JURNAL BINA PRAJA
Journal of Home Affairs Governance

ARTICLE

Regional Branding as an Effort to Promote a Sustainable Environment

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Abstract: Regional branding is an essential strategic way for increasing the development or progress of a region. Many studies that discuss city branding are associated with the tourism sector or others to increase regional competitiveness. Meanwhile, it is no less important to carry out regional branding, such as green branding, which focuses on global warming issues, to minimize environmental damage. So, regional branding is an increasingly important position because only the government is currently playing a role in promoting regions to create a sustainable living environment. This study aims to analyze the effect of regional branding and other factors, such as fiscal, economic, and social decentralization factors, on improving environmental quality. This study uses panel regression impact: difference in difference to explain the impact before and after branding on environmental quality. The data used was secondary panel data from 34 provinces during 2016-2021. The results showed that urban branding increased the environmental quality index after the Climate Conference 25 (COP25). Meanwhile, fiscal decentralization will likely encourage an increase in the environmental quality index. The increase in urban population and electricity consumption will likely reduce the environmental quality index. In this case, the central government needs to invite local governments and other stakeholders to collaborate and work together to improve regional branding focusing on the environment and environmental mapping qualifications.

Keywords: regional branding; fiscal decentralization; environment

OPEN ACCESS

Citation: Munawaroh, S., & Fajri, M. N. (2023). Regional Branding as an Effort to Promote a Sustainable Environment. *Jurnal Bina Praja, 15*(1), 73–83. https://doi.org/10.21787/jbp.15.2023.73-83

Received: 28 February 2023

Accepted: 2 April 2023

Published: April 2023

1. Introduction

Increasingly impulsive urban development encourages an increasing rate of population growth. It then encourages the city to be more diverse and oriented toward the long term. This orientation, for example, is in the form of providing inclusive inter-mass connectivity with the support of adequate facilities. Development synergies that are increasingly intense sometimes ignore environmental aspects and only side with achievements (Liu et al., 2023). These conditions then encourage development planners to accommodate mapping as well as possible actively. In addition, a city must also strive to increase productivity even more by obtaining added value for the community's survival (Behrens et al., 2014; Guan et al., 2021; Liu et al., 2022). In addition, good planning will bring a positive stigma for other people to visit and stay for a certain period. For this reason, cities and regions must mitigate it through regional and city branding (Parkerson & Saunders, 2005).

Regional and city branding is aimed at planning regions and cities so that they are perceived positively to bring appeal to the masses and the media (Kasapi & Cela, 2017). This branding can be achieved with a variety of appropriate indicators, such as an extensive population promotion process (Ooi, 2011), biologically static visits (Gómez et al., 2018), and sustainable investment (Middleton, 2011). Furthermore, this program must be intensified by involving land suitability, including cultural attributions (landmarks and social) to stimulate the tagline, something to see, do, and buy (MacCannell, 2002). Meanwhile, this branding is very beneficial for the city and the region itself, for example, increasing the region's image, attracting other investors, attracting tourists, increasing brand awareness for indigenous people, and the spirit of nationalism (Volcic & Andrejevic, 2011). Therefore, it needs a reasonably massive carrying capacity among policymakers considering psychological, economic, and other aspects.

Indonesia needs to consolidate branding in various regions as a country with a large area, cultural heterogeneity, and a reasonably massive landscape. It is intended as a means of review and an effort to increase the internalization of the memory of all parties who visit one area. Based on C40 Knowledge (n.d.), only DKI Jakarta is currently concentrating on regional branding with the potential and retention of a share of at least 40% per year to encourage new tourist arrivals. It has started to experience an increasing trend since 2017 reaching 7.6% yoy. Meanwhile, from the attribution to Indonesia's territory, other regions focus on branding taglines towards regional destinations, so their achievements are relatively narrow and less holistic. Additionally, several other regions in Indonesia still focus on and emphasize aspects of phenomenology and toponymy that are not very useful for future regional development. Awareness of comparing one region is still relatively low and tends to override aspects of culture and local wisdom.

As the main parameter in the southern hemisphere and Indonesia, Jakarta is also a trendsetter for other regions to apply it massively and continuously. Not only that, rejuvenating and revitalizing cities also requires special efforts so that they are also connected to the economic network and the nodes of the state itself. In addition, development and revitalization efforts are necessary to consider other environmental and ecological aspects so that the process in the future can be a positive spotlight for foreign countries.

Branding and a sustainable environment are intertwined, especially in building a more intelligent city and promoting an environmentally friendly lifestyle. Various breakthroughs need to be made to achieve this goal, for example, promoting

sustainable transportation and intermodal interactions, providing more green open spaces, reducing single-use plastics, and optimizing new and renewable energy. Thus, the community will automatically be aware of behaving wisely and sustainably.

The study by Pasande and Suhendra (2017) analyzes city branding as the DIY Government's step to increase regional competitiveness. By using a qualitative method, the study results show that branding in DIY has the potential to increase regional competitiveness, as evidenced by increased investment. In addition, the existence of rebranding also has the opportunity to increase regional competitiveness, significantly increasing Local Government Revenue (PAD). However, City branding carried out in DIY is still focused on tourism. It has yet to be utilized for other sectors. In line with the study of Keskin et al. (2016), city branding is a strategic tool to increase regional competitiveness. City branding can market history, quality places, culture, and natural resources through broad platforms to strengthen its competitiveness.

Another study by Intyaswono et al. (2016) analyzed the implementation of city branding strategies in Batu City, Malang. By using qualitative methods, the results showed that city branding in Batu City has been running in the education, tourism, and education sectors. City branding is used as a promotional tool and as a unifier of all parties that manage tourism. City branding is aimed at tourism attractiveness, enhancing a place's status as a tourist destination or residential area. Thus tourism is an overgrowing market segment that can attract many investors to invest in the sector (Jojic, 2018). On the other hand, Nugraha et al. (2017) focus more on how to do city branding, especially in Bandung, in the smart city era. The study results show that in determining to brand, one can pay attention to six branding elements: memorable, meaningful, likable, transferable, adaptable, and protected.

Several previous studies have mainly analyzed city branding for the tourism sector (Chen & Shih, 2019; Pasquinelli et al., 2022; Wang, 2019), entrepreneurship (Jokela, 2020), migration (Belabas & George, 2023; Jiahe et al., 2022), total city output, population, and land prices (Peng et al., 2021). On the other hand, some studies focus on urban planning itself, which includes five categories, namely the environmental planning system, the field of ideology and policy making, the field of planning in general, the field of implementation, and social feedback (Bonakdar & Audirac, 2020; Mohammadi Aydoghmish & Rafieian, 2022). In addition, other studies focus on analyzing the impact of city pilot promotions and policies in developing city brands (Yuan et al., 2023), where it was found that in cities that implement innovative city pilot policies, the development of city brands increases by 10% higher than cities without city pilot policies. This case encourages further studies on how city and regional branding relates to a sustainable environment, especially in Indonesia.

This research is significant to be explored in more depth, bearing in mind that there still needs to be more research on city branding, especially those focusing on a sustainable environment. In addition, it is essential to understand how to build a city brand to develop regional potential and maintain a sustainable environment.

This research will focus on two essential things in urban and regional rejuvenation. First, this research will provide an overview of regional social and economic transmission to achieve city branding that promotes a sustainable environment. Second, provide attribution for specific areas that require special incentives, both manifest and latent. Lastly, accommodate the government in planning impulsive and sustainable urban areas.

2. Methods

This research uses panel regression impact in the form of Difference in Difference. The Difference in Difference (DiD) is an analytical technique used to determine the impact of an intervention or program by measuring the difference in the results between the group affected by the intervention and the group that is not affected (Khandker et al., 2009). The DiD method is given a two-period setting where t = 0 before and t = 1 after the program is implemented. The DiD method will estimate the average program impact as follows:

$$DD = E\left(Y_1^T - Y_0^T | T_1 = 1\right) - E\left(Y_1^C - Y_0^C | T_1 = 0\right)$$

Estimates of actual DiD can also be computed within the regression framework, and the regressions can be weighted to account for potential bias in DiD. In particular, the estimation equation will be determined as follows:

$$Y_{it} = \alpha + \beta T_{i1} t + \rho T_{i1} + \gamma t + \varepsilon_{it}$$

City branding positively correlates with environmental sustainability as measured by the environmental quality index (Al-Hinkawi & Zedan, 2021; Górska-Warsewicz, 2020). With city branding, a region will commit to ensuring sustainable resource availability and environmental preservation. In addition, fiscal decentralization positively correlates with environmental sustainability, which is essential as an environmental regulator (Ji et al., 2021; Kuai et al., 2019). The study results by Brilhante and Klaas (2018) found that GDP has a positive effect on a sustainable environment, and population size has a negative effect on a sustainable environment. On the other hand, electricity consumption has a negative impact on a sustainable environment. Consumption of this energy, especially non-renewable ones, will exacerbate greenhouse gas emissions, harming environmental sustainability (Achuo et al., 2022; Zakari et al., 2021). Based on previous research, the empirical model can be formulated as follows:

$$EI_{it} = \alpha_0 + \alpha_1 COP_{it}^{25} + \alpha_2 D_{it}^{rb} + \beta_1 COP_{it} \times D_{it}^{rb} + \alpha_3 lnFDR_{it} + \alpha_4 lnFDE_{it} + \alpha_5 lnPop_{it} + \alpha_6 lnGDP_{it} + \alpha_7 lnEC_{it} + \alpha_8 RA_{it} + u_{it}$$

Where *EI* is an index of environmental quality, COP^{25} is a timeline for implementing the COP protocol in 2019 (1= after, 0= before), D^{rb} is a province that has a branded city, *lnFDR* is fiscal decentralization from the aspect of regional income (PAD), *lnFDE* is fiscal decentralization from the aspect of regional spending (capital + employees), *lnPop* is the natural logarithm of population, *lnGDP* is the natural logarithm of gross domestic product, *lnEC* is the natural logarithm of consumption of electrical energy, RA is the age of the province since it was established, *u* is the other province factor, *i* is the province, and *t* is the time.

This research uses secondary panel data from 34 provinces in Indonesia from 2016 to 2021. The provinces include Aceh, North Sumatra, West Sumatra, Riau, Riau Islands, Jambi, South Sumatra, Bengkulu, Lampung, Bangka Belitung Islands, DKI Jakarta, Banten, West Java, Central Java, DI Yogyakarta, East Java, Bali, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Kalimantan, South Sulawesi, West Sulawesi, Southeast Sulawesi, Central Sulawesi, North Sulawesi, Gorontalo, Maluku, North Maluku, Papua, and West Papua. The following is the operational definition of the variable:

Table 1. Definition of Research Variables

	Variables	Acronym	Definition	Source
Dependent	Environmental Quality Index	EI_{it}	Provincial Environmental Quality Index (Obtained by calculation 40%×IKTL+30%×IKU+30%×IKA).	Ministry of Environment and Forestry
Independent	Climate Conference 25 (COP25)	COP^{25}	Dummy timeline of COP protocol implementation in 2019 (1=after, 0=before)	
	Branding	D^{rb}	Dummy of branded province (1=branded, 0=not branded)	Department of Culture and Tourism (Disbudpar)
	Fiscal decentralization	*lnFDR*	Fiscal decentralization from the aspect of regional income (PAD)	Ministry of Finance
	Fiscal decentralization	*lnFDE*	Fiscal decentralization from the aspect of regional spending (capital+employees)	Ministry of Finance
	Population	*lnPop*	The natural logarithm of the population in a city	BPS
	GDP	*lnFGD*	The natural logarithm of gross domestic product	BPS
	Electricity consumption	*lnEC*	The natural logarithm of consumption of electrical energy	State Electricity Company
	Age provinces	*RA*	The age of the province since it was established	

3. Results and Discussion

Table 2 presents the size of concentration, size of distribution, and size of location, including research variables:

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ei	204	69.519	9.045	35.78	91.5
cop	204	0.5	0.501	0	1
branding	204	0.735	0.442	0	1
fdr	204	9392.273	13073.305	1394.752	77039.68
lnfdr	204	8.687	0.843	7.24	11.252
fde	204	10569.09	13416.763	1693.87	80902.094
lnfde	204	8.837	0.84	7.435	11.301
population	204	8024.169	11425.826	657.3	52684.09
lnurb	204	8.384	1.027	6.488	10.872
gdp	204	4.417e+08	6.321e+08	29150600	2.913e+09
lngdp	204	19.196	1.143	17.188	21.792
konsumsilistrik	204	7784.387	17126.115	237.12	186215
lnconsum	204	7.869	1.356	5.469	12.135
ra	204	64.618	77.43	4	494

Source: *Research finding*

Based on the calculation results in Table 2, most of the environmental quality indices are in the normal range (50% threshold). Meanwhile, the average value of fiscal decentralization from regional income (fdr) is Rp9,392.273 trillion, and the average value of fiscal decentralization from the aspect of expenditure (fde) is Rp10,569.09 trillion. So that the condition of fiscal decentralization still leads to budget deficit behavior with an average deficit value of Rp1.117 trillion. The average

urban population is still around the level of 8.024 million people. Gross regional domestic product ranges from Rp4,417 trillion. Electricity consumption is in the range of 7784.3 Gwh, and the average age of the province is 64 years.

Table 3 presents the correlation coefficient matrix.

Table 3. Pairwise Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) ei	1.000								
(2) cop	0.070	1.000							
(3) branding	-0.351***	0.000	1.000						
(4) lnfdr	-0.548***	0.119*	0.269***	1.000					
(5) lnfde	-0.467***	0.111	0.129*	0.952***	1.000				
(6) lnurb	-0.581***	0.028	0.328***	0.842***	0.803***	1.000			
(7) lngdp	-0.548***	0.079	0.329***	0.929***	0.887***	0.871***	1.000		
(8) lnconsum	-0.616***	0.051	0.304***	0.879***	0.843***	0.886***	0.896***	1.000	
(9) ra	-0.534***	0.019	0.174**	0.641***	0.614***	0.333***	0.512***	0.457***	1.000

*** p<0.01, ** p<0.05, * p<0.1

Source: *Research finding*

Based on Table 3, overall, the consistency of the coefficient column shows a medium level of correlation but a concentrated negative relationship. Based on our observations, this model is considered robust for further analysis, considering that the capture power of the independent variables has reached a 95% confidence level. Meanwhile, the multicollinearity aspect shows that if all variables are tested simultaneously, there will be no such problem so that it can be further interpreted. The results of multicollinearity are indicated by the consistency of column (1), whose value is not more than 0.9.

Table 4 is the result of the difference in difference estimation involving the time aspect in the form of a climate change conference which is an embryo of efforts to create zero carbon emission besides that through the treatment dimension in the form of provinces that have carried out branding (city branding optimization).

Table 4 shows a climate conference does not affect the environmental quality index at various comparison levels. Meanwhile, regional branding decreases the environmental quality index with a lower value than without branding. On the other hand, when local governments face fiscal centralization, the impact is even higher. Also, the disbursement of funds, both local and other local revenues, has strengthened the environmental quality index. Meanwhile, the aftermath of the conference encouraged the regions to be more aggressive towards branding, which led to a higher promotion of the environment than without a conference of this size. The increased urban population and electricity consumption have consistently decreased the environmental quality index. However, the gross domestic product consistently does not affect the decline in the environmental quality index. Finally, all explanatory variables were confirmed to be able to explain the environmental quality index of 59.2%.

Based on Figure 1, the existence of new policies and agreements for countries that are members of COP25 can increase the environmental quality index through the transmission of regional branding. It is evidenced by the difference line predicting a higher treatment than the control. By departing from this transmission,

Table 4. The Estimation Results of the Influence of Regional Branding on the Environment Before and After the Climate Change Conference

VARIABLES	(1) All	(2) ra=No	(3) lnurb=No	(4) lngdp=No	(5) lnfdr=No	(6) lnfde=No
Constant	65.47***	88.88***	75.89***	68.38***	64.48***	67.18***
	(7.474)	(11.33)	(10.55)	(6.471)	(7.690)	(7.472)
1.cop	-1.346	-0.435	-0.882	-1.338	-1.268	-1.342
	(1.579)	(1.905)	(1.761)	(1.586)	(1.594)	(1.614)
1.branding	-2.126**	-3.917***	-3.077***	-2.053**	-1.990*	-4.000***
	(0.956)	(1.173)	(1.087)	(0.925)	(1.030)	(0.887)
1.cop#1.branding	2.677**	3.098*	2.841*	2.654**	2.719**	2.722**
	(1.290)	(1.669)	(1.502)	(1.270)	(1.358)	(1.089)
lnfdr	1.857	-6.095*	-0.334	2.110		7.106***
	(3.194)	(3.573)	(3.424)	(2.728)		(2.711)
lnfde	6.412***	4.937**	5.824***	6.462***	7.338***	
	(1.684)	(2.235)	(2.047)	(1.739)	(1.301)	
lnurb	-5.034***	-1.272		-4.988***	-4.870***	-4.784***
	(0.921)	(0.815)		(0.971)	(0.858)	(0.987)
lngdp	0.335	1.565	-0.525		0.683	0.724
	(0.795)	(1.125)	(1.111)		(0.478)	(0.869)
lnconsum	-3.458***	-3.489***	-5.057***	-3.398***	-3.387***	-3.334***
	(0.974)	(0.957)	(1.055)	(0.988)	(0.931)	(1.083)
Ra	-0.0700***		-0.0529***	-0.0703***	-0.0673***	-0.0671***
	(0.00952)		(0.00727)	(0.00916)	(0.00772)	(0.0101)
Observations	204	204	204	204	204	204
R-squared	0.596	0.448	0.548	0.596	0.595	0.570
Number of prov	34	34	34	34	34	34

Standard errors in parentheses

**** p<0.01, ** p<0.05, * p<0.1*

Source: *Research finding*

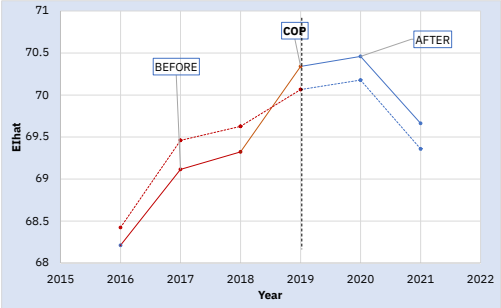

Figure 1. Trends Plot Using Difference in Difference of Environmental Index

Source: *Research finding*

the COP25 policy is suitable for regional branding to better navigate the environmental quality index. However, contextual framework work must be watched out for when the region faces branding problems that are only oriented toward achieving it.

3.1. Discussion

These results are consistent with the research of Al-Hinkawi and Zedan (2021) and Górska-Warsewicz (2020), which states that city branding positively correlates with the environment indirectly as measured by the environmental quality index. Urban branding can be an effective tool in driving environmental promotion. Regional branding, moderated by COP policies and agreements, can promote the environment and encourage cities to be more sustainable in various ecological aspects. Regional branding can promote people's behavior to be more concerned about the environment and navigate the role of intermodal to develop more rapidly. Through branding, cities can build a strong and positive image focusing on environmental sustainability and promoting efforts to preserve the environment.

Urban and regional brands do not directly reduce the environmental quality index. However, the rapid and chaotic urban development, which often accompanies big brands and rapid business growth, can have a negative impact on environmental quality. Several factors that can affect the quality of the environment in cities include air and water pollution, degradation of land and natural habitats, and dependence on fossil energy which produces carbon emissions. The increasing number of motorized vehicles and the ever-increasing need for energy can exacerbate air pollution and carbon emissions in cities. In addition, irregular urban growth can also cause adverse environmental changes. For example, uncontrolled land development can cause damage to the environment, reduce biodiversity, and increase the risk of natural disasters such as floods and landslides.

Several cities worldwide have used branding to strengthen their image as environmentally friendly and attractive cities to visit or live in. For example, Amsterdam is known as a bike-friendly city, with extensive bike paths and infrastructure that supports bicycle use as the primary means of transportation (Harisankar & Biju, 2018). In San Francisco, the "Zero Waste" campaign has successfully promoted recycling practices and significant waste reduction throughout the city (Zaman & Lehmann, 2011). Urban brands can play an essential role in driving environmental promotion, as they have great potential to influence consumer behavior and inspire other individuals and organizations to act sustainably. In this sense, urban branding can incentivize cities to adopt more sustainable business practices and policies and promote a better living environment for residents and visitors (Alamsyah et al., 2020). Thus, branding can be essential in building public awareness and support for maintaining a healthy and sustainable environment.

Fiscal decentralization is closely related to regional incentives in pursuing sustainable development. It follows the research of Ji et al. (2021) and Kuai et al. (2019), which states that fiscal decentralization positively affects a sustainable environment. Fiscal decentralization is an essential regulation to mobilize government power and resources to be beneficial for economic growth. Fiscal policy through urban branding can encourage economic growth and environmental sustainability in cities. Fiscal policy through urban branding can promote sustainable economic growth and maintain environmental sustainability in cities. It will bring long-term benefits to the community and the surrounding environment. Several fiscal policies that can be implemented through urban branding include tax incentives for using renewable energy, waste taxes, tax incentives for environmentally friendly products, and green taxes.

From the aspect of the provincial age, it is not the only factor that determines progress in the environmental field. Many other factors affect environmental

progress in an area, such as public awareness, government policies, and available natural resources. Some young or newly established regions have made more rapid progress in developing sustainable environmental programs and policies because they can start from scratch and design better and more environmentally friendly infrastructure. On the other hand, some areas that are old or have a long history often face challenges in dealing with environmental problems because they have to overcome the negative impacts of development and urbanization that have been going on for a long time. Therefore, it is essential to recognize that the age of a province is not the sole factor determining environmental progress in an area (Liu et al., 2023). It is essential for each region to continuously improve its environmental quality and increase public awareness and implement sustainable environmental policies and programs, regardless of the age of their province.

Consumption of non-renewable energy, such as electricity consumption, negatively correlates with the environmental quality index. It follows the study of Achuo et al. (2022) and Zakari et al. (2021) which shows that high electricity consumption will reduce the environmental quality index. Power plants that use fossil fuels (such as coal and oil) to generate electricity produce emissions of greenhouse gases, such as carbon dioxide and methane, which contribute to global warming and climate change. Burning fossil fuels for power also produces air pollutants, such as sulfur dioxide, nitrogen oxides, and delicate particulate matter, which can cause health problems and damage ecosystems. The high electricity consumption is, of course, also able to frustrate the regions in promoting environmental quality and awareness.

4. Conclusion

Based on the discussion results, regional branding after COP25 effectively promotes a sustainable environment. In addition, fiscal decentralization has also contributed to encouraging regions to move more to develop it. On the other hand, the increase in urban population and electricity consumption gradually decreases the environmental quality index. Finally, the provincial age only affects improving environmental quality.

The province can do several things to improve branding and environmental mapping qualifications, for example: Introducing the concept of sustainability to the community and helping to increase awareness about the importance of maintaining ecosystem balance and reducing the negative impact of urbanization on the environment; Maintaining the sustainability of natural resources by promoting the use of renewable energy, reducing waste, and managing waste properly. Expanding green open space increases the community's quality of life by providing access to parks, gardens, and other green open areas.

This research is minimal in several respects, and for example, it does not include indicators of the transmission of environmental damage, such as air, water, and land cover pollution.

Acknowledgment

We would like to express our gratitude to the reviewers for their comments and input on this article. We also thank the editorial board for processing this article.

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