The Role of Wrong Assumptions in Big Policy-Making Mistakes

Ali Haji Gholam Saryazdi[a]*

[a] System Dynamics Research Group, Imam Javad University College, Yazd, Iran.

A B S T R A C T

Assumptions play a big role in decision-making and policy-making. In other words, assumptions are one of the important components of the mental model that affects the identification, prioritization, and definition of the problem by affecting the type and amount of information received from the problem and also by influencing the model of analysis, analysis, solution identification, and prioritization. They influence decisions and ultimately affect the world around us (Real World). Thus, identifying key assumptions that have led to important decisions helps managers, decision-makers, and policy-makers to make better decisions and policies and correct mistakes. Therefore, this article aims to explain the role of assumptions in decision-making and policy-making by providing several examples of wrong assumptions (misconceptions) that have led to major policy mistakes. These examples are gasoline pricing, steel pricing, and companies' support of science and technology parks. In this article, by examining the numerical database, the policy mistakes were explained, and the governing structure was constructed using the opinion of experts. In the end, a suitable solution to prevent wrong assumptions is presented. The results of the article showed that assumptions by changing the mental model of individuals lead to wrong policies and decisions in various fields. Therefore, to make the right policy and decision, it is necessary to identify and review the assumptions through various means, such as using the opinions of a group of experts and correcting the assumptions.

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*Corresponding author
Email: a.saryazdi@iju.ir

1. Introduction

As shown in Figure 1, the overall decision-making and policy-making process begins with issues in the real world around us (Sterman, 2000). In other words, each person in his field of practice in his personal, work, organizational and social life faces issues with different degrees of importance, priority, and urgency. Therefore, information about it is collected to identify and define the problem and identify the factors and causes (information stage) (Forrester, 1980). Then, based on different methods and models, deep analysis and knowledge of the structure causing the problem is done, possible solutions are identified, and the best solution is determined (decision stage). In the next step, by implementing the solution, an attempt is made to improve the problem or eliminate it (action step). At this stage, the person's behaviour changes and leads to a change in the surrounding conditions. Changing circumstances lead to new problems and the repetition of this cycle (Sterman, 2000).
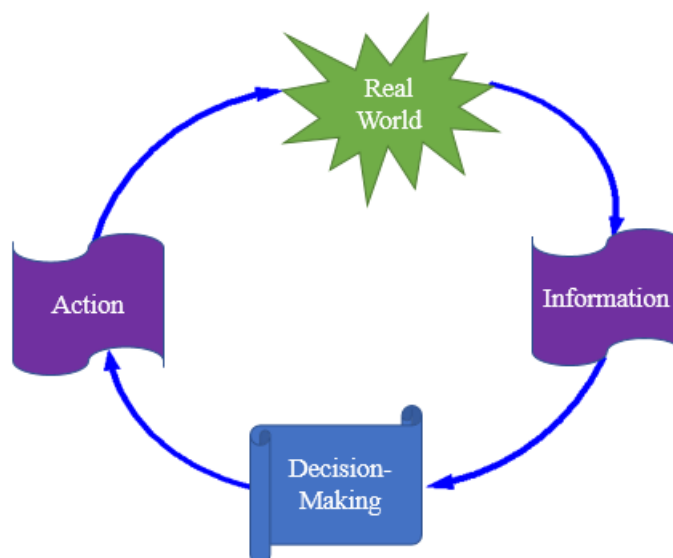
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Figure 1. General decision-making and policy-making process Sterman, 2000)

Since assumptions play an important role in decision-making and policy-making (Wang and Hammer, 2015), two questions arise: 1) What is meant by assumptions? And 2) What is the role of assumptions in the decision-making and policy-making process?

To answer the first question, we can say that assumptions are the same axiom or basic principles of each person (Argyris, 1977). Every mental model is based on assumptions about how the real world works (Sterman, 2000). Assumptions are created gradually as a result of education, experience, and interaction with the environment. Assumptions are generally unclear and should be clarified by reflection and reflection. In other words, the individual or

organization tends to keep constant within a certain range of these assumptions, goals, and beliefs that are the decision-making framework (Martin and Bidhan, 2012). Assumptions have three characteristics (Argyris, 1977), (Martin and Bidhan, 2012), (Wang and Hammer, 2015):

1- They are formed over time and gradually. Many of these assumptions are shaped by the general decision-making process, whether the decision is right or wrong or whether the person is aware that the decision is right or wrong.

2- Generally, the assumptions are not obvious to the person because, according to case 1, the assumptions are formed gradually. Therefore, in many cases, the person is not aware of the effect of these assumptions on his decisions.

3- A person's or organization's desire to preserve assumptions makes them biased and positive towards it, so they don't see its errors.

Given these three characteristics, and because assumptions are one of the most important components of the mental model, they have an important impact on our lives by influencing our decisions and policies. To answer the second question, as shown in Figure 2, it can be said that the assumptions affect the identification, prioritization, and definition of the problem by the type and amount of information received. At this stage, due to the characteristics of cases 2 and 3, the individual or organization often does not see the effect of these assumptions on their decisions and, ultimately, their problems. In other words, it does not collect information in this area. On the other hand, assumptions affect decision-making by analyzing the model of analysis, identifying the solution and prioritizing it, and ultimately affecting the world around us.
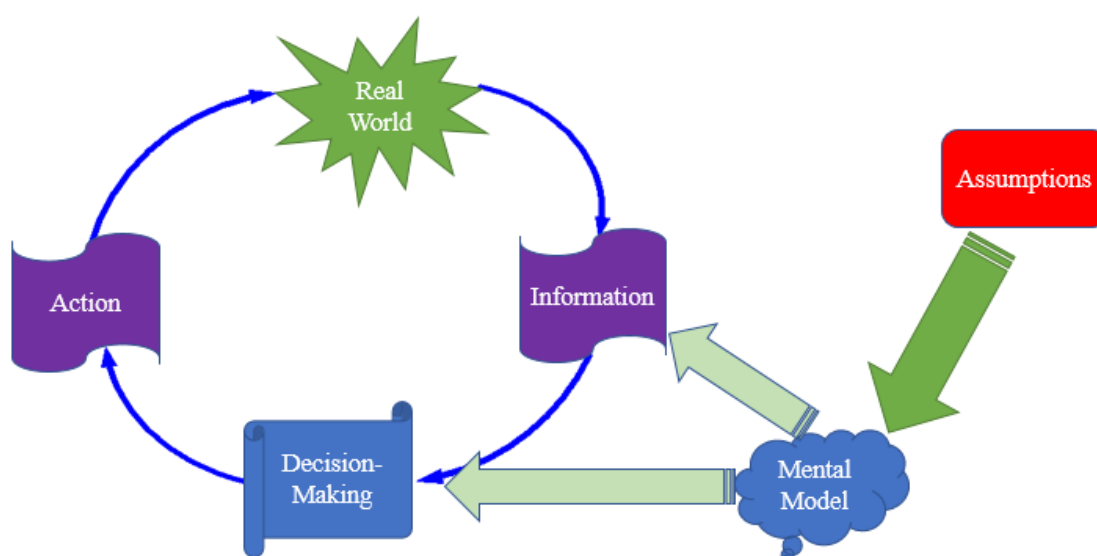

Figure 2. The role of assumptions in the decision-making and policy-making process (Source: Researcher)

Given the great impact of assumptions on decisions and policies, one can learn good lessons to

improve decision-making and policy-making by identifying assumptions in strategic decisions and macro-policies. Therefore, this article seeks to examine the wrong assumptions that have led to wrong decisions and bad conditions in the country. For example, it was stated in an article entitled "Suffering of a wrong assumption" that the wrong assumption of the value of the national currency occurs when we consider the price of the dollar not as a result of the devaluation of the national currency not as its cause (Mashayekhi, 2017). In other words, consider the value of the national currency equal to the price of the dollar. As can be seen from the diagram in Figure 3, based on this wrong assumption, it is assumed that if we reduce the dollar price by injecting dollars from oil revenues, we have increased the value of the national currency. While we may keep the dollar stable or even lower it for a while, the real value of the national currency will fall simultaneously due to rising domestic inflation to global inflation. When domestic inflation is higher than foreign inflation and the real value of the national currency decreases, if the country's officials prevent the rise of foreign currency prices by injecting oil-derived currency into the market with this wrong assumption of the value of the national currency, terrible consequences such as expansion formal and informal imports (smuggling), non-competitive domestic and foreign goods, whose prices increase in relation to foreign goods with high inflation, closure and semi-closure of factories and reduction of investment in production, and finally intensification of domestic inflation is created for the national economy. That will require more currency to import and meet the needs of the country for goods and services. Of course, since the supply of foreign exchange is increasingly impossible, the lack of foreign exchange resources will eventually cause the exchange rate to jump as the country has experienced several currency fluctuations (Figure 4).

If the assumption is correct, the value of the national currency is determined and measured by its purchasing power. If we consider a basket of domestically produced goods and services in terms of the type and quantity of each of the goods and services, some national currency is needed to buy that basket at some point in time. The amount of money needed to buy the basket represents the true power of the national currency. In other words, by expanding production and reducing inflation, the value of the national currency can be maintained, not the nominal stabilization of the dollar (Mashayekhi, 2017).
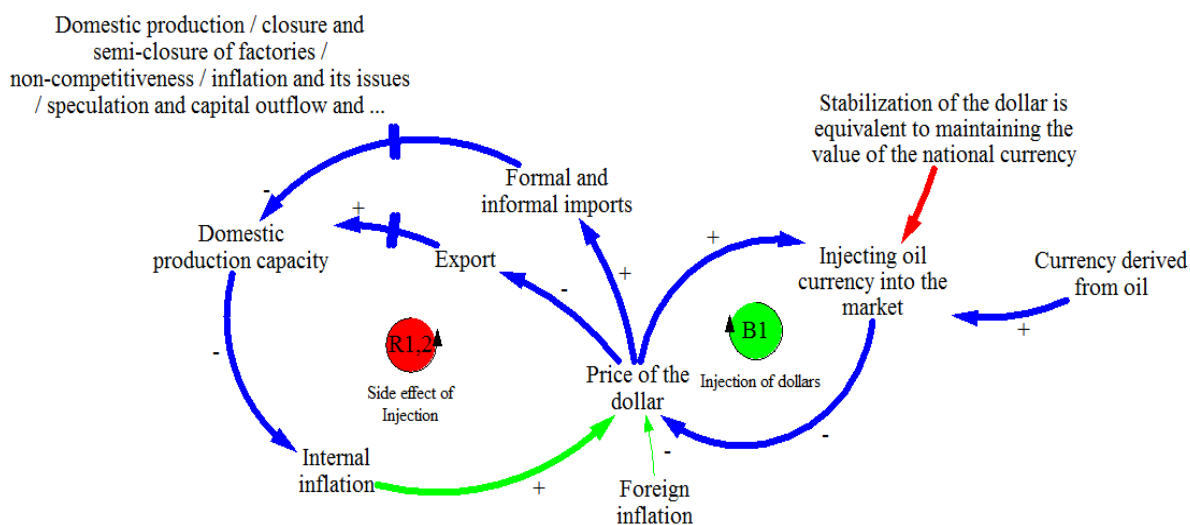
Figure 3: General pattern of the effect of wrong assumptions about the value of the national currency (Source: Researcher)
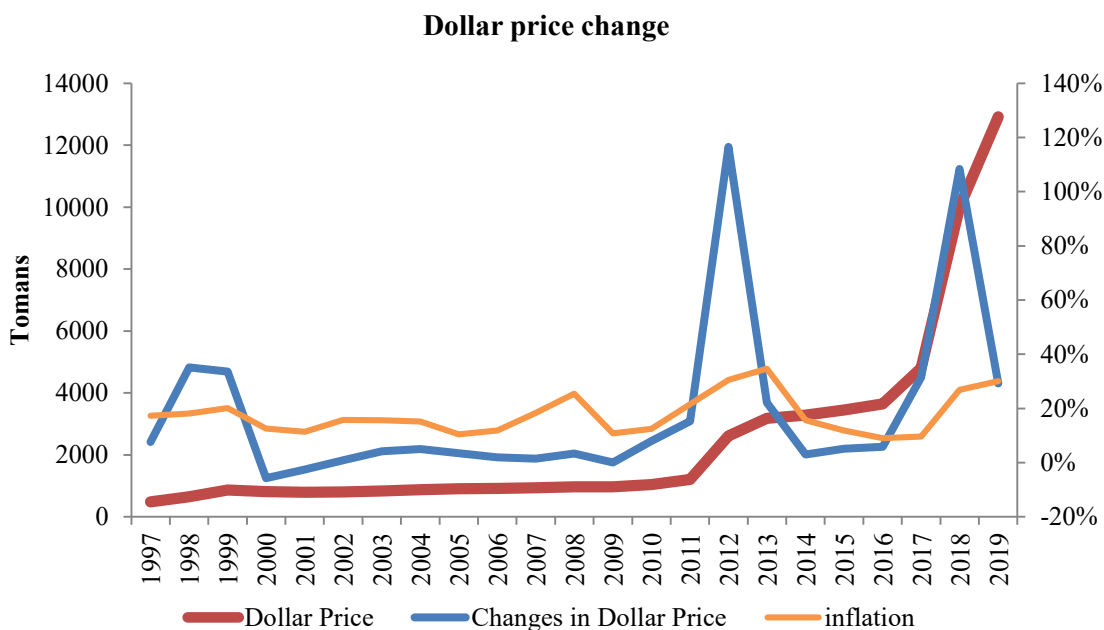

Figure 4: Fluctuations due to the effect of wrong assumptions about the value of the national currency (Source: (Statistical Center of Iran Website,2021))

Given the role of assumptions in decisions and providing an example of big wrong assumptions; Thus, identifying key assumptions that have led to important decisions helps managers, decision-makers, and policy-makers to make better decisions and correct mistakes. Therefore, this article tries to explain the role of assumptions in decision-making by providing several examples of wrong assumptions that have led to major policy mistakes. In this article, the effect of wrong assumptions in decision-making and policy-making is explained by mentioning a few examples in different systems, and then a basic solution to deal with the problem of wrong assumptions is presented.

2.   Research methodology

In this section, the research method is explained. This research seeks to answer the first two questions to answer a key question.

The first two questions are: 1) What is meant by wrong assumptions? And 2) What is the role of wrong assumptions in the decision-making and policy-making process? The key question is, what are the examples of the role of wrong assumptions in creating wrong policies (Big Policymaking Mistakes)?

In order to answer the initial questions, wrong assumptions were explained through library studies. And then, the role of wrong assumptions in the decision-making process was discussed. And by reviewing an example of the effect of wrong assumptions in making wrong decisions, this process was explained.

Then, to answer the key question, the problems were defined using library studies and numerical databases (Forrester, 1980). And then its big policy-making mistakes were explained. And then, through interviews with experts, the governing structure of these mistakes was identified. Finally, the causes of these mistakes were identified. And the wrong assumptions behind these mistakes were identified. Experts also confirmed the validity of the model (validity of CLDs). It should be noted that a small Group Model Building (GMB) method with 6 experts has been used to analyze the data to define the problem and construct the model and conclusion. These 6 experts were 2 economists, 1 specialist in the field of gasoline, 1 expert in the field of steel, a manager of a science and technology park, and a manager of a knowledge-based company in the science and technology park. Three 2-hour sessions were held for the group interview, which lasted 6 hours.

3.   Examples of wrong assumptions and their effects

In this section, the effect of wrong assumptions in decision-making and policy-making is explained by mentioning various examples in the field of macroeconomics (gasoline, steel) and knowledge-based economics (science and technology parks).

3.1. Pricing with wrong assumptions in the economy: the price of gasoline

Due to inflation, the government increased the price of gasoline at the beginning of each year until the Islamic Consultative Assembly, contrary to the government's opinion in 2003, for the welfare of the people, considering that the gradual increase in gasoline prices is inflationary and that the economy is commanded. Practices decided to adopt a policy of stabilizing the price

of gasoline. In other words, as shown in Figure 5, from 1997 to 2004, the price change at the beginning of each year increased based on inflation (gradual change policy), but with the approval of the Price Stabilization Law in 2004, the price remained stable from that year to 2007. Statistical Centre of Iran, Website; Double-digit inflation and the stability of gasoline prices, as shown in Figure 6, increased the trend of gasoline consumption (Haji Gholam Saryazdi, 2020). As both the diagram in Figure 5 and the structure shown in Figure 7 show, the wrong assumption that "change in gasoline prices is commensurate with inflation" caused the country to experience large fluctuations in gasoline prices because, after a while, the real price of gasoline remained stable. Because inflation in the country is in double digits, the nominal price is constantly increasing, which reduces the government's ability to maintain the real price due to increased gasoline consumption, smuggling it abroad, and increasing its subsidies, and the government is forced to increase its price to close prices. It is called the price, which is a big fluctuation, which is inflation. Therefore, here, too, the increase in the price of gasoline in proportion to inflation, which is itself a consequence of inflation, is considered the cause of inflation, and the policy-maker has made this wrong assumption and made the wrong decision and created unhealthy conditions in this field in the country.
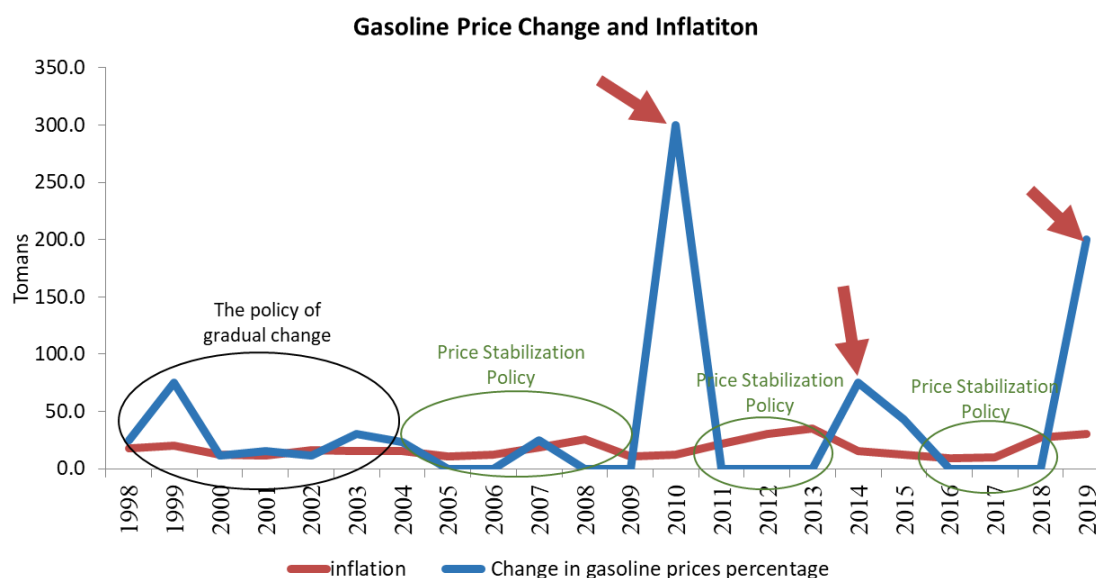

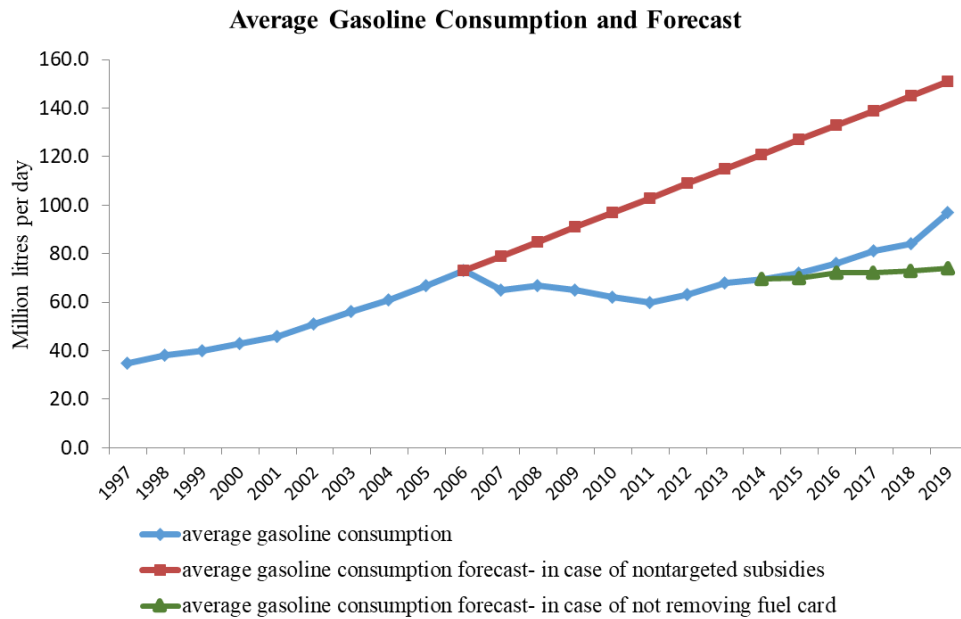Figure 5: Gasoline price behavior and its changes in the light of different policies

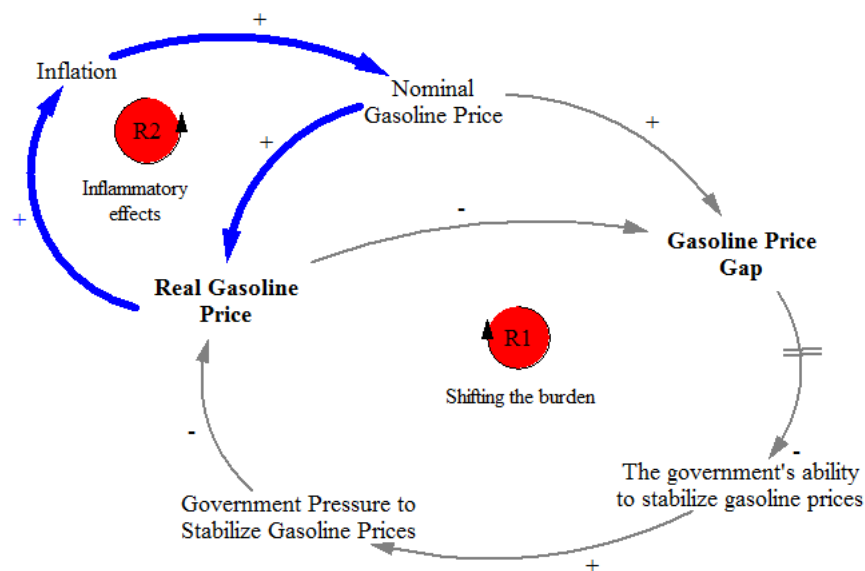Figure 6: Gasoline consumption trend (Haji Gholam Saryazdi, 2020)

Figure 7: General pattern of wrong assumptions about gasoline prices (Haji Gholam Saryazdi, 2020)

3.2. Pricing with wrong assumptions in economics: Steel style

The important point in discussing assumptions is that it has nothing to do with the person or the organizer of the assumption, and a person may have an assumption in one field or subject that he or she does not have in another field or subject. For example, in the case of gasoline, governments have sought to change the price of gasoline. The parliament has stabilized the price, while in the steel chain supply and demand regulation that the government approved and announced, the government is in favor of price stabilization and the parliament is against it.

The price per kilogram of the beam in the market and commodity exchange was higher than

the world price until mid-1999, which was lower than the world price curve after applying the steel method. Currently, the price of beams in Iran is lower than their real value compared to other steel sections. Therefore, as it is clear in Figure 8, this assumption and the associated decision cause the distribution of astronomical rents because due to government intervention in determining the base price of steel products, which is about 50% cheaper than world prices, about 80,000 billion tomans of rent is distributed (equivalent to twice the cash subsidy budget of the country). On the other hand, this outbreak reduces the exchange rate on the export side due to the impediment to the export of steel ingots by making the export license conditional on ensuring that domestic demand is met. At the same time, more than three times the country's need for long steel section capacity has been created (ifoolad Site, 2020).

In other words, although in the short run, with the supply of steel at a lower price and restrictions on exports (more for domestic supply), the real price of steel decreases (B1 Loop), but with the rent created and sales at a price lower than the nominal price, while production decreases, exports decrease (R2,3). By strengthening and stimulating speculators, false demand increases (Loop R1). Eventually, it leads to more inflation, which after the passage of time and the reduction of the government's ability to stabilize the price and create various problems, including the closure of steel factories, it will lead to price fluctuations and reduce the difference between real and nominal prices, and a pattern similar to the price of gasoline will be created.
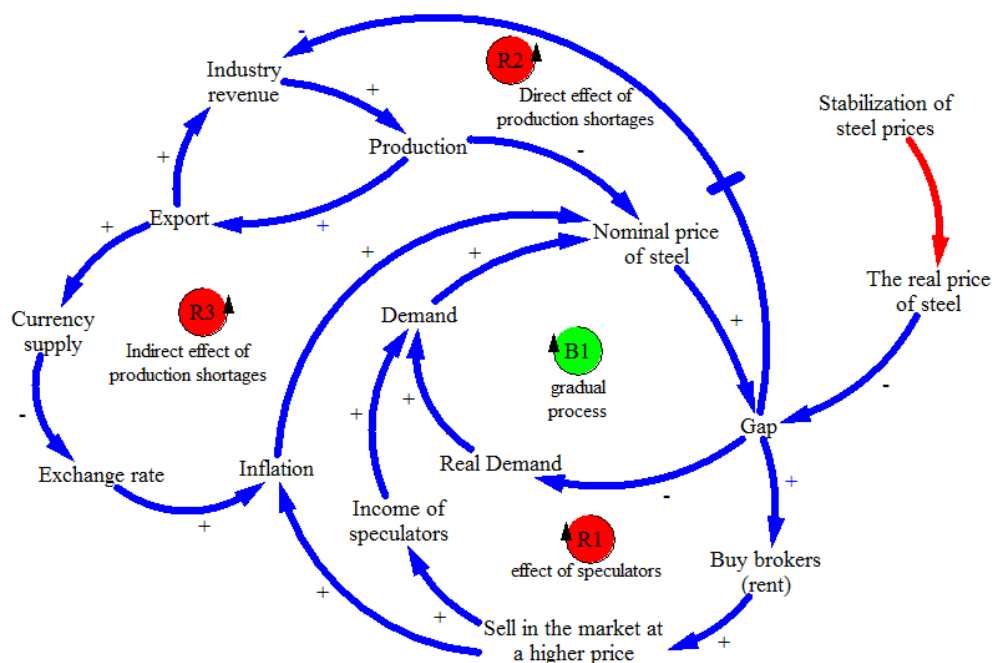

Figure 8: General pattern of wrong assumptions about steel outbreaks

3.3. Crocodiles with big mouth and small hands and feet

The previous examples showed how wrong assumptions in macroeconomics could lead to wrong decisions and policies and cause a lot of suffering and problems for the country. This section provides an example of knowledge-based economics and policy-making in science and technology parks and knowledge-based technology companies.

Some managers of science and technology parks have the assumption that the mission of parks is to create and support technology companies; in other words, " Being company-oriented is the main mission of the park." This assumption causes, as shown in Figure 9, to provide permanent support to companies, including tax exemptions, providing financial facilities, having priority over projects over other companies, and etc. (Haji Gholam Saryazdi and Poursarrajian, 2021), and companies are always in the same environment. They are closed, isolated, and artificial, meaning that park-based and knowledge-based companies do not understand the realities of the market, and even though they are large companies, they depend on the park and expect to receive this support. Such companies are called "crocodiles with big mouths and small hands and feet." Therefore, they need a permanent presence in the parks. In other words, instead of these companies being privately managed and contributing to the country's economic development, due to this wrong assumption, they have become private companies (apparently private but dependent on the government and oil money) and increasingly dependent on the government and oil. And weaken the economy.
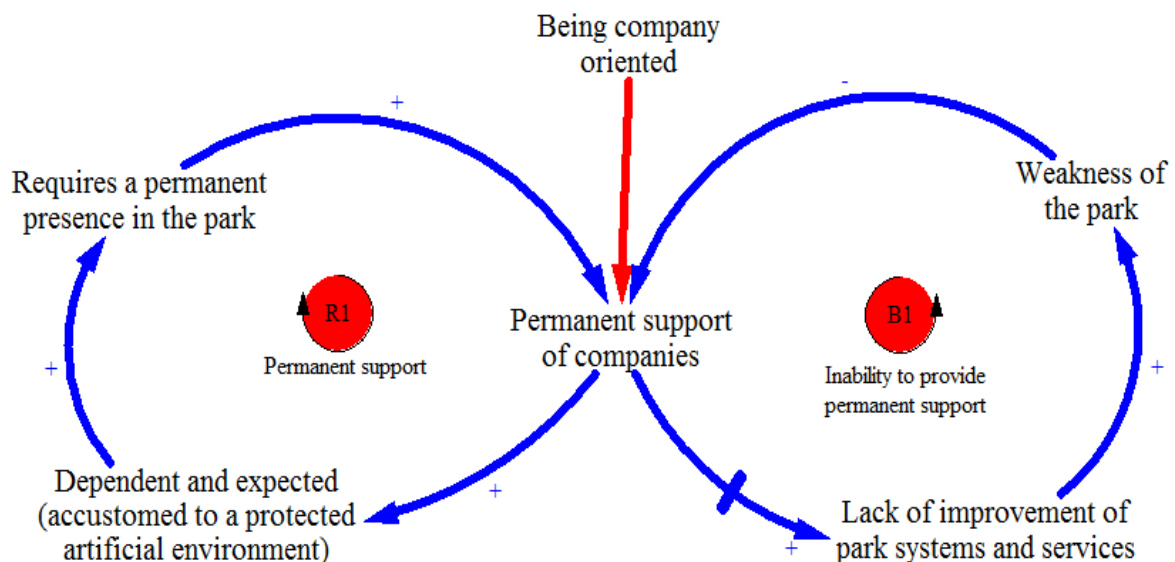

Figure 9: General pattern of wrong assumptions about the main mission of science and technology parks

4. Solution

As mentioned, assumptions play an important role in decision-making and policy-making and practically make people's lives that if the assumptions in people's minds are wrong, they will create a bad situation. Therefore, if these wrong assumptions are not properly identified and corrected, they will cause the recurrence of these sufferings. On the other hand, it was said that assumptions are both unknown, and there is a prejudice toward preserving them, so it is necessary to provide a way to recognize and correct them.

In this regard, experts in the field of learning, especially organizational learning, such as Argris (1977) have proposed a two-loop learning method for correcting assumptions (Argyris, 1977). From Argris's point of view, learning means identifying and correcting mistakes. One of his famous and applied theories in the field of learning is the concept of one-cycle learning versus two-cycle learning.

According to Figure 10, single-loop learning occurs when a problem arises, the first step in solving the problem is to find another strategy that is consistent with the basic assumptions and in line with their realization. In other words, basic assumptions and assumptions are used before they are questioned. But in two-cycle learning, the basic assumptions governing the problem are carefully and critically examined. This way of learning may lead to the transformation of key assumptions and values and thus change the framework for forming strategies and consequences.
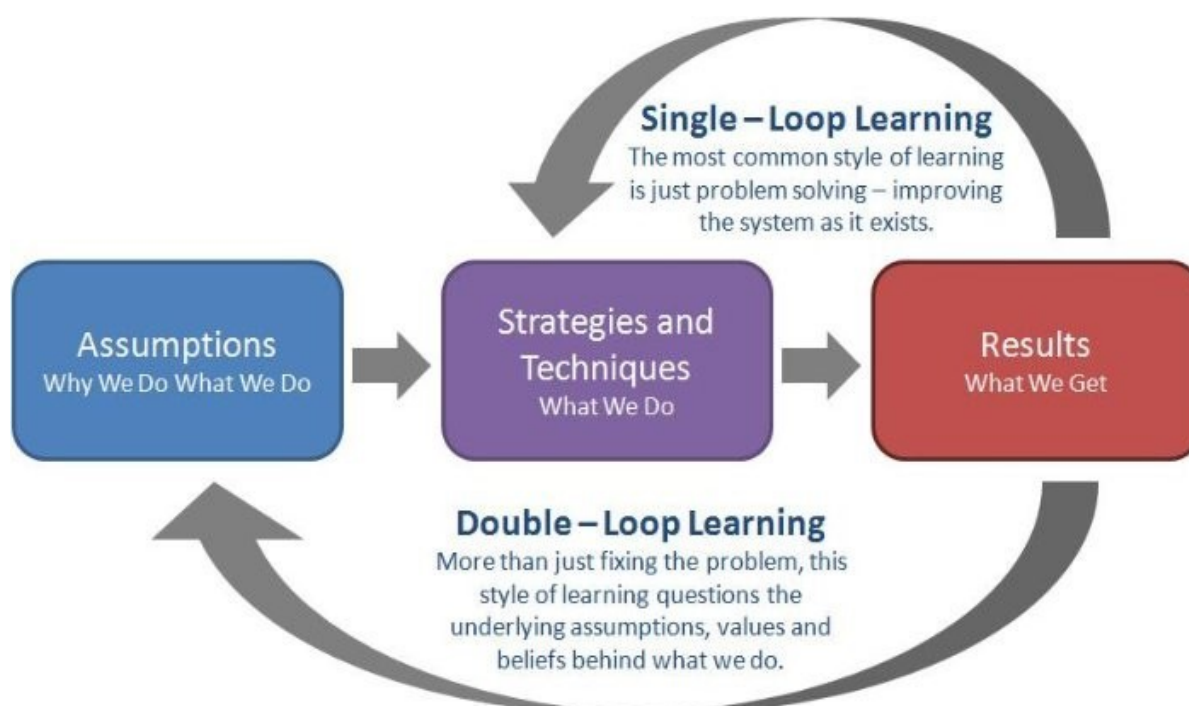

Figure 10: Single and double-loop learning (Argyris, 1977).

Therefore, to deal with wrong assumptions, it is necessary to identify the information related to the problem and the data indicating the error in the first problem according to Figure 11, in the first and the second loop, by analysing the causal structure governing it. In other words, in the first stage, by drawing behavioral diagrams over time, the problem resulting from the decisions made is explained, and then in the second stage, the cause-and-effect structure and the assumptions behind the decisions are identified, and the assumptions are corrected.
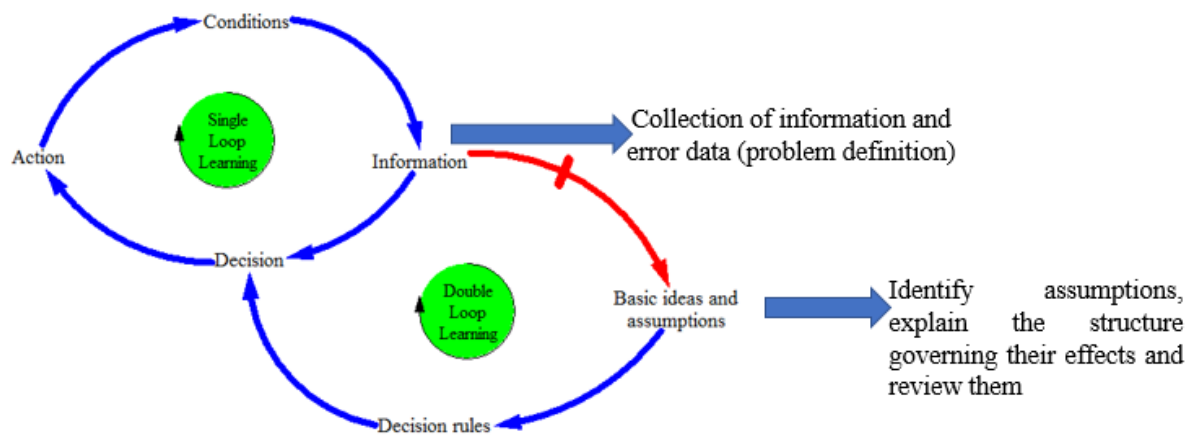

Figure 11: Two-stage correction of assumptions

For example, in the example of gasoline, as shown in Figure 12; First, by collecting information, the behavior of gasoline price behavior should be drawn, and then the governing structure should be identified, and the effect of the governing assumption should be explained, and then the correct assumption should replace the wrong assumption.
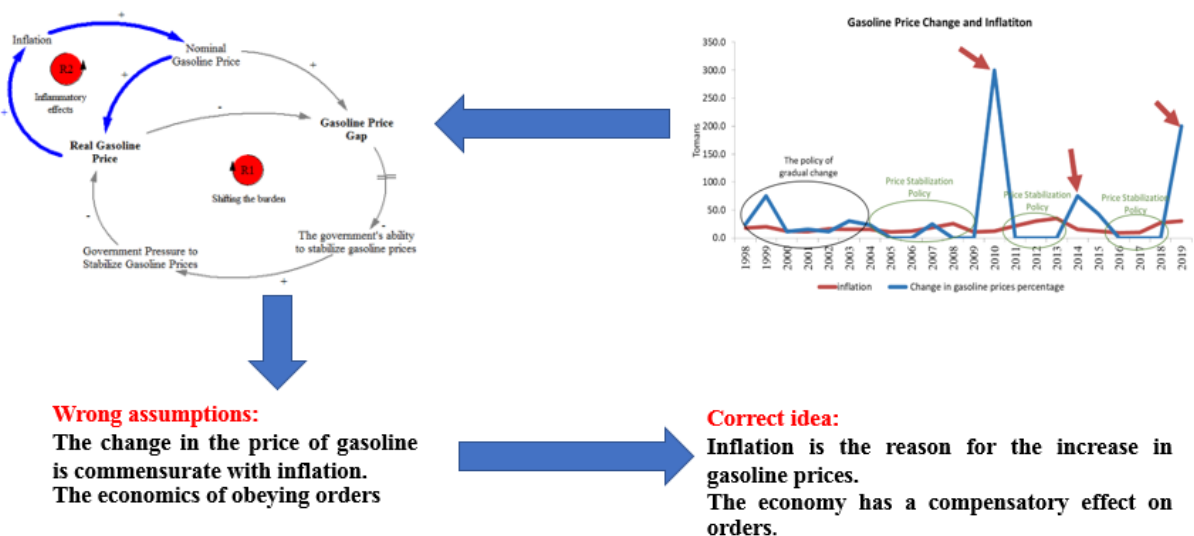

Figure 12: Correction of wrong assumptions in gasoline pricing policy

5. Conclusion

As stated, assumptions are the basic assumptions or principles that make up the mental model, and by influencing the type and amount of information received from the problem (cognition effect) and determining the analysis model (analytical effect) play a major role in decision-making and policy-making and ultimately in shaping the world around. Thus, identifying key assumptions that have led to important decisions helps managers, decision-makers, and policy-makers to make better decisions and correct mistakes. On the other hand, assumptions are gradually formed over time, and awareness of the existence of a particular assumption in mind and its effect (positive or negative) is low, and people are always prejudiced against it and do not see its errors.

In this article, while defining the assumption and expressing its role in the general decision-making process; By providing examples of wrong assumptions in the field of macroeconomics (gasoline, steel) and knowledge-based economics (science and technology parks) that have led to major policy mistakes, the role of wrong assumptions in decision-making was explained and the basic solution to counter wrong assumptions based on double loop learning were expressed. The proposed solution is in two stages of data collection (drawing the dynamic behavior of the problem) and identifying the governing structure, existing assumptions, and the effect of the assumptions to explain the correct assumption.

Based on the results of the article, the following policy recommendations are provided to improve policy-making and decision-making:

- When making policies and decisions, the assumptions of policymakers and decision-makers should be considered. In other words, people have to search for and understand their ideas.

- Policy-makers and decision-makers need to check the accuracy of their assumptions. For example, the assumptions that "the value of the national currency is equal to the exchange rate" and that "a gradual increase in price causes inflation" and that "the government can run the economy by order" are false.

- Policy-makers and decision-makers need to examine the impact of their assumptions on decisions.

Policy-makers and decision-makers to get the right assumptions is better to use the opinion of experts as a group to critique and correct the assumptions of different people. And the final decision and policy should be made based on the consensus of different people with the right assumptions.

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