Effects of Transformational Leadership and Political Competition on Corporate Performance of Nigeria National Petroleum Corporation

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Abstract—The performance and operation of NNPC have faced a series of attacks by all stakeholders as many have observed lots of inefficiencies, not only on the part of the management but also the staff. This has raised questions of whether their operations and performance are being seriously affected by lack of transformational leadership, and the political competition prevalent in the country. We applied administrative leadership theory and institutional theory as a guide to this research and empirically relates such theories to the study. The study also utilized the quantitative approach where questionnaires were distributed to 370 participants, and the correctly filled and returned questionnaires were used for the analysis using structural equation modeling. The path coefficient of transformational leadership to performance is strong and positive with $\beta = 0.672$; t-value = 14.245; p-value = 0.000. Also, the result found that political competition does not mediate the relationship between transformational leadership and the performance of NNPC (β = -0.008; t-value = -0.600; p- value > 0.05). Furthermore, the indirect paths are all insignificant, indicating that transformational leadership has a direct relationship with corporate performance. The study found that, while political competition does not serve as a mediator in the relationship between transformational leadership and corporate performance, these styles of leadership have a direct and positive impact on corporate performance. The direct relationship between transformational leadership and political competition was not discovered, despite the fact that political competition has a direct and significant impact, both positive and negative, on corporate performance. As a result, both political competition and transformational leadership have the potential to significantly alter corporate performance.

Keywords—Performance, transformational leadership, political competition, corporation performance, Nigeria national petroleum corporation.

I. INTRODUCTION

THE Nigerian National Petroleum Corporation (NNPC) has been the organ empowered by law to handle the issues of oil exploration and marketing in Nigeria. It is a corporate organ of the Ministry of Petroleum and the Federal Republic of Nigeria established under the statute 1977 as a state-owned and controlled company. It is a noteworthy participant in both the upstream and downstream sectors of the Nigerian Oil and Gas Industry (OGI). As a requirement for linking the Organization of Petroleum Exporting Countries (OPEC) in 1971, and in accordance with 1971 decree 18, Nigeria recognized an incorporated oil company called Nigerian National Oil Corporation [1], [2]. Also, in accordance with Nigerian Economic Development Plan for four years then, the NNPC

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was instructed to partake in all the 19 zones of the oil and gas production, comprising the midstream, downstream and upstream sectors. Moreover, the organization sought to be independent and convey linkages between the OGI and other segments of economy in Nigeria [3]. Despite the organizational setting of the NNPC, the performance of this corporation has been greatly affected by the various governmental and political parties in power of Nigeria. The political landscape and the resulting turbulence have had a notable impact on the performance of NNPC right from its establishment.

Despite the political influence of the NNPC, the issues of leadership capability have also been of concern, hence the issue of transformational leadership or the corporation comes to mind. This raises the question of how independent is an independent corporation. The years of military regime in Nigeria saw the military dictators manipulating the board members and operation of the corporation and the various politically elected government functionaries have had their own influences on the operation of the corporation. In a study conducted by [4], it was asserted that despite the various management teams and restructuring of the NNPC, it is still ineffective as evidenced in its consistent underperformance. The establishment of five semi-autonomous sectors in 1985 aimed to enhance the effectiveness of the organization, strengthen its capitalization, promote commercialization, and foster reorganization inventiveness. The objective was to make the corporation highly competitive and effective in pioneering the restructuring and positioning of Nigeria on the path of growth and development. This is crucial because the country heavily relies on revenue generation from its monocultural economy, with other revenue sectors being neglected as the government primarily concentrated only on crude oil production and sales.

II. THEORETICAL FRAMEWORK AND LITERATURE

The study utilized the administrative leadership theory by Henri Fayol published in French in 1916, then published in English in 1949, and the Institutional Theory [43]. The administrative leadership theory argued that good leaders or transformational leaders may make several technical decisions but must certainly have to cede policy decisions to their political superiors to guide the organization through to superior performance. The argument suggests that institutions possess integrity when they remain true to their functions, values, and a distinct set of unifying principles that define their special competence and character [5]. Institutional theory, which is rooted in old organizational theory, seeks to characterize institutions as social structures that have achieved a high degree of resilience [6]. They are composed of cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life. To Scott [9], this means the relationship between the organization and its institutional environment, and the researcher finds this theory appropriate to explain the relationship between the NNPC as an organization and her operational environment in Nigeria. Reference [7] looked at the potential contributions of institutional theory to understand corporate social responsibilities as a mode of governance, as well as what forms corporations apply social responsibilities in its historic, political, and environmental dealings. This has to do with stakeholders' views and state interventionism in the policies and management of corporate organizations in the modern era. Similarly, [8] discussed the nature and variety of these institutionalization processes. The influence of external pressures has a significant impact on the institutions, and the environment they operate in is a collective and interconnected one. Institutional theorists, including [8]-[10], agree that institutional constituents that exert pressures and expectations include the state, professions, as well as interest groups and public opinion.

A. Transformational Leadership

Reference [11] identified some elements such as idealized influence, intellectual stimulation, inspirational motivation, and individualized consideration as strongly causing effective changes in a firm's performance, while [12] saw transformational leadership (TFL) as causing changes in individuals. Reference [12] sees TFL as a procedure in which "leaders and supporters help each other to progress to a larger amount of resolution and inspiration". Reference [13], which focuses on TFL, measures the influence a leader has with their followers and recommends motivation and inspiration as key for achieving superior performance. This explains how transformational leaders make workers more aware of the importance and value of their work and inspire them to go beyond self-interest for the benefit of the organization. References [14] and [15] seem to equate TFL with ethical leadership, where leaders address workers personalities, what they are and what they can become, how they live and how they could live better. In this sense, this leadership style essentially requires a leader not only to tell a convincing and ethically rich story but also to exemplify and experience the story. For [15], such a leader is trustworthy, honest, courageous, and demonstrates integrity. Similarly, [16] and [17] describe TFL as charismatic leadership and charismatic leadership has three attributes namely a spark (the leader), flammable material (the situation) and oxygen (the followers). Spark means the leader has charismatic qualities; flammable material means the employees are willing to be receptive and finally, oxygen means the environment is conducive. We affirmed that each component cannot be effective if not a product of their union. Charismatic leadership resides in the followers' and leader's relationship. TFL involves inspiring workers to rise above their immediate self-enthusiasm "for the group, the organization or the larger nation" [18]. It is very important to note that TFL talks about leaders in relation to several outcomes in followers that make an organization function properly. Such outcomes are performance, creativity, organizational commitment, and task performance among others [19], [20]. A transforming leader must work toward the attainment of productivity, growth, and creativity among other desirous corporate performance measures. In summary, the following characteristics of transformational leaders were identified in statement form: transformational leaders identify themselves as change agents, believe in people, are courageous individuals in the face of ambiguity and uncertainty, are value-driven, life-long learners, capable of managing complexity, visionaries who set direction, mobilize individual commitment, demonstrate personal character, and engender organizational capability. It is these characteristics that led to the growth of key elements of transformational leaders discussed in the section that follows.

B. Corporate Governance and Performance

Corporate performance in every organization, be it public or private, must be assessed by governance, and corporate governance aims at promoting corporate transparency and accountability in the organization. This has to do with ensuring that the directors fulfill their fiduciary duties and adhere strictly to ethical conduct in directing the affairs of a corporation [21]. As stated in the study conducted by [21], corporate governance can be explained to mean the way corporations are governed and controlled with a view to increasing shareholders values and meeting the expectations of other stakeholders. This explains that not only the stakeholders of the corporation are considered but also other stakeholders but also other parties, including individuals or groups who have a connection to the corporation or whose actions are impacted, either directly or indirectly, by the corporation's activities [22]. The challenges of corporate performance in Nigeria are significantly influenced by the socioeconomic and political conditions that exist, and the NNPC is not exempt from these influences. The issue of corporate performance has to do with ensuring that there is good corporate performance and responsiveness to shareholders and other stakeholders in the organization [23]. In line with this, NNPC has the responsibility to ensure that both internal and external stakeholders are satisfied with their performance. However, the influence of the political class becomes a significant factor in achieving this goal. Understandably, the institutions and the legal framework for effective corporate governance appear to be in existence in Nigeria but the enforcement and compliance seems to be lacking, and there is no political, administrative, and legal competency in its implementation. Hence, the political class with the executive powers influences such corporate decision and implementations.

The high level of corruption has made enforcement of the laws so weak that the political class compete off the gains of

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these corporations, especially for the human goods. The political class and the executive branch have severely undermined the effectiveness of these corporate entities, resulting in widespread dissatisfaction among stakeholders. The activities of the political class, the socioeconomic, cultural, and environmental conditions of every country have an influence on the corporate governance and performance of every corporation [24]. The setting up of total quality management culture was imbued in 1995 with the aim of lowering the cost of attaining customer satisfaction and management quality [25]. The restructuring and introduction of new programs at NNPC did not help matters much, hence the question and search for effective leadership to serve the corporation [26]. The political and socioeconomic structure of the country has greatly added to the leadership challenges relating to performance of NNPC and manifest itself in the disruptions of production, inadequate development of native firms with operational experience to articulate and strengthen the policy decisions of the management of NNPC. The principal reason for this is that the political system in Nigeria is built on some sort of patronage network fueled by oil income, and those in authority lack the enthusiasm to support the improvement of a truly selfgoverning regulator that could oblige their ability to influence the operation of NNPC [27].

Such political interferences with the operational management decisions have impaired the performance of the organization. This inability has led the country to import about 80% refined petroleum product for local consumption [28]. Reference [29] described this, as a typical case of persistent mismanagement due, probably in part, to the kind of leadership that the corporation has been placed under. World Development Indicators 2016 chart [43] presents the volume of petroleum import (in Dollars) shows the trend of this importation for the past 15 years and it was indicated that Nigeria is the highest importer of petroleum product in Africa, even when it has remained the highest producer of crude oil in the continent. This signifies the inefficiency of NNPC to live up to its purposes. Excepting from 2008, Nigeria has been on top of the ladder in fuel importation. It is only after 2008 that Nigeria takes the lead, signifying that the same situation faced in Nigeria is also faced by Algeria. Lamenting on the plight that Nigerians have gone through economically with its vast natural resource, [30] tacitly referred to Nigeria as "petroleum-cursed-state" in Africa probably due to the leadership and management of the country's trustee of national treasure - NNPC. Linking the findings of [31], leadership problem in the corporate body and low performance are attributed directly to poor leadership of the organization and indirectly to the intervening role of political competition, especially the case of NNPC.

C. Political Competition

Political competition can be defined as the capacity to shape and control the content and direction of public policy [27]. Political competition is a global marvel and is not only confined to vote-based countries where free and fair election occurs all the time [32]. Political competition can be interpreted as the degree of democracy in a society or, at the end of the day, the expansion in the quantity of gatherings seeking open office. As competition in the financial market yields buyer benefits, political competition should be welfare improving for citizens through good corporate or institutional administrations [33]. Political competition is a complex concept. Therefore, this research will focus on the aspects of corporate performance involving organizational and macro or secular politics as was earlier stated. The calculation of political competition is essential because the role of institutions is most significant in politically vibrant environments where competition for power is intense. In a politically dynamic society, the presence of diverse policymaking bodies can enhance the performance of the oil sector. This could be achieved by protecting a National Oil Company (NOC) from the competing demands of various political actors and by organizing those demands into a coherent strategy for the NOC to follow. Thus, when a leader faces fewer political constraints, decision-making becomes more unified [27]. Empirical studies on the effect of political competition on corporate performance show a positive and significant relationship. Argued from the perspective of political competition, it would imply that for leadership at the NOC or NNPC to be effective, there must be a strong connection between corporate (NNPC) leaders and government leaders. Though, in situations of low political competition, it is more probable that administration leaders and NOC senior directors will originate from a similar gathering of elites and hence see their fortunes as rising or falling together [27]. However, corporate performance can be dysfunctional or functional to employees and the organization at large if the inherent politics is not well played by the leaders. Reference [34] argued that politics can produce positive or negative outcomes depending on the initial intention. This is why it is important to evaluate closely to politics in an organization. Political competition and organizational politics have good correlation.

According to [35], uncertainty, conflict, or shortage of resources that may occur in an organization may give rise to position rivalry, manipulation, force, egotism, and power. Findings of past studies have revealed that organizational commitment and job performance are negatively affected by organizational politics; this can in turn affect the performance of the organization [36]-[38]. Results of past reports have shown that there is an association among organization politics and worker job satisfaction, which is a dimension of corporate performance. Reference [39] investigated the effect of organizational politics on employees' job satisfaction among 250 employees from the health sector of Lahore, Pakistan. It was found that political actions of the organization in relation to their policies are negatively related to employees' job satisfaction level in the health sector. They concluded that there is a negative correlation between organizational politics and employee job satisfaction, which influences the overall performance of an organization. The implication of the finding is that a decrease in the level of employees' job satisfaction could be caused by higher perception of organizational performance and vice versa.

III. METHODOLOGY

This study utilized the quantitative approach in which questionnaires were distributed to a sample of 370 participants randomly among the 5,000 NNPC staff. Out of the total questionnaires distributed, 261 were returned and filled and used for the analysis. Consequently, primary data were collected using a direct hand delivery of the questionnaire and web-based method of administering the questionnaire, which involved sending waves of invitation emails to respondents. This electronic method of data collection is particularly helpful in social science research [42]. The data collected were analyzed using the appropriate mathematical and statistical tools (structural equation modeling).

The sample size was determined using Yamane (1973)'s formula [44] for sample size determination given as:

$$n = \underline{N} \\ \mathbf{1} + N(\varepsilon) \mathbf{2}$$
(1)

n = sample size, N = population, ε = confidence level. Given that our chosen level of confidence is 5% (or 0.05), and applying the formula given, our sample will be 370 as derived below:

$$n = \frac{5000}{1+5000(0.05)^2}, n = \frac{5000}{1+5000(0.0025)}, n = \frac{5000}{1+5000(0.0025)}$$

$$n = \frac{5000}{1+12.5}, n = \frac{5000}{13.5}, n = 370$$
 (2)

IV. ANALYSIS AND FINDINGS

For path coefficient, the rule is that whether it is large or small, it must fall within the bounds of -1 and +1 0.100 and significant at 0.05. A value close to -1 or +1 indicates a strong negative or positive relationship, respectively, and is usually greater than 0 and statistically significant. A value closer to 0 signifies a weaker relationship and a value very close to 0 is usually not significant. From Tables I and II, all path coefficients with corresponding t-values and p-values as well as bootstrapped confidence interval are listed. It shows that the entire direct paths coefficients are significant at 0.001 significance level. Specifically, the path coefficient of TFL to performance is strong and positive with $\beta = 0.672$; t-value = 14.245; p-value = 0.000. This implies that more institutional complexities reduce the performance of NNPC. However, the indirect paths are all insignificant, meaning that TFL has relationship with corporate performance. Finally, we found that political competition does not mediate the relationship between TFL and performance of NNPC ($\beta = -0.008$; t-value = -0.600; p-value > 0.05). The bootstrapped confidence interval -0.032,0.017 ranges between negative to positive values which shows that it has zero (0) in-between and this interrelationship is not also significant. This way, the second hypothesis (H2) is also not supported, as H2 states that political competition intervenes in the connection concerning corporate performance and TFL of NNPC.

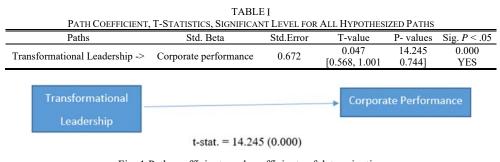


Fig. 1 Path coefficients and coefficients of determination

	Statistics					Bootstrapped Confidence Interv	
	Path a1	Path a2;c2	Indirect Effect	SE	t-value	95% LL	95% UL
Transformational Leadership -> Political Competition-> Corporate	-0.027	0.281	-0.008	0.013	-0.600	-0.032	0.0
			ompetition				

Fig. 2 Path coefficients and coefficients of determination

V. CONCLUSION

This investigation aimed to explore the relationship between TFL and performance of NNPC in Nigeria. Additionally, it examined the role of political competition as mediator in the above relationship. Following, the review of extensive literature conceptually, theoretically, and empirically along with the analysis and tests were performed. Before this study, NNPC's leadership had often been criticized for its management of the corporation. Various issues, including insufficient local consumption and frequent production disruptions, were attributed to what was described as "poor leadership" that plague and were held as being responsible for the weaknesses of NNPC in Nigeria. However, the findings of this study suggest that these claims may be unfounded. Based on the findings of this study, there is sufficient empirical evidence to conclude that the subpar performance of NNPC is not caused by the leadership of the organization. The study finds that even institutional factors do not significantly influence the relationship between NNPC leadership and its performance. Instead, the underwhelming performance of NNPC is due to unfavorable institutional complexities rather than the leadership of the corporation. The study suggests that political competition can be considered as a separate construct without involving any leadership style. Providing good and strong political competition could serve as a solution for poor corporate performance at NNPC in Nigeria. Consequently, it can be conferred that political complexities within and outside the corporation are among the strategies that can lead to improved corporate performance of NNPC. The study found that TFL styles directly influence corporate performance and have a positive significance. However, political competition does not mediate the relationship between TFL and corporate performance. Nevertheless, political competition has direct significant positive and negative effect on corporate performance. Furthermore, there was no direct relationship found between TFL and political competition. Therefore, TFL and political competition can each independently cause significant changes in corporate performance.

REFERENCES

- Ayoade, M.A., (2009). State petroleum ownership model-symbolism vs. progress? Oil and Gas & Energy Law Intelligence, 7, pp.1-20
- [2] Gboyega, Alex and Soreide, Tina and Le, Tuan Minh and Shukla, G. P., Political Economy of the Petroleum Sector in Nigeria (August 1, 2011). World Bank Policy Research Working Paper No. 5779. Available at SSRN: https://ssrn.com/abstract=19165414
- [3] Iledare, W. and Suberu, R., 2010. The management of oil and gas in federal systems: oil and gas resources in the Federal Republic of Nigeria, Black Auditorium, Washington, DC: The World Bank
- [4] Nwokeji, G. U. (2007). The Nigerian national petroleum corporation and the development of the Nigerian oil and gas industry: History, strategies and current directions. James A. Baker III Institute for Public Policy, Rice University.
- [5] Rhodes, R. A. W. (2014). Public administration. OUP Uncorrected Proof – Firstproofs, Thu Feb 13, Newgen.
- [6] Scott, W. Richard (1995). Institutions and Organizations. Thousand Oaks, CA: Sage.
- [7] Brammer, Stephen, Gregory Jackson, Dirk Matten (2012). Corporate Social Responsibility and institutional theory: new perspectives on private governance, *Socio-Economic Review*, Volume 10, Issue 1, 1 January, Pages 3–28, https://doi.org/10.1093/ser/mwr030.

- [8] DiMaggio, P. J., W. W. Powell. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *Amer. Sociol. Rev.* 48(2) 147–160
- [9] Scott, W. Richard (2004). "Institutional theory." in *Encyclopedia of Social Theory*, George Ritzer, ed. Thousand Oaks, CA: Sage. Pp. 408-14
- [10] Zucker, L. G. 1987a. Institutional theories of organization. Annual Review of Sociology. 13:443- 464
- [11] Pawar, A. (2016). Transformational leadership: inspirational, intellectual and motivational stimulation in business. *International Journal of Enhanced Research in Management & Computer Applications*, 5(5), 14– 21.
- [12] Burns J.M (1978). "Leadership," Harper and Row, pp 342.
- [13] Bass, B. M. (1985). Leadership and performance beyond expectations. New York: Free Press.
- [14] Freeman, R. E., & Stewart, L. (2006). *Creating moral authority*. Connect Paperso
- [15] Mihelic, K. K., Lipicnik, B., & Tekavcic, M. (2010). Ethical leadership. International Journal of Management & Information Systems (Online), 14(5).
- [16] Conger, J. (1990). Charismatic leadership. Wiley Encyclopedia of Management.
- [17] Klein, K. J., & House, R. J. (1995). On fire: Charismatic leadership and levels of analysis. The Leadership Quarterly, 6(2), 183-198.
- [18] Shamir, B., House, R. J., & Arthur, M. B. (1993). The motivational effects of charismatic leadership: A self-concept based theory. *Organization science*, 4(4), 577-594.
- [19] Cheung, M. F., & Wong, C. S. (2011). Transformational leadership, leader support, and employee creativity. *Leadership & Organization Development Journal*, 32(7), 656-672.
- [20] Omar, W. W. (2013). Transformational leadership style and job satisfaction relationship: a study of structural equation modeling (SEM). *International journal of academic research in business and social sciences*, 3(2), 346.
- [21] Adekoya, Ayodele Adelaja (2011). Corporate Governance Reforms in Nigeria: Challenges and Suggested Solutions. Journal of Business Systems, Governance and Ethics. Vol. 6 No.1, Pp 38 - 50.
- [22] Freeman, E. R. (1984). Strategic management: A stakeholder approach. Boston: Pitman. Philips, R. (2004). Some key questions about stakeholder theory. (Electronic version). Ivey Business Journal, 9 (6), 1-4.
- [23] Inyang B.J. (2009), Nurturing Corporate Governance System: The Emerging Trends in Nigeria, Journal of Business Systems, Governance and Ethics; 4 (2) 1-13.
- [24] Li, S & Nair A. (2007), A comparative Study of economic reforms in China and India: What can we learn?, Global Economic Review 36 (2) 147-166
- [25] Okoye, U. C. (2016). Uses and Impact of Total Quality Management in Increasing Customers Satisfaction in Nigerian ICTs Industry (Doctoral dissertation).
- [26] Omoregie, F.O., (2001). Improving the effectiveness of total quality management (TQM) in NNPC corporate headquarters Abuja. Unpublished NNPC Chief Officers' Management Development Programme Project Report.
- [27] Thurber, M. C., Hults, D. R., & Heller, R. P. P. (2011). Exporting the "Norwegian Model": The effect of administrative design on oil sector performance. *Energy Policy* 39, 5366–5378.
- [28] Sanders, Philip. 2010. Nigeria to end fuel subsidies by end of 2011 at the latest, Aganga says. Bloomberg. September 3. http://www.bloomberg.com/news/2010–09-03/
- [29] Gillies, A., 2009. Reforming corruption out of Nigeria oil 1&2, U4 Brief (Online) Available from: www.u4.no/themes/nrm (Accessed 20th July 2011)
- [30] Okpanachi, E., & Andrews, N. (2012). Preventing the oil "resource curse" in Ghana: Lessons from Nigeria. World Futures, 68(6), 430-450.
- [31] Munir, R. I. S., Rahman, R. A., Malik, A. M. A., & Ma'amor, H. (2012). Relationship between transformational leadership and employees' job satisfaction among the academic staff. *Procedia-Social and Behavioral Sciences*, 65, 885-890.
- [32] Mulligan, C. B., & Tsui, K. K. (2006). Political competitiveness (No. w12653). National Bureau of Economic Research.
- [33] Alfano, M. R., & Baraldi, A. L. (2015). Is there an optimal level of political competition in terms of economic growth? Evidence from Italy. European Journal of Law and Economics, 39(2), 263-285.
- [34] Othman, R. (2008) Organisational Politics: The Role of Justice, Trust and Job Ambiguity, Singapore Management Review, 30 (1), pp. 43-53.
- [35] Vredenburgh, D. & Shea Van-Fossen, R. (2010) Human Nature,

Organizational Politics and Human Resource Development, Human Resource Development Review, 9(1), pp. 26-47.

- [36] Drory, A. (1993). Perceived political climate and job attitudes. Organization Studies, 14(1), 59-71.
- [37] Gotsis, G. N., & Kortezi, Z. (2010). Ethical considerations in organizational politics: Expanding the perspective. *Journal of Business Ethics*, 93, 497-517.
- [38] Vigoda-Gadot, E. &Kapun, D. (2005) Perceptions of politics and perceived performance in public and private organisations: a test of one model across two sectors. *Policy & Politics*, 33(2), 251-276.
- [39] Gull, S., & Zaidi, A. A. (2012). Impact of organizational politics on employees' job satisfaction in the health sector of Lahore Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 4(2), 156-170.
- [40] Babbie, E. R. (2007). *The practice of social research*, Belmont, CA: Thomson Wadsworth.
- [41] Creswell, J. W. (2003). Qualitative, quantitative, and mixed methods approach.
- [42] Swink, M., Narasimhan, R., & Kim, S. W. (2005). Manufacturing practices and strategy integration: effects on cost efficiency, flexibility, and market-based performance. *Decision Sciences*, 36(3), 427-457
- [43] Bacud, S. A. D. (2020). Henri Fayol's principles of management and its effect to organizational leadership and governance. Journal of Critical Reviews, 7(11), 162-167.