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## MODEL OF SOCIAL IMPACT ASSESSMENT OF TRANSPORTATION AND LOGISTICS POLICIES IN THE ISLAMIC REPUBLIC OF IRAN

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**Resumen:** La logística y el transporte son componentes importantes de la economía y desempeñan un papel clave en el desarrollo económico de un país. La logística -como una industria importante- integra varias profesiones alrededor de un solo eje. Una de estas profesiones es el transporte marítimo, que es uno de los componentes más importantes y básicos de cada economía, que representa aproximadamente la mitad de los costos de logística y tiene un impacto significativo en el proceso de crecimiento económico. La infraestructura de esta función, por una parte, es la principal vía de comunicación entre los sectores económicos, así como la interfaz entre los mercados de la circulación de bienes y servicios y, por otra, desempeña el papel y la naturaleza de facilitando el viaje de pasajeros. Este documento presenta una introducción a la gestión del transporte y la revisión de las políticas de transporte y los impactos sociales de esta industria en la República Islámica de Irán en los últimos años y comparó la industria en Irán y los países desarrollados y evaluando el impacto de las políticas de transporte en la comunidad, algunos sugiere tendencias futuras. En un principio, se han expresado indicadores del campo de la logística y el transporte y se examina el estado general de Irán en el mundo. Luego, mediante la expresión de los efectos sociales de los seis indicadores de LPI, la comparación con los países desarrollados en cada tema social. El impacto social de las políticas marítimas y logísticas en los países desarrollados se analiza en comparación con Irán. Luego, con indicadores sociales y políticas de transporte, se ha estructurado un mapa bidimensional del análisis del impacto de las políticas sobre los indicadores sociales.

**Palabras clave:** logística, transporte, impacto social, formulación de políticas

**Abstract:** Logistics and transportation are important components of the economy and play a key role in the economic development of a country. Logistics -as one important industry- integrates several professions around a single axis. One of these professions is shipping, which is one of the most important and basic components of each economy, accounting for roughly half of the costs of logistics and has a significant impact on the economic growth process. The infrastructure of this function, on the one hand, is the main artery of communication between economic sectors, as well as the interface between the markets for the movement of goods and services, and on the other, it plays the role and the nature of facilitating the travel of passengers. This paper presents an introduction to the management of transportation and review of transport policies and social impacts of this industry in the Islamic Republic of Iran in the past years and compared the industry in Iran and developed countries and by assessing the impact of transport policies on the community, Some suggests future trends. At first, indicators of the field of logistics and transportation have been expressed and the overall status of I.R Iran among the world is examined . then, by expressing the social effects of the six indicators of LPI<sup>1</sup>, the comparison with developed countries in each social issue The social impact of shipping and logistics policies in developed countries is analyzed in comparison with Iran. Then, having social indicators and transport policies, a two-dimensional map of the analysis of the impact of policies on social indicators has been architected.

**Keywords:** Logistics, Transportation, Social Impact, Policy Making

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1- Logistics Performance Index

## 1. INTRODUCTION

Transportation service management is one of the opportunities that is of great importance in the success of other government sectors as well as a way to reduce shipping costs, ship tracking, and so on. In I.R Iran, the importance of this sector is due to the combination of the country with Central Asia and the countries of Iraq, Afghanistan and Pakistan, and the need for these regions to use the territory of Iran for the development of trade and transit. on this basis, currently updated and developed on a timely basis of this section is concerned with regional economic developments as a necessity and strategic need. Selecting a shipping system is a special form of logistics that generates communication between production centers, warehouses, distribution centers and administrative departments. The purchase of transportation services includes 3 components (Corwin, 2000):

- 1) Examining different shipping methods based on cost,
- 2) Determine the effect of transportation services on operations,
- 3) Assessing the effect of time of movement, carrier dependence and safe delivery on inventory levels.

Traditionally, transportation and logistics services are provided to the supplier who can provide the lowest shipping cost for the purchased goods. In the past, the transportation rate was determined entirely by the state institutions, but by implementing Article 44 of the Constitution and the flexible pricing and offering of various service options by shipping companies, the transfer activities are now provided by logistic services companies that have their expertise with the need Customer have been coordinated. Consequently, with the more careful consideration of shipping costs, provided by the supplier or by a logistics manager, there are good opportunities to save money. Today, government agencies and commercial companies almost understand the value of logistics, a process that includes transportation, relocation, discharges, and more.

With the globalization of the economy and the expansion of economic ties between countries, statistics, data and indicators of comparisons between countries have become more important. Accordingly, some internationally acclaimed organizations are collecting and disseminating statistics and comparisons between countries. Knowledge of the latest state of our country in these indices can play a significant role in economic decision making and will be beneficial for investors, business activists and other stakeholders.

Despite the fact that statistics, data and indicators of comparative analysis between the countries are useful for analyzing I.R Iran's situation in the field of transportation and logistics, but for policy in the field of transportation and logistics of the country, attention is paid to the social impacts of this area. Therefore, the issue of social impacts of shipping and logistics policies has been selected by the I.R Iran to study in order to carry out an overview.

## 2. THEORETICAL FOUNDATIONS OF RESEARCH

### 2.1. Definitions

**Transportation:** Providing services in the field of cargo and passenger transportation from one point to another. Which is one of the most important sections of human activity in the field of advanced civilization. Transportation services provide the opportunity to use the time and place in the best way possible by providing transportation facilities. The transported goods may include raw materials for a production process or manufactured goods that reach the customer. carriers are organizations that provide transportation services, including railways, road carriers, air, sea and pipelines (Johnson, 4: 1996).

Logistics managers may benefit from intermediaries that connect to different transport modes. For example, transport institutions can be cited.

Transportation is part of the process of moving inward and outward. Inward facing is often referred to as material management, which carries out logistics, warehousing, transportation, inventory management, quality control and discharging activities to improve customer service. The greater physical distribution focuses on the outward side and ends up with the flow of the goods produced. There may also be several members, such as wholesalers and distributors, in the physical distribution of goods.

**Logistics:** The process of designing, implementing and controlling the efficient and effective flow and storage of raw materials, inventory under construction, manufactured products, services and information from the point of origin to the point of consumption<sup>1</sup>. Its main activities include: procurement, preparation, maintenance , repair, transportation.

**Logistics management:** organizing, planning, managing and covering the flow of goods, starting with the creation and purchasing section and the ending in the production and distribution sector, based on the final customer order, in such a way that all requirements at

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1- Definition from council of logistics management (CLM)

the lowest possible cost and the lowest costs Capital is met. Logistics management or integrated logistics management actually combines both the inward and outward aspects of the logistics and can be considered as the art and science of receiving and distributing materials and products (CLM).

**Supply Chain<sup>1</sup>:** The flow of materials and products, information and money from customers to retailers, then to distributors / wholesalers, then to the final product manufacturer, then to suppliers, and vice versa. The supply chain involves two or more organizations that are legally separate and linked by material flows, information, and finance. These organizations can be companies that produce component parts and end products, and even provide service providers (logistics) and end customers themselves.

**Supply Chain Management:** The process of planning, executing and controlling supply chain operations in the best possible way. An integrated approach to planning and controlling the flow of materials from suppliers to final consumers<sup>2</sup>. A network of companies that interact with each other for the delivery of products or services, connecting flows from raw material supply to final deliveries<sup>3</sup>.

**Policy-making:** Managers and employees of an organization constantly decide and act on their organization throughout their lifetimes. These decisions should follow a logical and desirable frame of reference, in order to be able to coordinate in practice. Typically, managers of higher units for lower-level managers try to frame these organizational decisions. Therefore, by setting and defining criteria, indicators and priorities, they try to narrow the spectrum of decisions of managers and individuals under their supervision. Such a spectrum of decisions is in fact the same policy making (Wayne Parsons, 2006).

**Politics:** Politics refers to what is presented as a general decision that incorporates a spectrum of decision-making. It is in fact the decision guidance policy for others and may be presented in different affairs of an organization or macro levels. In other words, policies indicate the orientation of the goals and activities and the framework for the approved mission statement and strategic plans and the use of resources that need it during the mid-term plans (Julien Freund, 213: 1384).

**Logistics Performance Index (LPI):** is a multi-dimensional indicator that evaluates the performance

of a country's logistics sector and has been produced by the World Bank since 2007 in partnership with logistics providers and academic experts. The purpose of this report is to help countries identify their opportunities and bottlenecks in the field of commercial logistics and explain the costs of their poor performance. This indicator measures each country in six domains, which forms the most important dimensions of the current logistics industry. These six logistical areas are (Logistics Monthly and Supply Chain No 12, 1392):

1. Efficiency of clearance processes (speed, simplicity and predictability of formal procedures such as customs procedures);
  2. The quality of commercial and movement infrastructure (such as Entrance bases, railways, roads, information technology);
  3. Ease of access to various goods at competitive prices;
  4. Competence and quality of logistics services (transportation operators, customs brokers or intermediaries);
  5. Ability to track goods sent;
  6. The suitability of the delivery time of the goods to the customer in the scheduled time or expected time;
- Of course, none of these six domains can alone reflect the logistical performance of a country; they can show each other's logistical performance together and joint.

## 2.2. The evolution of logistics and transportation

The logistical term was derived from military activities related to the use and support of armed forces during the war. Anthony Henry Jomini, a French thinker and author, first described in the book "The Art of War" in 1838, the proper definition of logistics: "Logistics is the scientific art of the movement of the Army." Later, the British used this word to support their military units. Finally, in the first and second world wars, logistics in the forces and military organizations of most countries of the world, applied effectively, but with a variety of meanings and areas of performance. From then on, the logistical word was gradually introduced with the same semantics in the industrial and commercial spheres. Nowadays, this term has become widely used in both military and civilian fields, and its concepts and functions in both domains have enjoyed significant growth during mutual exploitation.

During the Second World War, logistical activities played a significant role in the victory of the United States and its allies. In addition, logistics activities have recently been introduced as an important component of American success during the Gulf War between 1990 and 1991. In this war, 122 million

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1- Supply Chain Management Guide; Colin Scott et al

2- Jones & Riley 1985

3- Ellram 1991

meals, 1.3 billion gallons of fuels, and 31,800 tons of mail were transported (Amini, 17: 1373).

Since the 1960s, logistics has been considered as one of the best commercial solutions. In the 1960s and 1970s, the effects of global competition on American companies were enormous. Companies have left their market share and profits to companies from other countries, especially companies from Japan and Germany. Competitive pressures increased in the mid-1970s, as they were forced to reduce the barriers to commercialization of American companies by increasing the quality of their products and services, focusing on newer levels of customer satisfaction and cost reduction. Logistics costs were considered as the ultimate cost reduction and customer service improvement. In this context, the companies focused their attention on the physical distribution of goods and materials to improve customer service and cost savings. They move towards logistics management, transport integration, distribution, warehousing, manufactured goods, inventory management, packaging, and material handling. Reducing cumbersome shipping rules has played a large role in increasing competition between shipping companies. Which resulted in lower costs and better management of inland transportation.

Physical distribution management went further into logistics management in the late 1970s and also in the 1980s. This situation has led to increased purchasing involvement with logistics decisions, including transportation management. The factors influencing this situation included changes in the production environment and increased emphasis on quality. By shifting manufacturers towards outsourcing a large percentage of product content to external suppliers, the business environment has changed. These suppliers were able to produce pieces at lower prices because they had a non-union environment. To replace the benefits of controlling the production of all components, many companies went to the just in time production system (JIT). JIT basically means delivering parts to producers by suppliers at times that are needed based on the customer's actual needs, thereby reducing shipping costs. But this also means contacting suppliers and shipping companies to ensure that the goods are delivered on time.

In many cases, it was observed that companies were moving toward single-source layout. At the same time, overall quality management systems enabled companies to compete with foreign manufacturers of goods. The selection of quality transport companies is also an important part of this equation because manufacturers have to ensure that goods are shifted in a secure way and customers receive appropriate services. When companies succeeded in reducing the

number of shipments, so more than ever, they focused on developing Gauges to measure performance. These Gauges include the percentage of timely transportation, the percentage of Damaged transport, and the percentage of orders that have been completely shifted.

In the late 1980s and early 1990s, the concept of supply chain management was slowly entering into commercial literature, and was defined as the overall management of the flow of goods and information from supply agencies to the final customer, meaning that each step in the flow of goods should be worth the extra chain. Slowly A supply chain refers to the flow of materials, information, funds, and services from suppliers of materials through workshops and warehouses to end customers, and includes organizations and processes that deliver goods, information and services to consumers. This chain includes many tasks such as purchasing, cash flow, material delivery, production planning and control, inventory control, logistics, distribution and delivery. Potential savings in a supply chain were also factors that could create a new trend.

In today's world competitions, we have to offer a variety of products based on the customer's request. The customer's desire for high quality and fast service has increased the pressure that it has not existed before, so companies can no longer afford all the work alone. Accordingly, activities such as supply and demand planning, material procurement, production and product planning, service maintenance, inventory control, distribution, delivery and customer service that were previously pre-existing at the company level were now transmitted to the supply chain level. The key issue in a supply chain is the coordinated management and control of all these activities. A supply chain has a series of fixed points - warehouses, distribution centers, offices where goods are stored - of course, all of these ultimately connect with shipping. Specifically, transporters will spend more time to Qualification or carry out their cargo operations. Transportation strategies will also lead to better relationships within the supply chain:

1. The partners facing both sides are trying to provide innovative solutions.
2. Collaborate with carriers be done to control shipping costs.
3. Provide services Be considered as the first priority of the carrier.
4. Commitment to continuous improvement of processes that are necessary for positive change.
5. Satellite communication systems to be implemented.
6. Information systems, logistics consulting, and specialized services based on customer requirements.

### 3. RESEARCH METHODOLOGY

This research is an applied and developmental type. The library and field method has been used to collect information. In the library method, a vector-based scan tool and in field research method, a researcher-made questionnaire was used. A deep study on logistics and transportation and theoretical foundations have been carried out and have been conducted in selecting qualified individuals. The

### 4. RESEARCH FINDINGS

#### 4.1. Position of I.R Iran in Logistics Performance Index

The trend of changes in I.R Iran's ranking in this index over the years 2007 to 2016 is shown in the table below. As the table shows, I.R Iran ranked between 78 and 114, with the highest score of 78 in 2007. It should be noted that in the 2014 report, information on I.R Iran has not been included. The report also aims to chart a macro-state image of a country and reduce random sample variations, from a review to another, and to compare 167 countries, a table of the status of countries over the four surveys.

Table 1. Iran Ranking in Logistics Operations during 2007-2016

Logistics Performance Index	From 150 countries in 2007	From 155 countries in 2010	From 155 countries in 2012	From 155 countries in 2016	the average four study periods until 2016 From 167 countries
Logistics Performance	78	103	112	96	104
1 The efficiency of customs and border management clearance ("Customs")	63	106	126	110	127
2 The quality of trade and transport infrastructure (Infrastructure)	66	86	100	72	83
3 The ease of arranging competitively priced shipments (Ease of arranging shipments)	78	121	115	88	107
4 The competence and quality of logistics services—tracking, forwarding, and customs brokerage ("Quality of logistics services")	66	69	87	82	83
5 The ability to track and trace consignments ("Tracking and tracing")	125	110	108	111	112
6 The frequency with which shipments reach consignees within scheduled or expected delivery times ("Timeliness")	106	85	138	116	132

Reference: (International Development Association: IDA)

In order to provide a more accurate picture of I.R Iran's position in logistics performance index, Iran's ranking in this index is compared with some advanced industrial countries and newly industrialized countries.

questions have been semi-deep and have been updated and documented with scientific sources and due to lack of research performance in the field of social impacts of the subject studied in the country have been Directed and guided. Attempts have been made to review the opinions of the experts in the direction of the topics that are tailored to the research needs and requirements of the current state of the country and to be implemented.

In this table, the score for each year with another year is weighted from the low to high table (International Development Association: IDA):

Study year	2010	2012	2014	2016
Weight percent	6.7	13.3	26.7	53.3

Table 2. Ranking of Iran and selected countries in the LPI during the period from 2007 to 2016

Selected countries	The efficiency of customs and border management clearance ("Customs")	The quality of trade and transport infrastructure (Infrastructure)	The ease of arranging competitively priced shipments (Ease of arranging shipments)	The competence and quality of logistics services—tracking, forwarding, and customs brokerage ("Quality of logistics services")	The ability to track and trace consignments ("Tracking and tracing")	The frequency with which shipments reach consignees within scheduled or expected delivery times ("Timeliness")
1 Germany	2	1	8	1	3	2
2 USA	16	8	19	8	5	11
3 Japan	11	11	13	12	13	15
4 France	17	15	20	19	15	13
5 Italy	27	19	17	21	20	22
6 South Korea	26	20	27	25	24	23
7 China	40	33	32	35	36	47
8 Malaysia	31	23	12	27	28	31
9 India	38	36	39	32	33	42
10 I.R Iran	110	72	88	82	111	116
11 Russia	141	94	115	72	90	87

Reference: (International Development Association: IDA)

In 2010, 2014 and 2016, Germany ranked highest among the countries studied, and in the years 2007 and 2012, Singapore ranked first in the world. The results of the four surveys show that 14 of the 28 countries of the European Union and 22 of the 34 OECD countries were among the countries that ranked the best in this index.

Table 3. Ranking of I.R Iran and selected countries in logistics performance index in 2016

Selected countries	2007 from 150 countries	2010 from 155 countries	2012 from 155 countries	2014 from 160 countries	2016 from 160 countries	Average study periods by 2016 from 167 countries
1 Germany	3	1	4	1	1	1
2 USA	14	15	9	9	10	9
3 Japan	6	7	8	10	12	10
4 France	18	17	12	13	16	14
5 Italy	22	22	24	20	21	21
6 South Korea	25	23	21	21	24	24
7 China	30	27	26	28	27	26
8 Malaysia	27	29	29	25	32	30
9 India	39	47	46	54	35	42
10 I.R Iran	78	103	112	Na	96	104
11 Russia	99	94	95	90	99	98

Reference: (International Development Association: IDA)

#### 4.2. Transportation statistics

According to the National Accounts (1993 SNA), the value added of the Transportation, Warehousing and of transportation performance in terms of passenger and goods transportation in 2013 shows that in the transportation sector (rail and road), a total of 842.5 million passengers and 653.7 million tons of goods were transported, compared with a year ago, Respectively decreased by 6.6% and increased by

Table 4. Performance of the Islamic Republic of Iran Shipping Fleet in 2013

	Passenger		goods	
	Number (Millions of people)	Share (percent)	Amount (million tons)	Share (percent)
road	817	92.4	621	78.3
Rails	25.5	2.9	32.7	4.1
Marine	15.6	1.8	139.7	17.6
Air	25.7	2.9	0.06	*
whole	883.8	100	793.4	100

Reference: Statistical Yearbook of Railways and Road Transport, Statistical Yearbook of Railways I.R IRAN, Ports and Maritime Organization, National Civil Aviation Organization

#### 4.3. Selection of transporters

Choosing a carrier can be one of the most important decisions a government purchaser must take for his organization. Just as choosing the correct supplier can ensure the success of the operation, determining how the goods are transported to the destination is also important. If the initial choice made by a company is in relation to the shipping method, Definitely the next option will be it's carrier.

When it comes planning to the importance of delivery quality for an organization, we must

to carry cargo. For example, a utility company may want to carry a series of special control equipment to repair or upgrade for a manufacturer. To provide high quality shipping services, it must sign an agreement with a carrier. Even for domestic transport, this approach can be widespread. Instead of relying on a carrier chosen by another, a public agency may want to hire a carrier to carry the compressor from the supplier's harbor. In this way, buyers are actually saying that they can choose the carrier better than the supplier.

If the government purchaser wants to contract for transportation services, the best choice should be the supplier. One of the most common methods for this purpose is bidding based on the lowest price and

Communications Group in 2013 had a growth of 1.9 percent Compared to fixed prices in 2004, with the share of this group of gross The domestic market reached 8.5% this year. The survey 1.3%. Also, in the maritime and air transportation sectors, a total of 41.3 million passengers and 139.8 million tons of goods were displaced, which compared to the previous year, respectively, is an increase of 14.3% and 0.7%. (Economic Report and Balance Sheet of Central Bank of I.R Iran).

consider customer satisfaction according to the following seven principles (7R) (Kuglin, 1998):

1. Right product;
2. With right quality;
3. In the right conditions;
4. In the right place;
5. At right time;
6. For the right customer;
7. With the right price.

It is clear that delivering goods with quality, precision and timely delivery is High importance and it is logical that this issue is of great importance in choosing the carrier who supplies the goods they have purchased. Considering the importance of choosing a carrier, it now looks at how to make a decision.

The first thing a buyer should consider when choosing a carrier is whether the service should be purchased separately. The most commonly used transfer method in the public sector is the selection of the FOB method, in which the goods transport is transferred to the supplier, and all delivery operations are delegated to the seller and The supplier will take possession of the goods until delivery.

There are other examples of freight transportation that a shipping company contracts directly with shipping services. Many organizations relocate goods and equipment through their facilities, and benefit from private carriers considering the quality of service, company experience, financial sustainability, customer satisfaction, and previous corporate resume or other factors. According to the research, the quality of services provided by the company is usually more important than the price offered by the participants in a bid.

If the bidding organization offers a high volume of services, this usually leads to great offers from shipping unions. In addition, long-term contracts can also create an opportunity for a carrier to act as a strategic partner for the organization. If this contract is executed, it can use a carrier whenever the organization needs to be shipped and can provide a

variety of shipping services and provide more flexibility for the buyer.

#### 4.4. Transportation modes

In general, common shipping methods include:

1) Road; 2) Rail; 3) Air; 4) Water; 5) Pipeline.

Each of the transportation methods mentioned has its own unique capabilities and its own disadvantages. Below is a brief analysis of each of these methods.

The most commonly used method of transportation is the use of road vehicles or trucks, which are called road transportation, and 92.4% of the total passenger transportation share and 78.3% of the total freight transportation share (2013) in I.R Iran. This section is dedicated (Table 4). This share of transportation in the US is \$ 481 billion (2000), accounting for almost half of the country's transportation share (World Bank). This industry includes a large number of small carriers, leading to high competitiveness. The main reasons for the use of trucks in this industry are availability, the ability to provide services to all areas, and relatively fast and reliable.

However, the rail freight industry in I.R Iran only accounted for 2.9% of passenger transport and 1.4% of cargo transportation (Table 4). Transportation by rail is mainly made up of edible grains, metal ores, crushed stone, glass and powdered products. Their advantage is moving goods over distance and volume in relatively inexpensive. But low accessibility is one of the main problems of the system, which will require other modes of transportation, including trucks, to complete the delivery operation. Another mistake is transit time, which is caused by the transfer of loads to the rail system. Among the benefits of this industry is the safer rail services than other methods, as well as the low impact of bad weather conditions.

Maritime shipping also plays a major role in the transportation industry in the world. In Iran, 1.8 percent of passenger traffic and 17.6 percent of cargo transportation are transported by water (Table 4).

The movement of goods through air has increased in recent years, but relatively high prices are still considered a constraint on government systems. According to a general rule, air transport rates are almost twice as high as road transport. But along with higher costs, there are some benefits to this. Since air travel is generally easier than land travel, it looks great for transportation of special equipment. Another advantage is shorter shipping time in this method. For example, a special repair piece can be transported only in a single day, while landing takes several days, in this case, air transport will be much more attractive

option. Despite the speed of delivery, organizations can reimburse their shipping costs.

#### 4.5. Social Impact of Shipping Policies

As can be seen, according to Table 2, I.R Iran's rank according to the Logistics Performance Index in 2016 among the 160 countries is 96, indicating a low performance of the country in this area than other countries in the world. I.R Iran's position in 2007 in this area is 78 in the world and in 2010 and 2012, at 103 and 112, indicating poor performance in this sector than other countries, although from 2012 to 2016 The rank of I.R Iran has slightly improved.

In the following, the performance of the country in comparison with other countries in the six areas of LPI is discussed:

1- Efficiency of clearance processes

According to Table 1 in 2016, I.R Iran ranked 110th in the field of clearance processes among other countries of the world, which shows the backwardness of the country in this area in competition with other countries of the world. This area is directly related to the customs of the country, and its weakness leads to increased smuggling of goods in the country and the resulting damage. The lack of electronic and up-to-date electronic goods clearance and administrative bureaucracy in the customs of the country is one of the main causes of this unfavorable situation, which leads to sleeping in the customs and increasing the cost of goods. This issue is one of the main causes of the smuggling of goods due to the high margin of profit.

2- The quality of trade and transport infrastructure

The country's ranking in LPI in this area is 72 in the world (2016), which has remained competitive with other countries since 2007, with Iran ranked 66th. One of the main social effects of this area is the high number of accidents in the country. According to the World Health Organization ([www.who.int](http://www.who.int)), in 2010, for every 100,000 people in the country, there were 35.8 of the victims of the road. This topic in countries such as Germany, which ranked first in the LPI indicator, is 7.6 per The population of 100,000.

3- The ease of arranging competitively priced shipments

In this area, according to Table 1, I.R Iran ranked 88th in the world compared to other countries of the world in 2016 and is far from industrialized countries. This area, which has a direct impact on commodity prices and inflation, requires special attention. According to the World Bank ([www.worldbank.org](http://www.worldbank.org)), inflation in I.R Iran in 2016 is based on a consumer price of 2.7 percent, while in countries like Germany and the United States, which



have the 8th and 19th LPI indices (Table 3) shows the inflation rate equal to 0.85% and 2% of the consumer price.

4- The competence and quality of logistics services

I.R Iran, among other countries in the world, won 111th place in 2016, which indicates a lack of quality and poor quality logistics services in I.R Iran. Lack of logistics services will lead to poor quality logistics services. Low quality logistics services in the transportation sector have serious environmental damages. As an example in air quality, which is one of the environmental indicators, Iran holds 119th among the countries of the world (Dabir Sayyafi, 2004: 201).

5- The ability to track and trace consignments  
In this area, I.R Iran has gained the status of 111 among other countries in the world in 2016, which according to the ranking of 125 in 2007, shows progress in this area<sup>1</sup>.

6- Timely delivery of goods  
In the area of timely delivery of goods, Iran's 85th rank among the countries of the world in 2010 and 116th in 2016, indicate a backwardness of the country in competition with others. The use of air transport in the timely handling of goods is critical to the customer, but this industry in Iran carries passengers 2.9% of the transportation industry. also In the shipping of goods, the share of this industry from the total freight traffic in the country is close to zero, which is very considerate (Table 4). One of the main reasons for this situation is the existence of sanctions in the airline industry, and another reason is a high cost of air transportation.

#### 4.6. Determine social indicators

In order to measure the impact of transport policies or any public social policy on society, it is necessary to determine or design appropriate and consistent indicators for this purpose. In the first document published by the UN in 1954 to measure social development in the countries, twelve indicators were presented as follows (Zahedi, 2007: 257):

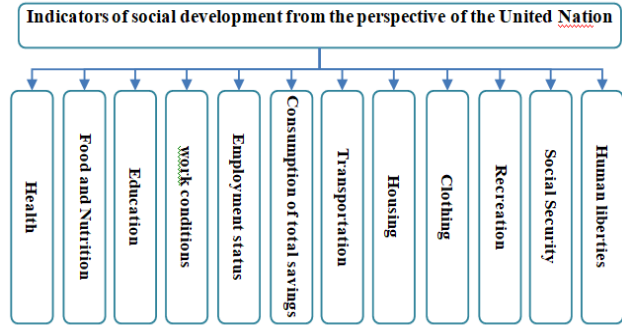


Figure 1. The first document on social development indicators from the United Nations (1954)

Although this and subsequent versions of the document are introducing comprehensive indicators of social development, they are not optimal for use in our research. Ahadi and colleagues have studied the effects of sustainable transport on a logical and systematic division into three parts of social, economic and environmental issues (Ahadi et al., 2014: 1). The work of Ahadi and colleagues as a first layer of social impact is valuable. But to examine the effects of transport policy, more comprehensive layers should be considered. Another feature that has an ahadi's pattern is fuzzy thinking in the template. The fact is that there can not be a clear border between social, economic and environmental indicators.

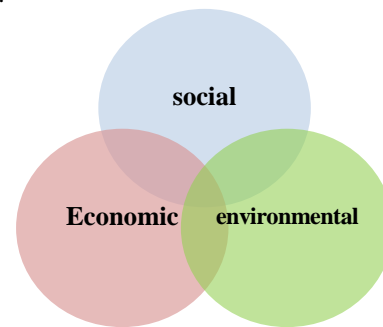


Figure 2. The Fuzzy Pattern of Social Indicators Affected by Sustainable Transportation (Model Based on Ahadi et al. Model)

Armaki et al. (2012), with a comprehensive review of the definitions of social development, have suggested the social development indicators in the Delphi method as follows. They conducted this research with the Delphi method and with aimed at identifying the functional indicators of social development (Armaki et al., 2012: 10):

1- International Development Association: IDA

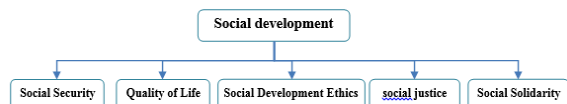


Figure 3. The dimensions of social development from Armaki et al. (2012)

The results of this research can greatly help to investigate the effect of policies on social indicators. They say in their explanation that social development represents the quality of the social system by institutionalizing development ethics, in particular the "social development ethics", in order to achieve "social solidarity" and increase the "quality of life" in the direction Establishing "social justice" and promoting the "social security" factor (ibid., 19). With this explanation, it can be said that the index of social development ethics is an indicator that lies behind other indicators and can be eliminated in the 4. could be integrated with the flourishing business index, but tourism has a cultural aspect in addition to the economic aspect. Therefore, it is considered as an independent indicator;

5. Security Development Indicator: The rapid deployment of military and security forces to 6. indicators of the impact of transportation policies is social security;

7. Environmental indicators: The development of roadways, on the one hand, requires the destruction of some natural environments such as forests and, on the other hand, has a positive impact on policies such as desertification. However, environmental indicators are one of the most effective and influential indicators of transport policy;

Other indicators can be considered either of little importance or within the top five indicators. These indexes can be modeled as below:

#### 4.7. General transport policies

Materials 127, 131, and 132 of the Fourth Development Law of the country have addressed the issue of transportation, but the most important part of these materials is concentrated around getting complications. Other laws passed by the Islamic Consultative Parliament do not have the same colorful smell of macro policing and are more like a 2.

- Economic, defense and security considerations
- Reduce intensity energy consumption
- Reducing environmental pollution
- Increase safety

present study. With these interpretations, we can determine the social indicators affected by transportation policies as follows.

1. Social Welfare Index: The existence of a roadway is one of the indisputable indicators of economic development and one of the criteria for measuring social welfare internationally. The presence of roadways has a direct impact on the ease of travel and social welfare;
2. Business Growth Indicator: Whether I.R Iran or any other country has extensive and separate agricultural and industrial sector poles. Fast and timely delivery of agricultural and industrial products to the sales markets is essential for business prosperity. This does not materialize except with proper roadways;
3. Tourism boom index: Tourism has so far boosted its position in increasing national income, which in some countries is higher than the ratio of oil sales to the budget of the Islamic Republic of Iran. Tourism

insecure areas is necessary for managing and suppressing insecurity, and this commitment is unaffordable without roadways. Therefore, one of the undisputed

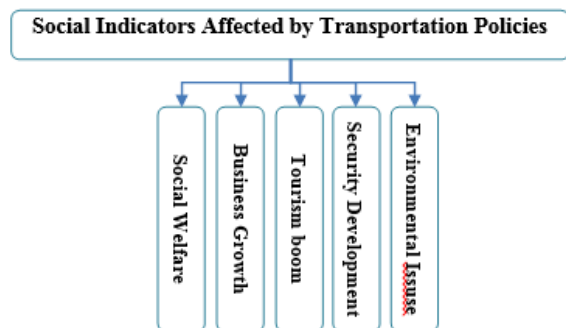


Figure 4. Social Indicators Affected by Transportation Policies

remedy for short-term problems. But the revolution Supreme Leader officially announced the general policy of transportation on 20/12/2000. These policies include:

1. Establish a comprehensive transportation system and regulate the share of each of sub-sections, giving priority to rail transport, And according to the following directions
  - Balancing and fit between infrastructure and fleet and navigation equipment and demand.
3. Increased productivity to achieve a high level through the development and improvement of

transportation and management and human resources and information.

4. Development and modification of the transportation network according to the following points:

- Network Attitudes to the Development of the Axes
- Land use planning
- Defense and Security Considerations
- National Profitability
- Transit Position of the Country
- Demand

**Table 5.** Examining the Effect of Transportation Policies on Social Indicators

General shipping policies	environmental issues	Security development	Tourism boom	Business boom	Social Welfare	average score
Create a comprehensive transportation system	5	5	1	3	3	3.4
Increasing productivity by improving methods	2	1	3	3	2	2.2
Development and modification of the transportation network	2	5	4	5	4	4
Attracting Nongovernmental Funds	1	1	5	5	2	2.8
Achieve a greater share of the global market	1	1	5	5	3	3
Sum scores	44 %	52 %	72 %	84 %	56	

## 5. CONCLUSION AND SUGGESTION

Logistics and transportation have played a very important role in the development of the Islamic Republic of Iran and as a result of the economy of the country. Considering the position of I.R. Iran in the Logistics Performance Index (LPI), special attention will be paid to policy in the transportation and logistics industry. With regard to the social effects of the logistics and transportation industry in smuggling goods, road accidents, Finished goods prices, inflation, the environment, etc., improving the country's situation and progress in the transport and logistics industry and creating a sustainable supply chain, It will have very good social effects in the country.

As can be seen from the results of the previous data, one of the main reasons for the increase in smuggling in the country, the increase in the number of road accidents, high inflation rates based on consumer prices, pollution, Air, and lack of timely delivery of goods to the customer is a country's backwardness in the field of logistics and transportation, and With regard to the general policies of the country in the field of transportation and the special attention to this industry, we could hope for a bright future in the transportation and logistics industry in Iran and improve the social impact of this industry. The to it.

This table can also be analyzed from another view. Among the five transport policies, development and improvement policy of transport network provides the most improvement with an average of 80% impact on relevant social indicators. Following this

5. Provide for attracting domestic and foreign capital and attracting people's participation and extending coverage in all activities in this sector.

6. Achieve greater share of the international transportation market.

Now, with social indicators and transport policies, we can Architecture two-dimensional mapping of the impact of policies on social indicators.

For this architecture, the Likert spectrum questionnaire has been used.

industry, which has suffered a number of laws before, today, by strengthening the private sector by the government, it is able to freely determine prices in a competitive environment and determine the place of business and how to negotiate with customers. With the implementation of article 44 of the constitution and the creation of flexibility in the transportation industry, this has a very high growth potential. And with all these issues, transportation and logistics are a dynamic and challenging part of the overall logistics process.

As shown in Table 5, transport policies has the best effect of 84% in the business boom index. Given the direct role of transport in the Business Distribution and supply network, this was a logical and expected outcome. The improvement of the tourism boom index with a 72% impact is second to the impact of transport policies. However, at first it seems that this index should not have a second-round effect, but it should be noted that this is the impact of transport policies on the tourism boom and is not a solution to the prosperity of tourism. In other words, the implementation of transport policies is a necessary condition for improving the tourist index, but not enough. Social welfare with 56%, development of security with 52%, and environmental indicators with 44% are next influential transport policies that should be proposed in their own right and in relevant researches to improve their pathology and solution. But it is important to note that due to the worrying climate change such as wetland drying, the phenomenon of greenhouse grasslands, the unwanted or unwanted desertification of forests, and so on, should be reviewed, the reform of the policies focusing on Less vulnerable to the environment and more attention

policy, policies for creating a comprehensive transportation system with 68% and achieving a larger global market share of 60% will make the most improvements in social indicators.

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