

# Presenting the model of factors affecting the management of Iran's Road Transport Industry (Case study of Isfahan Province)

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## Abstract

This research was carried out quantitatively to analyze the management of road transport of cargo and goods in Isfahan province with an emphasis on the political and security dimensions. Through semi-structured interviews with 8 subject matter experts, the management components of the road transport industry were identified. In the next step, the data extracted by the survey method was used as the basis for compiling a researcher-made questionnaire in the dimensions of environmental, economic, technical, process, operational, legal and human resource damages. The statistical sample in this phase was estimated to be 269 people through Cochran's sampling formula and was selected by the available random method. The validity of the data was confirmed through formal, content, and construct validity, as well as its reliability through Cronbach's alpha greater than 0.7. The results show that the average of all identified dimensions is higher than average (3); The results also show that the highest influence coefficient in process damages is (0.147) and the highest predictive power belongs to technical damages (0.245). The model fit criterion shows that the influence and predictor coefficients of the model are reliable.

Keywords: pathology, transportation management, cargo and goods, Isfahan province, politics, security  
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## 1 Introduction

Road transportation of cargo and goods is considered one of the most important pillars of economic growth and development, and in Iran, due to geographical and economic conditions, as well as the flexibility of road transportation and the existence of sufficient infrastructure, road transportation has a special position and importance. This sector includes activities that have been carried out widely in all areas of production, distribution and consumption of goods and services and plays an undeniable role in the set of economic activities [16]. Transportation refers to a set of human and goods movement activities in the economy [5]. The transportation industry plays a key and effective role in the implementation of sustainable development programs in countries. One of the important parts of the

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transportation industry is road transportation [4]. This mode of transportation is more suitable for short distances (usually less than 400 km). Road transportation is more flexible than other modes of transportation in terms of access to different points along the way and stops at multiple stations. With the advent of the age of automobiles, dirt roads became asphalt roads and changed the geographical space. Some believe that road transportation or the development of transportation networks plays an important role in the spatial concentration of economic activities [6]. Among the types of transportation methods, road transportation also has its special place and a long history. For example, in 1997, approximately 42% of transportation between European countries was done by road transportation. More attention to this part in the international field requires its legal mechanisms at the global level. In this regard, the Convention on the International Carriage of Goods by Road (Convention on the Contract for the International Carriage and Transport of Goods by Road) was drawn up and concluded in Geneva on May 19, 1956, one of the main issues of which is related to the responsibility of the operator of the road transport of goods [8].

Transportation plays a big role in reducing the cost of manufactured goods. For this reason, most manufacturing companies tend to be located near highways to easily send goods to their destination using road transport. In this connection, Graham [7], in research titled "Combination, Productivity and Investment in Transportation" has concluded that investment in transportation increases the density available to companies by reducing travel time or travel cost. gives and has a positive effect on the benefits of aggregation [7]. The connection of transportation with all socio-economic sectors has caused this activity to be considered one of the main pillars of the economy, trade and social life. So life and economic growth depend on it to a very high extent, and it can even be said that economic growth is not possible without it, and disruption will occur in the entire system of production, distribution and consumption [15]. The existence of an efficient transportation network can encourage producers and create a division of labour in society. Because, on the one hand, raw materials and intermediate goods reach the factory at the lowest cost, and on the other hand, it becomes easier to reach consumer markets and distant population centers. Therefore, improving the transportation network can be a factor in reducing the cost of goods and services, growing trade and finally reaching a high level of economic development [13]. The connection of transportation with all socio-economic sectors has caused this activity to be considered one of the main pillars of the economy, trade and social life. So life and economic growth depend on it to a very high extent, and it can even be said that economic growth is not possible without it, and disruption will occur in the entire system of production, distribution and consumption [18].

The road freight transportation system in the country is a system that has many variables that play a role in its efficiency and effectiveness. The supply of trucks and commercial vehicles is only part of the input of this system, while the laws and regulations, transportation infrastructure (such as roads, highways, ports, terminals), the macroeconomic environment of the country, such as the volume of commercial exchanges, exports, imports, inflation rates and The growth of economic indicators, fuel rates and energy carriers, as well as the conditions of the business of transporting goods such as inappropriate freight rates, the negative effects of the spread of the phenomenon of self-ownership of trucks, the unbalanced and variable volume of demand for cargo transportation and the life of the fleet, and social and cultural issues are other elements of this. are systems [17]. Iran is a vast country where urban and rural centers, production and consumption are heterogeneously scattered on its surface; Road transportation systems connect these centers. On the other hand, Iran is located on the path of international highways, which are considered a bridge between the East and the West of the world, different countries use Iran as a transit corridor. Therefore, the road transportation network is widely scattered throughout the country and has a high potential for the development of regions and reducing the level of spatial inequalities [10]. In the urban area, non-industrial resources lead to a significant reduction in the use of industrial land (which produces the main driver of transportation activity) and has led to a decrease in the demand for industrial storage space in urban areas. Factors such as geography, location and land use have important effects on transportation activities in urban areas. In fact, commercial and industrial land use patterns affect the types and quantity of manufactured and consumed goods and consequently the entire transportation [3].

In the field of freight transportation (especially in intercity areas), there is a significant emphasis on planning and engineering research. The study of freight transportation and logistics is investigated as a non-separate sector. Some recent researches consider how the impact of Logistic developments on urban land use patterns has begun to address this imbalance [6]. However, this work focuses on changes in the location of logistics facilities (for example, warehouses, distribution centers, and fulfilment centers) in urban areas instead of the relationship between land use, urban form, and vehicle activity patterns. Urban logistics and transportation issues pose many difficult problems, the four main stakeholders - freight and freight to operator operators - have different goals and are involved in different initiatives; In such a way that each of them may create security consequences for the society [13]. In addition to this, cargo transfer in countries like Iran, which have always sought various local sanctions for conflict, is considered a very strategic issue; In addition to numerous researches, almost no research has looked at road transportation as a security

factor; However, with the recent challenges of banning fuel and basic goods related to transportation, this issue has also been placed in the field of security issues. Dealing with the issue of cargo transportation security in the country is because of the concentration of Isfahan in the center of cargo transportation, and in this sense, it has strategic importance. This issue has also happened to other countries [11].

Urban logistics and transportation issues pose many difficult problems, the four main stakeholders -freight and freight to operator operators- have different goals and are involved in different initiatives; In such a way that each of them may create security consequences for the society [15]. In addition to this, cargo transfer in countries like Iran, which have always sought various local sanctions for conflict, is considered a very strategic issue; In addition to numerous types of research, almost no research has looked at road transportation as a security factor; However, with the recent challenges of fuel embargo and basic goods related to transportation such as tires, this issue has also been placed in the field of security issues. Dealing with the issue of cargo transportation security in the country is because of the concentration of Isfahan in the center of cargo transportation, and in this sense, it has strategic importance. This issue has also happened to other countries [13]. As MacKinnon [14] suggests in the article *Life Without Trucks: The Impact of the Temporary Destruction of Urban Freight Transport on a National Economy*, in the last 30 years, England has suffered severe paralysis of its road transport system twice, this factor of economic growth England has suffered a difficult crisis [14].

In the urban area, non-industrial resources have led to a significant decrease in the use of industrial land (which is the main producer of transportation activity) and has led to a decrease in the demand for industrial storage space in urban areas. Most of the industrial activities that used to take place in urban areas in developed economies have now moved to countries in Eastern Europe and Asia where lower labour costs can be taken advantage of. In some cases, companies (including multinationals) have relocated their facilities, while smaller domestic manufacturers have often gone out of business due to competition from manufacturers in these countries. Shifting the production process also results in shifting warehousing needs to these countries, with imported goods passing through Western European and American ports. It is done by storage or in large modern warehouses that can access the bulk flow of goods located near them. Ports or regional and national distribution centers located on large road networks outside urban areas are of this type [2]. Factors such as geography, location and land use have important effects on transportation activities in urban areas. In fact, commercial and industrial land use patterns affect the types and quantity of manufactured and consumed goods and consequently the entire transportation. In the field of freight transportation (especially in intercity areas), there is a significant emphasis on planning and engineering research, and the study of freight transportation and logistics is considered a non-separate part [18]. Some recent researches consider Understanding how logistics developments affect urban land use patterns has begun to address this imbalance. However, this work is more focused on changes in the location of logistics facilities (for example, warehouses, distribution centers, and fulfillment centers) in urban areas instead of the relationship between land use, urban form, and vehicle activity patterns [12].

It should be emphasized that the share of Isfahan province is 6.7% of the total roads of the country. Isfahan province ranks fifth among the provinces of the country with 5958 kilometres of roads. Isfahan province's share of the country's rural roads is 3.4%, i.e. 4536 km. The share of Isfahan province is 2015 km of the country's arterial roads and 1456 km of the country's transit roads, which is about 5.8%. Among the provinces of the country, Isfahan province ranks fifth after Fars, Sistan and Baluchistan, Kerman and Razavi Khorasan provinces in terms of having arterial roads. These terminals are located in different areas of Isfahan city and most of them are active. Isfahan province ranks second in the country after Fars in terms of the number of active terminals. The amount of goods transported within the province of Isfahan province is 14967 tons, and outside the province is 33443 tons. The province's share of the total goods transported in the country is 11%. The share of Isfahan province in terms of the amount of transported goods according to the province of origin and commodity group in 2017 with the total amount of transported goods is 48411 tons more than other provinces of the country. The share of Isfahan province in terms of truck trips is about 9.8%, that is 2938 trips. which is divided into 861 intra-provincial trips and 2077 extra-provincial trips. Isfahan province has the first place in the transportation of goods and the third place in the transportation of passengers in the whole country, which is an indication of the high capacity of this sector. Therefore, according to the above, and knowing the position of Isfahan province in the country in terms of goods and cargo transportation, pathology and review of the management of the road transportation industry of goods and cargo in Isfahan province with emphasis on political and security aspects is of great importance. which the current research has addressed.

## 2 Research Method

The research method in this section is descriptive survey type. Descriptive because the researcher wants to report what exists objectively and systematically. Since the researcher deals with the objective description of the research data, the descriptive research method and since he used the questionnaire to collect the information; It is considered a survey method. Also, because the researcher is trying to investigate the views and opinions of the respondents, the research is a survey type.

### 2.1 Statistical population and sample size

The statistical population of this research includes all subject experts in the field of road transportation, numbering 900 people. The sample size was estimated to be 269 people using Cochran's sampling formula. Out of this number, 255 questionnaires were usable and returned, based on this, the return rate of the questionnaires was estimated as 0.94.

$$n = \frac{Nt^2pq}{Nd^2 + t^2pq} = \frac{900 * 3.84 * 0.5 * 0.5}{900 * 0.0025 * 3.84 * 0.5} = 269.$$

Table 1: Information about sample size calculation

Sample size	269
The size of the community	900
Acceptable confidence level	1.96
A proportion of the population with a certain trait	0.5
A proportion of the population without a certain trait	0.5
Possible optimal precision or confidence interval	0.05

### 2.2 Measuring tool

Data collection was done using a researcher-made questionnaire based on interviews. This measurement tool includes environmental, economic, technical, process, operational, legal and human resource damages, which are scored as follows:

Table 2: Questionnaire scoring

Selective option	I quite agree	I agree	No idea	I disagree	I completely disagree
Score	1	2	3	4	5

### 2.3 Validity and reliability of research tools

#### 2.3.1 Reliability of the questionnaire

In this research, Cronbach's alpha coefficient was used to determine the reliability of the questionnaire. This method is used to calculate the internal consistency of measurement tools, including questionnaires.

Table 3: Reliability coefficient of questionnaire dimensions

Variable	alpha
Environmental damage	0.85
Economic damage	0.84
Technical damage	0.89
Process injuries	0.88
Operational damage	0.89
Legal damages	0.84
Damages of human resources	0.83

Table 4: Analysis of environmental damage factors

	Environmental damage component	factor load	KM0	Kai Dou
1	Communication with open waters and informal borders	.505	.847	1114.031
2	Environmental challenges of greenhouse gas production	.636		
3	Increase in latent demand	.876		
4	Hidden competition of private companies and personal devices	.809		
5	Lack of facilities, welfare service complexes, rescue and rescue stations on the road, emergency, etc.	.887		
6	The pressure of political behavior to secure party and group interests through surfing	.693		
7	Lack of proper unloading and loading space	.900		

### 2.3.2 Validity coefficient of the questionnaire

In order to modify the questionnaire and check the construct validity of the researcher-made questionnaire, the researcher first studied the research literature extensively and presented a proposed framework in this field according to different approaches. The proposed framework consists of 7 components of environmental, economic, technical, process, operational, legal and human resource damages. Below is the analysis of the factors related to each of the different parts and the proposed and final framework.

According to the findings of Table 4, the highest factor coefficient in the environmental damage component is related to item 7 "Lack of suitable unloading and loading space" with a factor load of 0.9 and the lowest factor coefficient is related to item 1 "Connection with open waters and borders Informal" with a factor load of 0.505, the value of KMO regarding sampling adequacy is 0.847, which is a high and acceptable value. Also, the factor loadings of each of the sub-components on the dimension of environmental damage are all higher than 0.3.

Table 5: Analysis of economic damage factors

Row	Environmental damage component	factor load	KM0	Kai Dou
1	Proportion of new investment and renovation with technical progress	.765	.786	142.158
2	Lack of financial-credit facilities to improve transportation	.782		
3	Lack of presence and investment of the private sector	.804		
4	Low gross fixed capital to invest in the transportation sector	.652		
5	Weakness of optimal allocation of resources	.746		
6	Exclusive and inefficient distribution policies of transportation system equipment	.549		
7	Payment of fuel subsidy	.729		
8	At the same time, the interests of the private sector, government and citizens	.707		
9	Receive and pay commission	.376		

According to the findings of Table 5, the highest factor coefficient in the component of economic damages is related to item 3 "lack of presence and investment of the private sector" with a factor load of 0.804 and the lowest factor coefficient is related to item 9 "receipt and payment of commission" With a factor load of 0.376, the value of KMO regarding sampling adequacy is 0.786, which is a high and acceptable value. Also, the factor loadings of each of the sub-components on the economic damage component are all higher than 0.3.

Table 6: Analysis of the component factors of process damage

Row	Environmental damage component	factor load	KM0	Kai Dou
1	The slowness of modernizing the road transport fleet	.735	.734	411.131
2	Weak monitoring of road construction projects and road infrastructure facilities	.771		
3	High waste of resources in the transportation of goods	.666		
4	Lack of a unified attitude in the field of transportation	.498		
5	Weakness of the system of time allowed for the arrival and departure of cargo vehicles	.978		

According to the findings of Table 6, the highest factor coefficient in the component of process damage is related to item 5 "Weakness of the time system for the arrival and departure of cargo vehicles" with a factor load of 0.978 and the lowest factor coefficient is related to item 4 "Lack of integrated attitude in The field of transportation" with a factor load of 0.498, the value of KMO regarding sampling adequacy is equal to 0.734, which is a high and acceptable value. Also, the factor loadings of each of the sub-components on the process damage component are all higher than 0.3.

According to the findings of Table 7, the highest factor coefficient in the component of technical damages is related to item 2 "the low level of safety of the country's roads" with a factor load of 0.806 and the lowest factor coefficient is related to item 3 "the wear and tear of the country's cargo transportation fleet" With a factor load of 0.741, the

Table 7: Analysis of technical damage factors

Row	Environmental damage component	factor load	KM0	Kai Dou
1	Weakness of driver behavior monitoring system	.760	.806	455.832
2	The low level of road safety in the country	.806		
3	The weariness of the country's freight transport fleet	.741		
4	Limitations of route planning systems	.804		
5	Low efficiency of the moving weight determination system	.743		

value of KMO regarding sampling adequacy is equal to 0.806, which is a high and acceptable value. Also, the factor loadings of each of the sub-components on the technical damage component are all higher than 0.7.

Table 8: Analysis of operational damage component factors

Row	Environmental damage component	factor load	KM0	Kai Dou
1	Absence of combined transportation system in the country	.799	.729	607.199
2	Inadequacy between supply and demand of road transport services	.787		
3	Predominance of brokerage and businessmen over the transportation system	.638		
4	Lack of long-term planning to improve the performance of the transportation sector	.533		
5	Failure to comply with global safety standards by domestic vehicle manufacturers	.760		
6	Weakness in the packaging and product care system	.666		
7	Operational damage component	.799		
8	Absence of combined transportation system in the country	.787		
9	Inadequacy between supply and demand of road transport services	.638		

According to the findings of Table 8, the highest factor coefficient in the component of operational damage is related to item 1 "lack of integrated transportation system in the country" with a factor load of 0.799 and the lowest factor coefficient is related to item 4 "lack of long-term planning". The time to improve the performance of the transportation field" with a factor load of 0.533, the value of KMO regarding sampling adequacy is 0.729, which is a high and acceptable value. Also, the factor loadings of each of the sub-components on the operational injury component are all higher than 0.3.

Table 9: Analysis of the component factors of legal damages

Row	Environmental damage component	factor load	KM0	Kai Dou
1	Lack of sustainable transportation strategy	.922	.661	910.979
2	Weakness of legal regulations and transport regulations	.852		
3	Incompatibility of Iran's commercial laws with world commercial laws	.912		
4	The resistance of drivers against the implementation of the country's general policies in the transport fleet	.965		

According to the findings of Table 9, the highest factor coefficient in the component of legal damages is related to item 4 "Resistance of drivers against the implementation of the country's general policies in the transport fleet" with a factor load of 0.965 and the lowest factor coefficient is related to item 2. "Weakness of legal regulations and transportation regulations" with a factor load of 0.852, the value of KMO regarding the adequacy of sampling is equal to 0.661, which is a high and acceptable value. Also, the factor loadings of each of the sub-components on the legal damages component are all higher than 0.3.

Table 10: Analysis of the component factors of human resource damage

Row	Environmental damage component	factor load	KM0	Kai Dou
1	Reluctance to enter the educated and professional generation into the transport fleet	.849	.739	406.795
2	Strengthening informal groups to oppose the policies of the transportation system	.869		
3	Weakness in empowering human resources	.848		
4	Reducing the incentives of transport fleet drivers	.647		

According to the findings of Table 10, the highest factor coefficient in the human resources damage component is related to item 2 "Strengthening informal groups to oppose the policies of the transportation system" with a factor load of 0.869 and the lowest factor coefficient is related to the item 4 "Decreasing the motivations of transport fleet drivers" with a factor load of 0.647, the value of KMO regarding the adequacy of sampling is equal to 0.739, which is a high and acceptable value. Also, the factor loadings of each of the sub-components on the human resources damage component are all higher than 0.3.



## 2.4 Method of collecting information

First, questionnaires were administered among 30 members of the sample, Cronbach's alpha coefficients were used to determine the reliability, which is explained in detail in the reliability section of the questionnaires. After the preliminary implementation, 277 questionnaires were distributed among them. During the execution of the questionnaires, the moderators gave the necessary explanations about the objectives of the research and its importance and the confidentiality of the information and answered the questions of the subjects. After completing the questionnaires, statistical analysis was done.

## 2.5 Research implementation steps

Collecting theoretical information related to the background of the research from all library and digital sources and reviewing and studying the existing literature in the world in the field of road transport injuries through:

- a) Reference to networks and internet sites
- b) Reference to domestic and foreign books and publications

Extracting the required materials (including the dimensions, features, principles, models, theories and research done inside and outside of Iran and the theoretical foundations of the research) from library and digital resources was used to design and compile the research tool.

## 2.6 Statistical analysis methods

The analysis of this research was done using AMOS statistical software at two levels of descriptive and inferential statistics. In the descriptive statistics section, statistical characteristics such as frequency, percentage, mean, and standard deviation were used, and in the inferential statistics section, univariate *t*-test, factor analysis, variance analysis test were used.

## 3 Research Findings

In the first stage, the average of the identified components of road transport management in the field of cargo and goods, with emphasis on the security and political dimension of table 11, mean, standard deviation, *t*-test and significance level of road transport management variables of cargo and goods is showing.

Table 11: Mean, standard deviation, *t*-test and significance level of the variables of road transport management of cargo and goods

Row	next	Average	Deviation from the norm	T test	Significance level
1	Environmental damage	3.8174	.61993	21.054	.000
2	Economic damage	3.9107	.64872	22.417	.000
3	Technical damage	3.8510	.69014	19.690	.000
4	Process injuries	3.9059	.59546	24.293	.000
5	Operational damage	3.8399	.55922	23.983	.000
6	Legal damages	3.9111	.56890	25.574	.000
7	Damages of human resources	3.9012	.75647	19.023	.000

As Table 11 shows, all identified damages are above the average level, and among these, technical and legal damages have a higher average than other known elements.

As Table 12 shows, in the environmental dimension, the pressure of political behaviours to secure party and group interests through surfing, and in the economic dimension of receiving and paying commissions, in the technical dimension, the weariness of the country's cargo transportation fleet, in the process dimension, the lack of attitude integrated into the field of transportation, in the operational dimension, the dominance of brokering and commercialism in the transportation system, in the legal dimension, the lack of a sustainable transportation strategy, and in the human resources dimension, the reduction of the drivers' motivation of the transportation fleet has a higher average than others. The components are known. In order to examine the impact of the identified components of road transport management in the field of cargo and goods, with emphasis on the security and political aspect in this field, Table 13 shows the importance coefficient and prediction of the pathological components of road transport management of cargo and goods. is a commodity.

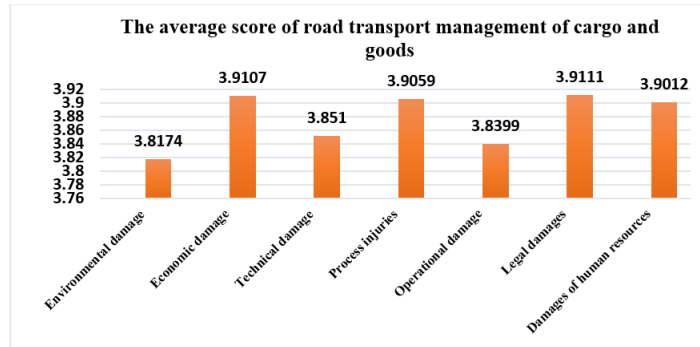


Diagram 1. Comparison of the average score of road transport management of cargo and goods in Isfahan province

As Table 14 shows, the highest impact factor in process damage is (0.147). The highest predictive power belongs to technical damages (0.245), the co-linearity coefficient indicates that the variables match in a regression path, and the model fit criterion shows that the influence and predictor coefficients of the model are reliable. Also, the second-order factor analysis method shows the weight of each of the components that determine the pathology of road transport management of goods and cargo, which is shown in Figure 1.

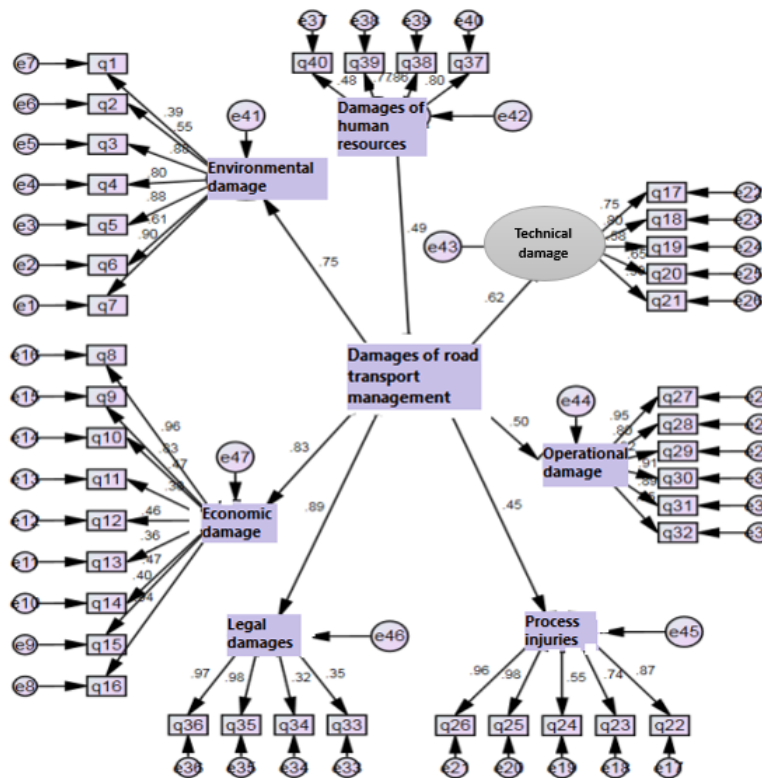


Figure 1: Pathology factor model of road transport management of cargo and goods

The evaluation indices of the factor model overall indicate that the fit of the data to the model is established. All the evaluation indicators of the factor model's generality by considering the optimal values for these indicators indicate the desirability of the factor model of the causal conditions.

#### 4 Conclusion

As the findings of the variables of cargo and goods road transport management showed, all the identified damages are above the average level, and among these technical and legal damages have a higher average than other known



Table 12: Mean, standard deviation, t-test and significance level of the subscales of the variables of road transport management of cargo and goods

next	Component	Average	Deviation from the norm	T test	p-value
Environmental damage	Communication with open waters and informal borders	3.5098	.91730	8.875	.000
	Environmental challenges of greenhouse gas production	3.8588	.77591	17.675	.000
	Increase in latent demand	3.5333	.95461	8.922	.000
	Hidden competition of private companies and personal devices	3.8863	.73093	19.363	.000
	Lack of facilities, welfare service complexes, rescue and rescue stations on the road, emergency, etc.	3.7451	.72750	16.355	.000
	The pressure of political behavior to secure party and group interests through surfing	4.1176	.86140	20.719	.000
	Lack of proper unloading and loading space	4.0706	.76005	22.493	.000
Economic damage	Proportion of new investment and renovation with technical progress	3.7137	.85597	13.315	.000
	Lack of financial-credit facilities to improve transportation	3.8745	.77354	18.053	.000
	Lack of presence and investment of the private sector	3.9373	.78117	19.160	.000
	Low gross fixed capital to invest in the transportation sector	4.0039	1.00979	15.876	.000
	Weakness of optimal allocation of resources	3.9333	1.12570	13.240	.000
	Exclusive and inefficient distribution policies of transportation system equipment	3.9059	.95929	15.080	.000
	Payment of fuel subsidy	3.7412	.99787	11.861	.000
	At the same time, the interests of the private sector, government and citizens	3.9059	1.14970	12.582	.000
Technical damage	Receive and pay commission	4.1804	.86875	21.697	.000
	Weakness of driver behavior monitoring system	3.6078	.98968	9.808	.000
	The low level of road safety in the country	3.9137	.93930	15.534	.000
	The weariness of the country's freight transport fleet	4.0510	.80436	20.865	.000
	Limitations of route planning systems	3.7412	.88939	13.308	.000
Process injurious	Low efficiency of the moving weight determination system	3.9412	.84676	17.749	.000
	The slowness of modernizing the road transport fleet	3.9529	.85903	17.714	.000
	Weak monitoring of road construction projects and road infrastructure facilities	3.8902	.85786	16.571	.000
	High waste of resources in the transportation of goods	3.7216	.90326	12.757	.000
	Lack of a unified attitude in the field of transportation	3.9922	.79364	19.963	.000
Operational damage	Weakness of the system of time allowed for the arrival and departure of cargo vehicles	3.9725	.96148	16.153	.000
	Absence of combined transportation system in the country	3.6863	.89377	12.261	.000
	Inadequacy between supply and demand of road transport services	3.8549	.80752	16.906	.000
	Predominance of brokerage and businessmen over the transportation system	4.0039	.78619	20.391	.000
	Lack of long-term planning to improve the performance of the transportation sector	3.8784	.74567	18.812	.000
	Failure to comply with global safety standards by domestic vehicle manufacturers	3.7569	.67265	17.968	.000
Legal damages	Weakness in the packaging and product care system	3.8588	.88495	15.497	.000
	Lack of sustainable transportation strategy	4.3020	.74175	28.029	.000
	Weakness of legal regulations and transport regulations	3.6275	.85021	11.785	.000
Damages of human resources	Incompatibility of Iran's commercial laws with world commercial laws	3.8039	.74822	17.158	.000
	The resistance of drivers against the implementation of the country's general policies in the transport fleet	3.8745	.76843	18.173	.000
	Reluctance to enter the educated and professional generation into the transport fleet	3.9176	1.09629	13.367	.000
	Strengthening informal groups to oppose the policies of the transportation system	3.9098	1.12755	12.885	.000
	Weakness in empowering human resources	3.7255	.98569	11.753	.000
Reducing the incentives of transport fleet drivers	4.0784	1.03184	16.690	.000	

Table 13: The coefficient of importance and prediction of the pathological components of the management of road transport of cargo and goods

Variable	Impact factor	Prediction	Fitness	colinear	p-value
Environmental damage	146 .0	114 .0	2128.360	0.991	00.0
Economic damage	139.0	111.0			00.0
Technical damage	145.0	245.0			00.0
Process injuries	147.0	101.0			00.0
Operational damage	140.0	067.0			00.0
Legal damages	144.0	164.0			00.0
Damages of human resources	153.0	201.0			00.0

Table 14: Evaluation indicators of the pathological factor model of road transport management of cargo and goods

Indicator	Degrees of freedom	Relative chi-square	Comparative fit index	parsimonious adaptive fit index	The square root of the mean square of the estimation error
amount	1356	2.123	0.94	0.91	0.064

elements. In the environmental dimension, the pressure of political behavior to secure party and group interests through surfing and in the economic dimension of receiving and paying commissions, in the technical dimension of the weariness of the country’s cargo transportation fleet, in the process dimension of the lack of a unified attitude in the field of transportation, In the operational dimension, the dominance of brokering and commercialism in the transportation system, in the legal dimension, the lack of a sustainable transportation strategy, and in the human resources dimension, the reduction of drivers’ motivations of the transportation fleet are known to have a higher average than other components.

The results of this part of the research are in line with the research of Chauhan et al. [1] Chauhan et al. [1], showed that with the popularity of smart transportation in smart cities, the exponential number of vehicles on the road increases, which in turn increases network traffic congestion. Therefore, finding a parking space in modern societies around the world has become a challenging task. They propose a system that reduces the user’s effort to locate the nearest available parking spaces in real-time. This reduces individual efforts to determine the appropriate parking location; This system uses IoT-based infrastructure to monitor and signal the availability of different parking spaces around smart communities.

Mismanagement in the transportation sector can disrupt the transportation system. Lack of planning thinking or the lack of specific operational planning can cause the inefficiency of the road transportation system in Isfahan province. Dissatisfaction with road transport personnel in different dimensions, including the lack of proper planning in loading and unloading goods, the lack of authority to deal with violations, or the wandering and long waiting of drivers at the terminal for loading can cause them to strike and the road transport sector be disturbed The activities of unauthorized companies cause that in such companies, there is a possibility of inciting and encouraging drivers to strike and not load goods and cargo in the transportation sector. The activities of such companies can turn into security and political problems. On the other hand, mismanagement not only does not attract the investment of the private sector in the field of road transportation, but it also causes the private sector to flee or not want to from this field.

Also, the results showed that the highest impact factor in process damage is (0.147). The highest predictive power belongs to technical damages (0.245), the co-linearity coefficient indicates that the variables match in a regression path, and the model fit criterion shows that the influence and predictor coefficients of the model are reliable. This shows that process injuries have a greater impact on the pathology of transportation and cargo management. In fact, managers should pay more attention to elements such as the limitations of route planning systems, the efficiency of the moving weight determination system, paying attention to the modernization of the road transport fleet, monitoring road construction projects and road infrastructure facilities, paying attention to the waste of resources in Transportation of goods, creating an integrated attitude in the field of transportation, paying attention to the system of time allowed for the arrival and departure of cargo vehicles should be emphasized.

The road freight transportation system in the country is a system that has many variables that play a role in its efficiency and effectiveness. The supply of trucks and commercial vehicles is only a part of the input of this system, while the laws and regulations, transportation infrastructure (such as roads, highways, ports, and terminals) and the macroeconomic environment of the country, such as the volume of commercial exchanges, exports, imports. Inflation rate and growth of economic indicators, fuel rates and energy carriers, as well as business conditions for transporting goods such as inappropriate freight rates, the negative effects of expanding the phenomenon of self-ownership of trucks,

the unbalanced and variable volume of demand for cargo transportation and the life of the fleet and Social and cultural issues, are other elements of this system.

The political and security consequences of mismanagement in the goods and cargo transportation sector of the province, consequences such as the ineffectiveness of the road transportation system in the province, the possibility of creating security and political issues due to the activity of unauthorized companies in the cargo transportation sector In the province, the increase in violations has been raised due to the lack of an authority to deal with violations in the field of transportation, and failure to handle them can bring more consequences.

Day by day, the dangers caused by natural disasters and accidents are increasing in the countries of the world, as a result, it is necessary to present the appropriate programs to the governments and use appropriate management and preventive methods to reduce human casualties and financial losses when such accidents occur, such as earthquakes, floods, rock falls, avalanches, tsunamis, landslides, storms, etc. are natural disasters that endanger transportation and road infrastructure. Destruction of structures and residential buildings, road networks and access such as bridges and communication roads, facilities Basic things such as water tanks, power plants, telephone communication lines, electricity, water piping, gas, etc. are among the problems caused by road crises.

## References

- [1] V. Chauhan, M. Patel, S. Tanwar, S. Tyagi, and N. Kumar, *IoT enabled real-time urban transport management system*, *Comput. Electric. Engin.* **86** (2020), 106746.
- [2] T. Dong, N. Jia, S. Ma, S.X. Xu, G.P. Ong, P. Liu, and H.J. Huang, *Impacts of intercity commuting on travel characteristics and urban performances in a two-city system*, *Transport. Res. Part E: Logist. Transport. Rev.* **164** (2022), 102792.
- [3] N. Drop and D. Garlińska, *Evaluation of intelligent transport systems used in urban agglomerations and intercity roads by professional truck drivers*, *Sustainability* **13** (2021), no. 5, 2935.
- [4] K. Eisenack, R. Stecker, D. Reckien, and E. Hoffmann, *Adaptation to climate change in the transport sector: A review of actions and actors*, *Mitig. Adapt. Strateg. Glob. Change* **17** (2012), no. 2, 451–469.
- [5] M. Feshari and H. Ghafouri, *Investigating the effect of fuel price on road transport demand: Time-varying parameter approach and Kalman-filter algorithm*, *Appl. Theor. Econ.* **4** (2016), no. 2, 103–126.
- [6] D. Frye, *Transportation Networks and the Geographic Concentration of Industry*, Center for Economic Analysis, Department of Economics, University of Colorado at Boulder, 2014.
- [7] D.J. Graham, *Agglomeration, productivity and transport investment*, *J. Transport Econ. Policy* **41** (2007), no. 3, 317–343.
- [8] M. Jabari, M. Hassannejad, and N. Moreover, *Examining the cases of exemption of the operator of the road transport of goods and their reference conditions in the Convention on the International Carriage of Goods (CMR)*, *Private Law Res.* **7** (2013), no. 2, 39–72.
- [9] M.S.A. Khan, K.M. Kadir, M.K. Alam, S. Mahmud, S.R.M.F.U. Hossain, M.P. Sikder, and A. Kamal, *An analytical approach to real-time cloud services on IoT-based applications for smart city planning*, *Int. J. Grid Util. Comput.* **12** (2021), no. 6, 507–523.
- [10] H.A. Faraji Sabokbar, *Ranking of the country's provinces based on road transport indicators*, *Majlis Strategy* **97** (2018), no. 26, 381–407.
- [11] Z. He and H.D. Haasis, *A theoretical research framework of future sustainable urban freight transport for smart cities*, *Sustainability* **12** (2020), no. 5, 1–28.
- [12] E. Kartini, H. Nurasa, I. Irawati, and M. Rahmatunnisa, *The cekungan bandung urban area management policy formulation*, *J. Infrast. Policy Dev.* **8** (2024), no. 3.
- [13] A. Mahmoudi, *Transportation Economy of Tehran*, Tehran, New Economy Publication, 1997. [In Persian]
- [14] A.C. McKinnon and Y. Ge, *The potential for reducing empty running by trucks: A retrospective analysis*, *Int. J. Phys. Distrib. Logist. Manag.* **36** (2006), no. 5, 391–410.
- [15] M. Mousai, *the role of culture on the consumption pattern*, *Islamic Econ.* **34** (2008), no. 8, 125–150.

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- [16] M. Shabani, *Pathology of cargo and goods road transport management in Isfahan province with emphasis on political and security aspects*, Road **116** (2023), no. 31, 211–222.
- [17] E. Shia, *An Introduction Based on Urban Planning*, 10th edition, Tehran, University of Science and Technology, 2001. [In Persian]
- [18] M. Shkouhi, *Designing the access network and providing security in the public spaces of the city*, Sci. Res. Conf. Women Urban Life, University of Tehran, Tehran, 2013.