributed to revising and editing.

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