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Sustainable development goals: transportation, health and public policy

Vahid Mohamad Taghvaei and Abbas Assari Arani

Department of Economic Development and Planning, Faculty of Management and Economics, Tarbiat Modares University, Tehran, Iran

Mehrab Nodehi

Ingram School of Engineering, Texas State University, San Marcos, Texas, USA

Jalil Khodaparast Shirazi

Department of Economics, Shiraz Branch, Islamic Azad University, Tehran, Iran

Lotfali Agheli

Economic Research Institute, Tarbiat Modares University, Tehran, Iran

Haji Mohammad Neshat Ghojogh, Nafiseh Salehnia, Amir Mirzaee,

Saeed Taheri, Raziye Mohammadi Saber and Hady Faramarzi

Department of Economic Development and Planning, Faculty of Management and Economics, Tarbiat Modares University, Tehran, Iran, and

Reza Alvandi and Hosein Ahmadi Rahbarian

Department of History, Faculty of Science of Humanities, Tarbiat Modares University, Tehran, Iran

Abstract

Purpose – This study aims to assess and decompose the sustainable development using the 17 sustainable development goals (SDGs) in Iran in 2018, for proposing agenda-setting of public policy.

Design/methodology/approach – It ranks the SDGs not only in Iran but also in the region and the world to reveal the synergetic effects.

Findings – Based on the results, subaltern-populace generally suffers from the hegemonic domination of ruling elite-bourgeois, lack of strong institutions, heterogeneous policy networks and lack of advocacy role of non-governmental organizations, due to no transparency, issues in law or no rule of law, no stringent regulation, rent, suppression and Mafia, all leading to corruption and injustice.

Practical implications – To stop the loop of corruption-injustice, Iran should homogenize the structure of the policy network. Furthermore, the failed SDGs of the three-geographic analysis are the same in a character; all of them propose SDG 3, good health and well-being as a serious failed goal.

Social implications – In this regard, strong evidence is the pandemic Coronavirus, COVID 19 since 2019, due to its highly-disastrous consequences in early 2020 where the public policymakers could not adopt policies promptly in the glob, particularly in Iran.

JEL Classification — H83, I15, Q56, R41

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Originality/value – In Iran, in addition to this, the malfunction of health is rooted in “subjective well-being” and “traffic deaths,” respectively. Concerning the transportation system in Iran, it is underscored that it is damaging the sustainable development from all the three pillars of sustainable development including, economic, social and environmental.

Keywords Public policy, Health, Transportation, Sustainable development goals, Policy network

Paper type Research paper

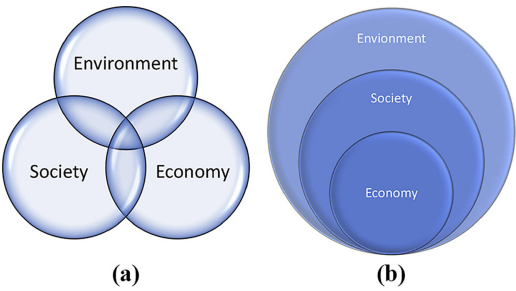
1. Introduction

Since the beginning of the 21st century, sustainable development has been one of the ultimate goals of societies, if not the only one. Sustainable development is often defined as the development that meets the needs of the present needs without compromising the ability of future generations to meet their own needs for growth (Brundtland Report, 1987). At this point, the other modern definition of sustainable development went beyond an intergenerational concept to a centralized goal: Economic growth which is socially comprehensive and environmentally sustainable (Sachs, 2015). In 1992, the United Nations held a conference on Environment and Development and published the Earth Charter, foreseeing and establishing a fair, sustainable and peaceful world in the 21st century (UNESCO, 2019; United Nations, 1992). Since then, sustainable development is divided into three pillars of economic, social and environmental dimensions. Regarding the relevance of the three dimensions, there are two distinctive viewpoints: weak and strong sustainability.

In the weak sustainability, these pillars are merged with one another for sustainable development. In that respect, they are interchangeable, for instance, the strategists can sacrifice the environment for economic growth, as long as the monetary value of the economic growth is more than that of the environmental degradation (Costanza and Daly, 1992). Following this stance raises two questions of whether the environment deserves to be sacrificed for economic development; and whether one can measure the value of the environmental degradation, purely by the monetary units (Nasrollahi *et al.*, 2018). Concerning these issues, such limitations are believed to cause the weak-sustainability to evolve into the strong one. Conversely, the Strong Sustainability concept considers the environment as the most important pillar, paving the way for social and sustainable development, which in turn, clears the way for economic development. Both weak and strong sustainability are graphically displayed in Figure 1. Despite the contradiction in the prioritization of sustainability pillars and the effect of its policies, both perspectives consider the integration of sustainability pillars as a cohesive system (Cato, 2009; Erzurumlu and Erzurumlu, 2015; Halati and He, 2018; Nikolaou and Tsalis, 2018; Ward and Dubos, 1972).

In parallel, the United Nations has launched a number of platforms for sustainability, both of which propose many interrelated goals for sustainable development, as an integrated identity. The first is the millennium development goals (MDGs) including eight interconnected goals as an all-encompassing process, established in the Millennium Summit in 2000 for a 15-year horizon, to 2015 (Figure 2). Considering its accomplishments and importance, the UN launched the second process which is much more inclusive, as the sustainable development goals (commonly referred to as SDGs) including 17 interdependent goals and 169 interconnected targets (Figure 3) (United Nations, 2016 [1]). In this way, the UN depicts sustainability in many contextually-integrated-goals as a major role model following sustainable development (Nilsson *et al.*, 2016; Pradhan *et al.*, 2017).

This study aims to assess and underscore the current status of SDGs in Iran for proposing agenda-setting of public policy. In this regard, it is aimed to investigate the obstacles of



Notes: (a) Weak sustainability; (b) strong sustainability
Source: Cato (2009), Nasrollahi *et al.* (2018), pp. 1108-1109

Figure 1.
Weak and strong sustainability



Figure 2.
MDGs



Figure 3.
SDGs of the United Nations

sustainable development in this developing country, despite its high capacity in economic growth, social development and environmental quality.

From an environmental perspective, Iran is ranked 13 in the world for ecological diversity (Caldecott *et al.*, 1994). Following other statistics, it has more than 110,000 square kilometers of jungles, 700 square kilometers of coral reef and the 26th and 27th greatest deserts in the world, providing unique environmental characteristics for the country (Mildrexler, 2006; Shokri *et al.*, 1999; UNESCO, 2019; United Nations, 2016; Wright, 2006). In addition, from an economic perspective, Iran has the 4th and 2nd largest crude oil and natural gas reserves in the world, respectively (EIA, 2018). Despite such economic potential, it has experienced 3 years of negative economic growth from 2012 to 2017 (World Bank, 2018) and it is ranked 80th among 180 countries for the Environmental Productivity Index, in 2018 (Yale University, 2018). Altogether, it is safe to assume that Iran is more capable than its current situation, emerging the investigation of its challenges for achieving the SDGs. These are for the public policy, public administration and governance in Iran, many researchers believe (Azadi, 2019; Moheimany, 2019)

To study the obstacles of SDGs in Iran, the structure of the study is as follows:

This section proposes the concepts of contextual integration and geographic integration for explaining: A multidisciplinary-approach to include all the SDGs, The extension of our case study into a global-analysis is further assessed and evaluated in Section 2. Afterward, in Section 3, the SDGs are ranked, on the basis of their scores in the UN Sustainable Development Solutions Network in 2018 for Iran, the East and South Asia and the world, to reveal the most threatening SDGs (Sachs *et al.*, 2018). Following this approach, the failed or threatening goals with the lowest scores, in Section 4, are selected and classified for an in-depth analysis. Further, in Section 5, they are studied extensively in detail, to improve the weakest pillars of sustainable development in Iran, accelerating the process of sustainability. Ultimately, in the conclusion, a summary of the study is represented in Section 6.

2. Literature review

This section combines the sustainable development literature with the public policy one to analyze the obstacles to sustainable development in Iran. First, it reviews some studies on public policy.

2.1 Public policy

Azadi in 2019 and Moheimany in 2019 claim that the underdevelopment of Iran is deeply rooted in its lack of effective governance and public policy. Azadi in 2019 compares four different indicators of governance for Iran and its peer countries including China, India, Malaysia, Turkey, Pakistan and the United Arab Emirates (UAE). The indicators are average GDP growth; the rule of law; control of corruption and freedom rating. In the first 3 indicators, Iran is at the bottom of the list, implying slow economic growth, lack of rule of law and ineffective control of corruption. In the 4th indicator, Iran is the 5th one among its peer countries, showing severe restrictions on freedom. These rankings provide a background for attributing the logjam of development in Iran to the lack of effective governance, public policy and policy-making, based on the Stanford Iran 2040 Project by Pooya Azadi in 2019.

In the policy process and policy-making chronology, agenda-setting is the most primary and important. The agenda-setting first recognizes social problems, needing state intervention; then, it ranks them of seriousness (Kingdon, 1995). Birkland (2007) believes

that “agenda-setting is the process by which problems and alternate solutions gain or lose public and elite attention” (Birkland, 2007). However, agenda-setting does not occur in a vacuum, but rather it is adjusted by the public, private and nonprofit actors and their relationships, which constitutes the components of policy network theory (Jann and Wegrich, 2007; Raab and Kenis, 2007).

Policy network theory is a fruitful way to begin the understanding of how power, groups, non-governmental organizations (NGOs) and the other network actors interact with each other to change the form of political policy, policy-making stages and agenda-setting (Raab and Kenis, 2007). Policy network theory is to describe the social structure according to the interaction of social entities (Kenis and Schneider, 1991). It has two types of fundamental elements: a set of objects (nodes, positions and actors); and a set of interactions among the objects (edges, ties and links) (Knocke, 1990). In fact, the policy network comprises the under-socialized approaches with rational choice or over-socialized ones like the Marxist approach (Granovetter, 1985). The interaction of these two sets of objects and approaches affects the policy-making stages.

As a component of policy networks, NGOs play a key role in public policy. Moheimany in 2019 emphasizes the advocacy role of NGOs as pressure groups in politics in Iran, a country with a hybrid and undemocratic regime and unsystematic and arbitrary government (Ganji, 2008; Katouzian, 1997; Moheimany, 2019). Moheimany (2019) argues that the policy networks formed in the reformist period in Iran such as women’s-right and environmental policy networks. These policy networks are a battlefield of liberal and conservative actors. From the perspective of policy network theory, NGOs are for decentralizing political power. From the view-point of public policy theory, it is the political opportunity structure as an independent variable, which determines the structure of policy networks (Marshall, 1995; Dowding, 1995). Based on Marshall (1995) and Dowding (1995), the structure of the policy network is homogeneous, in the case of a uniform political opportunity structure. However, the political opportunity structure is heterogeneous, if the power distribution is imbalanced among the actors of the policy networks and without a strong NGO. It centralizes the power in one side’s hands and makes a bigger gap between elite-bourgeois and populace classes (Lang’at, 2008; Louai, 2012; Vveinhardt and Andriukaitiene, 2015). This big gap inflates the subaltern class (Louai, 2012).

Gramsci in 1971 refers to the subaltern class as low-rank people in a society suffering from the hegemonic dominance of the ruling elite, denying their primary rights in culture, politics and the forth as active individuals in the same society (Gramsci, 1971; Louai, 2012). Guha in 1982 customizes the same issue for India as an entity which increases the demographic disparity between the populace and elite classes (Guha, 1982). In general, it has been shown to have a fixed feature which is “the notion of resistance to the imposed domination of the elite class” (Louai, 2012). Subaltern is, first, derived from Gramsci’s book “the-Prison Notebooks.” His example for subalterns is the peasant and workers, discriminated and oppressed by the National Fascist Party, Benito Mussolini as the leader, as well as his agents (Gramsci, 1971). After Gramsci, the concept of the subaltern is developed by Ranajit Guha in “Subaltern Studies I” and “Elementary Aspects of Peasant Insurgency in Colonial India” (Guha, 1982; Louai, 2012). Guha constitutes the “Subaltern Studies Group” or “Subaltern Studies Collective,” leading those scholars who work on the Indian peasantry historiography (Guha, 1982). Nonetheless, this group attracts many scholars from other South Asian historians. These scholars generalized the concept of the subaltern to the other nations, societies and histories, such as Touraj Atabaki from Iran (Louai, 2012).

2.2 Sustainable development

Inspecting and analyzing sustainable development in a given region is reported to require a completely-inclusive approach (Mayer, 2008; Shaker, 2015; Shaker and Zubalsky, 2015). This approach is referred to as “multidisciplinary-perspective” in Reid *et al.* (2017), due to the contextual integration of sustainability or the so-called “synergies” as in Scherer *et al.* (2018). The “co-benefit or trade-off among the SDGs” as described in Singh *et al.* (2018), are key components of any analysis of a sustainable development system. Sustainable development has high contextual integration, interconnecting all its pillars with each other, inclusive of the major dimensions affecting it, namely, environment, society and economy; as well as the minor components or, the 17-SDGs (Nilsson *et al.*, 2016; Pradhan *et al.*, 2017; Reid *et al.*, 2017; Scherer *et al.*, 2018; Singh *et al.*, 2018). In addition to the contextual integration, the above-mentioned pillars are geographically-integrated in Figure 4 for the purpose of further illustration.

Figure 5 shows that sustainable development has geographic integration, rather than territorial integrity as were thought to be the case, interrelating all the cities, countries and regions, especially the neighboring ones (Xiao *et al.*, 2017). In today’s world, the development has an initial point where it arises, grows, divides and is widely disseminated further, as mentioned below in more details (Shaker, 2015).

According to certain standpoints, development has its origins in a geographic point, thus, it has a geographic integration, rather than territorial integrity as were thought to be the case. It then, interrelates all the cities, countries and regions, especially the neighboring territories as a cohesive system (Xiao *et al.*, 2017). According to this view, development emerges from the eastern countries in the 1st century AD, migrates from the East to the West during 1900–1950; and finally, it is restored to its former homeland, the eastern countries as shown by The Economist (2018). Nonetheless, another viewpoint considers the West as the origin of development, the industrial revolution in the UK, swinging to the East. Although the former perspective conflicts with the latter over the origin of development, both unanimously confirm the mobility of development on Earth, supporting the geographic integration of sustainable development.

In this regard, Sustainable development has been reported to have an initial point where it arises, grows, divides and is widely disseminated further, as mentioned below in more details (Shaker, 2015). This is a historic milestone, often considered, the industrial

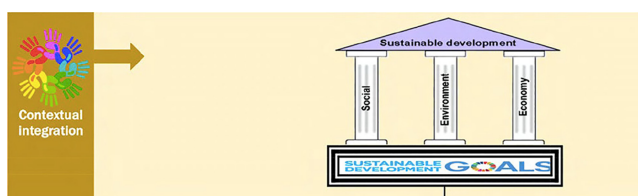


Figure 4.
Contextual integration,
synergy or inertia of
sustainable
development

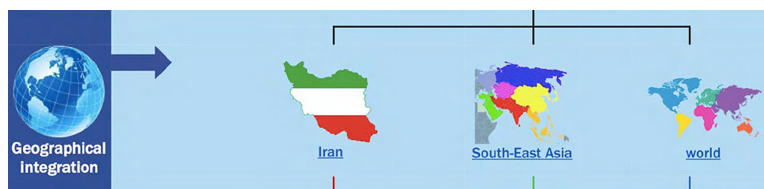


Figure 5.
SDGs of the United
Nations

revolution, like a newborn-cell, with various components, that often share the same characteristics are divided and disseminated to the globe. Prior to the industrial revolution, all trends are almost flat such as income, population, trade, etc., which are totally increasing like a new life or a renaissance, since then. Moreover, it involves numerous components (like DNA) including the economic, social, technological and so forth, providing the genetic traits of development. These are traded with each other by Adam Smith's concept of invisible hand, money or rather price, paving the way for the dissemination of development with the same characteristics, like a cell which is divided and developed in the same genetic traits. It supports the geographic integration of sustainable development.

Further inspection reveals that the UK, the homeland of the industrial revolution, is among the most developed regions, as defusing the development, not only on its own land and across Europe but also overseas, across North America. Sea transportation, as an integral component for growth, still has the highest capacity for carrying the bulk cargos, greater and purer than any other transportation modes, clearing the way for a greater spatial-mobility of development, as the major global-cities are the port-cities. As another instance, the city of Tokyo in Japan absorbs the development fully, acting as another benchmark for the development diffusion into East Asian regions including Hong Kong, Singapore, South Korea and even the country of China. This mobility confirms the geographic integration of sustainable development. In complement to this theory, [Figure 6](#) demonstrates that the most developed countries are on the path where the development has been disseminated via. For instance, the first 20 countries of the ranking are totally members of the Organization for Economic Co-operation and Development (referred to as OECD) countries which includes many European and the two North American countries. Conversely, the last 33 countries in the ranking are in Sub-Saharan Africa, confirming the geographic integration of sustainable development ([Department of Economic and Social Affairs, 2018](#)). Therefore, it is safe to assume that sustainable development has geographic integration. Sustainable development in a specific country, like Iran, cannot be investigated irrespective of sustainable development in the other regional countries. To formulate a comprehensive strategy for sustainable development, the policy-makers have to consider sustainable development not only in Iran but also in its region and the globe. This enriches our analysis to include the regional and global effects of sustainable development on Iran together with its own conditions.

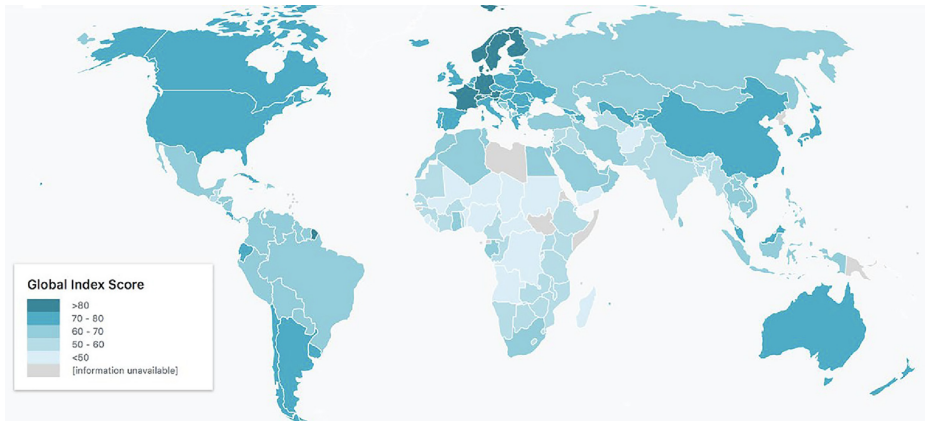


Figure 6.
Sustainable
development index of
countries in 2018

3. Methodology and data

In spite of many techniques for analyzing sustainable development, this study decomposes the sustainable development of Iran according to the 17-SDGs of the UN Sustainable Development Solutions Network in 2018.

The UN classifies the SDGs based on their scores for each country, region and the world, via two approaches: a. their current score; and b. their trends as forecasts show. In the first approach, there are four categories, in the order of score: SDG achieved; challenges remain; significant challenges remain and major challenges remain. In this paper, for easier understanding, the “major challenges remain” is often noted as “threatening goals or failed goals” and further, “SDG achieved” is shortened and replaced by “achieved goal.”

In the second approach, literature reports that there are five categories: on track to achieve the goal by 2030; score moderately increasing, insufficient to attain the goal; score stagnating or increasing at less than 50% of required rate; score decreasing and trend information unavailable (Sachs *et al.*, 2018). The ranking of this study is on the basis of these categories of scores. This study first ranks the SDGs not only in Iran but also in the region and the world to reveal the most threatening and critical aspects of Iran’s development, as well as those which, pervading Iran from the other countries. In addition, it provides the strategists with a guideline to invest and focus on the pillars and factors of sustainable development. accordingly, the most critical goals are decomposed to have a more accurate and detailed analysis of the sustainability process in Iran.

This section ranks the SDGs in three-geographic levels. Regarding the dataset of UN Sustainable Development Solutions Network in 2018 and following the methodologies of (Allen *et al.*, 2016; Allen *et al.*, 2018a; Allen *et al.*, 2018b; Reyers *et al.*, 2017; Salvia *et al.*, 2019), this study uses a transformative approach (or a transformation plan), interdisciplinary system model, decomposition analysis and content analysis to rank the achievement degree of all the SDGs (2030) up-to 2018 in three-geographic levels: A. the world, B. the region [2] and C. Iran. A three-level analysis provides us with not only the most threatening goals of sustainable development in Iran itself, as this study is focusing on but also those of the region and the world which are likely permeating Iran according to what is mentioned in the literature review as the geographic integration (The Economist, 2018; Xiao *et al.*, 2017). Based on the contextual integration, in addition, all the goals of sustainable development are considered to have an inclusive investigation (Scherer *et al.*, 2018; Singh *et al.*, 2018). Accordingly, all the SDGs are ranked for the world.

3.1 World

According to Sachs *et al.* (2018) [3], this research paper compares the scores of the various SDGs in each region. Subsequently, the goals with the lowest and highest scores of each region are selected as the failure and success of that region, respectively. As many regions show multiple goals with highly-close scores, the regions have different numbers of threatening (or failed) and achieved goals, as they should be considered in the same level of failure or achievement; however, many regions show a single failed or achieved goal whose score is considerably different from those of the other goals. In addition, each goal is ranked on the basis of two ranks: ratio, representing the current status of the goal in the region and trend, showing the predicted status of the goal in the future of the region. It is also worth mentioning that the “not available data” is estimated as half of the complete score. As a result, the most repeated goals in the failed and achieved goals of the various regions are reflecting the most threatening and the most successful goals of the world for sustainable development, respectively.

For further analysis, [Table 1](#) displays the SDGs with the lowest and highest scores in various regions of the world in 2018. Based on the table, goal 1 (No poverty) is the most repeated goal in the success column while goal 14 (Life below water) and goal 3 (Good health and well-being) are the most repeated goals among the achieved goals in all the regions of the world ([Sachs et al., 2018](#)). Concerning these goals, they imply that the world is highly successful in fighting poverty, but life below water and health are the most threatening factors of the world nonetheless. The global failure in life below water and health has the potential to permeate through the sustainable development of Iran and escalate based on the geographic integration concept. It is further implied that the most threatening issues of the world are the health and environmental goals. In early 2020, the pandemic of the Coronavirus, COVID-19, showed strong evidence for which the most threatening factor of the world is the health section ([Adhanom, 2020](#)). However, the

Region		Failure	Success
<i>OECD countries</i>			
	Ratio	Climate action Responsible consumption and production Life below water	No poverty
	Trend	Life below water	Good health and well-being
<i>East and South Asia</i>			
	Ratio	Zero hunger Good health and well-being Life below water	No poverty
	Trend	Life on land	No poverty
<i>Eastern Europe and Central Asia</i>			
	Ratio	Life below water	No poverty
	Trend	Partnership	Industry, innovation and infra No poverty
<i>Latin America and the Caribbean</i>			
	Ratio	Reduced inequalities Peace, justice and strong institutions Good health and well-being	No poverty Affordable and clean energy
	Trend	Life below water Life on land Peace, justice and strong institutions	No poverty
<i>Middle East and North Africa</i>			
	Ratio	Zero hunger Gender equality	No poverty
	Trend	Life below water	No poverty
<i>Sub-Saharan Africa</i>			
	Ratio	Good health and well-being Peace, justice and strong institutions Industry, innovation and infrastructure	Climate action
	Trend	Peace, justice and strong institutions Sustainable cities and communities	Climate action
<i>Oceania</i>			
	Ratio	Good health and well-being Industry, innovation and infrastructure	Climate action
	Trend	Zero hunger Gender equality	Climate action

Table 1.
Quantitative ranking in the globe: failed and achieved goals of sustainable development in the various regions of the world in 2018

Source: Elaborated by authors, based on [Sachs et al. \(2018, pp. 18–30\)](#)

economic components are among the most successful goals in the world. In addition to the global implication, [Table 1](#) has a regional perspective and it elaborates upon the achieved or failed (threatening) SDGs.

3.2 The region

[Table 1](#) shows that target 1 (No poverty) and target 3 (Good health and well-being) are, respectively, the most achieved and failed goals not only in the world but also in the region, the East and South Asia where Iran is located. Although this information shows a boost in the success of fighting poverty, it increases the danger of permeating failure in health not only to the global-side but also from the regional-side through Iran. In other words, it proposes health issues as the most serious global-and regional-threat against sustainable development in not only Iran but also the region around Iran.

3.3 Iran

Similar to the global and regional measurement, the achievement degree of goals in Iran are ranked in [Table 2](#). As can be seen, it shows the SDGs of Iran according to the level of threat. Goal 16 is the highest ranking in threat, implying that “peace, justice and strong institution” is the most threatening goal in Iran in 2018. After goal 16, where there are 5 more goals with the highest level of threat including goals 2, 5, 10, 3 and 14 (Zero hunger; Gender equality; Reduced inequalities; Industry, innovation and infrastructure; Good health and well-being, respectively). Even though their danger is less than the first goal, goal 16 (Peace, justice and strong institution), their threat is near to each other as they are categorized in the same level of prioritization, compared with the other SDGs. Thus, these six goals, on the basis of ([Sachs et al., 2018](#)), are considered the most threatening SDGs in Iran.

3.3.1 Dominance of social components in the failed sustainable development goals. The data in the two tables are graphically depicted in [Figure 7](#), which is the base for our results in the next section to provide a prioritization list of SDGs as a platform to formulate a strategy for

Priority level	Sustainable development goal
Highest priority	<ul style="list-style-type: none"> • Peace, justice and strong institutions • Zero hunger • Gender equality • Reduced inequalities • Good health and well-being • Life below water
Priority	<ul style="list-style-type: none"> • Climate action • Sustainable cities and communities • Industry, innovation and infrastructure • Partnership for the goals • Clean water and sanitation • Responsible consumption and production • Decent work and economic growth
Low priority	<ul style="list-style-type: none"> • Life on land • Affordable and clean energy • Quality education • No poverty
No priority	

Source: Elaborated by authors, based on [Sachs et al. \(2018, pp. 18–30\)](#)

Table 2.
Quantitative ranking
in Iran: Prioritization of
17 SDGs in Iran in 2018

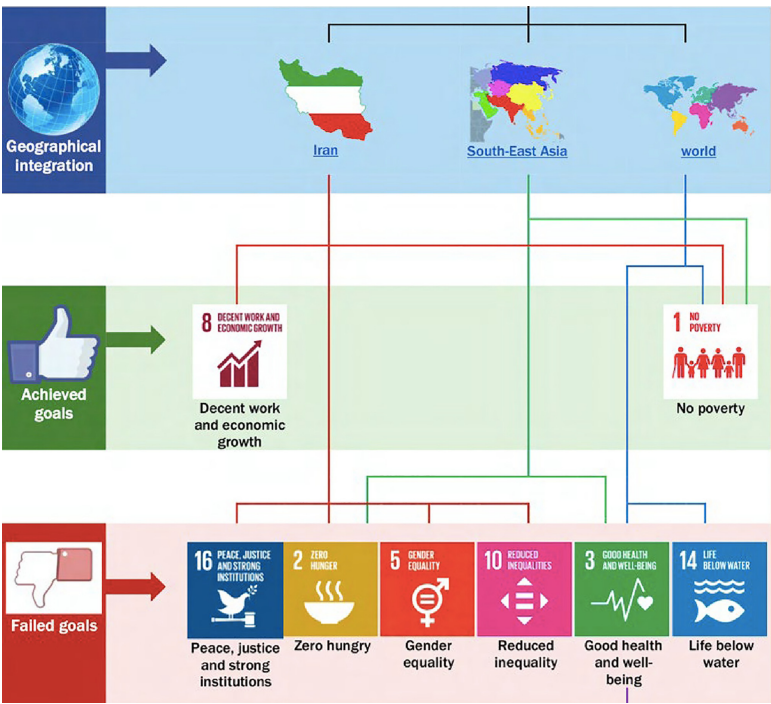


Figure 7.
Failed SDGs of Iran,
the region and the
world, ranked on the
basis of threatening
degree to the
sustainable
development of
Iran 2018

sustainable development in Iran. In that respect, the two tables suggest two key points. First, the six failed SDGs of Iran are the same in a character; except for SDG 14 which is an environmental element. All other goals are included in the social pillar of sustainable development, implying the weakness of sustainable development of Iran in the social aspect. Second, the failed (or threatening) SDGs of the three-geographic analysis are the same in a character; all of them propose SDG 3, Good health and well-being (a social component), as a serious threatening goal in the SDGs. Health, albeit in the last place, is included in the threatening level of sustainable development of Iran, but just like both the global and regional ranking increases the seriousness of health as a strategic factor for the sustainable development in Iran.

3.3.2 Health as a key challenge. Health, as a social component, plays a key role in the sustainable development of the whole region including Iran. In addition to its threat to the sustainable development in all the three-geographic level analyzes depicted in [Figure 7](#), it is [Figure 8](#) which is providing a preponderance of evidence for its global, regional and local hazard, specifically in Iran. [Figure 8](#) illustrates it further.

As shown by [Grinin et al. \(2014\)](#), [Nefiodow \(2014\)](#) and [Nefiodow and Nefiodow \(2014\)](#) in [Figure 9](#), by the next Kondratieff wave or rather the first development wave in the 21st century, health is the 6th development wave. It is another signal for the importance of SDG 3, Good health and well-being, predicting holistic health as the first Kondratieff wave in the 21st century. The pandemic Coronavirus, COVID 19 since 2019, confirms this importance due to its highly-disastrous consequences.

In that respect, [Nefiodow \(2014\)](#) recommends health as the engine of growth in the 21st century. Further, this idea is also supported by the World Health Organization, as shown

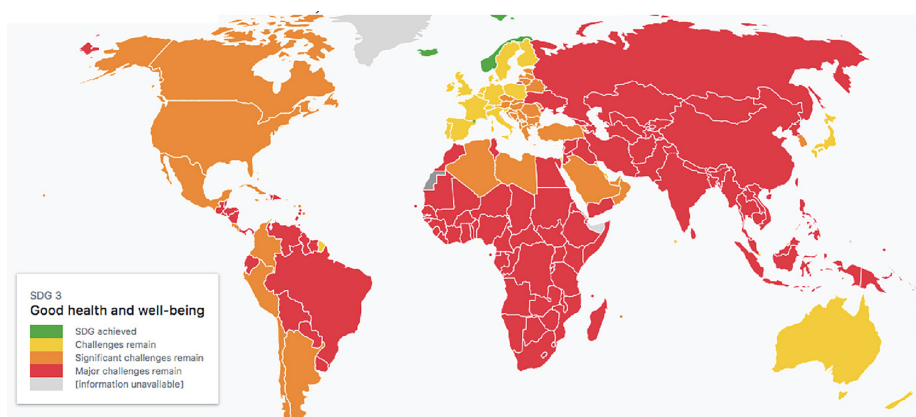


Figure 8.
Status of the SDG 3,
good health and well-
being of countries
in 2018

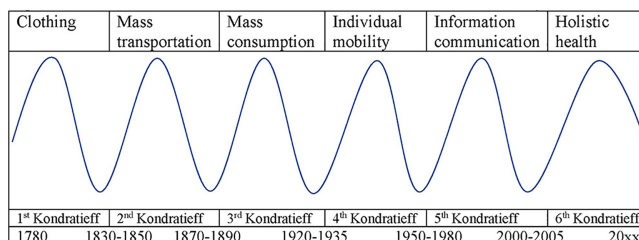


Figure 9.
Prediction of health as
the first Kondratieff
wave in the 21st
century

in Figure 10, identifying SDG 3, Good health and well-being, at the heart of sustainable development. According to this belief, all SDGs are in the shadow of SDG 3, Good health and well-being (World Health Organization, 2018). Apart from this view, the other researchers propose SDG 3, Good health and well-being, as a hub to develop the other SDGs referring to the inter-relation that exists among the common variables (Nugent *et al.*, 2018).

It is worth mentioning that although good health and well-being (SDG 3), as a social element, is the major challenge of the globe, most research studies are about the concepts of environment-economic with 67% of the relative models, rather than the economic-social-environment with 19% and the social with 1%. It means that only 1% of the published research studies are about social science scope. Moreover, the model coverage of good health and well-being (SDG 3) is just above 10%, ranked 12th among the other goals, while decent work and economic growth (SDG 8) and climate action (SDG 13) are about 60%, ranked the first and second, respectively (Allen *et al.*, 2016). It is possible for these results to be rooted in the incentive of the Western countries for eliminating the dependency on fossil fuels. Following this, the Western countries accumulate their funds on research and development (R&D) for renewable energy to become relaxed with the oil-exporting countries. As a result, SDG 3, Good health and well-being, needs special attention in any analysis for sustainable development especially in Iran where infrastructural variables including Transportation and public policy administration, which will be elaborated further on, with respect to the regional deficiencies are present, avoiding achievement of SDGs including good health and well-being.



Figure 10.
Health as the axis of
sustainable
development

Source: World Health Organization (2018)

4. Results: failed, threatening and achieved sustainable development goals in Iran

In this section, the failed, threatening and achieved SDGs of Iran in 2018 are analyzed to be introduced as the most critical factors, influencing the sustainable development of Iran. Following the UN's data, SDG 1, No poverty, is achieved; and the most critical components of the threatening goals are corruption, subjective well-being and traffic deaths.

4.1 Achieved goals

Based on the ranking lists in [Tables 1](#) and [2](#), SDG 1, No poverty, is the most successful SDG, not only in the world and region but also in Iran.

4.2 Failure or threatening in the social pillar

The most undeveloped SDGs of Iran are mainly included in the social pillar, implying low social capital which is likely to be rooted in a number of factors including but not limited to exogenous and endogenous factors. Regarding the ranking lists, [Tables 1](#) and [2](#), these SDGs are the goals 16 (Peace, justice and strong institutions), 5 (Gender equality), 2 (Zero hunger), 10 (Reduced inequalities), 9 (Industry, innovation and infrastructure), 3 (Good health and well-being) and 14 (Life below water). Except for the SDGs 9 (Industry, innovation and

infrastructure) and 14 (Life below water), all of the goals are included in the social pillar of sustainable development, emerging the analysis of social issues and the decomposition of these SDGs for a detailed analysis to reveal the causes and consequences, including the endogenous and exogenous ones. Elaborating further, the Exogenous factors involve the systematic elements, relating to the social, cultural and political backgrounds. An efficient political system needs a democratic government and legislature and an independent judiciary, promoting justice and peace. In that respect, an efficient cultural system needs a high level of education and, a strong social-structure which is the result of strong institutions, including both the governmental and non-governmental institutions; these are consistent with the SDG 16, (Peace, justice and strong institutions). The key role of SDG 16, (Peace, justice and strong institutions), is not only rooted in its first place in the priority ranking list of SDG in Iran in [Table 2](#). It also has the capacity to explain the failure of the other failed or threatening goals in Iran, especially the social goals including SDGs 5 (Gender equality), 2 (Zero hunger) and 10 (Reduced inequalities). Based on [Figure 7](#), the decomposition of SDG 16 proposes “corruption perception index” is the most threatening component, accordingly, not only is its ratio red but also its trend is falling sharply. Thus, it can be concluded that corruption plays a key role in impeding the social development of Iran, needing long-run strategies for improvement, as [Figure 12](#) shows. Regarding [Figure 12](#), social development is the result of human cultivation, which needs physical and psycho-social health (the next Kondratieff wave, represented in [Figure 9](#)).

Endogenous factors, on the other side, are the physical and mental health at the individual level which are a platform for the enhancement of exogenous factors, leading us to analyze SDG 3, Good health and well-being ([Figures 11–12](#)).

4.3 Failure in sustainable development goal 3, good health and well-being

Health is included in both the endogenous and exogenous factors for social development. In addition to the social pillar, health is the center of all the pillars of sustainable development, as shown in [Figure 10](#). Although, the researchers suggest health as the next wave of development or in other words, the next Kondratieff wave; it has the worst status in the world. It is not only the most threatening SDG of both the world and the region but also it is a dangerous SDG in Iran, as it is exacerbated by multiple factors. It is further illustrated in [Figures 7 and 8](#), [Tables 1 and 2](#), putting paramount.

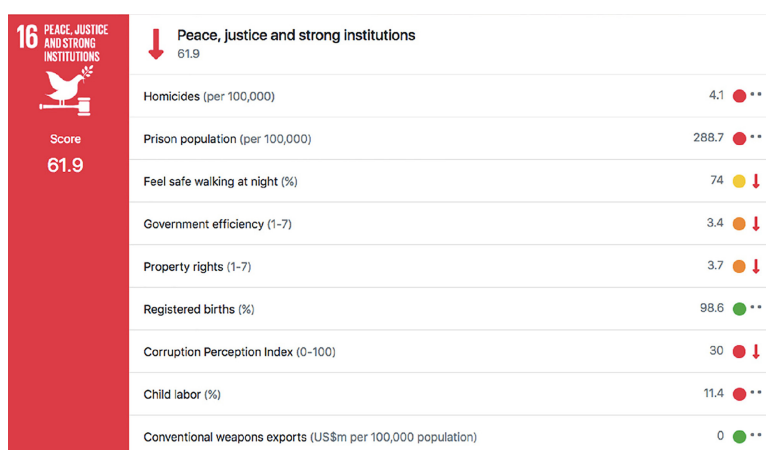
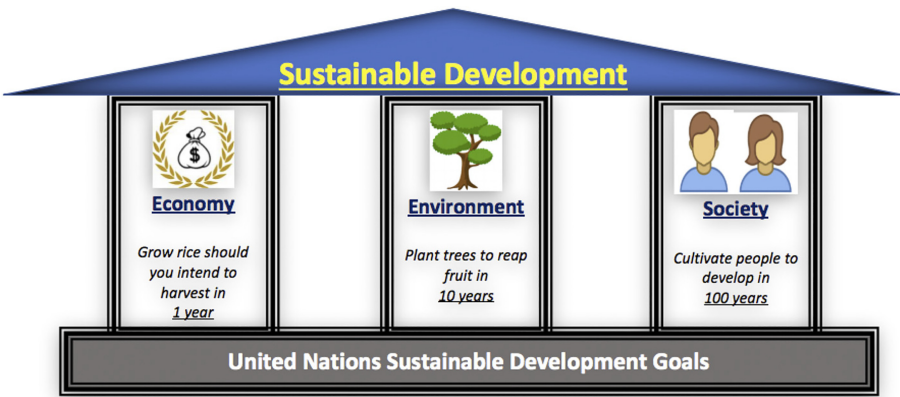


Figure 11.
Decomposition of SDG
16, peace, justice and
strong institutions, of
Iran in 2018

Figure 12.
Main pillars of
sustainable
development with a
time-period perspective



Source: Elaborated by the authors

Figure 13 represents the components of SDG 3, Good health and well-being, of Iran in 2018. Based on Figure 13, the malfunction of health in Iran is rooted in “subjective well-being” and importance to SDG 3, Good health and well-being. Strong evidence for confirming the importance of health in this century globe is the pandemic of Coronavirus (COVID-19) in early 2020 where the health issue threatens all the globe seriously, fundamentally and significantly (Adhanom, 2020). It shows that sustainable development policies have not valued the health sector sufficiently and the health public policy-makers are unsuccessful in managing and adopting policies promptly.

“Traffic deaths,” respectively. In this regard, subjective well-being is the most threatening component of SDG 3 which shows red color both in the ratio and the trend which is sharply falling. After that, the component of traffic deaths has the worst status with a red ratio. Despite its better trend, it is not expected to reach the expected SDGs in the near future. Regarding the results of this decomposition, subjective well-being and traffic deaths are analyzed in more detail in the next section.

5. Discussion (solutions for failure in the sustainable development of Iran)

5.1 Social factors and mental health

The failed components of the social pillar and mental health are correlated to each other, as they guide us to collect them in a comprehensive discussion. It is depicted in the following figures to interconnect the failed components of the social pillar and mental health, including justice, strong institutions, corruption and subjective-well-being.

Figure 14 displays a homogeneous structure of network policy actors and their edges in a developed society with a strong interaction of populace and elite-bourgeois, smoothing the way for justice and social responsibilities, Figure 15, whereas, represents the heterogeneous structure of policy network positions and their ties in our case study, Iran, as a developing society, with injustice and corruption.

As in the literature mentioned, elite and bourgeois are in the state’s shadow, as subaltern-populace is in the NGOs’ shadow; In fact, they propose their demands by the policy network actors in the form of state and NGOs, respectively, which are interacted effectively to change the agenda-setting based on their own aims. It makes a homogeneous structure of policy network, decentralizing the power distribution among the actors of the policy network. In that respect, Figure 14 displays the policy network nodes and links of subaltern-populace and

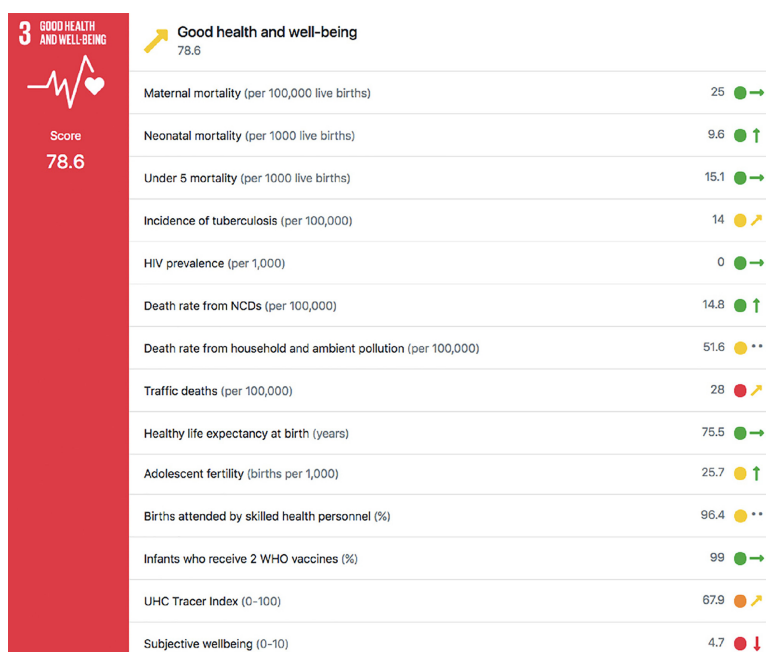


Figure 13.
Decomposition of SDG
3, good health and well-
being, of Iran in 2018

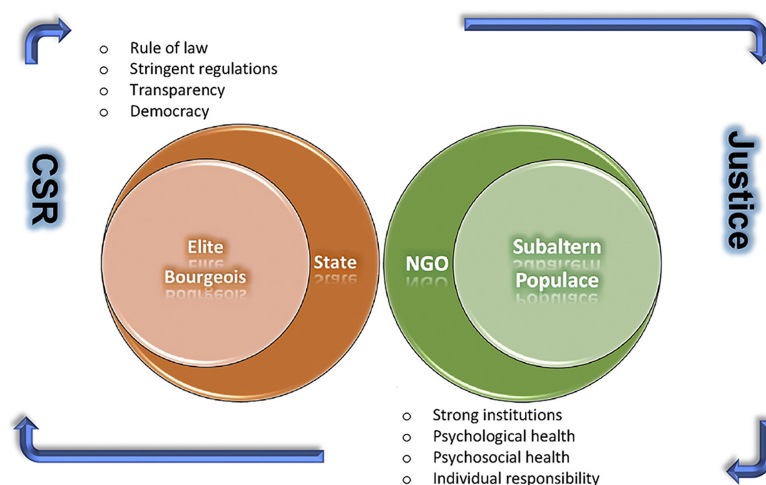


Figure 14.
Interaction of
subaltern-populace
and elite-bourgeois in a
developed society with
a homogeneous
structure of policy
network

elite-bourgeois in a developed society, organized by the efficient-function of social pillar components of sustainable development: rule of law, stringent regulation, transparency, democracy, strong institutions, psychological and psycho-social health and individual responsibilities. However, between the state and NGOs, it is rule of law, stringent regulation, transparency and democracy, which hold the balance of power, leading to justice, control of corruption and equality. These social characteristics play a key role in people's satisfaction,

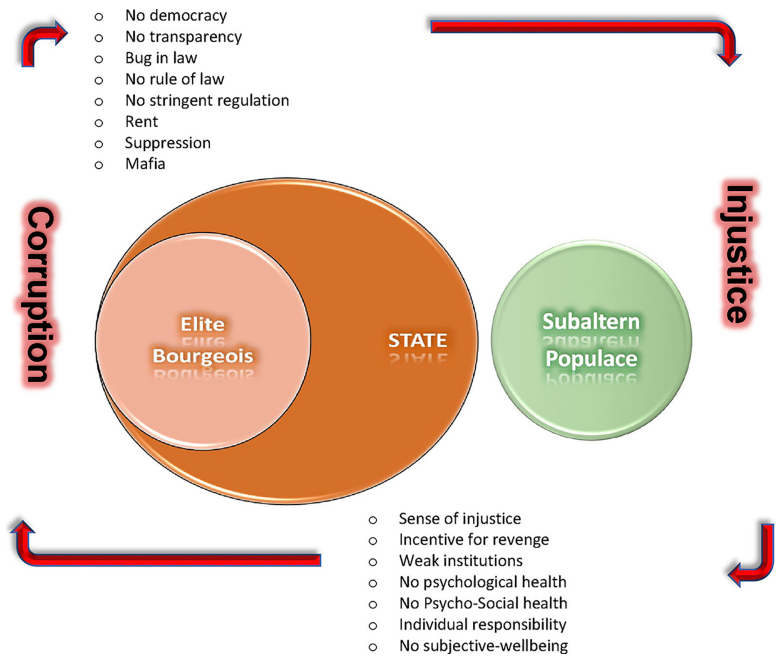


Figure 15.
Interaction of
subaltern-populace
and elite-bourgeois in a
developing society, like
Iran with the
heterogeneous
structure of policy
network

increasing their happiness and psychological health. Furthermore, it paves the road for psychosocial health which is the root of carrying corporate social responsibility (CSR) (Vveinhardt and Andriukaitiene, 2015). CSR reproduces the rule of law, stringent regulation, transparency and democracy to resume the cycle. This cycle cannot possibly be in balance in the non-democratic society as shown in Figure 15.

The weak interaction of subaltern-populace and elite-bourgeois in a developing society, like Iran, leads to the heterogeneous structure of policy network and centralization of power in state actors' hands, which in turn causing injustice and corruption, as also illustrated in Figure 15. The subaltern-populace generally suffers from the hegemonic domination of ruling elite-bourgeois, lack of strong institutions, heterogeneous policy networks and lack of advocacy role of NGOs, due to no transparency, issues in law or no rule of law, no stringent regulation, rent, suppression and Mafia, all leading to corruption and injustice, which is also the case in Iran as in the results of this paper and the previous research studies (Azadi, 2019; Lang'at, 2008; Louai, 2012; Moheimany, 2019). All the mentioned factors are strengthening the elite-bourgeois scenario which has the most powerful influence over governmental institutions, inflating the state government, widening the subaltern group and social discrimination. In that respect, the inflated state finds the subaltern-populace unprotected, without strong institutions, considerable policy network actors or strong advocacy role of NGOs, committing injustice. This injustice, undoubtedly, affects the subaltern-populace (Vveinhardt and Andriukaitiene, 2015).

Elaborating further, injustice has a bilateral impact on both subaltern-populace and elite-bourgeois to be involved in widespread corruption, leading to not only injustice but also a loop of corruption and injustice. In this regard, injustice makes individuals feel a sense of injustice, lowering their subjective well-being, psychological and psycho-social health, creating the incentive for revenge. Accordingly, they have two alternates: either they are involved in the

corruption in their current social position; or they try political mobilization to climb the social and political ladder to take the power for compensating what they have lost, boosting the loop of corruption-injustice. In addition, the loop of corruption-injustice is accelerated by elite-bourgeois, as they are committing the corruption to change the agenda-setting and to shift the balance of power in favor of their own benefits, increasing the injustice. Thus, the loop of corruption-injustice is established and boosted in such a developing society, without strong institutions and a heterogeneous structure of policy network, which very often threatens the prospect of the SDGs (Lang'at, 2008; Louai, 2012; Vveinhardt and Andriukaitiene, 2015).

Most of these characteristics are observable in Iran, including no strong institutions, justice, corruption psychological unhealthiness, no subjective well-being (based on the result section) no transparency, rent, Mafia and inflated state government (Azadi, 2019; Moheimany, 2019). To stop the loop of corruption-injustice, the social and political background is usually revised to make a democratic and transparent system with rule of law, stringent regulation and homogeneous structure of policy network for affecting agenda-setting, without rent, suppression and Mafia. All can be accomplished in the presence of a strong advocacy role of NGOs, to support the subaltern-populace. This role was played by clergies before the 1979 revolution, when this strong institution helped and guided subaltern-populace to rise against the state, in the presence of such freedom as they collapsed the 2,500-year-old Persian-Kingdom. Since then, this strong institution, clergies, mainly transferred from the subaltern-populace into the elite-bourgeois, as a social movement and political mobilization from the NGO into the corrupted state. Accordingly, this movement made a gap for the strong NGOs to protect the benefits of subaltern-populace against those of the elite-bourgeois in the state (Jafari, 2019). Following this situation, the lost NGO, recently, has been replaced by social networks such as Telegram and Instagram. This analysis explains the low subjective-well-being in the subaltern-populace of Iran as a developing society with a corruption-injustice loop. Yet, the question, “why do the elite-bourgeois suffer from the low subjective-well-being?” stays outstanding.

In addition to the subaltern-populace, it is the elite-bourgeois who do not have high subjective well-being. At the first look, it is expected to have high subjective well-being in the elite-bourgeois, as this inflated state with injustice is working in their favor; but this psychological unhealthiness resulted from the developing society, has been internalized. Consequently, this corrupted system has created such an unstable environment where even the beneficiaries are likely to migrate from it. This issue is not only related to the current political system (as a majority of Iranian governors have tried to gain the residency permit of Western countries, despite its prohibition based on the law of Iran) but also, it is observed in the previous political regimes, as one of the Persian kings, Ahmad Shah's famous quote that “working as greengrocery in Switzerland is better than ruling as the king in Iran.” It is evidence for the existence of a corruption-injustice loop which is rooted in centuries ago in Iran, that has to be stopped if the country is about to prosper.

5.2 Physical health and transportation

This section explains the road transportation system, after the social factors, as the most threatening issue, damaging all the pillars of sustainable development, social, environmental and economic, in Iran. Figure 16 shows the three sustainable development pillars which are directly and indirectly damaged by the road transportation mode in Iran: the traffic death, as

SUSTAINABLE DEVELOPMENT	Social	Health	Traffic death
	Economic	Budget	Subsidy for energy consumption
	Environmental	Resources & Pollution	CO2 emission and energy consumption

Figure 16.
Damages of
transportation to the
three pillars of
sustainable
development in Iran

the third cause of death in Iran, harms the health of society, considered as an arm of destructive social pillar of sustainable development (Amiri *et al.*, 2017); financing and subsidizing fossil fuels in Iran requires a large segment of budget, damaging the economic pillar of sustainable development in Iran (International Energy Agency, 2019a); and the CO₂ emissions and the fossil fuel consumption are among the main sources of environmental pollution and natural resources hazard, damaging the environmental pillar of the sustainable development in Iran (Parsa *et al.*, 2019; Taghvaei and Parsa, 2015); The three mentioned causes are explained in more details in the following paragraphs.

5.2.1 Traffic death. The social pillar of sustainable development in Iran is damaged by a health cause especially, traffic death. Of the three modes of Transportation in Iran, Road transportation is vastly more promoted and available, mostly due to the domesticized production of certain old cars in the country and the high profit it makes for the State government. Accordingly, it is reported that Traffic death stands in third place in death causes in Iran (Amiri *et al.*, 2017); According to the Iranian Legal Medicine Organization, road traffic death causes more than 20,000 mortalities and 8,000 major traumas (Rezaei *et al.*, 2014). Road traffic death in Iran is, therefore, must higher compared to the average corresponding quantities of the various regions in the world. In addition to the health and social consequences of the road traffic death, it has an economic consequence which is estimated between 7 and 40bn US dollars each year which is about 2 to 4% GDP of the country. In addition, the hospitalization cost of each road traffic injury is about 15 times larger than those of the other patients (Amiri *et al.*, 2017); Therefore, traffic accidents are not only damaging the social pillar but also the economic pillar of the sustainable development in Iran.

5.2.2 Financing and subsidizing fossil fuels. The economic pillar of sustainable development, in Iran, is damaged by the vast governmental subsidy paid to fossil fuels, advocating Road Transportation due to its profit and property for the State government. In numerous studies, it was shown that subsidizing fossil fuels can be an economic stimulus in the short term, however, in most developing countries it acts as a detrimental catalyzer of economic growth, transparency and fair growth of different economic sectors (Arzaghi and Squalli, 2015; Lotfalipour *et al.*, 2010; Taghvaei *et al.*, 2020). Figure 17 displays the countries with the highest amount of subsidy paid for fossil fuel consumption, in 2017. With regard to the graph, Iran is in the first place for subsidizing fossil fuel consumption in 2017, estimated at about 45bn dollars, even more than China, the densely-populated country as one of the biggest economies of the globe. Whatever the justification, including the promotion of the transportation sector or preventing the political and social protests, not only it requires a huge amount of budget and damages the economic pillar of the sustainable development in Iran but also increases fossil fuel consumption, polluting the environment.

5.2.3 Carbon dioxide emissions and fossil fuel consumption. Following the provided information, the environment pillar of the sustainable development in Iran is damaged by the high consumption of fossil fuel, promoted by the energy subsidization and usage of the country's obsolete automobiles, leading to vast CO₂ emissions and depletion of natural resources. Jafari and Baratimalayeri (2008) showed that the average automobile age in the country is significantly growing for a decade and a half ago. The average age of cars in Iran shows a sharp increase in trend and their value is considerably higher than the global average. Nonetheless, there are almost no national plans in the agenda-setting of public policy for scrapping the old cars. To make matters worse, as the inflation grows, it forces the population to continue using the old cars and subsequently, the CO₂ production is estimated to grow, the same as Traffic death, even though, its ratio might be somehow mitigated over time.

It is reported that the transportation sector absorbs the greatest share of the fossil fuel consumption, which, in turn, mainly is attributed to the road transportation mode with the oil products (International Energy Agency, 2019b; Taghvaei and Hajiani, 2014). This high volume of fossil fuel consumption is strong evidence for the high CO₂ emissions of road

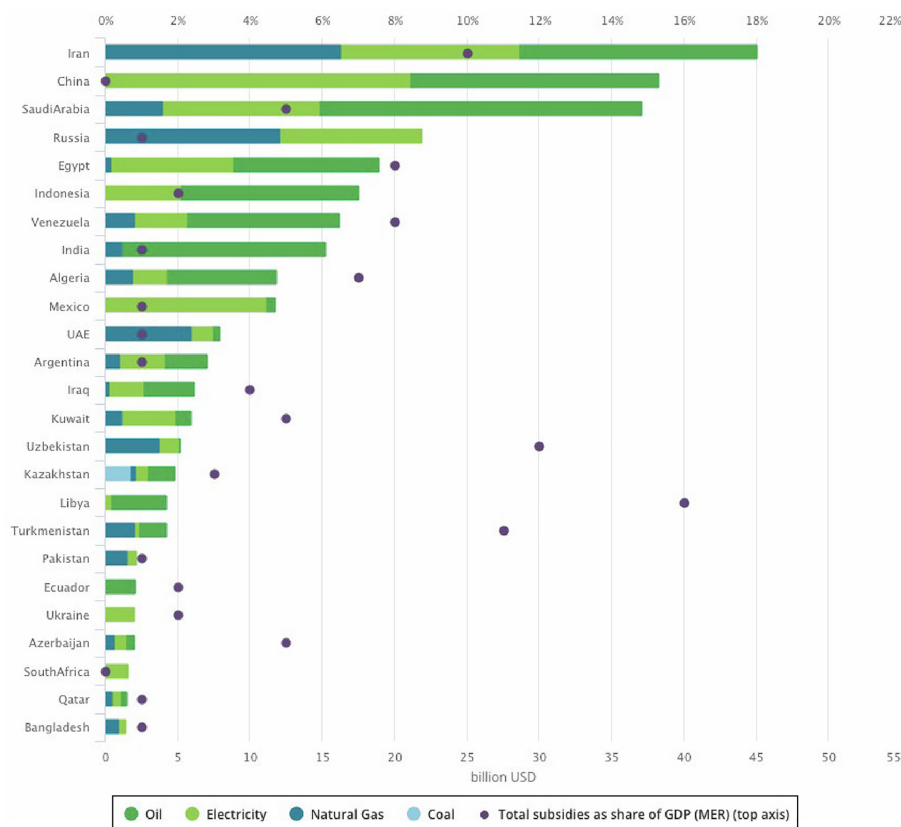


Figure 17.
Fossil fuel
consumption subsidies
by country 2017
(billion USD)

transportation mode, damaging the environmental pillar of sustainable development in Iran. As a result, road transportation mode is damaging all the three pillars of sustainable development pillars in Iran, including the social, economic and environmental. This study introduces the road transportation mode as one of the most important, if not the most important, key obstacles to sustainable development in Iran. In that respect, the policy-makers are advised to considerably entertain decreasing the fossil fuel subsidies and invest and modernize the old infrastructure, paving the way for the employment of newer, more advanced, more efficient and clean technology in road transportation. To import the newer technologies in the road transportation infrastructure, such as more efficient cars, the inefficient domestic-car-industry should be impeded from supporting. The example of the free market is best to be used, as for the fact that it has been more than 40 years that the domestic automobile industry of Iran has been supported in various ways. These supports included but were not limited to, extremely high strict rules and customs tariffs on imported cars, high subsidy for gasoline consumption, limiting the development of other alternate transportation modes, financial supports and super-large loans to the state's car industry and so forth. The above-mentioned supports are so strong and widespread that this industry is a symbol of monopoly and Mafia in Iran. Moreover, this mode of transportation can be substituted by railroads, airplanes and public transportation in which the government develops more infrastructure to provide the people with alternate transportation modes to select the cheaper, cleaner and safer (Figures 18-19).

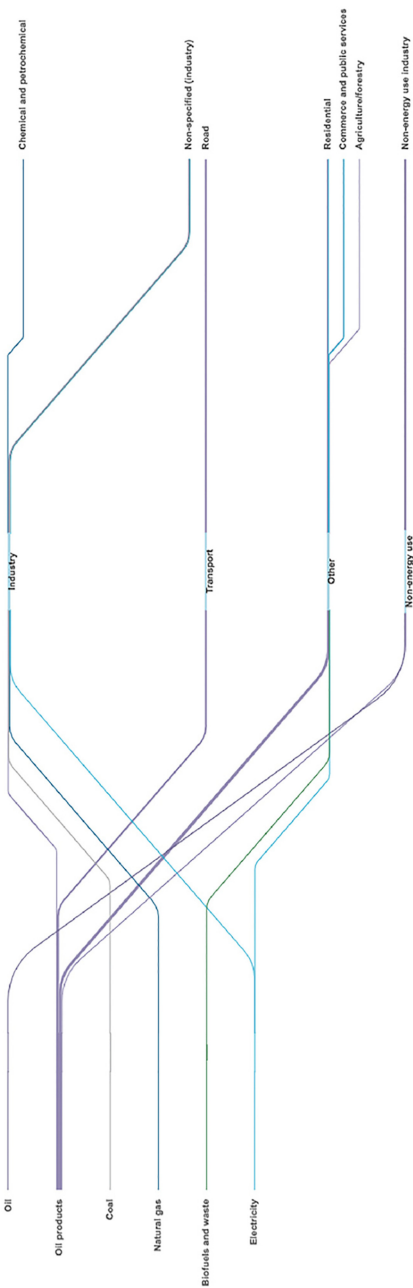


Figure 18.
Disaggregated flow of
final consumption of
various types of fossil
fuels in Iran in 1970
(millions of tons of oil
equivalent)

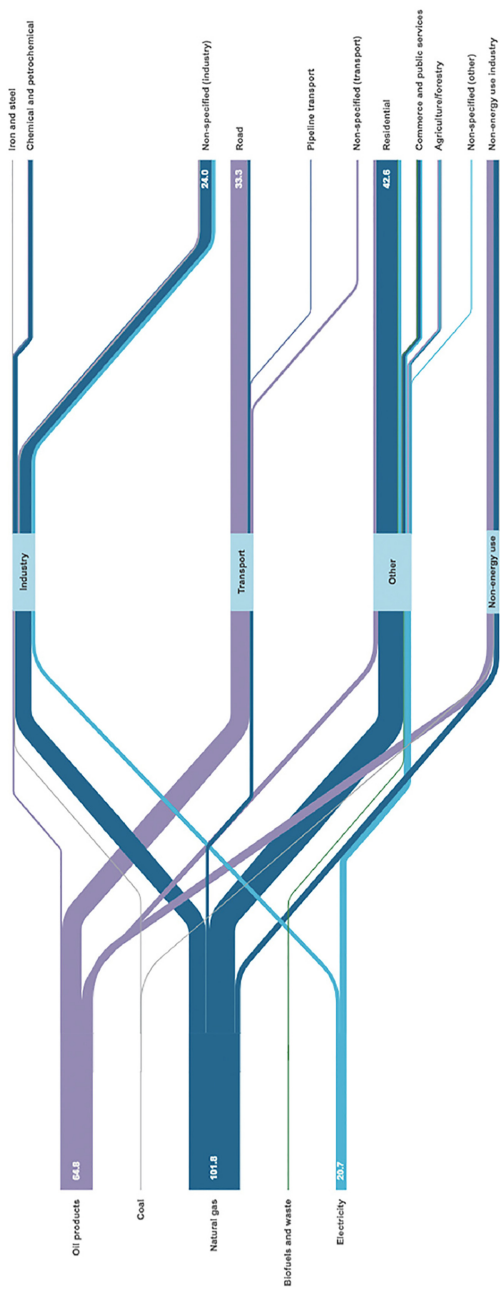


Figure 19.
Disaggregated flow of
final consumption of
various types of fossil
fuels in Iran in 2016
(millions of tons of oil
equivalent)

6. Conclusion

This study aimed to evaluate the scores of SDGs in Iran as a developing country to investigate the obstacles of sustainable development, despite its high capacity in economic growth, social development and environmental quality. As mentioned, this country has more potential from the economic, environmental and social point of view, in comparison with its current situation and position in the SDG ranking. To study the challenges, this research uses the scores of SDGs in 2018 in a contextual-and-geographically-integrated framework to find the failed goals of Iran, the region and the world, identifying the weak and threatening pillars and scopes of sustainability for Iran.

As SDGs are contextually-integrated, this research considers a multidisciplinary perspective to rank the SDGs of Iran. From a comprehensive perspective, this research paper gathers all the 17 SDGs to find the weakest goals of sustainable development in Iran in 2018. Researchers, in this paper, identify the geographic-integration to have a more comprehensive review from the world level to a sample country level. Hence, this study ranks the scores of the various SDGs in the world, the region and Iran. By doing so, researchers of this study realize not only the weakest goals of Iran but also the weakest of both the region and the world, threatening the sustainable development in Iran and the region, as an exogenous impact.

The investigation shows that the scores represent a relatively-identical result for the failed and threatening goals in Iran, the region and the world, including 6 failed goals. Goal 16 is the weakest goal, implying that “peace, justice and strong institutions” is the most threatening goal in Iran in 2018. After goal 16, there are 5 more goals with the highest level of threat including goals 2, 5, 10, 3 and 14 (Zero hunger; Gender equality; Reduced inequalities; innovation and infrastructure; Good health and well-being and life below water, respectively). Those of the region and the world are also among the 6 failed or threatening SDGs of Iran. Goal 3, Good health and well-being, for example, is a common threatening goal in all the three levels of the World, the region and the country. The pandemic of Coronavirus (COVID-19) in early 2020, as well as its detrimental consequences, show that the health sector plays a key role in the sustainable development of not only the country but also the region and the globe considerably, urging significantly higher attention.

The six mentioned goals have a common point including but not limited to: all are in the sub-field of social pillar of the sustainable development, representing the weak functioning of Iran in the social affairs, public policy and heterogeneous structure of policy network. Also, serving as strong evidence for the need to work on concepts such as democracy, fighting with the Mafia, rules of law and strong NGOs for their advocacy role in the subaltern class.

Furthermore, goal 3, health and well-being, has a unique character among the SDGs, highly-interrelating to the other goals. In that respect, it paves the way for the policy-makers to strengthen this sector as a powerful driver for sustainable development. Further, the decomposition of health and well-being goal in Iran shows that the most threatening factors of this goal in Iran are the subjective-well-being and the traffic death. As the subjective well-being can be a subdivision of the social dimension, which is discussed in its own section, this research paper focuses on traffic death as the transportation system of the country is ineffective and insufficient to respond to the needs of its society.

Concerning the Transportations system in Iran, it is underscored that it is a key issue that adversely affects sustainable development from all the three pillars of sustainable development including, economic, social and environmental. To this end, the adverse economic factor is rooted in the high amount of fossil fuel subsidy, which is consuming a high amount of budget. The subsidized fossil fuel has a low price, increasing the demand and consumption of this pollutant fuel and environmental pollution. In addition to its destructive role in the environmental and economic pillars, it is highly harmful to the social pillar, due to a large number of road accident death and injuries. This issue is the main factor harming health

quality, which, in turn, is a key element of the social pillar. Thus, the inefficient transportation system is one of the biggest obstacles for sustainable development, if not the biggest one.

This study suggests the policy-makers to amend the transportation system, through developing the public transportation infrastructure and other safe transportation modes as a substitution for road transportation; while improving the efficiency and safety of road transportation. As mentioned, the latter is easily possible by allowing the import of newer automobiles with higher technology or absorbing foreign investment in the area of the road transportation industry. However, this analysis is not to deny the other alternate obstacles such as Dutch disease, bad governance, war, sanctions, inappropriate monetary policies and so forth.

Notes

- 1 <https://sustainabledevelopment.un.org/>
- 2 In Sachs *et al.* (2018), Iran is in the countries of the East and South Asia which is called the “region” throughout the paper.
- 3 Page 18-30 in the report PDF file, available at: https://s3.amazonaws.com/sustainabledevelopment.report/2018/2018_sdg_index_and_dashboards_report.pdf

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Corresponding author

Abbas Assari Arani can be contacted at: Assari_a@modares.ac.ir