

**IMPACT OF INNOVATIVENESS ON OPERATIONAL  
PERFORMANCE OF GOVERNMENT LEVEL COMPANIES (GLCs):  
A MODERATING ROLE OF INCENTIVE SCHEMES**

**Sadia Shaikh**, Benazir School of Business, Benazir Bhutto Shaheed University  
Lyari, Karachi, Pakistan. Email: [dr.sadiashaikh@bbsul.edu.pk](mailto:dr.sadiashaikh@bbsul.edu.pk)

**Muhammad Faisal Sultan**, Assistant Professor, KASBIT & Ph.D. Scholar  
KUBS-UoK, Pakistan. Email: [mfaisal@kasbit.edu.pk](mailto:mfaisal@kasbit.edu.pk)

**Waqar Akbar**, Assistant Professor, Shaheed Zulfiqar Ali Bhutto Institute of  
Science and Technology, SZABIST, Karachi, Pakistan.  
Email: [waqar.akbar@szabist.edu.pk](mailto:waqar.akbar@szabist.edu.pk)

**Tasleem Arif**, Ph.D. Scholar, Department of Sports Sciences and Physical  
Education, Gomal University, Dera Ismail Khan, Pakistan.  
Email: [naeem.economics@suit.edu.pk](mailto:naeem.economics@suit.edu.pk)

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**Abstract.** *Corporate Entrepreneurship (CE) is not a new strategy of fostering a firm's performance*

*and to increase customer satisfaction and market share, espoused by striving firms. However, studies on the effect of CE on the performance of GLCs are not common in literature, especially in the eastern world. The literature strongly indicates the requirement of more workable models of CE for GLCs in Pakistan, due to the dearth of existing studies on the subject. Hence, this study aims to gauge the impact of the most compelling element of CE on the operational performance of GLCs. This study has also been supplemented with the moderating role of incentives schemes to effectively gauge the motivational aspect in CE of GLCs. The analysis has been made through SMART PLS and Structural Equation Modeling. Analysis indicated that innovativeness is perceived as one of the prime tools which may affect operational performance although GLCs have different compensation structures and thus do not seem to be affecting the relationship of innovativeness and operational performance of GLCs.*

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## 1. Introduction

The varying economic world order profoundly emphasizes the importance of entrepreneurship development to nurture the socio-economic framework of nations around the globe. The economic expansion of a nation is reliant on opportunities emerging from entrepreneurship and globalization (Incekara & Savrul, 2013). Similar has been indicated by Entebang and Harrison (2019) that economic growth of the nation is interrelated with the role of entrepreneurship and hence studies on entrepreneurial mindset and behaviour are evolving around the world continuously. In fact, research associated with corporate entrepreneurship (CE) is prevalent for almost two decades as it is imperative to know how established firms will achieve higher degrees of performance and competitive advantage. Thus, some of the studies suggest the implementation of CE as the solution to all (He, Wang & Martinez-Fuentes, 2020), which is also treated as an important factor for evaluation of firm performance (Abou-Moghli & Al-Abdallah, 2018). CE is also a way to capture opportunities under the scenario accompanied by very few of these (Ambad & Wahab, 2016) though challenges about large and small firms are completely different (Beaver, 2003). Hence, firms must adopt a different set of strategies to boost their performance (Wagner & Hansen, 2005). Larger firms have to use resources and capabilities adequately to create competitive advantage (Ambad & Wahab, 2016) and these entrepreneurial efforts are based on the level of CE implemented in the company (Abou-Moghli & Al-Abdallah, 2018).

Abou-Moghli and Al-Abdallah (2018) indicated that large firms contribute significantly to the growth of the economy and therefore determinants associated with CE of larger firms are more significant. However, there is immensely lacking empirical evidence for CE activities of larger and (PLC) public limited companies (Miller & Le Breton-Miller, 2011), the survival of listed firms is also deficient (Fama & French, 2016). Hence, this study intends to indicate that performance of PLCs is the major point of concern as they are exposed to a more challenging environment today as compared to the past due to the changing business environment. Thus, CE is used as the measure to overcome problems of PLCs which are suffering from lack of profitability & survival, and which apparently fail to implement effective strategies or manage operational quality (Ambad & Wahab, 2016). Nevertheless, due to social disconnection, CE is less popular in areas that are underdeveloped & therefore there are significant lacking studies on CE from these research areas (George, Kotha, Parikh, Alnuaimi & Bahaj, 2016).

Henceforth, it is also imperative to conduct studies on CE concerning the eastern world (Kuratko, Hronby & Covin, 2014), as prior studies are mostly concerned with the western part of the world (Adeoti & Asabi, 2018). The need

for study became more potent when various variables of CE as innovation, strategic-renewal, and corporate venturing are inconclusive on the firm's performance (Bierwerth, Schwens, Isidor & Kabst, 2015). In addition to this there is a requirement of a workable model for CE of government level companies (GLC) operating in Pakistan (Nayyar, 2017) and to transform the earlier as well as the contemporary model of CE (Banda & Kazonga, 2018).

Similarly, innovation in GLC might induce decision making and reduce competitive pressure (Entebang & Harrison, 2019), thus continuous innovation of offerings and technologies is a topline indicator of CE (Ambad & Wahab, 2016), which is termed as innovativeness (Ozdemirci, 2011). On the other side, the non-financial performance of the firm is treated as a persuasive indicator of organizational as well as human and customer aspects. Therefore, to provide workable research indicated by Nayyar (2017), for CE of GLCs, this study uses innovativeness as the predictor (IV) of CE activities of GLCs over operating performance.

## **1.2 Theoretical framework**

Most of the firms in developing countries like Bangladesh and Pakistan treat process innovation as the stronger predictor of a firm's performance. However, this creates a question mark on the betterment of the overall performance of firms such as a change in sales or market share remains unanswered (Canh, Liem, Thu & Khunong, 2019).

However, intangible assets (Al-Jinini, Dahiyat & Bontis 2019; He, Wang & Martinez-Fuentes, 2020) e.g. R&D, Human Capital, Brand Equity and Organizational capital, etc. allow firms to design innovative products & design effective distribution mechanism (He et al., 2020). Thus, valid to believe Canh Liem Thu and Khuong, (2019) that product innovation relates more to the specific demand variation of firms offering while process innovation is a way to induce technical efficiency. However, CE as an overall activity is based on the willingness of individuals to take entrepreneurial activities thus organizations must induce individual willingness to take risk through linking that with incentive schemes (Goodale, Kuratko, Hornsby & Covin, 2011). Accordingly, this study is based on innovativeness on the operational performance of the GLCs with moderating role of incentive schemes to clarify the impact of these schemes in the government sector. Emerging from the literature evidence, this study thus attempts to answer the following questions:

RQ1: Does innovativeness affect the operational performance of GLCs in Pakistan?

- RQ2: What is the role of incentive schemes on the operational performance of GLCs in Pakistan?
- RQ3: Do incentive schemes are fostering CE activities and innovativeness' in GLCs?

### **1.3 Significance and scope**

The significance of this study has many folds as this will not increase literature from underprivileged sides of the world (George et al., 2016), the eastern world (Kuratko et al, 2014) or provide more workable models of CE of GLCs concerning Pakistan (Nayyar, 2017). In reality, this study will provide an appropriate framework to understand the role of innovativeness on the operational performance of GLCs in association with incentive schemes which are required to motivate individuals to take risks. However, these schemes are not prevalent in the government sector although there is a provision of indirect forms of compensation concerning designations and job roles. This study will, therefore, significantly optimize knowledge on the relationship between innovativeness and operational performance of GCs coupled with the role of incentive schemes in GLCs

## **2 Literature Review**

Firm's decisions to invest in R&D, human capital, organizational capital, and brand equity provide the opportunities to renew organizational capital, invent products, and optimize distribution (He et al., 2020). However, these activities are heavily based on the extent of CE in the company (Abou-Moghli & Al-Abdallah, 2018) and there is also a requirement of CE in public sector companies to overcome the issues of profitability, growth, and quality (Ambad & Wahab, 2016). On the other side, an initial study by Covin and Slevin (1991) indicated innovation as the most important variable of CE among the initial three variables i.e. innovation, pro-activeness, and risk-taking. Similar has been indicated in another study that to survive in a highly competitive and uncertain world firms are required to increase their ability to innovate. Though innovation has been found to have a weaker relationship with the performance of older and larger firms (Canh et al., 2019) but the most important aspect of CE is to emphasize new products and technologies (Abou-Moghli & Al-Abdallah, 2018 & Ambad & Wahab, 2016).

This process is termed as innovativeness (Ozdemirci, 2011) which may foster profitability and growth (Ambad & Wahab, 2016). These assertions are valid as to measure the level of innovation we consider several new projects, frequency of launch of new products, and increase of sales through these new products (Canh et al., 2019). However, to gain an edge over rivals there is a rigorous need for the continuous launch of new products and technologies

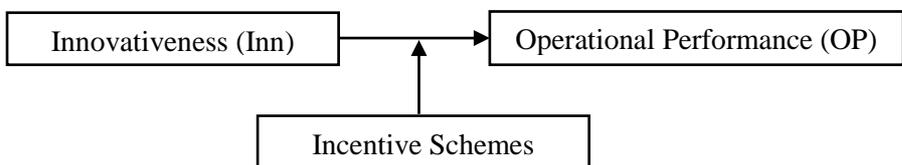
which is the essence of corporate entrepreneurship (Abou-Moghli & Al-Abdallah, 2018; Ambad & Wahab, 2016).

Furthermore, innovation in the company's offerings is treated more effectual than process innovation but firms in Pakistan focus more on process innovation. However, it has been observed that firms from western countries like Spain, France, and the UK prefer product innovation. Similarly, according to a study, selling products through innovative activities might also produce a negative influence on the firm's performance (Canh, et al., 2019). Moreover, product innovation is also a way to succeed in the competition and it is included in most of the CE movement however there are still some cases that highlight the lack of relationship between innovation and CE (Minafam, 2017).

**H<sub>1A</sub>:** There is no relationship between innovativeness (as a part of corporate entrepreneurship) in GLCs and the operational performance of firms in Pakistan.

Prior studies have constantly indicated significant lacking studies that highlighted the link between entrepreneurial activities of the firm and human resource management practices (Bow & Dawling, 2007). Some of the studies which elaborate on the relationship between reward mechanism and organizational performance indicate a significant difference in the relationship between firms of the US and Japan (Bow & Dawling, 2007). Managers involved in the process of product development respond positively to variable compensation structure which is coherent with the performance of a project. Similarly, compensation incentives are also a vigorous way to foster innovation in the organization (Barros & Lazzarini, 2012). On the other side, public sector institutions in Pakistan are not using HR practices in the desired way (Ashraf, 2017; Rehman, 2009), like the public sector institutions in developed and western counties (Burgess & Ratto, 2003).

**H<sub>2A</sub>:** There is no moderation caused by incentive schemes of GLCs on the relationship of innovativeness and operational performance.



*Figure 1* Research Model

### 3. Research Methodology

Details are going to be provided in the subsequent sections.

#### 3.1 Research design

This paper is mainly concerned with providing a new model of CE concerning GLCs of Pakistan as indicated by Nayyar (2017). Therefore, the philosophy associated with this research is epistemology as its purpose is to build and create knowledge rather than challenging reality.

The study attempts to discover the causal relationship between the variables, therefore a quantitative research design is preferred, whereas the survey method is adopted as the research strategy (Saunders et al., 2015), to collect the data from employees of GLCs. The same strategy was also opted by prior studies as Nayyar and Mahmood (2014); and Kura and Ahmed (2018). Thus, the approach of this research is deductive, and the method of analysis is the mono method.

#### 3.2 Sampling design

The sampling technique to compile this study is a non-probability sampling. To ascertain the study sample, it has been observed that the support to the lower level might not only be rendered by top management, but the middle management might also play a potent role in the activity (Carter & Jones-Evans, 2006). In fact, Peters, and Waterman (1982); Pinchott (1985), and Quinn (1985) highlighted the importance of middle-level managers in the process of CE. In fact, one of the studies from Pakistan also takes the reference of the top as well as middle-level management however GLCs are not focused on innovation as well as CE (Moghaddam et al., 2015). Moreover, studies from the west also indicated that compensation incentives to top management may foster CE activities. Although the structure of compensation incentives might also play a significant role in fostering the entrepreneurial behavior of individuals (Johl, Bruce & Binks, 2013).

Similar assertions have been indicated by Burgess and Ratto (2003) that incentives schemes are used in the public sector of the UK to improve the performance of employees. However, Public sector institutions in Pakistan are significantly lacking in incorporating effective HR practices (Rehman, 2009; Ashraf, 2017). Therefore, this study takes the reference of the top as well as middle-level management in order to grasp the impact of incentive schemes on individual entrepreneurial behavior effectively. A survey has been compiled from Pakistan International Airline (PIA), Pakistan Railway (PR), and Pakistan Customs (PC). Sample size of this study is 130 although initially 250 questionnaires were circulated due to the busy schedule and spread of COVID-19 the number of workable answers (questionnaire) was 130 only. Although it

is effective enough as the total elements used in the questionnaire were 12 and the sample size of 130 exceeds the 10-times rule and hence remain effective for the study (Kock & Hadaya, 2018).

**3.3 Research instrument**

The questionnaire used in this study is a combination of several studies to include elements that are more relevant to the variables as well as easy to be understood by respondents. The major contributors in this regard are Karacaoglu, Bayarkdaroglu, and San (2013); Minafam (2017) and Ozdemirci (2011) for elements on innovativeness. Kuratko et al. (2014), Johl Bruce and Blinks (2013) are the major source for incentive schemes, Ikenna Julius and Ngozi Ursula (2017) for operational performance. On the other side, SMART PLS has been used for data analysis. The total sample size of this study is 130 which is appropriate as Innovation (Inn) has 4 elements, Operational Performance (OP) has 5 elements and Incentive Schemes (IS) has 3 elements.

**3.4 Statistical testing and analysis**

The model of research in this study is reflective in nature, and thus it must use descriptive and inferential measures for making proper analysis (Benitez et al., 2020) and for analyzing reflective measurement models the criterion of Afthanorhan (2014) is followed.

Table 1 *Outer Loadings*

	<b>Incentive scheme</b>	<b>Innovative Performance</b>	<b>Moderating Effect 1</b>	<b>Organizational Performance</b>
Inn1		0.815		
Inn2		0.723		
Inn3		0.681		
Inn4		0.701		
IS1	0.917			
IS2	0.905			
IS3	0.648			
Inn * Incentive scheme			1.064	
OP1				0.603
OP2				0.829
OP3				0.877
OP4				0.866
OP5				0.832

The purpose of table 1 is to indicate outer loading for each element linked with the model used for innovativeness on the operational performance of GLCs. The minimum required value for outer loading is 0.708 as indicated by

Hair Sarstedt Ringle and Mena (2012) to predict 0.50 of variance for each of its indicators. However, Afthanorhan (2014) indicated 0.60 as the minimum acceptable value for acceptance of outer loadings and therefore all the elements mentioned in table 1 are valid to be accepted.

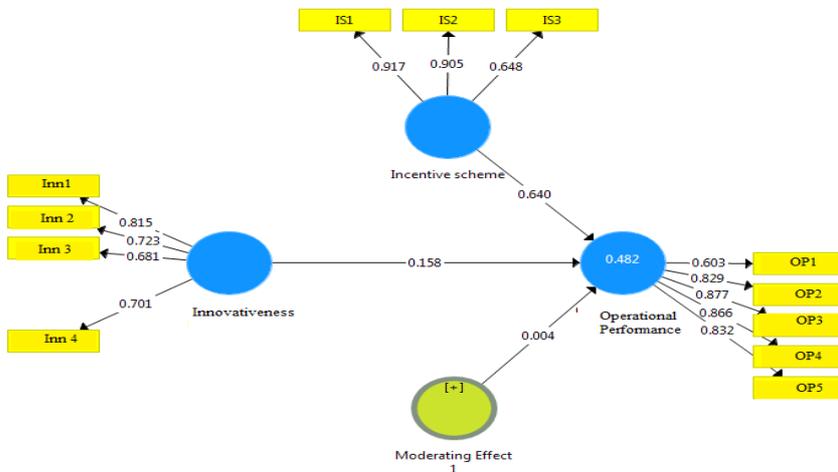


Figure 2. Outer loadings of elements for the construct of Innovativeness on Operational Performance of GLCs

Table 2 R Square and Adjusted R Squares

	R Square	R Square Adjusted
<b>Organizational Performance</b>	0.582	0.549

Table 2 highlights the predictive accuracy and the measure is indicated through the value of R to highlight the change in the dependent variable due to the independent variable. Though, in table 2 the value of R<sup>2</sup> is 0.549 which is treated as a moderate value of R<sup>2</sup> according to Henseler Ringle and Sinkovics (2009) and Hair Ringle and Sarstedt (2013).

Table 3 Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Incentive Scheme	0.763	0.757	0.869	0.693
Innovativeness	0.724	0.734	0.821	0.536
Moderating Effect 1	1.000	1.000	1.000	1.000
Operational Performance	0.863	0.883	0.902	0.653

Table 3 is highlighting construct reliability as well as convergent validity (Ab Hamid, Sami & Sidek, 2017; Sijtsma, 2009 a & b) and also some reliability measures i.e. Cronbach’s Alpha ( $\alpha$ ) and Goldstein rho. Ravand and Baghaei, (2016) mentioned that rho is a better measure of reliability than  $\alpha$  and convergent validity is the hybrid of outer loadings, Average Variance Extracted (AVE) & Composite Reliability (Sijtsma, 2009 a & b). The purpose of convergent validity is to highlight the extent to which parameters associated with one latent variable are measuring the same construct. In fact, AVE is sufficient to indicate convergent validity of the construct and the minimum range for the values of AVE is 0.5 which is required to reflect convergent validity (Benitez et al., 2020).

Table 4. *Discriminant Validity by Heterotrait-Monotrait Ratio (HTMT)*

	<b>Incentive Scheme</b>	<b>Innovative-ness</b>	<b>Moderating Effect 1</b>	<b>Operational Performance</b>
Incentive Scheme	1.00			
Innovativeness	0.354	1.00		
Moderating Effect 1	0.268	0.124	1.00	
Operational Performance	0.817	0.366	0.164	1.00

Table 4 indicates the discriminant validity through Heterotrait-Monotrait Ratio (HTMT). The measure i.e. HTMT ratio is the most preferred measure to highlight discriminant validity (Benitez et al., 2020). Discriminant validity is the way to indicate the lack of association and correlation among the variables of the same construct (Cheung & Lee, 2010). Study of Hair Jr. Sarstedt Ringle and Gudergan (2017) provides a cut-off value for the HTMT ratio which is 0.85 at the junction of two latent variables to assure discriminant validity.

Table 5. *Total Effects through Path Coefficients*

	<b>Original Sample (O)</b>	<b>Sample Mean (M)</b>	<b>Standard Deviation (STDEV)</b>	<b>T Statistics (O/STDEV)</b>	<b>P Values</b>
Incentive scheme -> Operational Performance	0.640	0.651	0.062	10.383	0.000
Innovativeness -> Operational Performance	0.158	0.159	0.072	2.179	0.030
Moderating Effect 1 -> Operational Performance	0.004	0.006	0.084	0.049	0.961

Table 5 shows the path coefficients to regress the impact of innovativeness on the operational performance of the GLCs of Pakistan. The table is a tool to incorporate inferential statistics for testing hypotheses (Benitez et al., 2020) which is the premier criterion of measurement models in SMART-PLS (Hair et al., 2019). However inferential statistics through SMART-PLS required implementation of t-statistics (Durate & Amaro, 2018) with a minimum value of 1.97 (Hair, Ringle & Sarstedt, 2011) & p-values with a maximum of 0.05 (Kock & Hadaya, 2018) to indicate relationship. Therefore, in light of these, it is obvious to believe that innovativeness is significant to affect the operational performance of the firm as it has a t-value (2.179) and p-value (0.030).

The result of incentive schemes is better as it has t-value (10.383) and p-value (0.000), however moderating effect is not effective as it has t-value (0.049) and p-value (0.961)

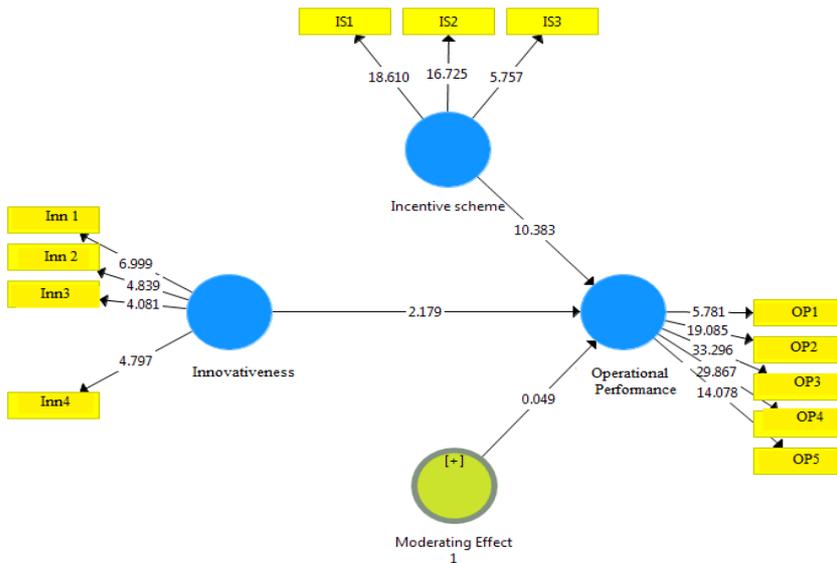


Figure 3. Path Analysis for the model of innovativeness on the operational performance of GLCs of Pakistan

Hence in the light of these parameters, it is valid to imply that innovativeness is perceived as an impactful element of CE to affect operational performance. However, moderation of incentive schemes in GLCs is nullifying the impact of innovativeness although employees of GLCs do perceive incentive schemes as an effective tool to affect the operational performance of the firm in a positive manner.

#### **4. Conclusion and Discussion**

The proposed detailed inferential statistics reveal acceptance of  $H_1A$  which signifies that there is a significant impact of innovativeness on the operational performance of GLCs. However, based on analysis, it is optimal to believe that there is no moderation of incentive schemes on the relationship between innovativeness and operational performance of GLCs. Therefore, it is optimal to accept  $H_2O$ , that there is no moderation caused by incentive schemes of GLCs on the relationship of innovativeness and operational performance. Hence the findings of this study are coherent with Covin and Slevin (1991) that innovation is perceived as an important tool for fostering CE and also with Canh et al. (2019), that innovation is perceived as the tool to excel in the competitive world. Moreover, the study is based on product level innovativeness and therefore found consistent results with the study findings by Abou-Moghli and Al-Abdallah (2018) and Ambad and Wahab (2016).

Moreover, this study also indicated that product innovativeness is perceived as an important tool by the employees of leading GLCs of Pakistan just like in developed countries including Spain, France, and the UK as indicated by Canh et al (2019). Similarly, findings are also coherent with Barros and Lazzarini (2012) that managers are inclined towards variable pay structure based on their involvement in innovation. On the other side results of the study proves that moderation of incentive-based pay nullifies the impact of innovativeness from the operational performance of GLCs. Thus, found consistent with Ashraf (2017) and Rehman (2009) that in GLCs of Pakistan there is a lack of inclination towards HR practices. Hence study also provides the reason product innovativeness has not been preferred over process innovativeness.

#### **5. Policy Implications**

Employees are considered as the most important resources of a firm who are mainly responsible for fostering the company's growth and productivity. Thus, there is a need for an effective remuneration structure to increase the satisfaction and motivation of the most important resource (Johl et al., 2013). This is especially applicable to the public sector where equity-based compensation is the major source of attraction of employees and hence companies all over the world must revise their compensation plans and structure of incentive plans (Barshay, Karp, McLoughlin, 2020). However, there is a severe dearth of effective HR practices in GLCs of Pakistan as indicated by Ashraf (2017) and Rehman (2009). Therefore, it is important to devise effective compensation and incentive policies especially for the post-COVID-19 session to attract individuals through fostering their entrepreneurial

behaviour (Barshay et al., 2020). As there is are vast differences in HR practices of the western and eastern world (Burgess & Ratto, 2003), therefore the mechanism of incentive schemes must be different through analyzing biographic characteristics of residents of Pakistan.

## 6. Area for Future Research

This research study is based on product innovativeness concerning leading GLCS of Pakistan like PIA, Pakistan Customs, and Pakistan Railways. Therefore, it is recommended that further studies might be done on process innovation and its association with the operational performance of GLCs. Similarly, further research might be conducted on CE activities of companies working under the Provincial Government like Municipal Corporations and other similar authorities.

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