JURNAL AKSI (Akuntansi dan Sistem Informasi). 2002.7.(2):242-249

JURNAL AKSI
Akuntansi dan Sistem Informasi
http://aksi.pnm.ac.id

The Role of Environmental Management System,Environmental Performance, and Military Connections to Carbon Emission Disclosure

Felicia Felita Destiyuanita[1)], Dul Muid[2)], Sugiharto[3)]

[1,2)] Diponegoro, University
[3)] State Polytechnic Madiun

ARTICLE INFO

Keywords:
Carbon emissions disclosure, environmental management system, environmental performance, military connections size firm, and leverage

Article History:
Received: 02-09-2022
Accepted: 10-09-2022

Corresponding author:
Dul Muid

E-mail:
dulmuid1305@gmail.com

ABSTRACT

This study aims to examine the role of environmental management systems, environmental performance, and military connections to the disclosure of carbon emissions. This study focuses on companies listed on the Indonesia Stock Exchange for the period 2017-2020. Hypothesis testing using multiple linear regression. Test-F shows a stable and significant model. The research results show four variables that have been proven to be insignificant to carbon emissions, namely the environmental management system, military connections, size firms, and leverage. Environmental performance and age firms in this research have affected a positive and significant impact on the disclosure of carbon emissions. This demonstrates that companies that receive the PROPER Awards from the Ministry of Environment and Forestry are those with good environmental performance in accordance with government regulations to reduce greenhouse gas emissions.

INTRODUCTION

Behind the pace of acceleration and success, the world of industrial technology has an inevitable bad influence on the industrial environment. Carbon retention and carbon emissions emitted by entities and other human activities have a slow impact over time. The most concrete environmental situation is climate change which causes global warming that has an unavoidable impact on the environment (Jones et al., 2017; Iswati, 2018). Natural disasters that occur like something that is avoided are global warming. Choi et al., (2013) stated that global warming is a problem in politics and business which is an important thing to pay attention to in large countries.

The increase in carbon emissions from power plants is also due to the use of fossil raw materials, namely coal. Greenhouse gas emissions resulting in energy combustion for the used sectorin 2015 reached 261.89 million tons of CO_2. Use of these emissions is dominated by the transportation

p-ISSN: 2528-6145, e-ISSN: 2541-3198 Accredited Third Grade by Ministry of Research, Technology of The Republic of Indonesia, Decree No: 148/M/KPT/2020

Cite this as: Destiyuanita, F.F., Muid, D., Sugiharto. (2002**) The Role Of Environmental Management System, Environmental Performance, And Military Connections To Carbon Emission Disclosure.** JURNAL AKSI (Akuntansi dan Sistem Informasi), 7 (2), 242-249. http://doi.org/ 10.32486/aksi.v7i2.424

sector by 53% followed by the industrial sector by 35%, households by 8%, others by 3%, and commercial by 1%. The transportation and industrial sectors are one of the largest contributors to GHG emissions in the use of fossils. Some certain industrial sectors still use fossils, namely coal instead of gas, which causes high emissions in these sectors.

In response to this, Indonesia's commitment to face climate change, the Indonesian government implemented a carbon tax passed through Law No. 7 of 2021 concerning Harmonizationof Tax Regulations, where this regulation aims to control aspects of economic behavior in order to move away from green economic activities or so-called low carbon. This action is carried out by the government to achieve the target of reducing greenhouse gas emissions by 29% at its own capacity, while 41% through international support by 2030. With this regulation, it means that there will be a responsibility that must be carried out for warming global warming caused by carbon emissions and communicating its contribution in the form of a sustainability report. Therefore, it is important that disclosure must be accompanied by an awareness of making policies yang environmentally friendly (Choi et al,2013).

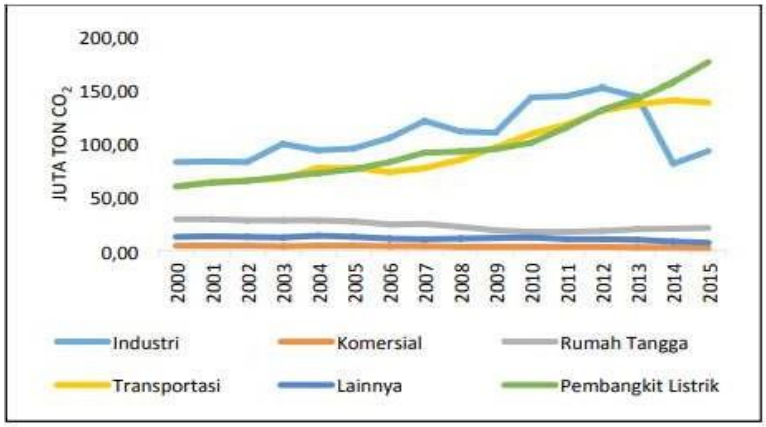

Figure 1. Greenhouse gas emissions of power plants, source www.esdm.go.id

With the process of accountability and disclosure of carbon emissions, it is important for companies to have good governance and the existence of board members who have military experience is considered capable of making decisions correctly because they tend to be more compliant with the rules and can also make decisions in a crisis as if the entity is under pressure from various aspects, for example in social and environmental issues.

This research refers to previous research conducted by (Iswati and Setiawan, 2019) and (Nasih et al, 2019). It is known that there are factors that influence the disclosure of carbon emissionsusing checklist items based on the Carbon Disclosure Project (CDP) developed in five broad categories relevant to the 18 checklist items index with climate change and carbon emissions developed by Choi et al (2013).

MATERIALS AND METHODS

This research uses a quantitative research approach. The whole data is in the form of numbers. This research model uses a multiple regression model. All data will be processed with STATA14 software. This study used 2 variables, namely independent variables, and dependent variables. Independent variables are the environmental management system, environmental performance, and military connections. Independent variable measurement systems of environmental management are measured using ISO 14001 certificates. Measurements adopted from the research of Rankin et al., (2011); Jonah et al., (2016); Setiawan and Iswati (2019) which is 1 for companies that have SML with ISO 14001 certificates and 0 or vice versa. Environmental performance variableswere measured using a PROPER award certificate given by the Ministry of Environment and Forestry using the PROPER rating score index which was documented from the research of Prafitri and Zulaikha (2016), namely: Gold (very very good, score 5), Green (very good, score 4), Blue (good, score 3), Red (bad, score 2), Black (very bad, score 1). Military connection variables were measured with a dummy

adopted from the research of Benmelech and Frydman (2015); Harymawan(2018) i.e., value 1 if there is a company management or company board member in the company structure with a military education background (Military Academy and Police Academy), and zero vice versa.

The dependent variable is carbon emission disclosure as measured by the carbon emission disclosure proxy. The measurement of carbon emission disclosure in this study used items adapted from the research of Choi et al, (2013) and developed a checklist based on information in accordance with CDP which was described into 18 carbon index items.

Population and Sample

The research population is all companies listed on the Indonesia Stock Exchange from 2017-2020. The sample is a part of the population, and the sample in this study uses purposive sampling techniques. The technique uses an approach with certain criteria:

a. The company is on the Indonesia Stock Exchange from 2017-2020. The sample is a company consisting of construction, transportation, agriculture, mining, energy and manufacturing.
b. The company received the PROPER award from the Ministry of Environment at the end of the year.
c. The company has an annual report consistently published on the IDX website for 2017-2020.

The research model used is multiple regression analysis as follows:

$$CED = \alpha + \beta 1\ SML + \beta 2\ KL + \beta 3\ KM + \beta 4\ Age + \beta 5\ Size + \beta 6\ Lev + \varepsilon$$

RESULTS AND DISCUSSION

The results of table 1 show the Pearson Correlation test matrix to determine the strength of the relationship between variables. Environmental Performance and Company Size have a positive correlation with a significant 1%. In other words, it shows that companies with environmental performance and large company sizes have a high level of disclosure of carbon emissions. However, the variables of environmental management systems, military connections, company life, andleverage have no influence on the disclosure of carbon emissions.

Table 1
Pearson's Test correlation (N=209)

	Ced	SML	Kl	Miles	Age	Size
SML	0.097	1.000				
	(0.162)					
Kl	0.185	-0.017	1.000			
	(0.007)	(0.809)				
Miles	-0.053	0.065	0.010	1.000		
	(0.448)	(0.349)	(0.890)			
Age	0.069	0.057	-0.043	-0.160**	1.000	
	(0.324)	(0.413)	(0.534)	(0.021)		
Size	0.221	0.017	0.207	0.049	-0.061	1.000
	(0.001)	(0.808)	(0.003)	(0.479)	(0.379)	
Lev	0.073	-0.112	0.212	-0.054	-0.002	0.018
	(0.291)	(0.106)	(0.002)	(0.438)	(0.975)	(0.792)

p-values in parentheses * $p < 0.1$, ** $p < 0.05$, $p < 0.01$

Source: STATA Output Data, 2022

Table 2 provides descriptive statistical results for all variables in the study in a total manner the number of observations of 209 companies. Based on these results, the variables of the

environmentalmanagement system have a maximum value of 1 and a minimum value of 0. On the environment performance variable the maximum score with a value of 5 and a value of at least 2. In military connection variables, the maximum score is 1, while the minimum score is 0. Military connection variables the maximum score is 1, while the minimum score is 0.

Table 2 Descriptive Statistical Test

Variables	Obs	Mean	Std. Dev.	Min	Max
Ced	209	0,273	0,177	0,056	0,778
SML	209	0,756	0,431	0	1
KI	209	3,258	0,546	2	5
Miles	209	0,287	0,453	0	1
Age	209	43,962	22,157	8	119
Size	209	28,521	3,271	20,681	35,602
Lev	209	0,652	3,048	-0,344	44,312

Source : STATA Output Data, 2022

Table 3
Ordinary Least Square (OLS) Regression Analysis Results

Carbon Emission Disclosure **(Y)**		
Variable	**(1) OLS**	**(2) Robust Test**
SML	0.028	0.028
	(1.05)	(1.09)
KI	0.054**	0.054**
	(2.48)	(2.39)
Miles	-0.026	-0.026
	(-0.99)	(-1.06)
Age	0.000	0.000
	(0.82)	(0.86)
Size	0.014**	0.014**
	(2.00)	(2.32)
Lev	0.003	0.003
	(0.87)	(2.62)
_cons	-0.458**	-0.458**
	(-2.15)	(-2.51)
R^2	0.264	0.264
F	0.000	0.000
N	209	209
Industry Dummies	Included	Included
Years Dummies	Included	Included

t statistics in parentheses * p < 0.1, ** p < 0.05, p < 0.01
Source: STATA Output Data, 2022

Based on the results of the regression analysis test table 3 states that the Environmental Management System is positively and insignificant, then H1 is not supported. Patten & Crampton

(2003) provide evidence that the involvement of companies that have ISO 14001 certificates has a direction towards higher environmental disclosure. Another requirement of the ISO 14001 environmental management system is to continue and update the environmental management system and include environmental issues currently related to carbon emissions. Dianawati (2016) a company that has an ISO 14001 Environmental Management System certificate has not been able to minimize and manage pollution related to carbon emissions and is still focusing on creating the final product. The implementation and certification of EMS help companies to integrate with environmental management systems, their health and safety, and in some cases, environmental management systems and their quality (Rankin et al., 2011). Perhaps because an Environmental Management System with ISO 14001 certificate requires employee participation and strong initiatives and high environmental training programs so that companies can report on increased awareness in the work environment and the responsibility of maintaining the image of the entity in mitigating the negative perspectives of stakeholders.

The ISO 14001 Environmental Management System Certificate gives the confidence to showto external parties of the company that the company has control over important aspects of the operating system and is committed to complying with environmental regulations to be relevant and they are constantly looking for improved performance of its environment (Dianawati, 2016). As a result of the output of this regression, perhaps the ISO 14001 Environmental Management System has not been able to reflect or reference companies to be able to manage and mitigate the risk of climate change caused by the carbon emissions produced. The waste of approval of the results of thecompany's operating process and the final product results are still focused on being environmentally friendly. Dianawati (2016) shows that there is still low awareness of companies in Indonesia payingattention to the importance of environmental factors in the production process. The results of this study are in line with Dianawati (2016).

Based on the results in table 3, shows that Environmental Performance plays an important role as measured by the PROPER index which produces significant positive values, then H2 is supported. The reason behind the results of this study is the theory of legitimacy where the performance of entities having a good or clean environmental scope will have a tendency to make credible and informative disclosures to the public. This is due to external and internal pressures so that public trust remains harmonious and receives support from the community (Prafitri & Zulaikha, 2016). Measurement of PROPER standards established by the government to achieve carbon emission reduction and appropriate and effective management of hazardous and toxic waste in emission reduction supervision. The measurement of PROPER standards established by the government to achieve carbon emission reduction, B3 waste management is appropriate and effective in monitoring carbon emission reductions, as well as Indonesia's commitments as stated in Presidential Regulation Number 61 of 2011 and Presidential Regulation Number 71 of 2011 run consistently.

The Government of Indonesia created PROPER (Company Performance Rating Program) as an effort by the Ministry of Environment (KLH) to encourage corporate governance to manage the environment through informative instruments (Deswanto and Siregar, 2018). Based on this, the company can improve its image and reputation by following PROPER. The company will show its concern by improving the performance of environmental management and information about the company's performance related to its environment (Ulfa and Ermaya, 2019). This proactive company seeks to manage and reduce the risk of climate change caused by CO2, Rankin et al., (2011) by implementing environmental management strategies and policies to deal with gas emissions and developing specific initiatives that greening excellence will gain a place in society. This research is based on (Prafitri and Zulaikha, 2016); (Setiawan and Iswati, 2019).

Based on the results in table 3, which shows that negative Military Connections are insignificant, then H3 is not supported. Hopes for companies led by former service members are still studying how to increase voluntary disclosures of carbon emissions. They do not prioritize voluntary disclosure over mandatory disclosure and the skills they have that effective communication with subordinates has not been able to run in the same direction as voluntary disclosure (Iswati and Setiawan, 2020). Because in this structure, former members of the military have different goals and ways to improve the company's performance. However, in research conducted by Benmelech and Frydman (2015), a company headed by board members with a military background does not use excessive leverage, small is also involved in cheating and is better at industrial efficiency.

Harymawan's (2018) research conducted in Indonesia found that companies that have leaders with a military background have the power to get low-interest rates and have low debt. The results of this study are in line with Iswati and Setiawan, (2020) stated that military connections have no influenceon the disclosure of carbon emissions.

The results of the control variability show that the life of the company has an important rolein the disclosure of carbon emissions. This is because the older the company does not guarantee to be consistently sensitive to its environment derived from the company's operations and take responsibility as outlined in the voluntary disclosures relating to carbon emissions, the results are inline with Khan et al., (2013). In the results of the company size variable, it shows that large companiesreceive greater attention from various groups of people, they will disclose information on emissionsor greenhouse gases by holding their social and environmental activities to legitimize their business. Where companies with greater resources can effectively respond to increased concern for the environment. In line with the results of research Choi et al., (2013). Meanwhile, variable results indicate that companies with high leverage tend not to disclose carbon emissions. This can be due toseveral factors, one of which is to make voluntary reporting requires considerable costs and a long time to be made which aims to be used by stakeholders in analyzing and making decisions. In line with the research of Yunus et al., (2016); Iswati and Setiawan (2020).

CONCLUSIONS AND SUGGESTION

Based on the analysis and discussion that have been discussed, there are three conclusions based on the H1 research framework that is not supported, so the Environmental Management System does not have an effect on carbon emission disclosure. This is because one of them is because the adoption of the ISO 14001 environmental management system has not been able to collect information related to carbon emissions. The results of the Environmental Performance research support the H2 hypothesis, which means that the better the environmental performance in acompany's waste management, as much the scope for carbon emission disclosure. The results of theMilitary Connection study reject H3 where the role of the military connection has no influence on the disclosure of carbon emissions. It may be that the entity led by former members of the military is still studying how to increase the disclosure of carbon emissions that are still voluntary and still focused on mandatory disclosures.

The results of the control variables state that the company has a large company size and adequate resources responding positively and significantly to the practice of disclosure of carbon emissions. Meanwhile, the variables of company age and leverage have no influence on the practice of disclosing carbon emissions.

The research findings provide several contributions and beneficial implications for academics and practitioners. This research contributes to practitioners, which can be used as a source of information that the practice of environmental disclosure, especially all entities, governments, and countries to combat climate change, especially in entities that have gone public and apply theoretical concepts to encourage the development of science about carbon emission disclosure and can also provide a boost to the importance of carbon emission disclosure.

In the contribution of academics, the results of the research can provide a view and input on the development of accounting science education which is correlated with voluntary disclosure and these results can be used as a reference basis in developing learning and insights among universities.

The limitations in researching are that entities that still publish carbon emission disclosures are still relatively low and few in number because carbon emission disclosures are disclosures that are still voluntary and there are some companies that do not meet the variable criteria so they are not included in the research data sample, and take a long time in tabulating data because to calculate the carbon emission disclosure score must see and match 2 reports are annual reports and sustainability reports.

The suggestion for further research is that it is expected to expand the sample outside the selected company, and subsequent research can modify the ordinary least square regression model into moderation by adding or replacing variable proxies such as ROA, ROE, ROI, DER, company values, environmental committees, and sustainability committees

REFERENCES

Annandale, D., Morrison-saunders, A., dan Bouma, G. (2004). Environmental Protection Instruments on Company Environmental Performance. *Business Strategy and the Environment*, *13*(1), 1–12.

Benmelech, E., & Frydman, C. (2015). Military CEOs. *Journal of Financial Economics*, *117*(1), 43–59.

Carbon Disclosure Project (CDP). *Cement – the invisible polluter* (2018). https://www.cdp.net/en/articles/investor/cement-the-invisible-polluter (accessed on 28 January 2022).

Choi, B. B., Lee, D., & Psaros, J. (2013a). An analysis of Australian company carbon emission disclosures. *Pacific Accounting Review*, *25*(1), 58–79.

Dianawati, W. (2017). Pengaruh Karakteristik Perusahaan dan Sertifikasi Lingkungan Terhadap Pengungkapan Corporate Social Responsibility. *EKUITAS: Jurnal Ekonomi Dan Keuangan*, *20*(2), 226–241. https://doi.org/10.24034/j25485024.y2016.v20.i2.1825

Epstein, E. M. (1972). The Historical Enigma of Corporate Legitimacy. *California Law Review*,*60*(6), 1701–1717.

Franke, V. C. 2001. Generation X and the military: a comparison of attitudes and values between west point cadets and college students. *Journal of Political and Military Sociology,* 29(1): 92–119

Freeman, R. E., & Reed, D. L. (1986). Stockholders and Stakeholders : A New Perspective on Corporate Governance. *California Management Review*, *25*(3), 88.

Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting. *Accounting, Auditing & Accountability Journal*, *8*(2), 47–77.

Guthrie, J., & Parker, L. D. (1989). Legitimacy Theory Corporate Social Reporting : A Rebuttal of Legitimacy Theory. *Accounting and Business Research*, *19*(76), 37–41.

Harymawan, I. (2018). Why do firms appoint former military personnel as directors? Evidence of loan interest rate in militarily connected firms in Indonesia. *Asian Review of Accounting*, *28*(1),1–18.

Hermawan, A., Aisyah, I. S., Gunardi, A., & Putri, W. Y. (2018). Going Green : Determinants of Carbon Emission Disclosure in Manufacturing Companies in Indonesia. *International Journalof Energy Economics and Policy*, *8*(1), 55–61.

Irwhantoko, & Basuki. (2016). Carbon Emission Disclosure : Studi pada Perusahaan Manufaktur Indonesia. *Jurnal Akuntansi Dan Keuangan ISSN 1411-0288 Print / ISSN 2338-8137 Online*, *18*(2), 92–104.

Intergovernmental Panel on Climate Change (IPCC). *Impacts of 1.5°C of Global Warming on Natural and Human Systems* (2018). Available online: www.ipcc.ch/sr15/chapter/chapter-3/ (accessed on 28 January 2022).

Iswati, S. (2018). Carbon Accounting Reflection as a Response to Face the Climate Change. *Advances in Social Science, Education and Humanities Research (ASSEHR)*, *98*, 15–18.

Iswati, S., & Setiawan, P. (2020). Green Earth : Carbon Emissions , ISO 14001 , Governance Structures , Militarily Connected from the Manufacturing Industries in Indonesia. *Journal of Accounting and Investment*, *21*(1), 1–18. https://doi.org/10.18196/jai.2101134

Kalu, J. U., Buang, A., & Aligha, G. U. (2016). Determinants of voluntary carbon disclosure in the corporate real estate sector of Malaysia. *Journal of Environmental Management*, *182*, 519–524. https://doi.org/10.1016/j.jenvman.2016.08.011.

Kementerian Energi dan Sumber Daya Mineral. *Data Inventory Emisi GRK Sektor Energi*; Kementerian Energi dan Sumber Daya Mineral: Jakarta, Indonesia, 2016. Available online: https://www.esdm.go.id/assets/media/content/content-data-inventory-emisi grk-sektor-energi-.pdf (accessed on 28 December 2021)

Kementerian Lingkungan Hidup dan Kehutanan. Program Penilaian Peringkat Kinerja Perusahaan Dalam Pengelolaan Lingkungan Hidup (PROPER): Jakarta, Indonesia, 2017. Available online: https://ppkl.menlhk.go.id/website/filebox/244/180117102736Publikasi%20PROPER%202017.pdf (accessed on 28 December 2021)

Kuo, L., & Chen, V. Y. (2013). Is environmental disclosure an effective strategy on establishment of environmental legitimacy for organization ? *Management Decision*, *51*(7), 1462–1487.

Luo, L., Tang, Q., & Lan, Y.-C. (2013). Comparison of propensity for carbon disclosure between developing and developed countries A resource constraint perspective. *Accounting Research Journal*, *26*(1), 6–34.

Malmborg, F. B. von. (2002). Environmental management systems, communicative action and organizational Learning. *Business Strategy and the Environment*, *11*(3), 312–323.

Mathews, M. R. (1995). Social and Environmental Accounting : A Practical Demonstration of Ethical Concern ? *Journal 0f Business Ethics*, *14*, 663–671

Mitchell, R. K., & Wood, D. J. (1977). Toward a Theory of Stakeholder Identification and Salience : Defining the Principle of Who and What Really Counts. *The Academy of Management Review*, *22*(4), 853–886.

Montiel, I., dan Husted, B. W. (2009). The Adoption of Voluntary Environmental Management Programs in Mexico : First Movers as Institutional Entrepreneurs. *Journal of Business Ethics*, *88*(1), 349–363.

Nasih, M., Harymawan, I., & Paramitasari, Y. I. (2019). Carbon Emissions , Firm Size , and Corporate Governance Structure : Evidence from the Mining and Agricultural Industries in Indonesia. *Sustainability (Switzerland)*, *11*(9).

Nasih, M., Harymawan, I., Putra, F. K. G., & Qotrunnada, R. (2019). Military Experienced Board and Corporate Social Responsibility Disclosure: An Empirical Evidence From Indonesia. *Entrepreneurship and Sustainability Issues*, *7*(1), 553–573.

Patten, D. M., & Crampton, W. (2004). Legitimacy and The Internet: An Examination Of CorporateWeb Page Enviromental Disclosures. *In Advances in Environmental Accounting &Management*, *2*, 31–57.

Patterson, J. D., & Allen, M. W. (1997). Accounting for your actions : How stakeholders respond tothe strategic communication of environmental activist organizations. *Journal of Applied Communication*, *25*, 293–316.

Peraturan Presiden Republik Indonesia Nomor 61 Tahun 2011 Tentang Rencana Aksi Nasional Penurunan Emisi Gas Rumah Kaca.

Peraturan Presiden Republik Indonesia Nomor 71 Tahun 2011 Tentang Penyelenggaraan Inventarisasi Gas Rumah Kaca Nasional.

Prafitri, A., & Zulaikha. (2016). Analisis Pengungkapan Emisi Gas Rumah Kaca. *Jurnal Akuntansi & Auditing*, *13*(2), 155–175.

Rankin, M., Windsor, C., & Wahyuni, D. (2011). An investigation of voluntary corporate greenhousegas emissions reporting in a market governance system Australian evidence. *Accounting, Auditing & Accountability Journal*, *24*(8), 1037–1070.

Setiawan, P., & Iswati, S. (2019). Carbon Emissions Disclosure, Environmental Management System, and Environmental Performance: Evidence from the Plantation Industries in Indonesia.*Indonesian Journal of Sustainability Accounting and Management*, *3*(2), 215. https://doi.org/10.28992/ijsam.v3i2.99

Thornton, R. V, & Hsu, S. (2001). Environmental Management Systems and Climate Change. *Enviromental Quality Management*, *11*(1), 93–100.

Verrecchia, R. E. (1983). Discretionary Disclosure. *Journal of Accounting and Economics*, *5*, 179–194.

Wong, L., Bliese, P., & Mcgurk, D. (2003). Military Leadership : A Context Specific Review. *The Leadership Quarterly*, *14*, 657–692.

Yunus, S., Elijido-Ten, E., & Abhayawansa, S. (2016). Article information : *Managerial Auditing Journal*, *31*(2), 156–17