Does the Role of Regional Heads in Managing Environmental Crises? : Advancing The Upper Echelon Theory

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Abstract. The role of the Regional Head is to determine the budget in resolving the crisis so that it does not prolong. The Regional Head's decision is a measuring tool as a concrete follow-up in formulating budget refocusing. The aim of this research is to determine the influence of regional heads' educational background, gender and length of service as regional heads on crisis management in Indonesia through budget refocusing. Because our research focuses on the role of regional heads in dealing with the environmental crisis caused by the Covid-19 pandemic, we selected a sample of all regional heads in Indonesia. To ascertain the conditions of the Covid-19 pandemic, we used a 2020 sample. The method used was the census sampling method. The results of the first study showed that many regional heads were men with slight variations in the data. Significant variations in area size reflect differences in area size. The two moderate positive correlations with assets and population indicate that budget refocusing tends to increase with assets and population. There is almost no significant relationship with other variables, a weak negative correlation with population and a weak negative correlation with budget refocusing.

Keywords: Budget Refocusing, Crisis Management, Regional Heads

1   Introduction

The covid 19 pandemic has posed various challenges for the government. Regional heads have an essential role in deciding to overcome the environmental crisis caused by covid 19[1]. According to the OECD report, Central governments often must work with local governments to coordinate responses, which include strategic planning, use of evidence for decision-making making, and communication with the public where local governments are at the forefront of dealing with the health, economic and social impacts of the pandemic so that vertical coordination between central and local governments is significant[2]. One of the environmental crises caused by covid 19 is the increase in medical waste. The COVID-19 pandemic has significantly increased med-

ical waste, such as masks, gloves, and personal protective equipment (PPE)[3]. Local leaders must ensure this medical waste is managed safely and according to applicable regulations to mitigate environmental pollution. According to [4], Regional heads emphasize political control over governance efficiency, with regional heads mobilizing resources to achieve environmental goals but potentially clashing with state power. Factors influencing regional heads in making decisions include leadership abilities, innovation and adaptation, experience, and in-depth knowledge of the issues at hand, allowing regional heads to make faster decisions[5]. According to the upper echelon theory, the role factors of regional heads in handling environmental crises are influenced by individual characteristics such as previous experiences, educational backgrounds, and personal values, leadership styles consisting of transformational leadership and evidence-based leadership, the impact of the external context in the form of social-political pressure and resources and support, strategic decision making long-term vs short-term orientation and adaptability[6].

Upper Echelon Theory

The Upper Echelons theory, developed by Donald C. Hambrick and Phyllis A. Mason, states that organizations reflect the values, experiences, and personal characteristics of their top managers. In the context of regional heads handling the environmental crisis due to Covid 19, this theory provides insight into how regional heads' characteristics and background affect how they respond to and manage the crisis. According to the upper-echelon theory, the factors that influence the role of regional heads in handling the environmental crisis due to the COVID-19 pandemic are individual characteristics, leadership style, and the impact of the internal context[6]. Individual characteristics consist of experience, education, personal values, and attitudes. Regional heads with previous experience in crisis management or environmental policy tend to be more effective in overcoming environmental crises. Prior experience assists local leaders in understanding the complexity of the crisis and in making timely and well-informed decisions[7].

Educational background can provide local leaders with the knowledge to address environmental crises better. Personal values regarding sustainability and environmental preservation will influence local leaders' policy priorities and actions in addressing the crisis [8,9]. Leadership style consists of transformational leadership and evidence-based capabilities. Regional heads with a transformational leadership style will be better able to inspire and motivate staff and communities to participate actively in mitigation and adaptation efforts to environmental crises. The role of transformational leadership style regional heads creates a clear vision and encourages innovation and collaboration[10]. Local leaders who value evidence-based approaches are more likely to use data and scientific research in decision-making, which is critical in responding to complex and changing environmental crises[11]. External context impacts consist of social and political pressure and support resources. Regional heads often face political and social pressure from various stakeholders[12]. The availability of resources and support from the central government, non-governmental organizations, and local communities will affect the effectiveness of the regional heads' response to

the environmental crisis. Regional heads who are good at building networks and strategic alliances will be more successful in resource mobilization [7].

2   Hypothesis Development

Regional heads with higher levels of education tend to have better abilities and knowledge in overcoming environmental crises, so the effectiveness of handling environmental crises will be better than regional heads with lower levels of education because education is needed to manage and overcome environmental problems such as waste management[13].

In addition, other studies have shown that university-level environmental education can significantly influence regional heads' attitudes and behaviors that can later be applied in decision-making. Thus, regional heads with an excellent educational background in the environment are more likely to adopt policies supporting sustainability and mitigating environmental crises[14].

The level of education significantly influences the regional head in handling the environmental crisis resulting from COVID-19, which will ultimately affect budget refusal.

H1: level of education is positively related to budget – refocusing

The gender of regional heads can indeed affect performance in decision-making. Research [13] shows that female leaders tend to have a more participative and collaborative leadership style than male leaders, who are often autocratic or task-orientated. A participative style can lead to more inclusive decisions and consider more perspectives. Some studies also show that female leaders are more likely to prioritize social and environmental issues. The presence of women in political leadership positions is associated with lower levels of corruption and more pro-social and pro-environmental policies [15].

H2: Gender is positively related to budget – refocusing

Longer-serving regional heads tend to have more experience and knowledge of their regions. This allows them to understand local issues better and develop more effective policies[15]. Long experience in a leadership position can enhance leaders' ability to respond better to crises because they have built the necessary networks and resources[16].

H3: Length of service is positively related to budget – refocusing

3   Method

3.1   Data and samples (materials and methods)

The research population is made up of regional heads in Indonesia. This study uses census sampling, where the sample is taken because it is essential to describe the role

of the regional head. The data used is cross-sectional, and it only takes data from 2020. The sample used is the year of the COVID-19 pandemic. Table 1 shows the sample data used in the study.

Table 1. Variable Definition and measurements

Variables	Definition	Source
REC	Budget optimization strategies	(Yanyu & Inso, 2023)[17]
Education Level	Stages or levels of formal education in the education system	(Classification, 1975)[18]
Gender	Social and cultural constructs involving roles, status, and relationships between men and women	(Fali et al., 2020) [19]
Length of service	The Length of time a person has held a particular position	(Hwang & Fong Lee Cheng, 2011)[20]
Asset	Resources that have economic value	(Caballero et al., 2017)[21]
resident	Individuals living in an area	(Sato, 2016)[22]
Area	Area size of a geographical region	(Chen, 2014)[23]

3.2   Sample selection

Because our research focuses on the role of regional heads in dealing with the environmental crisis due to the COVID-19 pandemic, we chose a sample of all regional heads in Indonesia. To ensure the conditions of the COVID-19 pandemic, we used a sample from 2020. The method used is the census sampling method. The results showed a positive impact on the role of regional heads in handling the environmental crisis due to the covid 19 pandemic.

3.3   Model specification

This study uses a regression model between the dependent variable of budget reco-fusing and the independent variables of education level, gender, Length of service, and public attention. It also analyses control variables for assets, population, and area.

Here is the research model:

$$HD = \alpha + \beta 1 TP + \beta 1 RGR + \beta 1 RLM + \beta AT + \beta PK + \beta LW$$

Description

X1 = level of education (TP)

X2 = Gender (GR)

X3 = Length of service (LM)

X4 = Asset (AT)

X5= Population (PK)

X6 = Area (LW)

4   Result and Analysis

4.1   Descriptive Statistics and correlations

In Table 2, the financial performance metrics for the data set of 378 observations reveal a wide range of crucial indicator values. The education level and area variables show more significant variation, reflecting wider differences with an average of 1.529.

Table 2. Descriptive statistic

Variable	Obs	Mean	Std. dev.	Min	Max
ln_rec	378	26.018	0.604	24.314	27.775
Edu	378	1.529	0.877	0	3
gender	378	0.913	0.283	0	1
ln_ls	378	6.917	0.607	2.485	7.418
ln_asset	378	28.578	0.505	27.605	30.688
ln_area	378	8.241	1.735	5.620	15.299
ln_pop	378	12.643	0.985	10.089	15.176

The financial performance metrics for the dataset of 378 observations reveal diverse values across various vital indicators. The mean value of education level is 1.529, with a standard deviation of 0.877. The range of education values from 0 to 3 indicates that the variation in education level may be from no formal education to higher education. The mean value of gender is 0.913, indicating that most respondents

are male. The data spread is relatively small, with a standard deviation of 0.283. The mean Length of tenure value is 6.917, with a variation of 0.607. the range of values ranges from 2.485 to 7.418, showing some variation in the Length of tenure that regional heads have. The average asset value is 28,578, with a standard deviation of 0.505. the range of values from 27,605 to 30,688 indicates a relatively slight variation in asset values. The average area value is 8,241, with considerable variation and a standard deviation 1,735. The range of values from 5,620 to 15,299 shows significant variation in area. The average value of the population is 12,643, with a variation of 0.985. the range of values from 10,089 to 15,176 indicates a moderate variation in population.

Table 3. Matrix correlation

	ln_rec	edu	gender	ln_ls	ln_asset	ln_area	ln_pop
ln_rec	1						
Edu	0.009	1					
Gender	-0.109	0.016	1				
ln_ls	-0.144	0.065	0.046	1			
ln_asset	0.539	-0.028	-0.055	-0.120	1		
ln_area	0.007	-0.059	0.134	0.059	0.050	1	
ln_pop	0.471	0.006	-0.206	-0.117	0.641	-0.311	

Table 3 shows the multicollinearity test between the independent variables. The correlation matrix provides insight into the relationship between various economic and financial indicators. The asset variable has a strong positive correlation (0.641) with population, suggesting that more excellent assets are associated with a more significant population. Budget recofusing has a moderate positive correlation with assets (0.539) and population, indicating that budget recofusing tends to increase with assets and population. Education level shows a significant relationship with other variables. Gender shows a weak negative relationship (-0.206) with population, meaning a slight negative relationship exists between gender and population. Area and population show a moderate negative correlation, indicating that larger areas tend to be associated with smaller populations.

Table 4. Regression result

	(1)	(2)	(3)	(4)
	ln_rec	ln_rec	ln_rec	ln_rec
edu	0.0151			0.0193
	(0.51)			(0.66)
gender		-0.103		-0.1000
		(-1.10)		(-1.07)

	(1)	(2)	(3)	(4)
	ln_rec	ln_rec	ln_rec	ln_rec
ln_ls			-0.0748*	-0.0754*
			(-1.75)	(-1.76)
ln_asset	0.450***	0.455***	0.440***	0.447***
	(6.34)	(6.41)	(6.22)	(6.29)
ln_area	0.0235	0.0239	0.0244	0.0257
	(1.41)	(1.43)	(1.47)	(1.55)
ln_pop	0.154***	0.147***	0.153***	0.145***
	(4.04)	(3.79)	(4.01)	(3.75)
_cons	11.00***	11.05***	11.83***	11.78***
	(6.49)	(6.53)	(6.78)	(6.74)
r2	0.322	0.323	0.327	0.329
N	378	378	378	378

*t statistics in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$*

Table 4 shows the regression results, providing valuable insights into the relationship between the dependent and independent variables. The coefficients indicate the magnitude and direction of the impact, while the t-statistics in parentheses assess the statistical significance of each variable.

The level of education has a small and insignificant positive coefficient, indicating that increased education has no significant effect on budget – refocusing. Gender has a small and insignificant negative coefficient, indicating that gender does not significantly influence budget refocusing. Length of service has a significant negative coefficient at the 10% level, indicating that an increase in service slightly reduces budget refocusing. Assets have a significant positive coefficient at the 1% level, suggesting that an increase in assets is associated with a significant increase in budget – refocusing. The area has a small and insignificant positive coefficient, indicating that the area has no significant effect on budget refocusing. The population has a significant positive coefficient at the 1% level, indicating that an increase in population is associated with a significant increase in budget – refocusing. The high significant intercept indicates that when all independent variables are zero, the baseline value of budget refocusing remains significant and extensive. An r2 value of about 0.32 to 0.33 indicates

that the model explains about 32% to 33% of the variation in budget refocusing. This suggests that there are other variables outside the model affecting budget refocusing.

4.2   Discussion

This research explores the role of regional heads in addressing the environmental crisis caused by the COVID-19 pandemic. This article highlights the importance of effective regional heads' practices in mitigating the impact of the environmental crisis due to the covid 19 pandemic, focusing on some of the findings obtained from data analysis of regional heads in Indonesia.

Firstly, the variation in education level ranges from no formal education to higher education. The average gender is close to 1, indicating that most regional heads are male, with slight variation in the data. Significant variation in area reflects differences in area size.

Second, the moderate positive correlation with assets (0.539) and population (0.471) shows that budget recofusing tends to increase with assets and population. There is almost no significant relationship with other variables, suggesting that education does not affect other variables in the model much. A weak negative correlation with population (-0.206) indicates a slight negative relationship between gender and population. There is a weak negative correlation with budget recofusing (-0.144), indicating an increase in the number of years in office slightly reduces budget recofusing.

5   Conclusion

This study offers various implications. First, this study contributes to the literature by providing evidence of the influence of regional heads in handling the COVID-19 environmental crisis due to the covid 19 pandemic. The second implication is the study results. This illustrates that several factors influence budget recofusing, which can be considered by regional heads when dealing with the environmental crisis.

Then it is recommended: 1) future research can be conducted on more regional heads and further add other variables, 2) future research can use different theoretical dimensions, and 3) future research can add observation periods to provide a more consistent picture in future research. This research implies that it provides a theoretical reconstruction different from previous research, which is studied through upper-echelon theory and can contribute to public accounting. In these findings suggest that regional heads are essential in addressing the covid 19 environmental crisis.

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