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Research Article

Green Transformation of the Real Sector in Türkiye: A priority Evaluation with DEMATEL Methodology

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Abstract

Increasing awareness of global changes in the natural environment, such as climate change and increasing biodiversity loss, has led to the concept of green transformation. Green transformation is a broad concept that includes objectives such as environmental sustainability, conservation of natural resources, combating climate change and ensuring energy efficiency. This study aims to examine the green transformation of the real sector in Türkiye and to rank the most effective strategies for transition to green transformation. It is aimed to rank the criteria that play the most role in the transition to green transformation and to offer solutions to the criteria. The critical success factors of the green transformation of the real sector in Türkiye are evaluated in line with the answers given by three expert opinions. The data obtained from the expert opinions were analyzed by DEMATEL method, which is one of the multi-criteria decision-making methods. In the study, the eight most frequently mentioned criteria in the literature were identified. In the study, the criteria for the green transformation of the real sector in Türkiye; increasing legal regulations for green transformation, increasing green financing opportunities, consumer preferences and behaviors, qualified workforce / green collars specialized in environmental issues, use of recyclable materials, increasing environmental social responsibility projects, combating air and environmental pollution, increasing investment in environmentally friendly energy resources factors were evaluated. As a result of the analysis, it was found that the most important criterion for the green transformation of the real sector in Türkiye is the need to increase legal regulations for green transformation. The second most important criterion for the green transformation of the real sector in Türkiye is to increase green financing opportunities for green transformation. Türkiye needs to achieve a more stable legal framework and more supportive financing opportunities to transition to green transformation.

Keywords: Green Transformation, Real Sector, DEMATEL, Türkiye, Multi-Criteria Decision Making

JEL Classification: C19, Q59, O11

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Türkiye'de Reel Sektörün Yeşil Dönüşümü: DEMATEL Metodolojisi ile Öncelikli Bir Değerlendirme

Öz

İklim değişikliği ve artan biyolojik çeşitlilik kaybı gibi doğal çevredeki küresel değişimlere ilişkin farkındalığın artması, yeşil dönüşüm kavramının ortaya çıkmasına neden olmuştur. Yeşil dönüşüm, çevresel sürdürülebilirlik, doğal kaynakların korunması, iklim değişikliğiyle mücadele ve enerji verimliliğinin sağlanması gibi hedefleri içeren geniş bir kavramdır. Sürdürülebilir bir yeşil dönüşüm, bu zorlukları azaltmak ve faydaları en üst düzeye çıkarmak için dengeli ve kapsamlı politikalar gerektirir. Bu çalışma, Türkiye'de reel sektörün yeşil dönüşümünü incelemeyi ve yeşil dönüşüme geçiş için en etkili stratejileri sıralamayı amaçlamaktadır. Yeşil dönüşüme geçişte en fazla rol oynayan kriterleri sıralamak ve kriterlere yönelik çözüm önerileri sunmak amaçlanmaktadır. Türkiye'de reel sektörün yeşil dönüşümünün kritik başarı faktörleri, üç uzman görüşünün verdiği yanıtlar doğrultusunda değerlendirilmiştir. Uzman görüşlerinden elde edilen veriler, çok kriterli karar alma yöntemlerinden biri olan DEMATEL yöntemi ile analiz edilmiştir. Çalışmada, literatürde en sık belirtilen sekiz kriter belirlenmiştir. Çalışmada, Türkiye'de reel sektörün yeşil dönüşümü için kriterler; Yeşil dönüşüm için yasal düzenlemelerin artırılması, yeşil finansman olanaklarının artırılması, tüketici tercihleri ve davranışları, çevre konularında uzmanlaşmış nitelikli işgücü/yeşil yakalılar, geri dönüştürülebilir malzeme kullanımı, çevresel sosyal sorumluluk projelerinin artırılması, hava ve çevre kirliliğiyle mücadele, çevre dostu enerji kaynaklarına yatırımın artırılması faktörleri değerlendirilmiştir. Yapılan analiz sonucunda Türkiye'de reel sektörün yeşil dönüşümü için en önemli kriterin yeşil dönüşüm için yasal düzenlemelerin artırılması gerekliliği olduğu görülmüştür. Türkiye'de reel sektörün yeşil dönüşümü için ikinci en önemli kriter ise yeşil dönüşüm için yeşil finansman olanaklarının artırılmasıdır. Türkiye'nin yeşil dönüşüme geçiş yapabilmesi için daha istikrarlı bir yasal çerçeveye ve daha destekleyici finansman olanaklarına kavuşması gerekmektedir.

Anahtar Kelimeler: Green Transformation, Real Sector, DEMATEL, Türkiye, Multi-Criteria Decision Making

JEL Sınıflandırması: C19, Q59, O11

1. Introduction

The concept of green transformation is a concept that emphasizes environmental sustainability and ecological balance and states that industrial and economic activities should be carried out in harmony with nature. Green transformation is a broad concept that generally includes objectives such as environmental sustainability, protection of natural resources, combating climate change and ensuring energy efficiency, and it refers to the development of the economy or society in a nature-friendly and sustainable direction. Environmental problems experienced in the 1970s and 1980s laid the foundation of the concept of green transformation. In this period when environmental problems such as industrial waste, air pollution and water pollution increase, societies and governments have begun to attach more importance to the protection of the environment. Green transformation is necessary to ensure environmental sustainability, combat climate change, access reliable and clean energy, prevent unnecessary use of natural resources and increase social welfare. Green transformation represents a global goal that requires the participation of people at different levels, from individuals to organizations, from local governments to global policy makers (Sheng and Liu, 2023).

Green transformation has many benefits, and these benefits appear in many areas. Green transformation reduces the carbon footprint by reducing greenhouse gases caused by fossil fuels. Green transformation contributes to human health by minimizing environmental impacts. Green transformation aims to increase energy efficiency and provides long-term economic benefits by reducing energy costs for businesses and individuals. Green transformation can reduce dependence on natural resources that increase carbon emissions by encouraging the use of clean energy sources such as wind, solar and hydroelectric energy (Yang et al., 2023; Ersin, 2023). Thanks to green transformation, access to clean air, food and water resources increases the quality of life of the society. Green transformation creates new business opportunities and new industries. The renewable energy sector offers developing economic potential in areas such as green technology and sustainable agriculture.

Green transformation has advantages as well as disadvantages. The high initial investment costs of green transformation projects may pose an obstacle for businesses. Installing renewable energy infrastructure, adopting energy efficient technologies and implementing sustainable practices are costly for businesses. Undeveloped or unoptimized technologies hinder the feasibility of green transformation. The variable nature of renewable energy sources may cause problems in energy storage. Since resources such as wind and sun are not continuous and predictable, energy storage technologies are needed and impose extra costs on businesses (Kostis et al., 2023). Green transformation may lead to a decrease in job opportunities or sector changes in some sectors. For example, a transition from the fossil fuel sector to the renewable energy sector may require some employees to acquire new skills. Some green energy projects, especially hydroelectric power plants, may have a negative impact on nature due to their environmental impacts. This situation carries the risk of damage to ecosystems (Wang et al., 2023). Considering the disadvantages of green transformation, it is important to pay attention to policies and strategies to overcome these challenges. A sustainable green transformation must pursue balanced and comprehensive policies to reduce these challenges and maximize their benefits.

The aim of green transformation is to enable business and society to adopt sustainable and environmentally friendly practices and reduce their environmental impact. Business world and society must take action for green transformation. Legal regulations that support green transformation can be introduced in order to achieve the sustainability goals of businesses and to encourage environmental responsibilities. A strong legal framework supporting green transformation will help businesses lead environmental sustainability and meet society's expectations. Green financing mechanisms should be encouraged for renewable energy and environmentally friendly infrastructure projects (Sarpong et al., 2023). By making it easier for businesses to invest in green projects, suitable loan conditions and advantages can be introduced. To encourage sustainable production and consumption models, the use of local and durable products should be increased. In order to support green transformation, educational campaigns should be organized to raise awareness of large segments of society on this issue. Businesses, factories, and homeowners can take various steps to become more energy efficient. This may include the use of energy-efficient lighting, insulation, and energy-efficient equipment and processes. Businesses and individuals need to adopt waste management strategies to reduce waste generation and encourage recycling. To promote sustainable transportation, it is necessary to support public transportation, increase the use of bicycles, and increase the use of electric vehicles (Ge et al., 2023).

In this study, the most frequently mentioned criteria in the literature for the real sector to transition to green transformation have been determined, and it is aimed to contribute to the literature by determining which criteria should be focused on by developing evaluations and suggestions specifically for Türkiye. As a result of our study, the analysis and evaluation of critical success factors in the green transformation of the real sector in Türkiye were examined. The critical success factors of the green transformation of the real sector in Türkiye were evaluated in line with the answers given by three expert opinions. The data obtained from expert opinion was analyzed with the DEMATEL method, which is one of the multi-criteria decision-making methods. In the study, eight criteria that were most frequently mentioned in the literature were determined. In the study, the criteria for the green transformation of the real sector in Türkiye are; increasing legal regulations for green transformation, increasing green financing opportunities, consumer preferences and behaviors, qualified workforce/green collar specialized in the environment, use of recyclable materials, increasing environmental social responsibility projects, combating air and environmental pollution, increasing investment in environmentally friendly energy resources factors were evaluated.

2. Literature Review

There are many different studies in the literature on the green transformation of the real sector. Green transformation is the climate crisis caused by excessive consumption of fossil fuels after the industrial revolution, air pollution and depletion of natural resources, etc. It is seen as a strategy to solve environmental problems. The green transformation initially appears to be a major challenge for the real sector (Martínez et al., 2023). Issues such as planning the necessary infrastructure investments, creating alternative funds, recruiting qualified personnel for the sector, and meeting bureaucratic requirements may pose short-term difficulties for the sector (Eti et al., 2023). However, when the economic, ecological and social costs of ignoring environmental problems are weighed against the opportunities and benefits of green transformation, it is clear that it makes more sense to cover short-term costs for long-term benefits (Zhong et al., 2023). The reluctance and slowness of the real sector to transition to green transformation further increases the damage to the environment and makes it difficult to use natural resources efficiently. External pressures such as national regulations, international agreements, and concerns about losing market power are now forcing companies to invest in green transformation (Xu et al., 2023). Businesses that undertake green transformation need guidance and support from the state. For governments to facilitate the transition to green transformation; Increasing renewable energy investment projects to encourage the production of green energies, providing subsidies to industries that want to install energy-efficient technologies, introducing interest-free loans to promote environmentally friendly trade, ensuring competition in financial markets and the active participation of domestic and international investors to promote financial development (Ran et al., 2023). Additionally, it should provide incentives to the financial sector to invest in renewable and environmentally friendly projects to promote sustainability (Hoxha et al., 2023).

Diversifying financing opportunities for green transformation has increasing strategic importance in combating the global climate crisis and transitioning to a low-carbon economy. Green finance policy, which encourages the green transformation of polluting enterprises, has become an effective tool for countries to overcome environmental problems (Meng et al., 2023). When implementing green loan policies, the green loan interest rate should be determined according to the actual status of the project. Green credit control measures also need to be strengthened to prevent companies from illegal borrowing (Cui et al., 2022). In the literature, it has been determined that green finance provides environmental improvement, protects natural resources, increases energy efficiency and has a positive impact on economic growth. One of the important issues in the literature on the green transformation of the real sector has been energy supply security (Li et al., 2023). The increase in energy costs due to the sudden change in energy supply and demand due to the pandemic and the recent Ukrainian-Russian war have exacerbated existing problems. Economic development and sustainability depend on supplying the energy we need in sufficient quantities, at low cost, in a reliable way and in a way that does not pollute the environment (Chen et al., 2023). Behind the idea of green transformation lies the idea of limiting the use of fossil fuels or switching to renewable energy sources instead of fossil fuels (Wu et al., 2023). Since the intensive use of traditional fossil fuels such as oil and coal causes environmental damage, it is necessary to switch to alternative energy sources. Renewable energy sources form the basis of the energy of the future because they cause very little greenhouse gas and pollutant emissions (Hacioglu et al., 2023).

Circular economy, one of the important pillars of green transformation in the literature, aims to reduce the level of toxic chemical use, increase the use of clean, reliable energy and fundamentally solve the waste problem (Sun et al., 2023). Circular economy, as part of the green transformation approach, helps to reduce the use of natural resources and reduce costs in sectors that rely on imported raw materials by recycling waste into the economy (Dinçer et al., 2023). Following the industrial revolution, changes in production and consumption patterns have created difficulties in sustainable development due to the decrease in natural resources over time (Zeng et al., 2023). It is stated that

concepts such as green economy and circular economy were put forward by participants from different segments of society, such as United Nations members, heads of government, and non-governmental organizations, to overcome difficulties (Fang et al., 2023). In the literature, the first step of circular economy is the implementation of zero waste. In this way, in addition to recycling waste, it will be possible to use it as much as necessary and to use resources "better and more efficiently" instead of "less".

3. An Evaluation on the Green Transformation of the Real Sector in Türkiye with DEMATEL Methodology

In this study, it is aimed to examine the green transformation of the real sector in Türkiye and list the most effective strategies for the transition to green transformation. The impact of the real sector on the damage caused to the environment around the world is at a level that cannot be ignored. If there is to be success in green transformation, it is not possible to achieve this without the participation of the real sector. Therefore, it is important for policy makers to determine the current environmental perceptions of the real sector, the measures they take and the factors that encourage/support them to take action. It is aimed to list the criteria that play the most role in the transition to green transformation and to offer solutions to the criteria. By ranking the importance of the criteria, the priority criteria in the green transformation of the real sector in Türkiye will be determined and the path to be followed for the transformation of the identified criteria will be determined. The biggest contribution of this study to the literature is that the real sector will determine the correct criteria for green transformation and the results will help the real sector make the right decisions. Firstly, 8 different criteria are selected that have an impact on the performance of green transformation of the real sector. These factors are defined in Table 1.

Table 1: Criteria List

Criteria	Codes
Increasing legal regulations for green transformation	K1
Increasing green financing opportunities	K2
Consumer preferences and behaviors	K3
Qualified workforce specializing in the environment/Green collar	K4
Use of recyclable materials	K5
Increasing environmental social responsibility projects	K6
Combating air and environmental pollution	K7
Increasing investment in environmentally friendly energy sources	K8

After that, an expert team is constructed with three people. These people consist of the academicians who have significant publications in this area. The evaluations regarding these criteria are obtained from these people. Moreover, the steps of DEMATEL are implemented (Özdemirci et al., 2023; Kou et al., 2023; Rawat et al., 2023; Yapar and Keskin, 2023). Finally, the weights of the indicators are computed. Table 2 gives information about these results.

Table 2: Weights

Criteria	Weights	Rankings
Increasing legal regulations for green transformation	0,1723	1
Increasing green financing opportunities	0,1705	2
Consumer preferences and behaviors	0,1204	3
Qualified workforce specializing in the environment/Green collar	0,1099	4
Use of recyclable materials	0,104	8
Increasing environmental social responsibility projects	0,1096	5
Combating air and environmental pollution	0,1066	7
Increasing investment in environmentally friendly energy sources	0,1068	6

It is determined that the most important factor affecting the green transformation performance of the real sector in Türkiye was the increase in legal regulations for green transformation (K1), and the least important factor was the use of recyclable materials (K5).

4. Conclusion

Since green transformation is a long-term and challenging process, it is necessary to support and strengthen the real sector, which is the main factor of the transformation, with an inclusive approach. Adapting to green transformation by implementing environmentally friendly activities in a systematic and planned manner has become an extremely important issue for every business, regardless of sector and company size. In the long term, green transformation will become inevitable for all sectors. If the real sector acts with awareness of this, it makes green transformation easier and more cost-effective. Conscious and timely adaptation of the sector to the green transformation will significantly accelerate Türkiye's sustainable economic development efforts.

As a result of our study, the analysis and evaluation of critical success factors in the green transformation of the real sector in Türkiye were examined. The critical success factors of the green transformation of the real sector in Türkiye were evaluated in line with the answers given by three expert opinions. The data obtained from expert opinion was analyzed with the DEMATEL method, which is one of the multi-criteria decision-making methods. In the study, the criteria for the green transformation of the real sector in Türkiye are increasing legal regulations for green transformation, increasing green financing opportunities, consumer preferences and behaviors, qualified workforce/green collar specialized in the environment, use of recyclable materials, increasing environmental social responsibility projects, air and environment. The factors of combating pollution and increasing investment in environmentally friendly energy sources were evaluated.

The most important criterion in the green transformation of the real sector in Türkiye is to increase the legal regulations for green transformation. Legal regulations are made in which a government or an authority creates regulations, standards and rules on a certain subject, in order to control and direct the security, order, economy and welfare of the society in the long term, even though it may bring different difficulties in the short term. Legal regulations provide assurance to businesses that transition to green transformation, encouraging businesses to determine their environmental responsibilities and act in accordance with these responsibilities. Legal regulations ensure that all businesses comply with the same environmental standards, ensuring equal competition and facilitating the spread of the transition to green transformation. In this regard, according to the findings obtained from the study, suggestions can be made to create legal regulations for the real sector in Türkiye to transition to green transformation.

An official carbon tax is not yet implemented in Türkiye. A carbon tax is the taxation of a specific activity or product in a country or region based on its greenhouse gas emissions. The main goal is to reduce greenhouse gas emissions through a carbon tax and facilitate the transition to green transformation. A carbon tax can be introduced as a legal regulation tool to reduce greenhouse gas emissions in Türkiye. Carbon tax in Türkiye should initially be applied in sectors with high carbon dioxide emissions, and the scope of the tax should be expanded over time. To ensure the effectiveness of the carbon tax, it is also important in which area the revenue obtained from this tax is used. Carbon tax revenues should be collected in a fund to be used to compensate for possible environmental damage. If used in this way, the potential yield expected from the tax may be higher.

AUTHORS' CONTRIBUTIONS

Authors have contributed equally.

CONFLICT OF INTEREST STATEMENT

There is no financial conflict of interest with any institution, organization or person and there is no conflict of interest between the authors

REFERENCES

- Chen, Y., Ma, X., Ma, X., Shen, M., & Chen, J. (2023). Does green transformation trigger green premiums? Evidence from Chinese listed manufacturing firms. *Journal of Cleaner Production*, 407, 136858.
- Dinçer, H., Kalkavan, H., Yüksel, S., & Karakuş, H. (2023). Defining the Most Effective Green Corporate Governance Strategies for Sustainable Performance. In *Economic, Environmental and Health Consequences of Conservation Capital: A Global Perspective* (pp. 41-54). Singapore: Springer Nature Singapore.
- Ersin, İ. (2023). Ekonomik Kalkınma. *Ekonomi Politikası* (Ed.: C. Gerni & B. Aşık). Ankara: Gazi Yayın Dağıtım. 175-194
- Eti, S., Dinçer, H., Yüksel, S., Uslu, Y. D., Gökalp, Y., Kalkavan, H., ... & Pinter, G. (2023). Determination of priority criteria in green building transformation: An analysis on the service industry. *Research in Globalization*, 7, 100164.
- Fang, L., Zhao, B., Li, W., Tao, L., He, L., Zhang, J., & Wen, C. (2023). Impact of digital finance on industrial green transformation: Evidence from the Yangtze River economic belt. *Sustainability*, 15(17), 12799.
- Ge, W., Xu, Y., Razzaq, A., Liu, G., Su, X., Yang, X., & Ran, Q. (2023). What drives the green transformation of enterprises? A case of carbon emissions trading pilot policy in China. *Environmental Science and Pollution Research*, 30(19), 56743-56758.
- Hacıoğlu, U., Dincer, H., Yılmaz, M. K., Yüksel, S., Sonko, M., & Delen, D. (2023). Optimizing sustainable industry investment selection: A golden cut-enhanced quantum spherical fuzzy decision-making approach. *Applied Soft Computing*, 148, 110853.
- Hoxha, V., Dinçer, H., & Yüksel, S. (2023). Analysis of strategic priorities of green building projects for the efficient energy consumption. *International Journal of Energy Sector Management*.
- Kostis, P., Dincer, H., & Yüksel, S. (2023). Knowledge-based energy investments of European economies and policy recommendations for sustainable development. *Journal of the Knowledge Economy*, 14(3), 2630-2662.
- Kou, G., Pamucar, D., Dinçer, H., Deveci, M., Yüksel, S., & Umar, M. (2023). Perception and Expression-based Dual Expert Decision-Making Approach to Information Sciences with integrated quantum fuzzy modelling for renewable energy project selection. *Information Sciences*, 120073.

- Li, X., Wang, R., Shen, Z. Y., & Song, M. (2023). Green credit and corporate energy efficiency: Enterprise pollution transfer or green transformation. *Energy*, 285, 129345.
- Martínez, L., Dinçer, H., & Yüksel, S. (2023). A hybrid decision making approach for new service development process of renewable energy investment. *Applied Soft Computing*, 133, 109897.
- Meng, X. N., Xu, S. C., & Hao, M. G. (2023). Can digital-real integration promote industrial green transformation: Fresh evidence from China's industrial sector. *Journal of Cleaner Production*, 426, 139116.
- Özdemirci, F., Yüksel, S., Dinçer, H., & Eti, S. (2023). An assessment of alternative social banking systems using T-Spherical fuzzy TOP-DEMATEL approach. *Decision Analytics Journal*, 100184.
- Ran, Q., Yang, X., Yan, H., Xu, Y., & Cao, J. (2023). Natural resource consumption and industrial green transformation: does the digital economy matter?. *Resources Policy*, 81, 103396.
- Rawat, S. S., Dincer, H., & Yüksel, S. (2023). A hybrid weighting method with a new score function for analyzing investment priorities in renewable energy. *Computers & Industrial Engineering*, 185, 109692.
- Sarpong, F. A., Sappor, P., Nyantakyi, G., Agyeiwaa, O. E., Ahakwa, I., Cobbinah, B. B., & Kir, K. F. (2023). Green financial development efficiency: a catalyst for driving China's green transformation agenda towards sustainable development. *Environmental Science and Pollution Research*, 1-29.
- Sheng, X., & Liu, Y. (2023). Research on the impact of carbon finance on the green transformation of China's marine industry. *Journal of Cleaner Production*, 138143.
- Sun, C., Xu, Z., & Zheng, H. (2023). Green transformation of the building industry and the government policy effects: Policy simulation based on the DSGE model. *Energy*, 268, 126721.
- Wang, Z., Chu, E., & Hao, Y. (2024). Towards sustainable development: How does ESG performance promotes corporate green transformation. *International Review of Financial Analysis*, 91, 102982.
- Wu, J., Cai, X., Zuo, F., & Dong, Y. (2023). Study on the Impact of Common Institutional Ownership on Corporate Green Transformation in the Context of "Dual Carbon": Evidence from China. *Sustainability*, 15(15), 11943.
- Xu, Y., Yang, C., Ge, W., Liu, G., Yang, X., & Ran, Q. (2023). Can industrial intelligence promote green transformation? New insights from heavily polluting listed enterprises in China. *Journal of Cleaner Production*, 421, 138550.
- Yang, X., Liu, X., Ran, Q., & Razzaq, A. (2023). How does natural resource dependence influence industrial green transformation in China? Appraising underlying mechanisms for sustainable development at regional level. *Resources Policy*, 86, 104191.
- Yapar, B. K., & Keskin, A. (2023). Determining the criteria affecting tax ethics in Türkiye using the Fuzzy DEMATEL method. *İstanbul İktisat Dergisi*, 73(2), 745-780.
- Zeng, M., Zheng, L., Huang, Z., Cheng, X., & Zeng, H. (2023). Does vertical supervision promote regional green transformation? Evidence from Central Environmental Protection Inspection. *Journal of Environmental Management*, 326, 116681.
- Zhong, S., Peng, L., Li, J., Li, G., & Ma, C. (2023). Digital finance and the two-dimensional logic of industrial green transformation: Evidence from green transformation of efficiency and structure. *Journal of Cleaner Production*, 406, 137078.