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Editorial

Information Management and Business Review (IMBR) provides a unique platform for scholars around the world to share their knowledge and publish research work in the fields of information management, business, management and related disciplines. The work submitted for publication consideration in IMBR should address empirical and theoretical developments in the subjects related to the scope of the journal in particular and allied theories and practices in general. Scope of IMBR includes: subjects of finance, accounting, auditing, cost & management accounting, financial psychology, financial literacy, marketing, information management, human resource management, knowledge management, innovation, change management, enterprise management, e-commerce and information system. Author(s) should declare that work submitted to the journal is original, not under consideration for publication by another journal and that all listed authors approve its submission to IMBR. It is IMBR policy to welcome submissions for consideration, which are original, and not under consideration for publication by another journal at the same time. Author (s) can submit: Research Paper, Conceptual Paper, Case Studies and Book Review. The current issue of IMBR comprises papers of scholars from Indonesia, UK, Uganda and Bangladesh. Determinants of Corporate Social Responsibility Disclosure, Determinants of Government Characteristics and Audit Findings, Assessment of Key Success Factors for Construction Projects, Performance Measurement in Local Governments and Social-Costs Perspective Impacts of Cybercrime in World-Economy are some of the major practices and concepts examined in these studies. Journal received research submission related to all aspects of major themes and tracks. All the submitted papers were first assessed by the editorial team for relevance and originality of the work and blindly peer-reviewed by the external reviewers depending on the subject matter of the paper. After the rigorous peer-review process, the submitted papers were selected based on originality, significance, and clarity of the purpose. The current issue will therefore be a unique offer, where scholars will be able to appreciate the latest results in their field of expertise, and to acquire additional knowledge in other relevant fields.

Editor In Chief

Ijaz Ur Rehman PhD

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Determinants of Corporate Social Responsibility Disclosure: Empirical Evidence from Indonesia Stock Exchange

Dita Ayu Lestari, Noegrahini Lastiningsih, Shinta Widyastuti
Universitas Pembangunan Nasional Veteran Jakarta, Indonesia
noegrahini@gmail.com

Abstract: This study aims to examine the relationship between consumer proximity, environmental performance, profitability, and media exposure on corporate social responsibility disclosure. This study used data from companies listed in Indonesia Stock Exchange (IDX) 2017-2019. A purposive sampling method was used in this study with 60 samples on the Indonesia Stock Exchange. Hypothesis testing in this study using multiple linear regression with SPSS. The results show that consumer proximity has a positive effect on corporate social responsibility disclosure. Meanwhile, environmental performance, profitability, media exposure does not affect corporate social responsibility disclosure. The implication of this study is for the companies to increase social responsibility to the stakeholders and community due to the positive reciprocal relationship.

Keywords: *CSR Disclosure, Consumer proximity, Environmental performance, Profitability, Media exposure.*

1. Introduction

Companies are institutions that are considered to provide many benefits to society. Much labor is absorbed, people's consumption needs are met, pay taxes, and other contributions are obtained from the company. However, if examined from the negative side, the company in carrying out its production activities can produce waste in the form of waste, causing environmental pollution, degradation of ecosystem quality, and sustainable natural damage that can harm the community (Fitriyani and Mutmainah, 2012). This phenomenon was reported by the website industry. Kontan, id 2009 in which the Sinarmas Group was criticized by Greenpeace that the company had destroyed forests and peatlands so that this condition led to deforestation. Changes in forest land use have led to an increase in greenhouse gas emissions. One of the results of the audit showed that the Sinarmas Group was logging the forest before the AMDAL permit was issued. This condition caused several companies to terminate their cooperation with the Sinamas Group in ordering palm oil. This problem should reflect on the Law on Limited Liability Companies No. 40 of 2007 which contains the obligation for companies to provide information related to their CSR activities. Corporate Social Responsibility (CSR) disclosure in corporations aims to encourage business entities in the business world to be more ethical in carrying out their operational activities so that they do not intersect and have a negative impact on society and the environment. One of the ways corporations grow their business, maintain, and legitimize the company's contribution from the economy and politics is to increase the intensity of disclosure of the company's CSR implementation (Wardhani and Sugiharto, 2013; Yingjun et al., 2015).

It should be in accordance with the Law on Environmental Protection and Management No. 32 of 2009 that companies are required to maintain and protect the elements of life around them by minimizing adverse risks to the environment due to corporate operational activities. Corporations must pay attention to the three main pillars which are commonly known as 3P, namely Planet, People, and Profit. The company is no longer a business institution that only targets a successful financial performance by maximizing its business profit (profit-oriented), but the company is also obliged to take responsibility for the company's operating activities that have a direct impact on the environment around the organization (Yuliskayani and Damayanti, 2018). Several studies link CSR disclosure with several variables such as consumer proximity, environmental performance, profitability and media exposure which are shown with inconsistent results. Consumer Proximity is the closeness of customers in a product produced by a goods company or in the service sector. In connection with the visibility perspective, companies that produce or sell goods and services that are widely consumed by the community will tend to produce more social visibility (Wang, et al., 2013). The company considers that public exposure is vital to the company's success in maintaining a good image. Companies classified as having a consumer proximity are companies engaged in manufacturing, textiles or garments, food, household goods, telecommunications services, retail food and beverages, and the financial sector. Environmental performance is the relationship that occurs from a corporation with the surrounding environment regarding what are the effects on the environment for something that has been done. Environmental relations for commodities and services, restoration and complying with environmental regulation for activities (Damanik and Yadnyana, 2017).

Using PROPER which was proclaimed by the Ministry of Environment which aims to disseminate information related to environmental performance and to increase the level of company performance improvement (Lastiningsih and Aswar, 2020). If the company pays close attention to environmental performance, the company has implemented CSR as there is evidence of the company's high attention to environmental and social concerns (Halmawati and Oktalia, 2015). Profitability is one of the goals of the company that is usually achieved by organizations. The level of profitability can indicate the condition of the company's management. Therefore, if the company has large profitability, the higher the disclosure of its social responsibility (Pakpahan and Rajagukguk, 2018). Therefore, the company's profitability can be linked to the company's CSR disclosure. Profitability is proxied by using ROA where the ratio reflects the company's capability in creating profits from its investment sector.

Partalidou et al. (2020) found that CSR disclosure is an important factor for the company's financial performance, intended with the aim of increasing transparency and indicating that they operate in accordance with community norms, all of these stages are important for the company so that the interests of stakeholders can be found. Furthermore, information media is growing rapidly in today's high technology era, information media is considered to be a bridge for anyone who needs information. In the past few years, newspapers are a common form of container for companies to disclose CSR activities. Internet media (web) is an option that can be said to be effective in disclosing corporate CSR, this is in line with the increasing use of the internet among the public. The purpose of this study is to determine the effect of consumer proximity, environmental performance, profitability, and media exposure on corporate social responsibility disclosure.

2. Literature Review and Hypothesis Development

Legitimacy Theory: Legitimacy theory is a theory that explains how companies interact with the community. Legitimacy can be defined as whether the actions taken by the company are appropriate or appropriate within the corridor of a system of social norms, values and beliefs. Legitimacy theory states that companies continue to strive to confirm that company has worked within the norms and boundaries of society (Syed and Butt, 2017). This legitimacy theory is widely found and used in the literature to explain CSR disclosure practices. Legitimacy is considered important because for companies the community legitimacy obtained by the company can be a strategic aspect in the future regarding the concept of sustainability.

Stakeholders Theory: In the theory of stakeholders, the company is not only engaged in its interests but must also be able to share benefits for its stakeholders (Freeman and McVea, 2001). One of the benefits that a company can provide is the implementation of its CSR program. This CSR program is certainly expected to be able to add or improve the welfare of workers, customers and society. So that a good relationship can be built between the corporation and the surrounding environment.

CSR Disclosure: World Business Council for Sustainable states that the definition of CSR is a sustainable obligation by business entities to act more morally and ethically in accordance with norms and provide participation in the economic development of the local community and the wider community, including improving the welfare of workers and their families (Aulia, 2010). Among the various reporting standards mentioned, one of them is GRI G4 which provides a relevant framework matrix to support a standardized reporting approach according to international standards. Standardized reporting encourages the concept of transparency and substantial consistency that is required to make this information useful and can be used as a reference in making decisions. Klerk et al. (2015) said that UK legislation mandates companies to disclose information related to the environmental, employee, social and community issues in annual reports but does not provide guidance on specific topics that must be addressed, and this suggests that the level of disclosure is partly large still discretionary.

Consumer Proximity: If it is related to theoretical legitimacy, the company has social and environmental factors that come from the community where these conditions need to be considered. Consumer proximity is

the meaning of consumer closeness to products or services. Then, it can be ascertained that if consumers have a factor of closeness to a product or service, then the consumer who is part of the community will legitimize the company. Companies with high closeness to consumers have greater social visibility (Branco and Rodrigues, 2008). The closer the consumers are to the product or service, the higher the demands for CSR disclosure (Yuliskayani and Damayanti, 2018). Gamerschlag et al. (2010) in Giannarakis (2014) found that companies belonging to the consumer and energy supply industry tend to disclose more CSR information to reduce stakeholder pressure.
H1: Consumer proximity has a positive effect on CSR disclosure.

Environmental Performance: Environmental performance is a company system that is willing to integrate environmental attention and awareness of company operations and interactions with stakeholders that go beyond the legal responsibility of the organization (Lastiningsih and Aswar, 2020). Environmental performance is very important for the company. Companies that disclose environmental performance are like providing good news for the community.
H2: Environmental performance has a positive effect on CSR disclosure.

Profitability: Profit is one of the main goals of the company. Profitability can be used as consideration for companies in carrying out CSR disclosures in terms of the company's financial performance. Companies with high profitability will find it easier to respond to external demands, namely the community because the company has more funds to use in carrying out its social responsibility activities and discloses CSR responsibilities compared to companies with low profitability ownership (Dewi and Yasa, 2017). Klerk et al. (2015) suggest that if the combination of financial accounting information and CSR disclosure is combined, it can explain market value better than focusing exclusively on financial accounting information alone. Haniffa and Cook (2005) in Giannarakis (2014) suggest that the positive correlation between profitability and CSR disclosure can be drawn from the fact that profitable companies have the freedom and flexibility to more broadly expose CSR practices to stakeholders, and legitimize them.
H3: Profitability has a positive effect on CSR disclosure.

Media Exposure: Media exposure is a space used by companies to seek public trust and support. According to Branco and Rodrigues (2008) in Yuliskayani and Damayanti (2018), if the media coverage of the company is greater, the company will be the object of attention and attract further public scrutiny (Yuliskayani and Damayanti, 2018).
H4: Media exposure has a positive effect on CSR disclosure.

3. Research Method

The population in this study is companies listed on the IDX for the period 2017-2019. The frequency of this data is yearly. Determination of the sample using the purposive sampling method. The criteria for determining the sample which are: companies listed on the IDX 2017-2019, companies that published successive annual reports during 2017-2019, companies that generate profits during 2017-2019 and the company is registered in the PROPER of the Ministry of Environment. A total of 60 samples were found. The data used is secondary data in the form of company annual reports and company sustainability reports which are accessed through the official website of the Indonesia Stock Exchange. Data analysis using multiple regression analysis model.

4. Results

The total number of companies listed on the Indonesia Stock Exchange in 2017-2019, the number of companies listed in that period was 20 companies. Thus, there are 60 research samples. Based on table 1 the R2 value is 0.148 and it can be interpreted that as much as 14.8% is influenced by the four independent variables. While the rest (100 - 14.8) 85.2% is influenced by other variables that are not explained in this study.

Table 1: R Square

Model	**R**	**R Square**	**Adjusted R Square**
1	.384[a]	0,148	0,085

Table 2 below shows the regression test results indicating that consumer proximity on CSR disclosure by obtaining a significance result from the T-test of 0.022, which illustrates that it is smaller than 0.05 so that H1 is accepted because it succeeds in proving the initial prediction that consumer proximity has a positive effect on CSR disclosure. And it can be concluded that consumer proximity has a positive influence on CSR disclosure. It is in line with the theory of legitimacy where the company has social and environmental factors that come from the community where these conditions and things need to be considered. It can be assumed that if the company which is included in the consumer proximity category will disclose its CSR because the companies included in this category are close companies. To their consumers, where consumers have more desire to get more information related to their company, both financial information and non-financial information. Furthermore, the consumer proximity company will provide greater CSR disclosure for consumers and other stakeholders. Giannarakis (2014) suggests that companies belonging to the health care sector, the basic needs of consumers statistically have a significant effect on the level of CSR disclosure because they are directed to include more information into CSR disclosures.

Table 2: T-test Results

Coefficients

		Unstandardized Coefficient		**Standardized Coefficients**		
Model		B	***Std. Error***		T	**Sig.**
1	(Constraints)	0.184	0.102		1.81	0.076
	CP	0.104	0.044	0.331	2.365	0.022
	EP	0.002	0.046	0.006	0.041	0.968
	P	-0.236	0.176	-0.172	-1.34	0.186
	ME	-0.048	0.037	-0.166	-1.292	0.202

The second hypothesis testing shows that environmental performance has no effect on CSR disclosure. This result is comparable to the study of Wijaya (2012) which states that the cause of the ineffectiveness of CSR disclosure is that CSR disclosures told by companies in which the activity is included in the PROPER indicator category are not widely disclosed in annual reports. The PROPER assessment should have become a community legitimacy for the company represented by the government program. In this research, there are still many companies that are not registered with the PROPER program and this indicates that the company is still not very aware of its environment. Furthermore, the third hypothesis testing shows that profitability has no effect on CSR disclosure. These results are in line with Giannarakis (2014), Dias et al. (2019), Fitriyani and Mutmainah (2012), Ramadhan (2019) and Aulia (2018). The rejection factor for this hypothesis is because companies with large profitability will not necessarily be motivated to carry out more social activities. This indicates that the company is still oriented more to the company's profit, management still generates more attention and is interested in disclosing information about its finances and considers it unnecessary to disclose things that can interfere with financial information such as information about its CSR.

William (1999) in Rashid (2015) argues that profitability does not affect the complete disclosure of CSR. Because the company is deemed not to need to fund in CSR initiatives and related to CSR it is more influenced by “public” pressure than “economic” pressure. Haifeng, et al. (2020) also revealed that an increase in the quality of CSR information disclosure itself increases the company's burden and hinders company performance. Finally, the four-hypothesis testing shows that media exposure has no effect on CSR disclosure. These results are in line with the research of Solikhah and Winarsih (2016) using a sample of 128 companies. There are still many sample companies that are inconsistent in providing disclosure of their CSR information through the company's official website platform in the 2017 - 2019 period. Submission of corporate social activities is able to provide sufficient and straightforward information to the general public who are still lying, when compared to understanding the company's annual report. Meanwhile, the company's annual report will be able to provide more detailed information related to social activities carried out during that period which is more specific to stakeholders in the company. The disclosure of CSR in the company's annual report is more detailed and specific because so far the sample in this study continues to disclose CSR even though the media is not a reference for disclosing it.

5. Conclusion

The results in this study indicate that the consumer proximity in this study has a significant effect on CSR disclosure. This is in line with the theory of legitimacy, in which this legitimacy theory encourages companies to ensure that companies in carrying out their operations have run according to the norms or rules that exist in society. Consumer proximity is likened to social visibility, where social visibility is obtained from consumers. Meanwhile, environmental performance variables, profitability and media exposure have no effect on CSR disclosure. The limitation of this study is that the results of this study cannot be generalized because the sample used in this study is relatively small with a total of 20 companies listed on the IDX 2017-2019. Many prospective sample companies do not publish sustainability reports because disclosures related to their social responsibility are already available in the annual report. Several susceptibility reports are incomplete and do not include indexes according to the applicable standards. This proves that the company still has minimal attention to CSR disclosures by company. It is recommended that the company be able to increase its social responsibility to the community and other stakeholders. This can be used as a positive reciprocal relationship. Suggestions for regulators to measure their performance in formulating policies and standards in regulating procedures and disclosure of CSR in Indonesia. For further research, it is necessary to add other variables that are more supportive of CSR disclosure because it is given that in accordance with the low determination coefficient value of 14.8%.

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Determinants of Government Characteristics and Audit Findings on Local Government Financial Performance

Febriana Dwi Jayanti & Mahendro Sumardjo
Universitas Pembangunan Nasional Veteran Jakarta, Indonesia
febriana.jayantidwi@gmail.com

Abstract: This study is based on the low success of local governments' financial performance in West Java Province, as evidenced by the fact that financial reports of local governments that receive unqualified opinions are still being found. The detection of numerous frauds in local governments is responsible for the majority of incidents of poor financial performance in local governments. Local government financial performance is related to local government size, dependence on central government, local spending, and audit findings. The purpose of this study was to examine the influence of local government characteristics and audit findings on the financial performance of local governments. Techniques analyzing data used regression model selection test with STATA version 16. This study builds on agency theory to develop a conceptual framework that connects local government size, dependence on central government, local expenditure, audit findings, and financial performance. The results of this study show that the size of local government, local spending has a significant effect on local government financial performance based on independence ratio and operating expenditure activity ratio, local government financial performance is unaffected by the dependence of central government or audit findings. Contributions to the West Java Provincial Government are required to be taken into account when making decisions and policies for the improved financial performance of local government.

Keywords: *Government Size, local expenditure, audit findings, the dependence of central government, financial performance.*

1. Introduction

The public sector in Indonesia shows significant enthusiasm in the well-being of the community through, the various services provided, this is reflected in the number of local governments that actively realize the well-being of their regions by proving good annual performance reports. The public sector is a government entity with other organizational units, the unit in question is regional management to address the living needs of the people or a form of service to the community in the fields of health, education, and security (Halim, 2008). The high enthusiasm of the public sector in Indonesia is due to the implementation of various policies and development programs. In addition, the community demands local governments in terms of improving financial and non -financial performance through various more creative and innovative programs to optimize the various local potentials available. The development of government performance also develops implications for the complex services of government entities (Sesotyaningtyas, 2012). Therefore, the government must be responsible for reporting all activities carried out so that its performance can be evaluated by the parties concerned and also the community. If the government's performance is felt to have good implications for the development of public services, then the growth of positive value-added from investment is higher. Thus, encouraging infrastructure improvements, increasing Regional Income Allocation (PAD).

Increasing capital expenditure and intergovernmental revenue with management using regional independence ratio (Abdullah & Halim, 2006). The financial information in the Local Government Financial Report (LKPD) or liability report is stated to have indicators measuring the financial performance of the local government in the current year (Junawati et al., 2013). However, it is unfortunate that the public is too high in assuming the performance of the government, which is due to the emergence of issues related to the highlight of government performance in the eyes of the public. One of the reasons is because the people feel they have not enjoyed the results of government performance to the maximum. The main issue is described as the number of LKPDs that have not yet presented reports properly in certain aspects so that the LKPD has not obtained a Fair With-out Exception (WTP) opinion. Despite this, it is known that during the last decade, the implementation of independence in Indonesia through fiscal decentralization has not worked to the maximum. Policy design and practice (performance) is one of the causes (Jaweng, 2014). The phenomenon of financial performance that occurs in Local Governments in Indonesia is revealed in various aspects. As in 2015 revealed by the BPK as many as 280 local governments in Indonesia experienced cases of asset management reaching 2,006 trillion is not optimal. Then continued the findings of fraud, cuts in social assistance, and embezzlement of BPJS funds in 2018 in the Government of West Java. Financial performance is the achievement of an organization in a certain period (Bastian, 2010). Based on the phenomenon that has been described previously, to strengthen the results of research in testing the influence on the financial performance, the researcher will conduct other research although some indicators have been studied previously. However, earlier research, such as that undertaken by Masdiantini and Erawati (2016), has shown that there is a link between the size of local government and its financial success. Meanwhile, Marfiana and Kurniasih (2013) stated that there is no effect between the size of local government with the financial performance of local government. The results of research by Noviyanti and Kiswanto (2016) and Suryaningsih and Sisdyani (2016) stated the influence between dependence on the central government with the financial performance of local governments. Meanwhile, Kusuma and Handayani (2017) and Aswar (2019) stated that there is no effect between dependence on the central government with the financial performance of local governments. Furthermore, Marfiana and Kurniasih (2013) and Kusuma and Handayani (2017) stated the influence.

Between regional spending and the financial performance of local governments. There is no correlation between regional spending and local government financial performance, according to Nugroho and Prasetyo (2018) and Dasmar, et al. (2020). Marfiana and Kurniasih (2013) stated the influence between the findings of the BPK audit with the financial performance of local governments. Meanwhile, Jannah et al. (2020), and Dasmar, et al. (2020) stated that there is no effect between the findings of the audit with the financial performance of local governments. The purpose of this study was to examine the influence of local government size, dependence on central government, local expenditure, and audit findings on financial performance. According to research recommendations made by Aswar (2019) and Wijayanti and Suryandari (2020), this study adds the variable of central government dependency as an indicator of local government independence, as well as the audit findings as an indicator of regulatory compliance. This research has extensive implications for inspectorates and regional apparatus, public sector practitioners, and public sector auditors, in addition to the theoretical benefits.

2. Literature Review and Hypothesis Development

Agency Theory: Due to the existence of a contract for the agent to act for and on behalf of the principal in making a decision, agency theory maintains that the theoretical relationship between the principal as the owner of the power and the agent is management as the executor of the authority. Agency theory in the government sector is used as an analysis of principal-agent relationship when making public sector budgeting due to the contract in terms of providing services (services) as the principal's interest, in it also states the role of parties in the public sector. The role of each party involved, among others, the first party auditor of the Financial Examining Agency as an examiner of performance and financial reports for the current period, the second party auditee/client/entity examined as the manager and responsible for State Finance such as: central and local governments (Ministry / Institutions, public service bodies), State-Owned Business Entities, Regional -Owned Usama Bodies, third party recipients/ external users such as representative institutions, as well as the public in accordance with the Public Information Disclosure Act (Rai, 2008). The community trusts the government to manage local revenue and develop policies to give welfare to the community, as evidenced by this study's relationship with agency theory.

Hypothesis and Conceptual Framework: The following are the hypotheses that have been developed in this study based on elements that are likely to affect the financial performance of local governments:

Government Size and Financial Performance: The size of a local government is determined by taking into account all total assets, total revenue, the number of employees, and service production levels (Damanpour, 1991). In terms of financial performance, it is predicted that greater size will improve the region's financial performance and vice versa. Masdiantini and Erawati (2016), Andani et al. (2019), and Islami et al. (2020) investigated the impact of local government size on the financial performance of local governments.

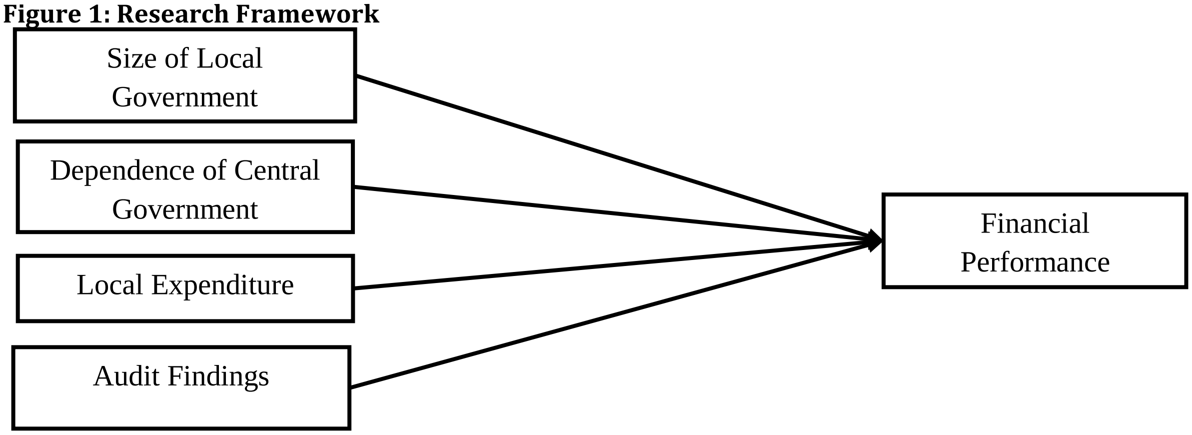
According to a previous study, the size of a local government has a significant impact on its financial success.
H1: local government size has a significant effect on the financial performance of the local government.

Dependence of Central Government and Financial Performance: The size of the General Allocation Fund reflects the level of reliance on the central government (GAF). GAF is a fund derived from the central government's State Revenue and Expenditure Budget (APBN) and distributed to local governments as a form of decentralization support (Central Government, 2005). Marfiana and Kurniasih (2013), Aziz (2016), and Noviyanti and Kiswanto (2016) investigated the impact of reliance on the central government on financial performance. Previous research has found that a local government's reliance on the federal government has a major impact on its financial success.
H2: dependence on the central government has a significant effect on the financial performance of local governments.

Local Expenditure and Financial Performance: Regional expenditure based on Law Number 32 of 2004 is a regional obligation that is recognized as a reduction in the value of net wealth in the current budget period (Central Government, 2004). It is intended to meet the needs in the implementation of public services. Marfiana and Kurniasih (2013), Aziz (2016), and Noviyanti and Kiswanto (2016) investigate the impact of regional spending on local government financial performance. According to a previous study, regional spending has a significant impact on local government financial performance.
H3: local expenditure has a significant impact on the financial performance of local governments.

Audit Findings and Financial Performance: Audit findings are conditions related to statements of fact (Bastian, 2014). By complying with all the prescribed laws and regulations, the government's performance will be better because the findings stated by the auditors will be few and even indicated not at all. Renas and Muid (2014), Masdiantini and Erawati (2016), and Noviyanti and Kiswanto (2016) investigate the impact of BPK audit results on local government financial performance. According to previous research, the audit's conclusions have a significant impact on local governments' financial performance.
H4: Audit findings have a significant impact on the financial performance of local governments.

Figure 1: Research Framework



3. Research Methodology

The population of the study is comprised of the district/city governments in West Java Province, which consists of 18 district governments and 9 city administrations. Secondary data in the form of local government financial reports (LKPD) and inspection reports audited by the BPK RI in West Java Province from 2017 to 2019 was used in the research. This study uses the multiple linear regression hypothesis techniques by STATA application. This study uses ratio and nominal scales. This study employed 72 samples out of a total of 81 samples that were evaluated according to the researchers' criteria. The following are the criteria that were employed in this sampling process:

- Local Governments in West Java Province and LKPD from 2017 to 2019 have been audited. The report has been uploaded on the official website of the BPK RI.

- LKPD provided by the local government is complete for the research period, LKPD obtained by the researcher through the page https://www.bpk.go.id/
- LKPD is loaded in full such as Balance Sheet, Budget Realization Report, Operational Report, Cash Flow Report, Equity Change Report, and Notes on Financial Statements.
- Have data on the report of the results of the audit examination in 2017 to 2019 to obtain the number of audit findings.

Table 1: Measurement of Variables

Variable	Measurement	Source
Financial performance	Five regional financial ratios are used to assess the financial performance of local governments. These include revenue effectiveness ratios, efficiency ratios, independence ratios, activity ratios, and growth ratios for municipal.	(Halim & Kusufi, 2012)
Size of local government	Ln total assets in the local government balance sheet	(Tama & Adi, 2018)
Dependence of central government	Comparison between General Allocation Fund to total income.	(Marfiana & Kurniasih, 2013)
Local expenditure	Ln total realization of regional spending.	(Kusuma & Handayani, 2017)
Audit findings	Audit findings in Rupiah	(Tama & Adi, 2018)

4. Results and Discussion

In West Java Province, there are 81 district and city administrations that make up the population of this research. Purposive sampling is a strategy for selecting samples. Table 2 shows the final sample of this investigation.

Table 2: Final Sample of the Study

Criteria	Total
Local Governments in West Java Province and LKPD from 2017 to 2019 have been audited. The report has been uploaded on the official website of the BPK RI	27
LKPD provided by the local government is complete for the research period, LKPD obtained by the researcher through the page https://www.bpk.go.id/	27
LKPD is loaded in full such as Balance Sheet, Budget Realization Report, Operating Report, Cash Flow Report, Equity Change Report and Notes on Financial Statements.	27
Data on the report of the results of the audit examination in 2017 to 2019 to obtain the number of audit findings	27
The company did not meet the required data	(3)
The number of governments that are the sample of the study	24
Number of research periods	3
Number of samples during the study period	72

Based on the criteria established for selecting the sample for this study, a sample was chosen from the total population of 27 Regional Governments in the Province of West Java between 2017 and 2019, based on the criteria established. The selection was conducted on 3 (three) local governments that did not meet the research data completely for the research period, namely 2017 to 2019. The results obtained are the total sample in this study amounted to 72 samples.

Table 3: Statistical Descriptive Analysis

Variable	Obs	Mean	Std Deviation	Min	Max
EFFECTPAD_w	72	0,9752968	0,1196052	0,5665126	1,332647
EFFIC_w	72	4,27895	1,858874	1,498789	9,528152
INDEPD_w	72	-0,0513549	0,1940351	-0,2807342	0,4504358
EXPDOP_w	72	0,7715067	0,1080756	0,0879946	0,8885168
EXPDCAP_w	72	0,2019972	0,0634702	0,0119598	0,3967461
GRWTH_w	72	0,1231229	0,2761219	-0,391411	0,8568515
SIZE_w	72	5,35e+12	4,79e+12	4,75e+10	2,65e+13
DEPEND_w	72	0,3933705	0,0602894	0,2141489	0,4848885
EXPENDIT_w	72	3,13e+12	2,69e+12	7,26e+11	2,21e+13
FNDGS_w	72	8,89e+09	1,57e+10	-2,97e+09	7,27e+10

Based on the purposive sampling method, the sample size is 81 consisting of 27 districts/cities during the period of 3 years of research, but after the elimination of outlier data into 72 samples used in this study. The independent variable of local government size has an average value of 5.35e+12, dependence on central government has an average value of 0.3933705, regional spending has an average value of 3.13e+12, and audit findings have an average value is 8.89e+09. While the dependent variable of local government financial performance with PAD effectiveness ratio proxy has an average value of 0.9752968, efficiency ratio has an average value of 4.27895, independence ratio has an average value of -0.0513549, operating expense activity ratio has a value an average of 0.7715067, the capital expenditure activity ratio has an average value of 0.2019972, and the growth ratio has an average value of 0.1231229.

Table 4: Stata Analysis Results

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	EFFECT PAD		**EFFIC**		**INDEPD**		**EXPENDOP**		**EXPENDCAP**		**GRWTH**	
	Z	P>|z|	T	Z	P>|z|	Z	P>|z|	T	P>|t|	P>|t|	Z	P>|z|
SIZE_w	1	0	1	3	0	0	0	0,	0	0	2	0
	,18	,237	,03	,60	,000	,68	,497	02	,984	,311	,38	,018
DEPEND_w	0	0	-	1	0	-	0	-	0	0	-	0
	,99	,322	0,43	,88	,060	1,34	,179	0,32	,748	,672	1,32	,188
EXPENDIT_w	1	0	1	-	0	-	0	-	0	0	-	0
	,10	,273	,21	6,04	,000	2,34	,019	0,43	,665	,231	1,17	,241
FNDGS_w	0	0	0	-	0	2	0	0,	0	0	0	0
	,37	,715	,01	1,17	,243	,27	,023	16	,872	,995	,31	,755
N : 72												

Based on the results of the data in this study, that SIZE shows z-count <z-value (1.18 <1.96) and significance value (0.237> 0.05) in model 1. Then t-count <t-table (1.03 <1.96) and significance value (0.311> 0.05) in model 2. Then z-count < z-value (0.68 <1.96) and significance value (0.497> 0.05) in model 5. And z-count <z-value (0.02 < 1.96) and a significance value (0.984> 0.05) in model 6. The proposed hypothesis is rejected. The findings of this study agree with those of Nugroho and Prasetyo (2018) and Maulina, et al. (2021), who found that the size of local governments had little bearing on their financial success. According to the findings, the proposed hypothesis is rejected, and the agency theory, which states that local governments are given authority to manage assets for public use, is not supported. In fact, government assets have not been fully managed optimally in meeting the needs of public activities and services as well as the needs of each region is difficult to estimate. Other results from this research data show that SIZE shows z-count >z-value (2.38> 1.96) and significance value (0.018 <0.05) in model 3. And z-count > z-value (3.60> 1.96) and significance value (0.000 <0.05) in model 4. As a result, it can be deduced that the size of a local government affects its financial performance, and the hypothesis is supported.

The findings of this research back up those of Aziz (2016) and Masdiantini and Erawati (2016), who discovered that the size of a local government has a significant positive impact on its financial success, The outcomes of this study support the agency theory, which argues that local governments have been able to maximize government operations related to their performance by using good asset management to benefit their principles. DEPEND exhibits a t-count t-table (0.99 1.96) and significance value (0.322> 0.05) in model 1 based on the outcomes of the data in this study. Then t-count < t-table (-0.43 <1.96) and a significance value (0.672> 0.05) in model 2. Then t-count < t-table (-1.32 <1.96) and a significance value (0.188> 0.05) in model 3. Then t-count < t-table (1, 88 <1.96) and significance value (0.060> 0.05) in model 4. As well as z-count < z-value (-1.34 <1.96) and significance value (0.179> 0.05) in model 5. Last count < t-table (-0.32 <1.96) and significance value (0.748> 0.05) in model 6. As a result, It can be deduced that local governments' financial performance is unaffected by their reliance. On the federal government, and the presented hypothesis is rejected. The findings of this analysis agree with those of Kusuma and Handayani (2017) and Aswar (2019).

They discovered that local government financial performance was unaffected by reliance on the federal government. The findings of this investigation showed that the hypothesized hypothesis was rejected and that agency theory was not supported which said that general allocation funds and revenues of each region should be allocated for decentralization and equitable growth, but the needs of each region are different and their management is not optimal for regional needs, there are still many funds used for other purposes outside the principal's interests. EXPENDIT has a z-count z-value (1.10 1.96) and a significant value (0.273> 0.05) in model 1. Then t-count <t-table (1.21 <1.96) and significance value (0.231> 0.05) in model 2. Then count < z-value (-1.17 <1.96) and significance value (0.241> 0.05) in model 3. And calculate <table (-0, 43 <1.96) and a significance value (0.665> 0.05) in model 6. As a result, it is reasonable to conclude that municipal spending has no bearing on the financial success of local governments. The presented hypothesis is rejected. The findings of this study agree with those of Nugroho & Prasetyo (2018) and Dasmar, et al. (2020), who found that regional spending had no substantial impact on local government financial performance.

The proposed hypothesis is rejected, and the agency theory, which states that while the authority in the management of regional expenditure is required to meet the needs of regions in providing public services, increases in nominal capital expenditure and increases in the proportion of capital expenditure are not mutually exclusive, is not supported, according to the findings of this study. Other results from this research data show that EXPENDIT shows z-count < z-value (-6.04> 1.96) and a significance value (0.000 <0.05) in model 4. Last z-count < z-value (-2.34> 1, 96) and a significance value (0.019 <0.05) in model 5. As a result, it may be inferred that regional expenditure has an impact on local government financial performance, but not in the way that the hypothesis predicted, regional spending has a major negative impact. The findings of this study agree with those of Ariwibowo (2016) and Qowi and Prabowo (2017), who found that regional spending had a considerable negative impact on local government financial performance. These findings contradict the study's hypothesis, which suggested that municipal spending has a positive impact, on the financial success of local governments.

The bigger the government entity's expenditure, the better the region's financial success, yet this cannot be verified, according to this agency's opinion. In the context of the connection between the principal and agent, there is a tendency to commit moral hazard in order to maximize its utility. So that in the process of budgeting regional expenditure funds can allow the occurrence of inequality between the amount of expenditure budgeted is not able to reflect the actual ability of regional spending. FNDGS reveals z-count z-value (0.37 1.96) and significant value (0.715> 0.05) in model 1. Then t-count <t-table (0.01 <1.96) and significance value (0.995> 0.05) in model 2. Then z-count < z-value (0.31 <1.96) and significance value (0.755> 0.05) in model 3. While z-count < z-value (-1.17 <1.96) and significance value (0.243> 0.05) in model 4. Finally, t-count < t-table (0.16 <1.96) and significance value (0.872> 0.05) in model 6. As a result, the audit findings had no bearing on the financial performance of local governments, and the theory was disregarded. The findings of this study are consistent with those of Jannah et al. (2020) and Dasmar et al. (2020), who found those audit findings had no substantial impact on financial performance.

According to the findings, the proposed hypothesis was rejected, and the agency theory, which claimed that local governments should make financial records and audited reports more transparent in order to strengthen public control over government, was dismissed. Nevertheless, the number of audit findings does not play a direct role in financial performance because the agent does not apply the criticisms and suggestions from the auditor properly. Other results from the data of this study show that FNDGS z-count > z-value (2.27> 1.96) and significance value (0.023 <0.05) in model 5. As a result, it's possible to deduce that the audit findings have an impact on local government financial performance, but not in the way that the hypothesis of a substantial positive impact suggests. These findings contradict the study's hypothesis, which suggested that audit findings have a negative influence on the financial performance of local governments. Local officials should follow the laws and regulations in carrying out their duties so as not to give rise to a finding in providing services to principals; the greater the number of findings of breaches of compliance from related entities, the lower the financial performance of local governments.

5. Conclusion and Recommendations

Based on the ratio of independence and capital spending activities, the size of local government has a considerable favorable effect on its financial performance. This shows that if there is an increase or decrease in the size of local government then the financial performance of local government also experiences the same thing. The size of the local government does not have a significant effect on the financial performance of the local government based on the ratio of local revenue effectiveness, efficiency, capital spending activities and growth. This means that if the size of local government grows or shrinks, the financial performance of the government does not change, implying that the size of local government has no bearing on its financial success. This is due to the fact that the asset function has not been fully utilized for productive tasks. Local governments' financial success is unaffected by their reliance on the federal government. This means that whether the level of reliance on the central government rises or falls, the financial performance of local governments does not suffer in the same way, implying the opposite of reliance on the central government. This is because, while the factors of general allocation funds and total revenue influence regional financial performance, it is still implemented in line with the right budget. Furthermore, general allocation funds are misappropriated to conduct routine shopping, resulting in a lack of targeting. Based on the activity ratio, local expenditure has a major negative impact on local government financial performance. This means that if local expenditure increases or decreases; the financial performance is affected in the same way.

Based on the ratios of local revenue effectiveness, efficiency, independence, and growth, local expenditure has no substantial impact on the financial performance of local governments. This means that if regional spending increases or decreases, local government financial performance does not change in the same way, therefore it is the opposite of regional spending. This is because regional expenditure incurred by the government in each entity is not for financing activities that are declared productive such as capital expenditure in the form of land to be managed as a source of regional income and for improving regional infrastructure in the long run but the budget is used to meet employee expenditure, meaning only to satisfy the local officials. The findings of the audit had a significant positive effect on the financial performance of local governments based on the ratio of capital expenditure activities and concluded that the results contradicted the research hypothesis. The findings of the audit did not have a significant effect on the financial performance of local governments based on the ratios of local revenue effectiveness, efficiency, independence, operating spending activity and growth.

This indicates that if there is an increase or decrease in the findings of the audit, then the financial, performance of local governments do not experience the same thing, thus contrary to the findings of the audit. This is because the presence of many audit findings in the government does not always imply poor financial performance by local governments. The financial performance of entities that have been implemented into various activities is unaffected by large or small audit findings because if you want to know the number of findings, you must confirm further from the perspective of performance assessment after the audit LKPD. West Java is expected to provide consideration in making decisions and policies on the development of local government financial performance. Then, for future research, other variables not explored in this study, such as regional wealth, legislative size, and audit opinion, are likely to be used as well as further researchers are expected to conduct research on government entities other than the Province of West Java that has not been studied by adding a period of research years.

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An assessment of Key Success Factors for Construction Projects in the Democratic Republic of Congo

Adrien Fariala[1] & Olawumi Dele Awolusi[2]
[1]Department of Business Administration, the Business School, University of Roehampton, London, UK
[2]Department of Accounting and Finance, College of Economics and Management, Kampala International University, Kampala, Uganda
adrien.fariala@roehampton-online.ac.uk, awolusi.olawumi@kiu.ac.ug

Abstract: The success of the Government's construction projects in the Democratic Republic of Congo (DRC) since 2011 has been anchored on the potential of construction firms in completing these projects based on the planned timeframe as well as the budget. Consequently, from a project management viewpoint, the main objective of the present study was to assess the critical success factors in developing countries' construction projects and to examine the impact of risk management, leadership, experience and expertise, and project size on construction projects in DRC. Data was gathered from respondents in the construction projects in DRC using quantitative methods. A statistical software program, SPSS version 25, was subsequently used to analyze the collected quantitative data. The findings emanating from this study contribute to the body of knowledge on key success factors in construction projects in DRC as a developing country. It was revealed from the study that the success of construction projects in DRC could be boosted through effective and efficient risk management. In addition, effective and efficient leadership mainly transactional leadership would affect construction project success. Further, the more the experience and expertise of construction project staff, the more likely the project success criteria would be met, and the more likely the project would be successful. And lastly, smaller-sized and medium-sized construction projects may be more successful, whereas mega projects may not be very successful due to insufficient and limited experience and expertise.

Keywords: *Critical Success Factors, Developing Country, Least Developed Countries, Project Success, Quality.*

1. Introduction

This study assessed key success determinants in developing countries' construction projects with particular emphasis on the Democratic Republic of Congo (DRC) construction industry. The construction industry plays a vital role in developing countries and contributes significantly to the growth of socio-economy development and employment (Awolusi, 2021; Mahmood and Shahrukh, 2012). This is applied in DRC as well. DRC is a central African Francophone nation, as shown in appendix 6 whose population is approximately 78 million and covers an area that spans 2.345 million km^2 (United Nations, 2018). The DRC is the second biggest country in Africa; the country is larger than the combined area of Norway, Sweden, Germany, France and Spain (Chepkemoi, 2018). The country is the largest producer of cobalt ore and the second producer of diamond in the world according to the report by Chepkemoi (2018). The DRC government has launched several construction projects since 2011 with the aim of development and the emergence of the country using the concept of "revolution of modernity" (ANAPI, 2016). These projects are still ongoing today, and many are waiting for funds from investors.

However, as explained by Niazi and Painting (2017), the major concern for construction industry stakeholders is the frequency of inability of project implementers in completing projects within time and budget scope (Olayisade & Awolusi, 2021). Successful developmental projects are not entirely dependent on one but on several key success determinants and numerous studies have been undertaken to establish the possible factors that could be contributing to success in construction projects (Serrador and Pinto, 2015). Managing the particular determinant that contributes to success in construction projects significantly influences how a project meets the quality, cost and time dimensions which are parameters against which a successful project is weighed (Gunduz and Yahya, 2015). According to Mavetera et al. (2015), investigators have made attempts to establish success determinants that may be used in refining the evaluation of construction projects. Even though the economic development of developing countries depends on the successful implementation of new infrastructure projects, the planning and execution of construction projects have not been adequately achieved (Rajasekaran and Valli, 2014).

In addition, Gunduz and Yahya (2015) mention that most construction projects in developing nations, where economies are low, do not meet the success criterion for construction projects. According to Gunduz and Yahya (2015), the majority of projects incur cost overruns way beyond the scheduled time and are often of poor quality. Efforts have been made by various scholars and practitioners alike to pinpoint key determinants for successful construction projects to improve their success (Alashwal et al., 2017). Nevertheless, due to the complexity of construction projects, there has never been a single conventionally accepted collection of critical success factors (CSFs). Furthermore, findings of studies from developed countries are deemed to be unsuitable for generalizing in the least developed countries, and most notably, for unstable economies such as the DRC. In addition, the majority of the studies that have been done and attempted to establish critical determinants associated with successful construction projects have their context based on more industrialized countries (Kogan and Lee, 2014; Iram, Khan and Sherani, 2016; Alashwal et al., 2017). Despite construction constituting one of the pillars of the economy in developing countries, there are limited studies that have been undertaken to evaluate CSFs of construction projects so that that their success rate can be improved (Damoah, Akwei and Mouzughi, 2015). Silva, Warnakulasuriya and Arachchige (2016) note that identifying and carefully controlling key success determinants may have the desired result on construction projects and improve their success rates.

Different fields have delved into studying CSFs stemming from Rockart's 1981 theory of CSFs which states that a project has a limited number of key areas which if managed effectively ensure the success of a project (Ramlee et al., 2016). In light of the preceding discussion, this study investigated key determinants for successful construction projects in the least developed countries and in particular, DRC. The DRC government invested heavily in construction projects such as the building of new infrastructure given the country's economic emergence (ANAPI, 2016). For example, the construction of the modern city Kinshasa which budget is around USD 15 billion. This includes constructions of hospitals, schools, buildings, roads, shopping centers, while the construction of the biggest Hydro Power Project Inga 3, will cost nearly USD 13.5 (Clowes, 2018). However, most of these projects tend to slow down or fail to meet the success parameters of quality, cost and time which are scheduled at the outset of these development projects (World Bank, 2018). We believe that they are many reasons which lead to a project failing in DRC such as risk management, experience, expertise, etc. The identification of key success factors will furnish project participants with a key indicator to succeed in projecting the least developed countries in general and particularly in DRC. In the construction industry, stakeholders are utterly concerned with the failure of projects being completed within the defined scope of budget and time, and whereas there is a common problem globally related to cost overruns, it is posing a unique challenge for developing nations (Niazi and Painting, 2017).

Different studies have been conducted and aimed to identify project success factors and the root cause of their failures (Yong & Mustaffa, 2013; Gunduz & Yahya, 2015; Doulabi & Asnaashari, 2016; Williams, 2016; Alashwal, Fareed & Al-obaidi, 2017; Aneesha & Haridharan, 2017; Banihashemi et al., 2017). Some of these studies identified success factors for construction projects, but few focused on key success factors. Our Studies will focus on the key ones that may affect the project in developing countries. Consequently, this present study sought to investigate how key success determinants of risk management, leadership, experience, expertise, and project size influence successful building projects in DRC. The study's core objective was to find out the factors that influence successful construction projects in DRC. The aim was to undertake a quantitative study upon which the state of construction projects in DRC would be laid bare and subsequently allow for generalizing to other developing and least developed nations. However, the specific objectives of the study were to;

- **i.** Examine the influence of risk management on construction projects in DRC.
- **ii.** Examine the influence of leadership on construction projects in DRC.
- **iii.** Establish the influence of experience and expertise on construction projects in DRC.
- **iv.** Examine the influence of project size on construction projects in DRC.

The specific research questions of the study were to find out;

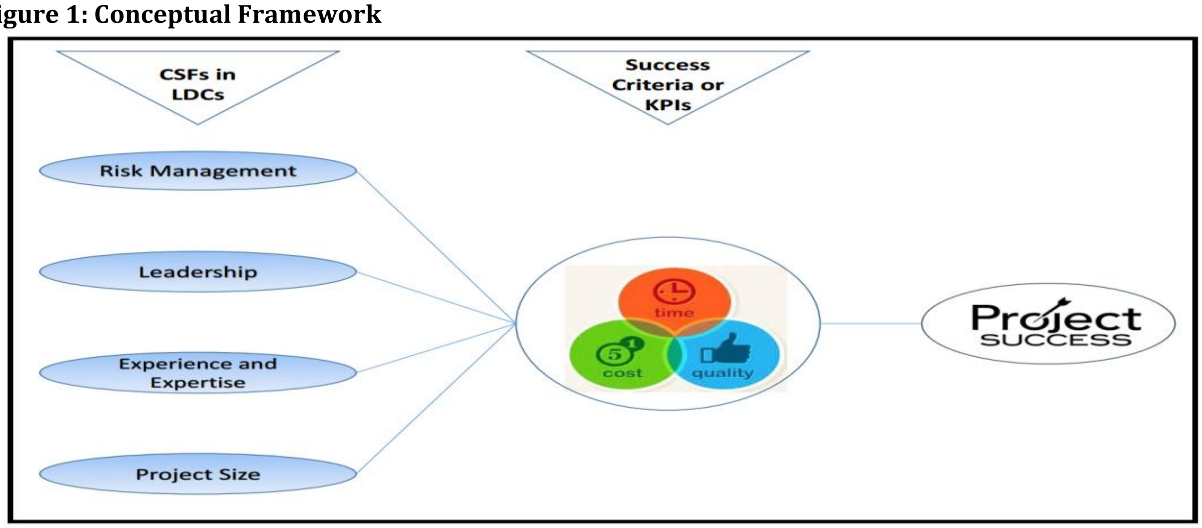
- **i.** How does risk management influence construction-related projects in DRC?
- **ii.** How does leadership influence construction-related projects in the DRC?
- **iii.** How do experience and expertise influence construction-related projects in DRC?
- **iv.** How does project size impact construction-related projects in the DRC?

To establish the influence of these critical success determinants on construction-related projects in DRC, the above-stated research questions were answered via the collection of data in a field study and analyzing the information gathered. It is also important to note that, other researchers focused on developing nations like Ghana, Malaysia and South Africa but none has been done in countries like DRC, Soudan, Zambia and others which are classified as LDCs by the United Nations (Tesfaye et al., 2017). The LDCs have many challenges compared to other developing countries such as acute poverty, weak human capital, lack of expertise and skills (Development Policy and Analysis Division | Dept of Economic and Social Affairs | United Nations, 2018). This study would be of great importance to academia by making a contribution to the literature regarding project management while offering students the opportunity for converting learned theory into practice. In addition, the results would assist the business sector and investors in making appropriate and desirable adjustments to project management programs. The assessment results of CSF will benefit Project managers and teams working in developing countries and LDCs as the study provide determinants that are crucial in successful construction projects. This will improve their skills and awareness of what needs to be considered while doing a project in developing countries and particularly in LDCs.

2. Review of Related Literature

Conceptual Review: Successful construction projects are defined based on some standards, such as critical success parameters (Tesfaye et al., 2017). Studies on this subject in developing countries are scanty and due to the historic under the development of the country. The aim of this study is trying to build upon literature concerning key success indicators in construction projects for developing countries with emphasis on DRC. Success in construction projects rests with the implementation of various features effectively. Project management practice, according to Alias et al. (2014) and Silva, Warnakulasooriya and Arachchige (2015) has the potential of influencing the success of a construction project whether directly or indirectly. Pinto and Slevin (1988) are wary that there are in-depth studies on factors that influence successful projects in developing countries that are inadequate, a matter that this study tried to address. In the evaluation of factors that influence successful construction-related projects, the emphasis has to be made, and distinction is made between success factors and success criteria (Crawford, 2000; Tesfaye et al., 2017). Sanvido et al. (1992) consider a successful project like that which fulfils certain expectations of the project stakeholders. The “iron triangle” (Barnes, 1988) is the preferred success benchmark for construction projects in third-world countries. The "iron triangle" criterion explicitly emphasizes the dimensions of quality, cost and time. According to Ojiako, Johansen and Greenwood (2008), this framework defines successful projects as those who meet set quality, are completed within the planned time as well as the budgetary cost. Although this framework provides the basis for evaluating successful projects, developing countries have unsuccessfully met this criterion (Long et al., 2004). The conceptual framework is shown in figure 1.

Figure 1: Conceptual Framework

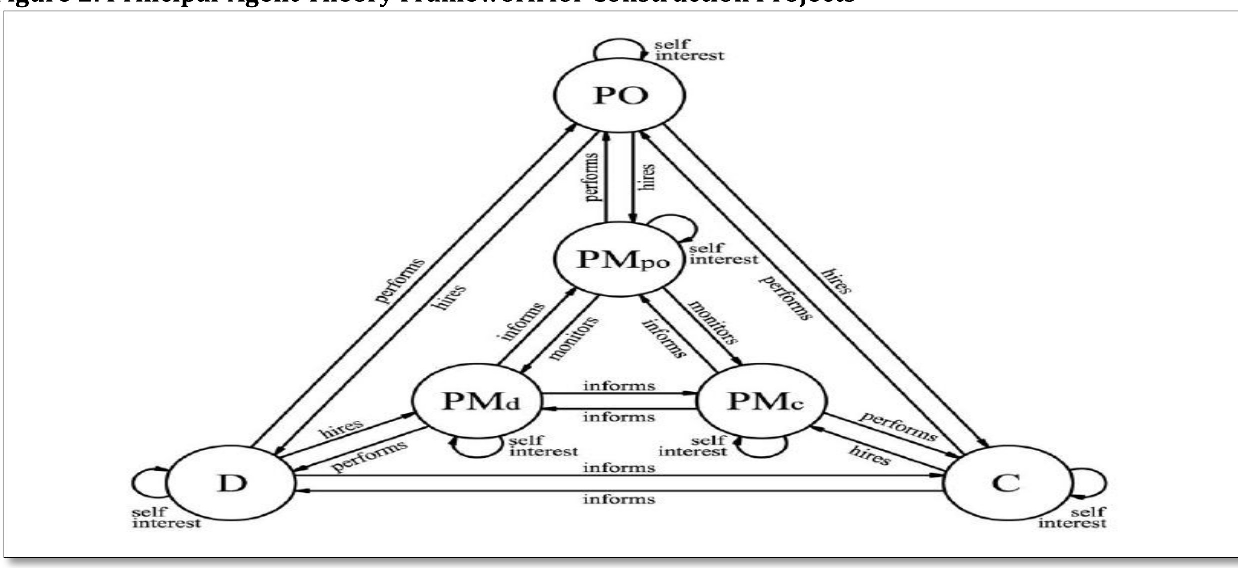


Source: Authors Own

To establish the key success determinants for construction projects in DRC, the researcher used the quantitative research method (Saunders, Lewis and Thornhill, 2012). The study participants responded to a structured questionnaire to which numeric data were collected to help address the research questions. The researcher computed descriptive statistics, inferential statistics and performed correlation analysis (Weiers, 2011) using SPSS.

Theoretical Review: The present study is grounded on the following theories: **Principal-Agent Theory** (Ceric, 2013); **Contingency Theory** (Hattangadi, 2016); and **Systems Theory** (Chikere and Nwoka, 2015; Hattangadi, 2016). **The Principal-Agent Theory** (Ceric, 2013) is based on the tenet that the agent can make decisions for the owner (principal) in any business or economic transaction**.** According to Ceric (2013), the Principal-Agent Theory is rooted in information asymmetry, such that one party (agent) is more informed than the owner while not sharing similar interests, and as a result of this, opportunistic behavior can be expected in such relationships (Ceric, 2013). In this study, the construction companies are contractors (agents) for the government and private owners (principals) of construction projects in the DRC. Therefore, to better understand this study, the researcher draws on the Principal-Agent Theory. George Akerlof, Michael Spence, and Joseph Stiglitz contributed tremendously in the 1970s to develop the information asymmetry theory on which the Principal-Agent Theory is based. In this study, the construction companies are contractors (agents) for the government and private owners (principals) of construction projects in the DRC. Figure 2 shows the Principal-Agent Theory framework for construction projects. According to the model, the project owner (PO) relates to the contractor (C) in a business relationship that involves various economic interests. There is often a designer (D), a project owner's project manager (Papo), a designer's project manager (PMd), and a contractor's project manager (PMc) as shown in Figure 2. Therefore, to better understand this study, the researcher draws on the Principal-Agent Theory.

Figure 2: Principal-Agent Theory Framework for Construction Projects



Source: (Ceric, 2013)

The Contingency Theory: Postulates that no best cause of action in running a business exists and that organizing, leadership or decision making is contingent on the internal and external situation. According to Hattangadi (2016), organizations ought to take into consideration the prevailing situation before making decisions on issues related to distributors, suppliers, unions, technology, consumer interest groups, government, customers and competitors. Wadongo and Abdel-Kader (2014) explained when applied during decision making; this theory may enhance management in performance. In this study, decision-making choices in construction companies in the DRC will be studied relating to distributors, suppliers, unions, technology, consumer interest groups, government, customers and competitors. Consequently, to better understand this study, the researcher draws on the contingency theory.

The Systems Theory: Views an organization as a composition of interrelated organs and that organization's relationship with their environments (Chikere and Nwoka, 2015; Hattangadi, 2016). The theory is a transdisciplinary theory that was developed in the 1950s by Ludwig von Bertalanffy (Hattangadi, 2016). This theory applies to the current study as construction firms in DRC are organizations made up of interrelated organs or branches that have to relate with the society, government, and stakeholders (environment). Therefore, to better understand this study, the researcher draws on the Systems Theory. Construction projects are operated on a systematic level, with various stakeholders playing different roles towards one goal. The incorporation of the systems theory will help to study the interrelatedness of different stakeholders' activities and their contribution towards the success of construction projects.

Empirical Literature Review

Key Success Indicators in Construction-Related Projects: The scope of construction is very diverse, and similarly are success determinants in construction projects. Silva, Warnakulasooriya and Arachchige (2015) assert that despite the identification of various key success factors, there is a lack of consensus among scholars on agreeable factors as they take different dimensions. The implication for this is that depending on the framework chosen; the factors could be defined either broadly or narrowly. More so, the authors go on to state that CSFs would most likely differ from one country to another as a result of country-specific operating environment, policies and legal constraints. Silva, Warnakulasuriya and Arachchige (2016) evaluated published literature in journals to analyze key success determinants in the construction industry. The findings revealed a host of 34 internal determinants and 40 external determinants. Further, the study established that there was a repetition of 19 internal determinants and 10 external determinants in at least 3 papers. The factors explored in this study suggested that external factors such as environment and inherent determinants like the projects' nature contribute to successful projects regardless of their position. The inclusivity of this study addressed issues affecting all stakeholders on all phases of a construction project. Therefore, it would perhaps be significant noting that the findings of studies which are conducted in developed countries may be suitable for neither generalizing nor being sufficient to represent the situation in the developing countries and as such, they need to examine such factors in the context of developing countries.

Risk Management: Traditional, the concept of risk has been perceived as being associated with negative, and many people traditionally view risk as exposing to danger or hazard. However, in project management, project risk is considered as an occurrence that is uncertain and which can either positively or negatively impact the project goals such as its quality, cost, schedule or scope (Hosny, Ibrahim and Fraig, 2018). Risk management encompasses the mitigation of project or organizational risks by the management (Abd El-Karim, Mosa El Nawawy and Abdel-Alim, 2017). PMI identifies four fundamental risk management steps, and these include "risk identification, risk analysis, risk response planning, and risk monitoring and control" (Project Management Institute, 2013). Even though other scholars have shown fewer numbers of steps for risk management, its importance in construction-related projects cannot be undermined. In another study, Tsiga, Emes and Smith (2017) explained the significance of managing risks in petroleum projects. They explained that multinational corporations should embark on risk management for diverse cultures while undertaking projects globally. Tengan and Aigbavboa (2017) explained the importance of undertaking monitoring and evaluation exercises to mitigate risk and enhance the success of projects. Similarly, effective risk management is imperative for any successful building construction project (Odimabo and Oduoza, 2018). Consequently, we hypothesize that
H_1: risk management affects the success criteria for construction-related projects in DRC.

Leadership: Leadership is an influential process that can help move an organization or project move forward (Aritz and Walker, 2014). The Least Developed Countries (LDCs) are characterized by weak human capital, and there is a need for leadership development in these countries, such as the DRC. Men (2014) found that **authentic leadership** development is pivotal in nurturing the communication system which can enhance a projects' success due to transparent communication practice, accountability, and employees' positive evaluation of the entire organization. In addition, Joo and Nimon (2014) recommended that HR departments should develop **leadership development** programs that incorporate both authentic leadership development and transformational leadership development in a concerted manner. According to Giltinane (2013), in return for compliance, followers being rewarded is what characterizes transactional leadership. This type of leadership could positively affect the satisfaction as well as the performance of subordinates if the rewards are contingent. The focus of a leader exercising this form of leadership is majorly on management tasks, and as a result, he/she may not identify a team's shared values (Giltinane, 2013).

On the other hand, transformational leadership realizes the importance of the potential of followers as well as recognizing the need to satisfy their higher needs. Burns conceptualized transformational leadership in 1978 (Gözükara and Şimşek, 2015). A transformational leader is viewed as inspiring followers to achieve more while at the same time, motivating the followers in achieving high ideals and goals. According to the survey by Liphadzi, Aigbavboa and Thwala (2015) in South Africa, successful projects are influenced by transactional leadership. The authors noted that the laissez-faire style of leadership does not influence successful construction projects as there is no relationship between the two. It may, therefore, be argued that the style of leadership influences successful construction projects. Consequently, that
H_2: Leadership affects the success criteria for construction-related projects in DRC.

Experience and Expertise: Niazi and Painting (2017) state that poor contractor experience in a development project is a factor that results in cost overruns. In addition, Hosny, Ibrahim and Fraig (2018) explained that design complexity, time compression, availability of resources, team size, management stability, experience and history affect risks in construction. Further, Baron and Parent (2015) suggest the training of business leaders to enhance their expertise and make them authentic leaders. Large development projects often involve multinational corporations as contractors. Thus, Rezek (2013) explains that business leaders ought to become authentic and effective in facing culturally diverse markets. In another study, Wondimu et al. (2016) identified the qualification of contractors and competence of project owners as success determinants in building projects. Further, Wondimu et al. (2016) stated that the management of projects should take into consideration the mixing of cultures across the globe and, therefore, the multicultural experience is vital in the management of projects across countries. Araszkiewicz (2017) explained the importance of effective and efficient portfolio management by companies. We, therefore, hypothesize that
H_3: Experience and expertise influence the success criteria of construction projects.

Project Size: Ramlee et al. (2016) explain that the size of past projects completed may influence successful other projects. The authors also state that company image, waste disposal, adequate plant resources and labor, quality policy and turnover history significantly affect the success of projects. Similarly, Das and Ngacho (2017) explain that unique characteristics of construction projects about their control, scheduling, planning, complexity and nature collectively determine a project's success. Nzekwe et al. (2015), argue that regardless of the project size, the project manager can always succeed if they have carefully planned their project. Misic and Radujkovic (2015) explained the problems associated with huge or mega projects. According to the authors, large is risky, with over 50% of cost overruns, and turn to have a delivery failure as high as 66% and these projects may not produce the intended societal benefits. In addition, Mišić and Radujković (2015) stated that the key players of every project are people and that the delivery of mega projects requires competent project managers. Consequently, project size may affect construction projects' success in less developed countries. In another study, Belay and Torp (2017) found that cost deviation is not associated with longer. Consequently, the present study, therefore, hypothesized that
H_4: Project size affects the success criteria of construction-related projects in DRC.

Success Criteria: The universally accepted measures used in evaluating a successful project are referred to as success criteria. According to Alias et al. (2014), the CSFs in a construction project based on the "iron triangle" framework include quality, time and cost. The dimension of time is strongly supported by Zidane et al.(2015) who stated that effective and efficient use of time is a key determinant of a construction project that is considered successful. Alias et al. (2014) describe CSFs as project management inputs that may lead to successful projects, whether directly or indirectly. In another study, Tsiga, Emes and Smith (2017) explained the need for distinguishing between success criteria and success factors. Whereas success criteria constitute measures that we use to judge the success or failure of the project, success factors refer to inputs in a project and which strongly influence a project's success and therefore call for their management (Tsiga, Emes and

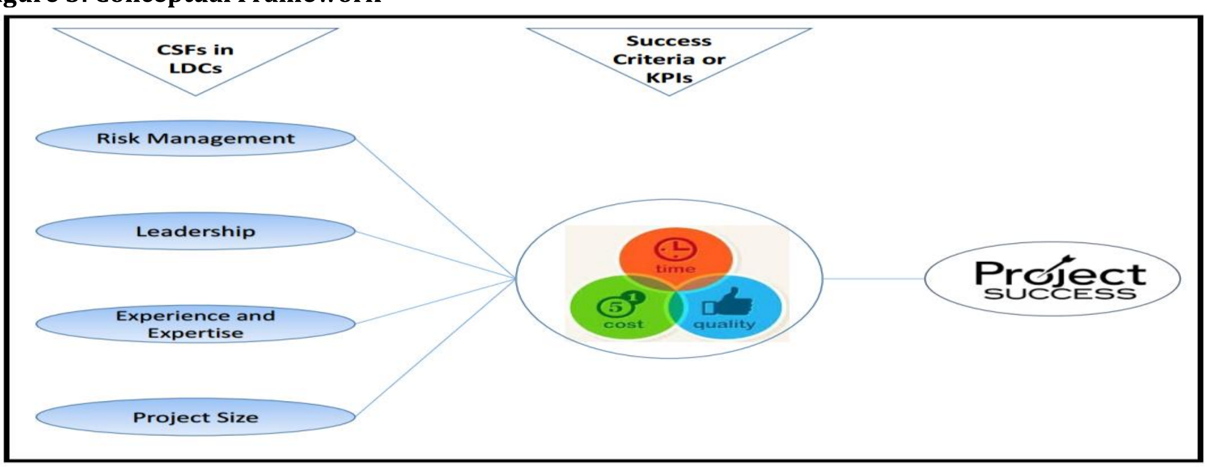
Smith, 2017). However, Das and Ngacho (2017) state that complex construction projects have their CSFs evaluated using the traditional measures of quality, cost and time. Further, the authors critique the traditional model of the evaluation criteria of success of a project by noting that this criterion fails to adequately consider social and environmental concerns of the society and therefore cannot be taken as ensuring the completeness of a successful project. Consequently, using factors like risk management, leadership, experience and expertise, and size of the project developing countries would be a better measure to use in evaluating the success of construction-related projects.

Critical Success Determinants and Success Criteria: Project risks can result in a slowdown of a construction project that would eventually result in cost overruns (El-Karim, El Nawawy and Abdel-Alim, 2017). Further, the study in the South African construction industry by Liphadzi, Aigbavboa and Thwala (2015) on the association between leadership styles and success of a project established that transaction leadership style influenced successful projects on scheduled delivery, budgeting, and quality of a project. Further, Niazi and Painting (2017) stated that poor contractor experience is a factor that results in cost overrun in development projects. Hosny, Ibrahim and Fraig (2018) concurs with this view and states that experience and expertise affect project quality, cost, and schedule. Lastly, Das and Ngacho (2017) explained that the complexity and size of a project affect successful projects on cost, delivery time, and quality.

Project Success: Project success refers to meeting the expected results or even over-performing in project delivery (Ramlee et al., 2016). Ramlee et al. (2016) note that whereas common universal measures are quality, schedule and cost, each project has its success criteria. Although the concept of project success is somewhat controversial based on non-agreement about what constitutes standard key success determinants for construction-related projects (Ramlee et al., 2016). As explained by Montequin et al. (2016), project success is not necessarily meeting cost, deadlines and specifications. The satisfaction of a client with the final delivery depends more on the perception of the success or failure of a project. Critical success determinants have proven to impact directly on the criterion for success on all three criteria of a construction project's success.

Conceptual framework: Figure 3 presents a selection of four CSFs in the least developed countries (LCDs) like DRC is shown on the left-hand side. The universally accepted parameters for success are in the middle of the figure, and the projects' success is shown on the right-hand side. In the model, the key success determinants and how they affect the parameters based on the "iron triangle" are illustrated. These success determinants were identified based on the review of several studies (Damoah, Akwei and Mouzughi, 2015; Gunduz and Yahya, 2015).

Figure 3: Conceptual Framework



Source: Authors Own

Gaps in Literature: Based on a review of related literature, it has become evident that there is inadequate literature about construction projects' CSFs in the least Developed Countries (LDCs). The Democratic Republic of Congo is among the developing countries but classified under the LCDs, according to the United Nations Report in 2018, as shown in appendix 5. Previous studies on this subject focused on such countries as South Africa Malaysia, Nigeria, Sri Lank, Ghana (Cheong Yong and Emma Mustaffa, 2012; Afolabi et al., 2019; Risath and Siriwardana, 2018; Babalola and Ojo, 2016; Odimabo and Oduoza, 2013; Tshik, 2015), Which are not classified as Least Developed Countries. This shows that in the least developed countries, studies investigating key success factors in building-related projects are scanty. The literature reviewed shows that all the studies have either been conducted in the developed world or the developing world but none in the specific region of LDCs and hence the need for the current study being conducted in DRC.

The researcher has also found out through reviewing the existing literature of the absence of a clear-cut framework that LDC practitioners can refer to implement successful projects. The area of framework development has been underexplored or neglected by previous researchers. This study will aim to generate data that can be transformed into relevant frameworks for practitioners in the industry. The current body of knowledge only offers dispersed information that does not provide a unified framework that can be adopted by LDCs. Lastly; the reviewed studies have failed to thoroughly explain how each of the success criteria is affected by the CSFs. Most of the studies have grouped the success criterion simply as success without carefully putting separating each criterion and presenting data on how it is affected by a particular CSF. By successfully aligning success criteria and certain CSFs, practitioners can easily locate which CSFs to alter based on the affected success criterion.

3. Methodology

The study was carried out at 17 construction companies in the DRC. Construction companies of different cities were targeted to have a general idea of challenges from different corners of the country. The cities selected for this study were Kinshasa, Lubumbashi, Kolwezi, Bukavu, Goma and Kisangani. According to Adams, Khan and Raeside (2014), a research design is a plan by the researcher that helps in the fulfillment of the objectives of the research besides ensuring that the collected data is suitable for addressing the stated problem. Akeke, Akeke and Awolusi (2015) note that researchers can use different forms of research designs that include but are not limited to descriptive, explanatory and exploratory. The researcher, a descriptive research design. In descriptive research design, a researcher gathers data whilst not tampering with the environment (Saunders, Lewis and Thornhill, 2012). The researcher opted for the quantitative approach while utilizing survey questionnaires as the primary method for soliciting data. As stated in Easterby-Smith, Thorpe and Jackson (2012), quantitative methods are ideal for investigating phenomena that cannot be analyzed through the personal experiences of people. Quantitative research approaches aim to investigate a phenomenon as it applies to the majority of the investigated population (Awolusi, 2012).

A population comprises units that share a similar set of attributes or traits (Zikmund, 2010). According to the author, a population includes all members that a researcher has got interested in and consists of the entire set of observations being considered in a study. The target population of this study was comprised of all the staff members of construction companies in the DRC. This population was estimated at 5000 staff members. However, the accessible population was only about 200 staff members, and the researcher used a sample of this accessible population. Weiers (2011) defines sampling as the systematic extraction of members of a population to gather useful data regarding the entire population. The author further states that a subset that is obtained from the population is referred to as a sample. Saunders, Lewis and Thornhill (2012) identify sampling techniques as either random or non-random. While probability concepts are applied in selecting study participants in random sampling, this probability is not attached when a non-random sampling technique is utilized. Edwards and Holland (2013) suggest that probabilistic sampling can be used in quantitative research. The authors stated that a sample should furnish the most helpful data for addressing the research objectives (Edwards and Holland, 2013).

Saunders, Lewis and Thornhill (2016) explicitly state that probability sampling ensures that any item on the sampling frame stands a chance to be selected and used in a study. The authors state that this randomness implies a basic argument in the generalization of research studies. Concurring with the previous statement, Leedy and Ormrod (2015) explain that a quantitative study can use both sampling techniques, but when selection is being done, probability sampling should take precedence. The researcher employed probability sampling as respondents were selected from a sampling frame in the form of a company staff directory (Eze & Awolusi, 2018). The author sent emails to the respondents and only used the respondents that replied to the mail, and in doing so, the researcher used a non-probability sampling technique called convenience sampling (Saunders, Lewis and Thornhill, 2016). The researcher selected 17 construction companies out of the over 500 construction companies in the DRC based on their location in the country and then applied to the companies for permission to conduct this study. Some companies are not purely construction but are involved in construction projects across the country. The applications, as well as authorization letters for undertaking the study, are annexed in the Appendices section. The first 17 companies that replied and were granted the opportunity to collect data were included in the study.

The selection of 17 companies helped the researcher to cover the different parts of the country that have different challenges. Then the researcher sent out 10 to 20 emails to selected staff members on each of the 17 company's directory and also travelled from different corners of the country to explain to staff members about the questionnaires. The letter of invitation to staff members to participate in this study is shown in the Appendix. The researcher requested the staff to voluntarily join the study and also introduce other suitable staff members in their respective companies to join the study. The first 10 staff members of each of the 17 companies that replied to the invitation for participation in this study were subsequently recruited. The questionnaires were both in French and English; the staff did choose to answer any of their preferred languages. The sampling technique used was non-random because the researcher wanted to establish contact with the most suitable construction companies and staff members. The researcher had 10 respondents from each of the 17 companies making a total of 170 respondents. Saunders, Lewis and Thornhill (2012) explain data collection is a process of collecting useful data during a research project. Quantitative data were obtained through a structured questionnaire that was distributed to staff members at the 17 companies involved in construction in the DRC shown in the Appendix.

As explained by Collis and Hussey (2003), questionnaires are well-known research tools that are composed of a set of well-articulated and proven questions aimed at inducing trustworthy responses from a research subject. Further, Collis and Hussey (2003) explained that questionnaires facilitate the collection of bulk data and are less time-consuming than interviews. Even though the use of online questionnaires to collect data has advantages such as access to unique populations and timeliness, the researcher used email and handed hard copy questionnaires because not all staff members have access to the Internet at all times. The researcher emailed copies of the questionnaire to staff members at the company offices and travelled across DRC for data collection. During the data collection exercise, each research respondent had ample time to read and respond to the same questionnaire at a convenient time and his understanding language, either French or English. The introductory page of the email questionnaire contained the aim of the research and the guidelines for responding to the questions. The researcher used a 5-point Likert scale during the construction of the structured research instrument (Likert, 1932). The Liker scale can be used to measure a sample's behavior in terms of attitudes and perceptions (Likert, 1932). The research respondents were asked to agree or disagree using five-point scales of attitude measures, and the scores were processed by calculating measures of dispersion and central tendency (Brace, 2008).

Thus, the researcher used the email questionnaire method and distributed the questionnaires to employees to obtain data. Yujin (2011) refers to a pilot study as one where the research instrument is tested on a small scale to gauge its validity and reliability. Flaws in the formulated research instrument were identified by selecting a construction company to test the questionnaire before initial data collection. The researcher collected pilot data from a construction company that was excluded from the real data collection exercise. The pilot study feedback was examined to check the limitations as well as flaws of the research instrument. The final research instrument had been adjusted accordingly, based on the feedback of analysis of the pilot study. Data analysis is a statistical procedure in which data is organized, summarized and presented as information (Adeer, Mellenbergh and Hand, 2011). The researcher analyzed the data by computing "inferential statistics" (Weiers, 2011). As explained by Weiers (2011), inferential statistics involves reaching conclusions that go beyond the sample data alone, such as trying to make conclusions based on the sample data on what opinions of the entire population might be about the topic (Weiers, 2011). Also, inferential statistics can help the researcher decide whether observations are dependable or have occurred by error (Weiers, 2011).

Consequently, "inferential statistics is used to make inferences from a sample data to a more general condition of the population" (Weiers, 2011). To facilitate data analysis, the researcher used statistical software known as SPSS. The researcher carried out regression analysis Weiers (2011) to establish whether the independent variables risk management, leadership, experience and expertise, project size influence the dependent variable project success. The following regression model was adopted for this study:

$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + e$……………………………………………………………Equation 1

Where:
Y = Project success;
X_1 = Risk management;
X_2 = Leadership;
X_3 = Experience and expertise;
X_4 = Project size;
B_0 = Constant; and
B_1, B_2, B_3, and B_4 are correlation coefficients; and
e = Error term

The regression analysis model summary contained the R-value which showed the relationship between the variables under study, whereas the R square showed the number of dependent variables capable of being explained by independent variables. Furthermore, analysis of variance (ANOVA) output showed whether the four factors risk management, leadership, experience and expertise, project size are together crucial on the project success by comparing the P values and F value, thereby indicating the significance of the entire model (Weiers, 2011). In addition, the researcher carried out correlation analysis (Weiers, 2011) to test the connection of all the key success determinants which included risk management, leadership, experience and expertise, project size, success criteria, and project success. The correlation coefficients were computed with the aid of SPSS, and the results were outlined in a correlation matrix that contains the p-value of each of the relationships outlined above (Weiers, 2011). In the two-tailed test, the level of significance was at 0.01.

Validity and Reliability Considerations: Saunders, Lewis and Thornhill (2012) explain validity as a measure of whether the findings are really about what they represent whereas reliability is the degree to which consistent results are obtained when the instrument is used to collect data. Various structured items in the instrument ensured content validity, and external validity was achieved by conducting a pre-trial of the instrument before the actual data collection exercise in which the researcher tested for reliability and validity (Cohen, Manion and Morrison, 2011). Further, the researcher used a variety of questions in testing the same concept to ensure the reliability of the (Babbie, 2014) and subsequently calculated Cronbach's Alpha to establish how items in the questionnaire were related (Nunnally and Bernisten, 2010). Bias is any likelihood that hinders the objective and impartial analysis of action and could occur in any phase when conducting research (Pannucci and Wilkins, 2010). According to Saunders, Lewis and Thornhill (2012), the bias in a study manifests itself in various forms including disability, ethnicity, gender as well as age. To avoid the influence of bias in this study, the researcher ensured that the language used was appropriate and that it did not have a discriminatory tone (Saunders, Lewis and Thornhill, 2012). Further, the researcher implemented the concepts of research ethics to eliminate biases associated with research (Saunders, et al, 2012).

Lastly, the researcher engaged the respondents voluntarily and gave them ample time and freedom to fill the questionnaire at their convenience to minimize study participant bias (Saunders, Lewis and Thornhill, 2012). According to Walton (2015), research ethics is specifically significant and manifests in cases where the respondents involved are people. The purpose of research ethics are three-fold, namely; to protect human respondents, to serve society and individual interests and to examine the ethical soundness of the study, including consenting and confidentiality (Walton, 2015). The researcher, in all circumstances, considered the ethical implications on all the respondents. The researcher put himself in the place of the participant and scanned for foreseeable threats to the respondents. Also, the researcher did not withhold any information and never misled the respondents. The respondents were also notified of the objectives of this research as well as being informed of voluntary participation and possible withdrawal if they wished to do so. Furthermore, because of the language barrier, the researcher did send out questionnaires in both languages French and English which was translated by a professional translator so that the questions can still have the same meaning in both languages and the respondent had a choice between the two to respond to his any of his choice.

4. Results and Discussion of Findings

Results: This section covers the analysis of the collected data and presents the analyzed results. The section is structured based on the objectives of the study, which were to:

i. Examine the influence of risk management on construction projects in DRC.
ii. Examine the influence of leadership on construction projects in DRC.
iii. Establish the influence of experience and expertise on construction projects in DRC.
iv. Examine the influence of project size on construction projects in DRC.

The demographics data provides additional information about the subjects of a research project and helps a researcher to comprehend better a situation that is under consideration (Saunders, Lewis and Thornhill, 2016). Demographic data in this study comprised of years of experience, the company, highest educational qualifications, the nationality of construction staff, location of a construction project, and functional area of construction staff was gathered during the survey. The statements and questions on the research instrument were measured using the Likert-like scale.

Correlation Analysis: The correlation analysis results for the main variables risk management, leadership, experience and expertise, project size, and success of a project are shown in Table 4.20. A correlation analysis demonstrates the existence of a relationship between variables under investigation (Weiers, 2011). Pearson Correlation (r) is used to illustrate the presence of a linear relationship among the variables under consideration in a study (Weiers, 2011). In Table 4.20, the double asterisk means that in a two-tailed test, the correlation is significant at 0.01. The results show that there is a moderate positive correlation between risk management and project size (r = 0.591**); and between risk management and success criteria (r = 0.482**). The findings also show a weak positive correlation between risk management and experience and expertise (r = 0.0.282**); and between risk management and project success (r = 0.248**).

However, the results show a weak negative correlation (r = -0.062**) between risk management and leadership. Further, the correlations analysis results show very weak negative relationships between leadership and experience and expertise (r = -0.134**); leadership and success criteria (r = -0.030**); leadership and project success (r = -0.092**). A weak positive relationship is also found to exist between leadership and project size (r = 0.021**). In addition, the results show moderate positive correlations between experience and expertise and success criteria (r = 0.549**); and experience and expertise and project success (r = 0.532**). It is further established from the findings that there exists a weak positive relationship between experience and expertise and project size (r = 0.348**). Lastly, a fairly strong positive relationship was found to exist between project size and success criteria (r = 0.617**); and a fairly moderate positive relationship between project size and project success (r = 0.452**).

Table 4.20: Correlation Analysis

		Risk Management	Leadership	Experience and Expertise	Project Size	Success Criteria	Project Success
Risk Management	Pearson Correlation (r)	1	-0.062	0.282**	0.591**	0.482**	0.248**
	Sig. (2-tailed)		0.450	0.000	0.000	0.000	0.002
	N	150	150	150	150	150	150
Leadership	Pearson	-0.062	1	-0.134	0.021	-0.030	-0.092

	Correlation (r)						
	Sig. (2-tailed)	0.450		0.102	0.799	0.717	0.261
	N	150	150	150	150	150	150
Experience and Expertise	Pearson Correlation (r)	0.282**	-0.134	1	0.348**	0.549**	0.532**
	Sig. (2-tailed)	0.000	0.102		0.000	0.000	0.000
	N	150	150	150	150	150	150
Project Size	Pearson Correlation (r)	0.591**	0.021	0.348**	1	0.617**	0.452**
	Sig. (2-tailed)	0.000	0.799	0.000		0.000	0.000
	N	150	150	150	150	150	150
Success Criteria	Pearson Correlation (r)	0.482**	-0.030	0.549**	0.617**	1	0.591**
	Sig. (2-tailed)	0.000	0.717	0.000	0.000		0.000
	N	150	150	150	150	150	150
Project Success	Pearson Correlation (r)	0.248**	-0.092	0.532**	0.452**	0.591**	1
	Sig. (2-tailed)	0.002	0.261	0.000	0.000	0.000	
	N	150	150	150	150	150	150

Source: SPSS 25 (IBM, 2019)

Regression Analysis: Regression analysis was used to investigate whether the independent variables risk management, leadership, experience and expertise, project size influence the dependent variable project success. The following regression model was adopted for this study:

$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + e$……………………………………………………………..Equation 1.

Where: Y = Project success;

X_1 = Risk management;

X_2 = Leadership;

X_3 = Experience and expertise;

X_4 = Project size;

B_0 = Constant; and

B_1, B_2, B_3, and B_4 are correlation coefficients; and e = Error term

Table 4.21: Model Summary

Model	R	RSquare	Adjusted RSquare	Std. Error of the Estimate
1	0.608	0.370	0.353	1.605

As shown in the model summary in Table 4.21, there is a moderate positive relationship (R= 0.608) between the dependent and the independent variables. The value of R Square 0.370 indicates that only 37.0 percent of project success could be explained by risk management, leadership, experience and expertise, project size – the independent variables for the study.

Table 4.22: Analysis of Variance (ANOVA)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	219.583	4	54.896	21.314	0.000
Residual	373.457	145	2.576		
Total	593.040	149			

Source: SPSS 25 (Ibm.com, 2019)

ANOVA output is presented in Table 4.22. According to the ANOVA output, the four factors together (risk management, leadership, experience and expertise, project size) on project success are statistically significant given that the p-value was 0.000 which is not more than the standard 0.05 Therefore, the overall regression model was statistically significant.

Table 4.23: Coefficients

	Unstandardised Coefficients		Unstandardised Coefficients		
	B	Std. Error	Beta	t	Sig.
Constant	0.100	3.406		0. 029	0. 977
Risk management	-0.081	0.079	-0.085	-1.037	0.301
Leadership	-0.128	0.179	-0.048	-0.718	0.471
Experience and expertise	0.879	0.147	0.426	5.966	0.000
Project size	0.382	0.091	0.355	0.4204	0.000

Source: SPSS 25 (Ibm.com, 2019)

The coefficients in Table 4.23 above can be used to re-write the multiple regression model stated earlier in section 4.5. Hence, the model $Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + e$……………………………………………Equation 2
Becomes:
$Y = 0.100 - 0.081X_1 - 0.128X_2 + 0.879X_3 + 0.382X_4 + e$……………………………………………………...……………Equation 3

The regression equation above has shown that when all the factors (risk management, leadership, experience and expertise, project size) are kept at zero levels, project success will be equal to the constant or intercept 0.100. In addition, the findings also reveal that keeping all the other independent factors at a constant, a unit rise in risk management results in an 8.1% decrease in project success, and a unit rise in leadership results in a 12.8% project success decrease. Regression analysis results suggest that a unit increase in experience and expertise will result in an 87.9% increase in project success while a unit rise in project size results in a 38.2% increase in project success. This infers that at a 5% level of significance, experience and expertise, and also project size are the most significant key success determinants in construction projects. The reliability of the instrument was assessed through the computation of Cronbach's alpha, as shown in Table 4.24. Cronbach's Alpha values that are below 0.7 imply that a research instrument is unreliable (Field, 2009). The Cronbach's alpha for the instrument used in this study was 0.736 and was subsequently considered to be reliable.

Table 4.24: Cronbach's Alpha Results

Section	Measuring	Initial Cronbach's Alpha
A	Demographics	Not Required
B	21 Study Questions	0.736

Source: SPSS 25 (Ibm, 2019)

Discussion of Findings

How Does Risk Management Impact Construction Projects in the DRC? According to our findings, risk management influences construction projects in DRC. The study findings showed that political and governmental risks, economical risks, equipment risks, sub-contractor risks, construction risks, management risks and design risks negatively affect construction projects in DRC. However, the findings of the study did not show whether the owner-generated risks negatively affect construction projects in the DRC. According to the correlation analysis results, the larger the construction project size in the DRC, the greater the need for risk management in the project and subsequently the greater the chances of the project meeting success criteria. Further, the greater the need for risk management, the greater the need for experienced employees with the right expertise. More so, construction project success in the DRC could be enhanced by effective and efficient risk management because there are desirable aspects of risks.

Project risk can either be positive or negative and may affect the goals of the project regarding quality, cost, schedule and scope (Hosny, Ibrahim and Fraig, 2018). The results showed that leadership in construction projects in DRC might not result in the management of risks effectively and efficiently. Despite the results from the analysis failing to show the significance of risk management, the results from descriptive statistics and correlation did confirm the significance of risk management. Hosny, Ibrahim and Fraig (2018) explained that the success of construction projects increases when there is a framework on risk management. The authors' study on construction projects' risk management framework suggests that identified risks have to be prioritized for the contractors to have an effective risk response. An effective risk management framework is crucial in minimizing negative risks while enhancing positive risks and eventually resulting in the delivery of the construction project as it was intended based on the iron triangle framework (Hosny, Ibrahim and Fraig, 2018). It is thus inferred that effectively managing risks increases the chances of a construction project being successful.

How Does Leadership Impact Construction Projects? The findings above show that leadership impacts construction projects in the DRC. According to the results, transactional leadership positively affects construction projects in the DRC, while transformational leadership does not positively affect construction projects in the DRC. The correlation analysis results showed that large construction projects in DRC demand effective and efficient leadership. A positive relationship between transactional leadership and project success was established in the study by Liphadzi, Aigbavboa and Thwala (2015). The findings of this study concur with their findings. Consequently, this may explain the correlation analysis results that showed that project leadership in construction projects in the DRC does not amount to experience and expertise or the meeting of success criteria or project success. Although the regression analysis results do not confirm the value of leadership in construction projects, transactional leadership has been established to influence the success of construction projects. Effective and efficient leadership in large construction projects is necessary for their success and in meeting the success criteria (Tabassi et al., 2016). It may be concluded that effective and efficient leadership, including transactional leadership, would affect construction project success in the DRC.

How Do Experience and Expertise Impact Construction Projects? Findings also show that experience and expertise influence the success of construction projects in DRC. A project that is handled by experienced staff with the relevant in DRC is more likely to be successful based on the correlation analysis results. This also means that the success criteria may be highly met. Niazi and Painting (2017) stated that poor contractor experience is a factor that results in cost overruns in development projects. Furthermore, Hosny, Ibrahim and Fraig (2018) associated experience with the likelihood of having a successful construction project. In another study, Abbas, Din and Farooqui (2016) recommended construction project managers be experienced to effectively coordinate the various actors in the implementation of the project. Project management expertise should include formal skills, emotional intelligence, managerial skills and interpersonal abilities. Therefore, the more the experience and expertise of construction project staff in the DRC, the more likely the project success criteria would be met, and the more likely the project would be successful.

How Does Project Size Impact Construction Projects? The findings show that project size influences the success of construction projects in DRC. It was established that smaller-sized and medium-sized construction projects in the DRC are more successful. However, the results show that mega-sized construction projects in the DRC are not more successful. According to the correlation analysis results, the size of a construction project and project success criteria in DRC are positively related. Similarly, the size of the project and project success in DRC are positively related. Furthermore, the regression analysis results confirm the importance of project size as a key success factor for construction projects in developing countries like DRC. Mišić and Radujković (2015) explained that megaprojects are risky and have cost overruns of over 50%, and turn to have a delivery failure as high as 66% and these projects may not produce the intended societal benefits. In addition, Mišić and Radujković (2015) stated that the key players of every project are people and that the delivery of mega projects requires competent project managers. Therefore, smaller-sized and medium-sized construction projects in the DRC are more successful, while mega projects in the DRC may not be very successful due to inadequate experience and expertise.

5. Conclusion and Recommendations

Conclusion: Based on the preceding discussion, the following are conclusions that can be drawn:

- Effective and efficient risk management enhances the success of construction projects.
- Effective and efficient leadership, including transactional leadership, would affect construction project success.
- The more the experience and expertise of construction project staff, the more likely the project success criteria would be met, and the more likely the project would be successful.
- Smaller-sized and medium-sized construction projects are more successful, while mega projects may not be very successful due to inadequate experience and expertise.

Recommendations

Recommendations on the Key Success Factors for Construction Projects in Developing Countries such as the DRC: The following are recommendations made based on the findings of this study regarding CSFs in construction projects in DRC:

- Continually embark on effectively and efficiently managing risks in construction projects in developing countries.
- Leadership in developing countries concerning construction projects should be effective and efficient.
- Developing countries should be able to engage mostly experienced staff with the right expertise in construction projects.

Continually Embark on Effectively and Efficiently Managing Risks in Construction Projects: Firstly, those responsible for managing construction projects in development should embark on efficiently and effectively, managing risks by ensuring that risk management matches project size. This proposal is supported by Silva, Warnakulasooriya and Arachchige (2015), who explained that risks in the construction industry are large and project success could be enhanced through continuous effective and efficient risk management. Therefore, by continually embarking on effectively and efficiently managing risks, both the desirable and undesirable aspects of risk could be harnessed for the project's success.

Ensure Effective and Efficient Leadership in Construction Projects: Secondly, developing countries should have those managing construction projects exhibit leadership that is highly effective and efficient. The type and scale of a construction project may require a specific leadership style. A similar proposal was made by Liphadzi, Aigbavboa and Thwala (2015) who established that transactional leadership influences the success of construction projects. Therefore, by ensuring effective and efficient leadership in construction projects, project success may be enhanced.

Engage Mostly Experienced Staff with the Right Expertise in Construction Projects: Thirdly, developing countries should engage experienced staff with appropriate expertise to undertake construction projects. It was established that staff with appropriate experience and expertise are a key success factor as far as construction projects are concerned. The level of staffing should match the project size. Niazi and Painting

(2017) stated that poor contractor experience is a factor that results in cost overrun in development projects while Hosny, Ibrahim and Fraig (2018) explained that experience affects construction projects. Therefore, by engaging mostly experienced staff with the right expertise in construction projects, project success may be enhanced. This study has made an additional contribution to the available literature concerning CSFs in construction projects and in particular, in third world countries. The fact that related studies may have been done elsewhere and more so in developed countries does not mean that the findings of such studies can be generalized to represent the situation in the developing countries.

This study was necessary to be conducted to understand the situation in the context of developing countries. Time constraints might be one major limitation encountered by the researcher. The researcher, however, mitigated this by working beyond normal working hours and travelling during holiday time to collect data. The study's validity may have also been influenced by inaccurate data, particularly which was obtained from secondary sources as verification of these sources could not be done wholly. Also, it was not possible to cover the whole country due to its vastness. However, the researcher collected data from all spheres of the country, which ensured a good representation of the population. The following considerations should be made when considering further research on the key success factors: The Impact of construction project managed by external resources / foreign investment. Positive or negative impact growth in the Developing Countries industry; Evaluation of key success determinants for construction projects in DRC using qualitative interviews; Evaluation of key success determinants for large and complex construction projects in the DRC; The impact of transformational leadership in Construction Project in the DRC; and How can the risk that has been identified be mitigated going forward?

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Performance Measurement in Local Governments: An Analysis of Organizational Factors

Vadira Damayanti & Khoirul Aswar
Universitas Pembangunan Nasional Veteran Jakarta, Indonesia
khoirulaswar@upnvj.ac.id

Abstract: This study aims to determine the effect of organizational factors, namely decision-making authority, organizational objectives and targets, incentives and technical knowledge on performance measurement. The research sample is the Regional Apparatus of the City of East Jakarta Administration's Head of Subdivision and Planning Staff. The sampling technique uses the census sampling method. The data analysis method uses Structural Equation Modeling (SEM) using the Smart Partial Least Square application version 3.0. The findings reveal that technical knowledge has a considerable impact on performance measurement. Meanwhile, decision-making authority, organizational objectives and targets, and incentives have no significant effect on performance measurement. The findings of this study have implications for local governments to always maintain a code of ethics according to the standards for the preparation of LAKIP in order to realize effectiveness and efficiency so that government performance in the future can improve.

Keywords: *Performance measurement, decision-making authority, organizational objectives and targets, incentives, technical knowledge, organizational factors, local government.*

1. Introduction

The reform of state finances triggered by the economic crisis in 1998 required bureaucratic reform, marked by the issuance of TAP MPR No. XI/1998 concerning the Implementation of a State that is clean and free from KKN. As part of the government's attempts to foster more useful, clean, responsible, and successful governance, Presidential Instruction No. 7 concerning Government Performance Accountability was issued in 1999 (Pamungkas, 2012). The United Nations Development Program (UNDP) argues that accountability is an assessment of a process of implementing organizational activities/performance that must be accounted for whether it has been carried out according to agreed rules and standards. As well as an input for organizational leaders in improving organizational performance in the future. This instruction is supported by the issuance of Publication Decree of the Head of State Administration Agency (LAN) Number 239/IX/6/8/2003 regarding Guidelines for Preparation of Government Performance Accountability Reports. As a measure of government accountability to the public, the Government Agencies Performance Report (LAPKIN) offers information on the attainment of policy implementation results. Performance measurement in Indonesia has become a major part of public sector management reform (Podger & Officer, 2004). Local government institutions or agencies are responsible for providing reports to the government above, namely the Ministry of Administrative Reform and Bureaucratic Reform (vertical accountability) and to the public (horizontal accountability) through the DPRD (Mardiasmo, 2004). The results of the evaluation of the Government Agency Performance Accountability System (SAKIP) at the district/city level show that the average evaluation of SAKIP in 2018 was 56.53% and in 2019 it was 58.85%.

Where there was an increase of 2.32% from the previous year (menpan.go.id, 2020). Meanwhile, the results of the SAKIP evaluation at the provincial level showed that the average SAKIP evaluation in 2018 was 67.28% and in 2019 it was 69.31%, which means an increase of 2.03%. Although there was an increase in the average SAKIP score in both the Province and Regency/City, however, as many as 211 Regencies/Cities in Indonesia still received an average SAKIP score under category B. The Ministry of State Apparatus Empowerment and Bureaucratic Reform stated that the lower the category obtained, it means that the potential for budget ineffectiveness and inefficiency is getting bigger so this should be the focus of attention for the government in the future in an effort to improve their performance to increase budget effectiveness and efficiency. Performance measurement is the main key in realizing effectiveness, efficiency and accountability in the public sector (Spékle & Verbeeten, 2009). Organizational factors are one of the aspects that determine the success of performance measurement (Cavalluzzo & Ittner, 2004). Decision-making authority is one of the organizational factors that can affect performance measurement (Cavalluzzo & Ittner, 2004). The existence of a delegation of decision-making authority makes it easier for management to make decisions quickly and develop creativity and innovation that creates a change (Putri & Kamilah, 2019). Organizational objectives and targets also need to be considered for their effect on measuring organizational performance. According to the United States General Accounting Office (1997), overlapping organizational goals make it difficult to precisely identify the organization's strategic goals.

Which can make measuring organizational performance difficult. Verbeeten (2008) supports this by demonstrating that organizational objectives and targets have a major impact on Performance Measurement. In addition, performance measurement is also influenced by incentives. The reward and punishment system are believed to be used as an indicator of good performance (Kloot, 1999). According to the findings of Primarisanti and Akbar (2015)'s study, incentives have a considerable impact on performance measurement. Technical knowledge is also an important consideration. Technical knowledge is needed by members of the organization or employees in carrying out their duties. Technical knowledge enables the improvement of internal capabilities in understanding and using performance measurement (Sihaloho & Halim, 2005). Previous research by Akbar et al. (2012) showed that technical knowledge affects performance measurement. This study refers to Syachbrani and Akbar (2020) and Aswar et al. (2020). As a differentiator for the study, with added another independent variable, namely incentives based on the recommendations of the previous study by Shafrizal et al. (2018). Based on the explanation above, further research is carried out to determine the factors that affect performance measurement.

2. Literature Review and Hypothesis Development

Institutional Theory: Complex phenomena and views within the scope of public sector organizations are mostly explained by institutional theory (Van Helden, 2005). This theory assumes that pressure on the organization will encourage the organization to conform to the right form of behavior because the legitimacy of an organization will be questioned if there are violations in the organization (DiMaggio & Powell, 1983). Public organizations that gain legitimacy will tend to be similar to other public sector organizations (DiMaggio & Powell, 1983). This homogeneity triggers stimuli or barriers to new practices in organizations, including accounting practices (Chang, 2007 in Khubiyati & Arifin, 2016). The homogeneity process can be captured by the concept of isomorphism including coercive, mimetic, and normative isomorphism (DiMaggio & Powell, 1983). Coercive isomorphism is created from the formal and informal pressures placed on an institution by other institutions in which they belong and the cultural expectations of the society in which the organization operates (DiMaggio & Powell, 1983). In relation to the performance measurement system, the organization is obliged to consider the mandate of the central government through the submission of an annual performance report.

The existence of regulations imposed by the government puts pressure on organizations to adapt in accordance with what has been regulated by law. The decision encourages government organizations to adopt certain models, systems or practices because of pressure factors from outsiders called a coercive isomorphism. Normative isomorphism is closely related to professionalism. There are two aspects of normative isomorphism, namely legitimacy based on cognitive aspects obtained from tertiary institutions as well as formal educational background and the level of growth and influence of professional institutions that allow the rapid spread of new practices throughout the organization (DiMaggio & Powell, 1983). Mimetic isomorphism occurs due to environmental uncertainty. The source of mimetic isomorphism comes from informational cascades. Where individuals or organizations that have inadequate information will make the same decisions as their predecessor organizations and ignore the information they have. According to DiMaggio and Powell (1983) argues that when organizational goals are perceived as ambiguous, technology cannot be understood and uncertainty occurs, this will encourage organizations to imitate other organizations.

Performance Measurement: Performance measurement is the main key in realizing effectiveness, efficiency and accountability in the public sector (Speklé & Verbeeten, 2009). However, there are often problems in implementing performance measurement, namely during the development process and using the results from the implementation of performance measurement. Organizational variables are one aspect that influences the success of performance measurement (Cavalluzzo & Ittner, 2004). The first organizational factor is decision-making authority. Decision-making authority is a situation in which a person has the authority to make decisions with predetermined conditions to achieve the organization's strategic goals (Cavalluzo & Ittner, 2004). Previous research related to decision-making authority conducted by Cavalluzzo and Ittner (2004) as well as Putri and Kamilah (2019) showed that decision-making authority has a significant influence on performance measurement. Meanwhile, Yowi (2011) in East Sumba Regency and Parwoto and Halim (2020) in Yogyakarta Special Region Province shows that decision-making authority does not have a significant impact on performance measurement. Then, the next factor is organizational objectives and targets. Organizational goals are defined as the implementation of an organization's mission statement that includes the expected results with a predetermined time (Pabeno et al., 2016). Organizational goals are an explanation of the organizational goals.

To be achieved or within a monthly, semi-annual or annual period (Pabeno et al., 2016). Previous research that examines this factor by Verbeeten (2008) shows that organizational goals and objectives have a significant impact on performance measurement. Meanwhile, Pabeno et al. (2016) in Jayapura City and Syachbrani and Wijaya (2020) at the Directorate General of Budget, Ministry of Finance of the Republic of Indonesia shows that organizational goals and objectives do not have a significant impact on performance measurement. Then, another factor, namely incentives are rewards related to performance and gain sharing, as profit sharing to employees for increasing productivity or decreasing costs (Rivai, 2009: 766 in Rochmat et al., 2013). Previous research that investigated the incentive factor, namely Julnes and Holzer (2001) in the United States which explained that incentives have a significant impact on performance measurement. Meanwhile, Specle and Verbeteen (2013) and Khaeruddin and Aditya (2020) states that incentives do not have a significant impact on performance measurement. Finally, Employees' technical knowledge is the knowledge they need to perform their jobs (Aswar et al., 2020). Akbar et al. (2012) show that technical knowledge influences performance measurement.

Hypothesis and Conceptual Framework: The development of hypotheses related to organizational factors in this study is formulated as follows:

Effect of Decision-Making Authority on Performance Measurement: Delegation of decision-making can develop creativity so as to make the determination of a decision faster (Primarisanti & Akbar, 2015). A person who is given the authority is required to be professional in making decisions and must be responsible for the decisions he chooses, whether they are in line with the objectives. As a result, decision-making delegation is a factor that influences performance responsibility. This is due to the fact that normative isomorphism occurs. Managers feel that putting in place a performance measurement system will help them make better decisions, thus they are motivated to employ performance metrics. Related research conducted by Cavalluzzo and Ittner (2004) and Primarisanti and Akbar (2015) shows that performance measurement is influenced by decision-making authority.
H1: Decision-making authority has a significant effect on performance measurement.

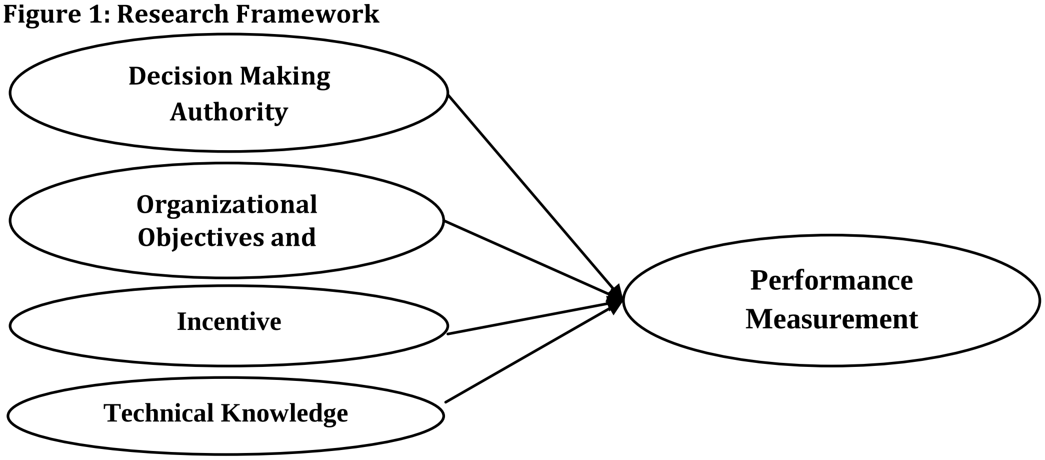
Effect of Organizational Objectives and Targets on Performance Measurement: According to Sihaloho and Halim (2005) that organizational goals are agreements about the goals of each program and activity to be implemented to realize performance goals so that this goal orientation allows organizations to adopt performance measures. The performance will be better when there are clearer and more consistent goals, according to Verbeteen (2008), because it is easier to monitor performance when goals are explicit. However, determining the organization's mission, goals, and strategies requires involving a variety of stakeholders with varying choices and interests, making it difficult for the government to determine goals and objectives. As a result, local governments will tend to imitate the goals and objectives of other local governments that are more successful (DiMaggio & Powell, 1983). This is the result of mimetic isomorphism. Wang (2002) and Verbeeten (2008) show that performance measurement is influenced by organizational objectives and targets.
H2: Organizational objectives and targets have a significant effect on performance measurement.

Effect of Incentives on Performance Measurement: The reward and punishment systems are believed to be used as an indicator of good performance (Kloot, 1999). The provision of incentives due to organizational policies to improve the performance of each individual for the better and reflects normative isomorphism. Providing incentives by the organization as an effort to meet the needs of employees because basically, every individual has an interest in their welfare (Indudewi & Nafasita, 2012). Providing incentives to employees

will improve the performance and productivity of an organization. Primarisanti and Akbar (2015) show that performance measurement is influenced by incentives.
H3: Incentives have a significant effect on performance measurement.

Effect of Technical Knowledge on Performance Measurement: Technical knowledge is defined as a need for organizational members to support the implementation of their duties (Aswar et al., 2020). The existence of technical knowledge allows for increased understanding and internal capacity of stakeholders in using performance measurement (Julnes and Holzer, 2001; Sihaloho and Halim, 2005 in Akbar et al., 2012). In Indonesia, many initiatives have been made to expand the expertise of government personnel and authorities, ranging from technical training to formal degree programs (Akbar et al., 2012). This perspective reflects normative isomorphism. In accordance with the results of Akbar et al. (2012) which suggests that performance measurement is influenced by technical knowledge.
H4: Technical knowledge has a significant effect on performance measurement.

Figure 1: Research Framework



3. Research Methodology

The population of this study is the State Civil Apparatus in the East Jakarta City Administration's Regional Apparatus Organization. The head of the planning sub-section and the planning personnel responsible for LAPKIN in the Regional Apparatus Organization of the East Jakarta City Administration were included in the study's sample. The total sample in this study is 45 respondents. The sampling technique used is census sampling. Primary data, which is data acquired directly from the field, is the sort of data used in this study (Sekaran & Bougie, 2017). This study uses a survey as a method of data collection and a questionnaire as a means of data collection. The questionnaire was distributed via WhatsApp in the form of a google form link. The measurements of each variable are presented in table 1. A structural equation model (SEM) is used to process the data in this research, and partial least square (PLS) is data analysis software that can process a small amount of data.

Table 1: Variables Measurement

Variable	Indicator	Scale	No of Statements	Source
Performance Measurement	Inputs, outputs, outcomes, costs, benefits, impacts, and processes.	Likert	7	Aswar et al. (2020)
Decision Making Authority	My office manager has decision-making authority that is intended to achieve the strategic goals of the organization	Likert	1	Yowi (2011)
Organizational Objectives and Targets	Mission of Regional Apparatus Organizations (OPD), OPD targets follow political developments, OPD targets change according	Likert	3	Wijaya and Akbar (2013)

	to community demands.			
Incentive	OPD provides incentives for performance improvement and OPD provides incentives for risk-taking	Likert	2	Primarisanti and Akbar (2015)
Technical Knowledge	Receive training on performance measures, receive published information on performance measures, involve experts in developing performance measures	Likert	3	Aswar et al. (2020)

4. Results and Discussion

The process of distributing the questionnaires was assisted by the Head of the Administrative Subdivision and his staff. Data collection was carried out for 41 days with a questionnaire return rate of 72.6%.

Table 2: Statistic Descriptive

Variable	Mean	Std. Deviation
Performance Measurement (PM)	4,29	0,70
Decision Making Authority (DMA)	4,42	1,19
Organizational Objectives and Targets (OOT)	3,00	1,28
Incentive (ICT)	3,58	1,14
Technical Knowledge (TK)	4,16	0,78

Table 2 shows the results of statistical tests where the mean value of the performance measurement is 4.29 with a standard deviation of 0.70. Then, the decision authority making has a mean value of 4.42 with a standard deviation of 1.19. The mean and standard deviation of organizational objectives and targets, respectively, are 3.00 and 1.28. Furthermore, the mean and standard deviation of the incentive are 3.58 and 1.14, respectively. Lastly, technical knowledge has a mean value of 4.16 and a standard deviation of 0.78. Each of the mean and standard deviation values contained in each variable illustrates that the mean value > standard deviation value. That is, this study describes a fairly high level of homogeneity and shows the existence of an average value that can describe the actual data.

Table 3: Convergent Validity and Reliability

Variable	AVE	Composite Reliability	Cronbach's Alpha
PM	0,514	0,879	0,843
DAM	1,000	1,000	1,000
OOT	0,532	0,764	0,671
ICT	0,779	0,875	0,724
TK	0,736	0,893	0,819

Source: Own Calculations

The recommended AVE value is more than 0.50 (Hair, Sarstedt, Hopkins & Kuppelwieser, 2014). Based on the results in table 4. Each variable has an AVE value above 0.50 meaning that all variables in this research are declared valid. Then the recommendation value in Cronbach's alpha is more than 0.60. The value of Cronbach's alpha in each variable is greater than 0.60, as seen in the table above. As a result, all variables in this study had a high level of dependability for each statement. Furthermore, it can be seen from the table above that the composite reliability value for all constructs or statements is more than 0.70, meaning that all constructs or statements in this research are estimated to have met the criteria.

Table 4: Discriminant Validity Fornell-Lacker Criterion

	Incentive (ICT)	Decision Making Authority (DMA)	Technical Knowledge (TK)	Performance Measurement (PM)	Organizational Objectives and Targets (OOT)
ICT	0,882				
DMA	0,226	1,000			
TK	0,469	0,544	0,858		
PM	0,380	0,415	0,677	0,717	
OOT	-0,012	-0,081	-0,128	-0,162	0,729

Source: Own Calculations

Based on the results of the Fornell-Lacker Criterion test, the discriminant validity value of each variable is more than 0.60. Performance Measurement (PM) has a value of 0.717. The Decision-Making Authority (DMA) has a value of 1,000. Organizational Objectives and Targets (OOT) have a value of 0.729. Then Incentive (ICT) has a value of 0.882 and Technical Knowledge (TK) has a value of 0.858. These results illustrate that all constructs or statements of each variable are valid.

Table 5: PLS Path Algorithm and Bootstrapping

Relations	Path Coefficient	T Value	P Value
ICT -> PM	0,087	0,671	0,502
DMA -> PM	0,069	0,389	0,697
TK -> PM	0,588	4,713	0,000
OOT -> PM	-0,079	0,433	0,665

Source: Own Calculations

The results in table 6 show that the coefficient value of the decision-making authority (DMA) path analysis is 0.069. This shows that decision-making authority has a positive relationship to performance measurement of 0.069. The value of the t count t table is 0.389 2.021, and the significance value is more than 0.05, hence H A1 is rejected, according to the results of the t-statistical test above. The reason for the rejection of this hypothesis was due to the limited authority for the preparation of LAPKIN in the LAPKIN preparation team. Each member of the team has the authority to provide input and analysis of the organization's performance. LAPKIN is made up of data on performance achievement, such as physical realization, budget realization, revenue target achievement, strategic goal achievement, and other targets with determined indications and values. The team's authority is confined to data presentation and analysis, regardless of whether or not the results are as predicted. This is because the preparation of LAPKIN has been regulated by law. Yowi (2011) in East Sumba Regency and Parwoto and Halim (2020) in Yogyakarta Province's Special Region complement the findings of this study, which reveal that decision-making authority has no substantial impact on performance assessment. The coefficient value of organizational objectives and targets (OOT) path analysis on performance measurement is -0.079.

This means that organizational objectives and targets have a negative relationship with performance measurement. If the significance value is larger than 0.05 and the t-statistical test shows t count t table ebesars 0.433 2.021, then "H2" is rejected. This indicates that organizational goals and objectives have little bearing on performance measurement. The results of this study are in line with Pabeno et al. (2016) in Jayapura City and Syachbrani and Wijaya (2020) at the Directorate General of Budget, Ministry of Finance of the Republic of Indonesia which shows that organizational objectives and targets do not have a significant impact on performance measurement. The reason for the rejection of this hypothesis is that the objectives of the OPD do not change following political developments on a regular basis. That is, political interests are not a source of uncertainty that affects the objectives of performance measurement in the public sector. This indicates that the institutional theory is not supported, namely mimetic isomorphism. Where local governments imitate other local governments that are better because of the uncertainty. Furthermore, the value of the path analysis coefficient on the incentive is 0.087. This shows that incentives have a positive relationship to performance measurement. The results of the t-statistical test show that t_count < t_table is 0.671 <2.021 and the significance value is greater than 0.050, then H_A3 is rejected.

This suggests that incentives have no discernible impact on performance evaluation. Incentives do not have a major impact on performance measurement, according to Specle and Verbeteen (2013) and Khaeruddin and Aditya (2020). The contributing factor is that most OPDs no longer provide incentives to ASN because their duties and work are part of their obligations as state servants. ASN has also been given a salary and income allowance by the government, so there is no longer any additional incentive. So that the reward indicator is no longer used in performance measures because it does not have a significant impact. Finally, the path analysis coefficient on technical knowledge (TK) is 0.588 and is positive. The results of the t-statistical test show that t_count > t_table is 4.713 > 2.021 and the significance value is less than 0.05, then H_A4 is accepted. This implies that technical knowledge has a substantial impact on performance measurement. Akbar et al. (2012) reinforce this conclusion by demonstrating that technical knowledge has an impact on performance measurement. Because technical performance assessment training is normally directed at lower managerial levels, such as the Head of the Planning Subdivision, the hypothesis in this study was accepted. Training related to technical matters is more relevant to lower-level managers than middle and upper-level managers. This is because lower-level managers manage and are responsible for providing direct direction to staff. So, they need technical skills and abilities in leading and organizing staff.

5. Conclusion

After a series of tests, decision-making authority, organizational objectives and targets, and incentives were discovered to have no meaningful impact on performance measurement. Meanwhile, technical knowledge has a significant effect on performance measurement. The contribution of this study is to head of OPD planning expected to maintain the standard of the LAKIP and be responsible for every task that has been entrusted to maintain public trust. This research makes a number of recommendations that might be valuable to future researchers who want to expand their research by including other factors that affect performance measurements, such as internal responsibility, productivity, and metric difficulty. For the head of the planning sub-section of the East Jakarta administration city OPD, it is hoped that they will be able to maintain behavior and adhere to the code of ethics in accordance with management standards in the preparation of LAKIP and be responsible for each task that has been entrusted to maintain public trust. The next study added the population, not only in the East Jakarta Administration City OPD. Then, the further study also can expand the object and respondents so that the results of further research are expected to be more valid.

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Social-Costs Perspective Impacts of Cybercrime in World-Economy, Country-Wise: Policy-Guidance under Piecemeal Approach

Akim M. Rahman[1] & Saadi Islam[2]
[1]Dept of Economics, Canadian University of Bangladesh, Bangladesh
[2]Public Relations, American International University-Bangladesh (AIUB), Bangladesh
akim_rahman@hotmail.com, rahman.19@osu.edu, saadi.islam1990@gmail.com

Abstract: Today's technology-driven human-society(s) country-wise are counted more than ever before where UAE-society is no exception. Tech-users here compete for comparative time-saving options for marginalizing operating costs. It has resulted in huge data usages, a high number of users & devices, which has attracted criminals for taking advantage, which is called cybercrime. Addressing cybercrime, the UAE, like many countries, is not out of control by-laws. However, laws like cybercrime for its society are not always for absolutely eliminating the crime. Thus, besides cybercrime law in place, UAE needs a *piecemeal* approach in practice where one department may vary from approaches of other-department. With awareness about risky online behaviors & options, tech-users as defenders are needed to invest their efforts. This study has laid out the foundation of the proposal, *Akim's Model-2021*, using the Theory of Consumer Choice & Behaviors and Welfare Analysis. Tech-user's actual utility-received is the sum of utility-received from *awareness & own-effort* and utility-received from cybercrime-law. Any changes to services received from joint efforts may risk tech-user, to be a victim. Welfare analysis shows tech user's actions - *awareness & own-effort*, besides cybercrime-law can create, Net Social-gain, which largely depends on tech user's actions. Tech-user's economic surplus is greater than government expenses for implementation of cybercrime law in UAE. Net-loss to the UAE is the sum of deadweight loss and net-loss to tech producers for underutilized resources.

Keywords: *Cybercrime, piecemeal approach, sense of responsibility, awareness & own-effort, perceived risks, theory of consumer choice & behaviors.*

1. Introduction

Today's human race lives in world of business mentality with a technology-driven modern lifestyle. In this lifestyle, services are carried out in multi-faucets, competitive and rational manner (Rahman, 2018). Time values in this technology-driven world are counted more than ever before no matter what society or country we talk about. The United Arab Emirates (UAE) society is no different in the globe. As a result, meeting society's needs, many sectors including service-sector like banking has been modernized (Rahman, 2018). Here tech-users compete for comparative time-saving-option(s) marginalizing its operating costs. This continued development of ICT utilization in other areas namely social-media facilitation, internet shopping and reservation, etc. have created a powerful economy while enabling the borderless exchange of information. The Internet, computers, cell phones and other forms of technology have revolutionized every aspect of human life over these years (Holt et al., 2016). On top of this, the ongoing COVID-19 brings blessing globally for service providers who provide services meeting the high-rising market demands for electronic communications in multi-faucets including working from home, banking, shopping, obtaining news and entertaining ourselves, etc (Rahman, 2021b).

However, these advancements have created huge opportunities for committing various forms of crime (Cybersecurity & Infrasture Security Agency, 2019). These online crimes are referred to as cybercrime (Furnell, 2003; Jain et al., 2016). Cybercrime can therefore be viewed as a large umbrella term that encompasses computer-assisted crime in which computers and technology are used in a supporting role including the use of the computer to send harassing messages. With global cybercrime damages predicted to cost up to $10.5 trillion annually by 2025, not getting caught in the landslide is a matter of taking in the right information and acting on it quickly (Zaharia, 2021). As of 2020 data statistics, Iceland stands first when it comes to cybercrime risk where the UAE positions third in the globe (NordVPN, 2020). In reality, today's world is a place where real life and usages online are becoming increasingly indistinguishable from each other. Therefore, the widespread access points for cybercrime will continue to grow with the evolution of technology and organizational transformation country-wise where the United Arab Emirates (UAE) is no exception.

Accordingly, comments on the "Fight Fraud" campaign, H.E. Abdulaziz Al-Ghurair, Chairman of UAE Banks Federation (Gulf News, 2021). Recently various sources reminded the UAE that the threat of financial fraud has only increased in a world transformed by Covid-19 (Gulf News, 2021; Cherrayil, 2016). In reality, these progressions and their usages have created myriad opportunities for attackers to commit various forms of cybercrime. It occurs because the perpetrators use special knowledge of cyberspace (Furnell, 2003), which means any activities associated with the internet and diverse internet culture. From a risk-magnitude perspective, cybercrime can be a low-risk crime, however; managing it effectively can deliver huge payoffs. These are the common scenarios of risk factors associated with today's technology-facilitated usages in the globe without boundaries. It is severe in magnitudes in some countries where the UAE has become a major target because of its continuation of increased economic activities, tourism, technology and the rise of oil and gas industries (Al Neaimi et al., 2015). These all together have increased usages of internet services in the UAE (Basamh et al., 2014). Another study shows that over the years, hackers stole data related to ATM and credit cards from processing companies and adjusted available balances on these accounts (Hasbini, 2014).

The number of complaints is growing faster in the UAE economy. Digital-banking perceived risk or threat has further increased globally during the Covid-19. Addressing the issues in the digital arena, the UAE is not out of control by laws. But it needs a framework that can ensure effective communications on cyber-security defense within and outside its agencies. Particularly, it needs a piecemeal approach in practice where the approach for one department may vary from the approach for other departments. Along with raising customers' or tech users' awareness about risky online behaviors, tech-users are needed to put their own efforts underpinning the awareness. Thus, besides having cybercrime law in place, this study takes on the challenges to layout the foundations of a proposal, which can be called Akim's Model-2021, a piecemeal approach along with ensuring tech user's awareness & own-efforts for protection using Theory of Consumer Choices & Behaviors. It further carries out welfare analysis of the proposal country-wise such as the UAE intending to attract lawmakers' attention for addressing the cybercrime problem in the modern world. Lastly, this study put forward recommendations for effective policy design country-wise.

2. Literature Review

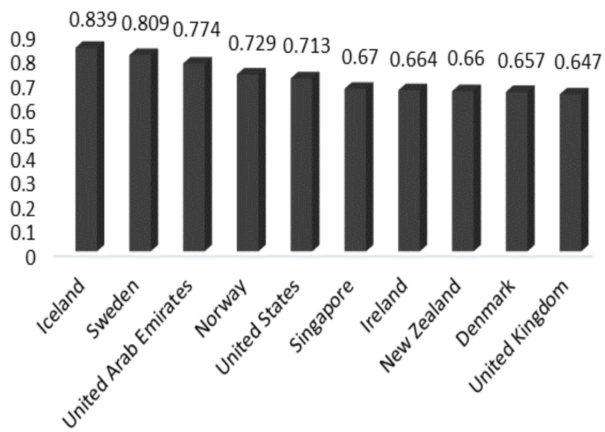
Cybercrime is no new in today's technology-driven world. Like in many countries, the national security awareness campaign was launched in the UAE first in November of 2007 (Al Neaimi et al., 2015). In a study based on survey data statistics, it was reported that in the year 2010, several users lost their UAE bank savings through internet fraud (Hasbini, 2014). Over the years, hackers stole data related to ATMs and credit cards from processing companies and adjusted available balances on these accounts (Hasbini, 2014; Al Neaimi et al., 2015). Later, these cards were distributed to other hackers for targeting countries to withdraw large volumes of cash (Al Neaimi et al., 2015). Digital-banking perceived risk or threat has further increased globally during the Covid-19. On marginalizing the dilemma, a distinctive policy proposal, which is also known as Akim's model was made in literature (Rahman, 2018). Underpinning the model, it is expected that the Voluntary Insurance (VI) will be a new product in digital-banking-services in world-economy country-wise. The proposal has been well recognized by policy practitioners globally. Under the proposed VI policy, either bank or third party can provide the services and account-holders will bear the insurance premium (Rahman, 2018). Thus, the proposed VI, in financial institutions in the UAE can be instrumental in undermining criminal activities in digital-banking services.

It can address the perceived risk of fraud in digital-banking services, which can instrumentally reach the "Cash-less" human society. The UNDP Report of 2012 reveals that there are huge potentials in the Middle East to build strong e-government portals that can enhance digital communication and reduce operational costs up to 95 percent (Barrett, 2018). This transformation into technology-driven smart cities or nations requires cooperation, coordination and commitment of all stakeholders and deployment of the right set of skills and infrastructure. Otherwise, it can open up a path for criminals. Thus it causes cyber-threats, which are already at an exponential rate in the UAE (Dubai Electronic Security Center, 2017). All this creates a demand among rational policy-makers for cost perspective analysis of online/electronic crime & abuses, which was missing until now. Accordingly, it creates a gap in the relevant literature. This study, therefore, sets out to use Welfare Analysis Technique for assessing probable costs of cybercrime country-wise-economy such as the UAE-economy, which can fill the gap in the literature. It further proposes a policy model, which is called "Akim

Model-2021" underpinning the Theory of Consumer Choices & Behaviors, besides having cybercrime law in place. Lastly, this study makes recommendations, which can be helpful in policy design for effective outcomes addressing the perceived risk of cybercrime.

Why the UAE?: There has been an escalation & intensification of cybercrime activities originating in and targeting the Middle East and North Africa (MENA) region (Dubai Electronic Security Center, 2017; Economist Intelligent Unit, 2018)). On the cyber-risk aspect, in Figure 1, the UAE places the 3rd position in the world even though it is not prepared to meet the crisis, Table 1.

Figure 1: Countries with the Highest Cybercrime Risk



Source: Nord VPN, 2020

Table 1: Preparedness on Cyber Security in GCC Countries (20018-19)

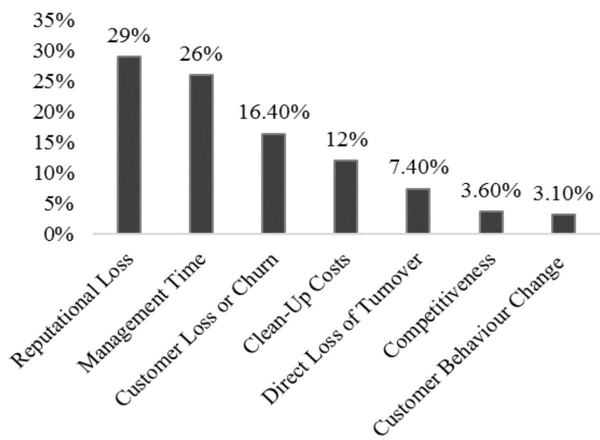
Country	Score 0=High Preparedness 4=Low Preparedness
Qatar	0
Oman	0
UAE	1
Bahrain	2
Saudi Arabia	2
Kuwait	3

Source: Economist Intelligence Unit, 2018

Such activities are financially as well as politically and ideologically motivated (Jain et al., 2016). In the MENA region, the UAE is situated in the Southeast of the Arabian Peninsula, bordering Oman and Saudi Arabia. The UAE is a federation of six emirates - Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al-Quwain, Fujairah and Ras Al Khaimah. The capital city is Abu Dhabi, located in the largest and wealthiest of the seven emirates. Since after forming the Federation, the UAE has been developed rapidly and is now noted for its modern infrastructure, international events and status as a trade and transport hub (Kshetri, 2013). The city of Dubai has also diversified into the exhibitions, events, ICT, re-export and financial sectors. Taking advantage of its position near the head of the Gulf, it has consolidated its historical reputation as a regional entre-port. Dubai has developed luxury hotels, large port facilities and a range of free trade zones to attract both manufacturing and services industries. As of 2018, the UAE population of 10.4 million largely depends on its expatriate workforce that made up about 88% of the population. The UAE government has increased spending on job creation and infrastructure expansion including preparations for hosting the upcoming world expo in Dubai (Jain et al., 2016). Also, the UAE is opening up utilities to greater private sector involvement and has created several free trade zones across the country for attracting foreign investors (DFAT, 2021). Over the years, the UAE has built its National Innovation Strategy to become the leading innovation nation.

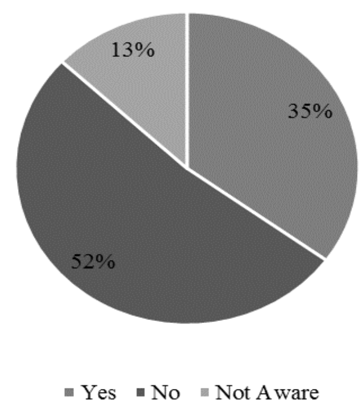
It has begun its journey by defining the word "innovation" in multi-faucets. They are a) the desire of individuals, private institutions and government to generate creative ideas b) innovative products & services that improve quality of life and c) promote economic growth and increase competitiveness (Chandra et al., 2019). These strategies have mainly focused on the development of smart cities, updating software and applications of using disruptive methodology such as nanotechnology, artificial intelligence, etc. by ensuring a swift implementation of technology across various industries (Chandra et al., 2019). Transformation into a smart nation requires cooperation, coordination and commitment of all stakeholders and deployment of the right set of skills and infrastructure. These can help ensure security no matter what country or society we talk about. It would not be overstated that possible "glitches" seem to be minimized but not eliminated. Thus authority should consider possible security risks at hand in the form of smart security and cyber-security policies to Dubai's current city and grid infrastructure. Accordingly, an e-security policy needs to be adopted for the protection of a truly modern and technologically advanced city. All these progressions in multi-facets and continuation of high-rise economic growth in the UAE, particularly Dubai becomes a global village where social engagement will boom further over the Internet. All these make the UAE be in more danger of possibilities of cybercrime or cyber-attacks than that in any other smart city in the globe.

Figure 2: The Primary Impact of Cyber Attack in UAE



Source: Grant Thornton, 2017

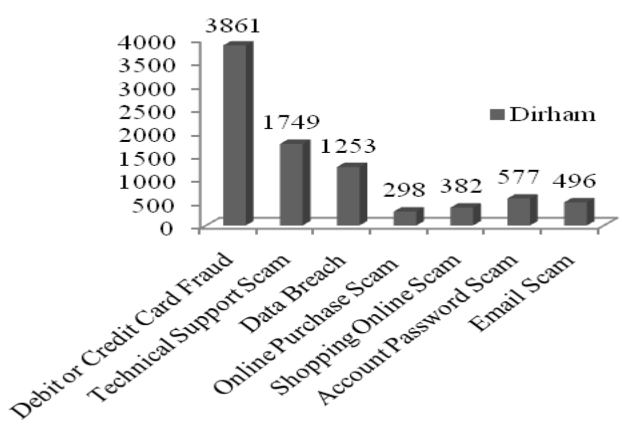
Figure 3: Most Firms Have no Cyber Insurance



Source: Grant Thornton, 2017

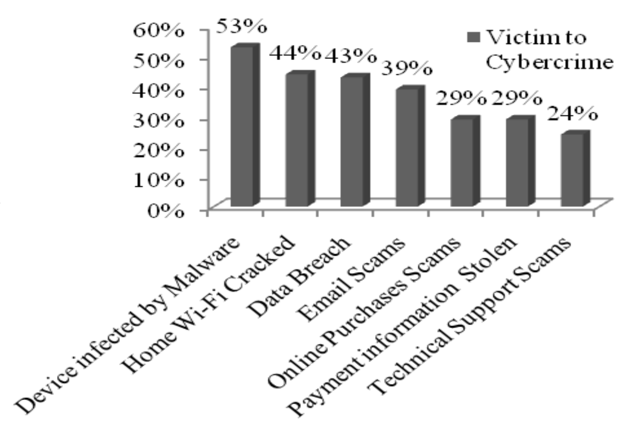
With these technological & economic progressions in multi-faucets, the UAE has been suffering from the issue of cybercrime, even though the UAE has cybercrime-law in place (Hasbini, 2014; Creesey and Nayfeh, 2012). Direct and indirect impact & costs evolved from cybercrime in the UAE are shown in Fig-2 where reputational cost is the highest and cost from customer behavioral changes stands the least. Despite these social costs, besides the cybercrime law in place, Fig - 3 shows that 52 % of business firms in the UAE do not have cybercrime insurance. In an aim to effectively face the perceived risk factors, the government may consider the Voluntary Insurance approach underpinning Akim's Model (Rahman, 2018). In the year 2017, thru debit & credit cards fraud, the accumulated amount of financial loss was 3861 Dirham, which was the highest among seven categories of financial fraud in the UAE, Figure 4 where online purchase scam amount was the lowest.

Figure 4: Highest Financial Loss in the UAE in 2017



Source: Naqvi, 2018

Figure 5: Cybercrime Experience in UAE in 2017



Source: Naqvi, 2018

On cybercrime type, Figure 3 shows that 53% of electronic devices were infected by malware in the year 2017. Figure 5 further shows that 24% of technical supports was scammed in the same year. Since UAE has the highest number of internet users and since Dubai is the world's business hub (University of Birmingham

Dubai, 2021), which will require the highest technological usage as years ahead. For prompt broader involvements of stakeholders within and beyond are needed for ensuring effectiveness & efficiency of cyber-security defense efforts. However, independent efforts, most authorities country-wise now have their own cybercrime prevention acts, which has caused inefficiency of the law in practice. In absence of a broader involvement of parties domestically and as well as globally, the cybercrime impact is getting worse in terms of financial & social costs (University of Birmingham Dubai, 2021; DFAT, 2021).

Types of Cybercrime - What is it and how does it happen in Reality? Cybercrime is an activity of a criminal who either targets or uses a computer, a computer network or a network device. In most cases, cybercrime is committed by cybercriminals to make money at the cost of someone else. It is carried out by individuals or groups. Some of these criminals are organized and use very advanced techniques. Others are novice hackers. Rarely, these criminals aim to damage computers for reasons other than profit. These could be political or personal as we are witnessing in today's modern world.

Categories of Cybercrime: In general, Cybercrimes can be classified into four categories (Holt et al., 2017; Walls, 2001). They are

- Cyber-trespass
- Cyber-deception
- Cyber-porn/obscenity
- Cyber-violence

Types of Cybercrime: Cybercrime types, in general, are as follows (Holt et al., 2017; Walls, 2001).

- Email fraud
- Identity fraud
- Theft of credit-card payment information
- Theft of corporate data statistics or secretly selling corporate data
- Cyber extortion
- Ransomware attacks
- Crypto-jacking
- Cyber espionage

Others: Besides the above types of cybercrime, the US Department of Justice (US DOJ) has recognized another type of cybercrime. It is the type that involves storing data using the computer(s) as an accessory(s) for committing the crime. In an aim to prevent this type of cybercrime, the US Government has signed up with the European Convention on Cybercrime. This type of cybercrime can be identified as follows

- Intercepting Illegally
- Interfering with systems in such-way so that compromise a network
- Infringing copyrights
- Gambling Illegally
- Selling illegal items Online and
- Soliciting, producing or possessing child pornography

Extra Scenario(s) or Way(s) that is considered to be Cybercrime: Cybercriminals may cause damages to devices or computers using viruses and malware in aim to stop them from working. They may also use malware for deleting or stealing information. Using a technique called Denial-of-service (DoS) cybercriminals may try stopping users using a machine or network or prevent a business from providing a software service to its customers (Cyber-security & Infrastructure Security Agency, 2019). Criminals may choose to spread illegal information or illegal images or spread malware using computers or networks. Cybercriminals may also carry out what is known as a Distributed-Denial-of-Service (DDos) attack, which is similar to a DoS attack.

How Do these Happen? With examples of these types of cybercrime attacks are given below for a helpful understanding of what counts as cybercrime.

Malware Attacks: A malware attack is where a computer system or network is infected with a computer virus or malware. A computer compromised by malware could be used by cybercriminals for several purposes. These include stealing confidential data, using the computer to carry out other criminal acts or causing damage to data. A famous example of a malware attack is the WannaCry ransomware attack, a global cybercrime committed in May 2017 (Kaspersky, 2017).

Phishing: A phishing campaign is when spam emails or other forms of communication are sent messages with the intention of tricking recipients into doing something that undermines their security. It may contain links or attachments, particularly infected ones. It may ask the receiver for a response with confidential information (Kaspersky, 2017). A famous example of a phishing scam from 2018 was the one that took place over the World Cup where messages were sent to football fans. Accordingly, the criminals tried to entice fans with fake free trips to Moscow where the World Cup event was going on.

DDoS-Attack: It is one of the kinds of cybercrime-attack that is used by criminals to bring down the network. This type of attack first took place in 2017 on the UK National Lottery website. This brought down the lottery's website (Kaspersky, 2017).

Hidden Costs of Cybercrime: Besides damages intellectual property and monetary assets, the most overlooked costs of cybercrime come from damages to company performances. This cost can be in multi-faucets particularly financial costs and work-hours lost after a cyber-incident. The report further explored the hidden costs and the lasting impact and damage cybercrime can have on an organization including (Lewis et al., 2020). Figure 2 clearly shows that the UAE faces multi-faucets hidden-cost of cybercrime. They are mainly reputation cost, management time, customer behavior change, etc. Besides these, the following are major components of the hidden cost of cybercrime in the UAE.

Cost-Incurred from Anticipation: Firms even individuals very often buy or subscribe to software such as antivirus software, insurance and compliance with the agreement.

System Downtime: Downtime is a common experience of firms, organizations, etc. The assessed cost of downtime varies from organization to organization on an incident aspect.

Reduced Efficiency: As a result of system downtime, organizations or firm loses time, which can reduce efficiency.

Incidence Response Costs: In reality, most organizations or firms require adequate time to move from the discovery of an incident to remediation. Many security incidents can be managed in-house. But major incidents can often require outside consults, which can be very expensive.

Brand and Reputation Damage: It can damage the external image of the brand of the firm or organization, which can negatively influence its revenue levels, which can hurt the government's tax-revenue levels.

3. Methodology

In an aim to establish the basis of policy guidance under piecemeal-approach, this study uses the Theory of Consumer Choice & Behaviors (Rahman, 2019). It puts forward effective policy-design guidance for leadership country-wise such as the UAE, as well as for tech-user in deciding on its actions to protect own device from cybercrime acts and beyond. Accordingly, in this study, the policy-options assumptions are made. Finally, this study carries out a Welfare Analysis of the proposal underpinning the nation's cybercrime law.

Assumptions: In our model, three parties namely i) tech-user ii) attacker and iii) policy-maker are involved. Besides benefit-cost assessment, an attacker learns about the tech user's level of defense, which serves as a sample for the attackers to learn about that of the entire tech-users population. Therefore, if the tech-user is being attacked with a lack of defense, the attacker will be encouraged to continue. On the other hand, if the tech-user is well-defended, the attacker will be discouraged to continue. In reality, the attacker in some cases receives ransom from tech-user or defender. Despite this fact, this study ignores the attacker's welfare including such redistributed wealth as part of social welfare. Thus in this study, the following specific assumptions are made,

- It is assumed that no relevant other factors, except the risk factor of cybercrime consequences, are changing.
- Here a rational tech user's preferences of self-defense depend on the tech user's understanding of the severity of the risk factor.
- These preferences are stable, total efforts and transitive for maximizing the utility of risk-protective choices.

Policy-Options: Awareness & Own-effort of Tech-user, Besides Nation's Cybercrime-law.

4. Theoretical Background Consumer Choice and Utility Maximization

The progression of digital technologies has been changing economic activities in today's world where cybercrime should not be ignored. The digital progression has also attracted more criminals for monetary benefits. In this process by-and-large, a cyber-criminal or attacker extracts an economic payoff by hacking a system of value to a victim and then asks for a ransom to not undermine that value. If these crimes are not properly addressed, they could significantly reduce overall social welfare received from technology-progressions or increase the social cost of human society in the 21st Century Era. Thus studying cybercrimes from an economics perspective is important for two reasons (Becker, 1968). First, understanding the benefits & costs to the person committing the crime can help in decision committing the crime, which leads to an analysis of the optimal approach to limit this crime, given a certain amount of resources. Secondly, understanding the social costs of a crime can help to determine a socially-efficient level of resources that should be deployed against it. Since the 21st Century humankind prefer a democratic environment over dictatorships country-wise (Rahman, 2021a) and since society is a formation of all characteristics of people & its behaviors, the policy-design goal for a society is not always to eliminate a crime. Rather it is for determining how much and which criminal behavior should be tolerated.

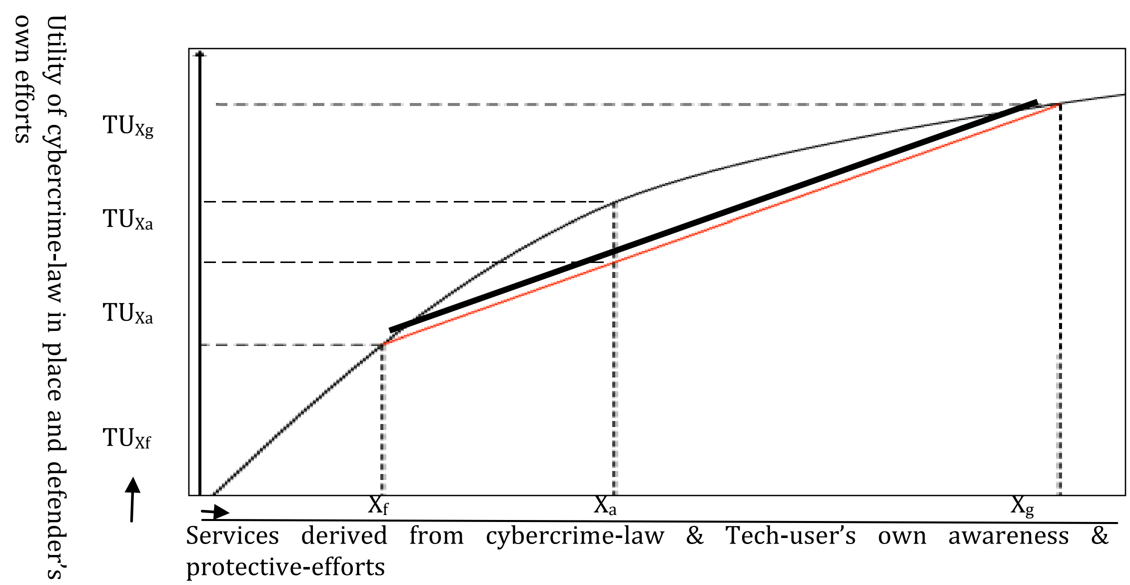
This is because reducing the amount of crime to zero is not necessarily aligned with social interest. This is because a) probable economic cost of eliminating the crime could be higher than its harms to society b) preference based on this cost-benefit assessment can facilitate sharpening and ensuring individual's own responsibility. Thus tech-user has their own responsibilities on awareness and accordingly investing efforts in aim to protect the tech-user-self from bad activities out there such as rape-crime or cybercrime etc. Since cybercrime is in multi-faceted and complicated issue, in reality, we take freedom and cast a simple example for better understanding why a society decides "how much and which behavior" should be tolerated. Suppose Lavina, a female-gender, wants to see a rape-free human society. To fulfill Lavina's demand, the authority needs to assign law enforcement wherever male & female are together. Meeting Lavina's demand can be very expansive and it can undermine Lavina's own efforts to protect her. However, it is an essential component for a human growing up for survival no matter what culture or society we live in. It is obvious Lavina's social background, education level, and age, etc. can be instrumental in her awareness & own efforts for her safety besides having the nation's Rape Law in place.

This scenario in cybercrime cases raises the question: how many offenses should be permitted and how many offenders should go unpunished? The method is used to formulate a measure of the social loss from offenses and finds those expenditures of resources and punishments that minimize this loss. The optimal amount of enforcement is shown to depend on, among other things, the cost of catching and convicting offenders, the nature of punishments—for example, whether they are fines or prison terms and the responses of offenders to changes in enforcement. Accordingly, this study proposes a piecemeal approach or separately considering each issue of cybercrime under the general provision of cybercrime where a proposal of a newly established agency or commission can be instrumental for an effective outcome. Under this administration, responsibilities can be broken down based on the type of cybercrime in piecemeal options. The outcome under this setup can be effective where the attacker will be punished and tech-user will be facilitated with training & guidance on awareness and protecting self. Otherwise, the current system may often fail unless they are broken into pieces. In this setup, besides having cybercrime laws in place, the tech user's approach to a task or situation will be the way the tech-user deals with it or think about it where tech user's awareness and self-effort can play significantly.

Awareness & Own-efforts of Tech-users under Theory of Consumer Choices & Behaviors: It is now well recognized that the perceived-risk factor plays an influential role in tech users' decisions (Rahman, 2018; Rahman, 2019). It is no different when it comes to awareness and self-efforts for being on the safe side in case of risk-factor such as cybercrime (Rahman, 2021a; Rahman 2021b). It is palatable to assume that from a rationality perspective, the tech-user is risk-averse, i.e., the tech-user prefers certainty over uncertainty when it comes to saving tech-user from the danger out there. Figure-6 illustrates the risk preferences of a risk-averse for a rational and conscious tech-user who is concerning cybercrime. Tech-user's actual benefit or utility that the tech-user receives from awareness & self-efforts will never fall on TU (X) but rather on the chord (the bold line) as shown in Figure - 6. Point X_g, in Figure - 6 represents probable outcomes of services (X). Here outcome = ƒ (cybercrime laws in place and tech users awareness & own-preventive-effort). That ensures a necessity of joint efforts rather than individual from tech-user or government-cybercrime-law on effectively preventing cybercrime. Accordingly, tech-user may use a certain level of X. Here tech user's awareness & self-effort (AE) = ƒ (age, education level, experience, sense of responsibility, etc.). Thus the outcome of cybercrime prevention depends on strength of cybercrime laws and tech users' awareness & own preventive effort.

It means the outcome of service-on-security depends on full utilization of cybercrime law, tech user's own awareness & self-effort, which can ensure the highest level of security. Thus it may cost higher for ensuring the highest level of security. Any changes to these services-on-security may risk tech-user being a victim. It may cost lower but it can put tech-user at risk. In this setup, X_g represents services derived from supportive factors such as cybercrime law, tech user's awareness & own effort, which produce the highest outcome "secured from cybercrime". X_f represents service-on-security derived from cybercrime law where $X_g > X_f$. In the case of X_f, (where X_f indicates cybercrime law in place) tech-user enjoys lower cost, which may produce the outcome of "getting attacked or hacked". As long as there exists a level of consequences, a tech-user may give a try to use X_g units of service-on-security X, the utility that this tech-user receives will lie somewhere on the chord (the bold line). The chord represents the expected utility (EU) of using service-on-security X, which lies in the concavity of the curve. This is because it is the average probability that the defender will use service-on-security X or not where X represents the combination of cybercrime law and tech user's awareness & own effort. As a result, the tech-user will never receive TU (X_a) but rather EU (X_a).

Figure 6: Cybercrime-Risk Aversion Scenario Having Laws in Place Along with Tech-User's Awareness & Own-Efforts



UAE Government Efforts besides Having Cybercrime-Law in Place: In addition to cybercrime law in place, just recently the government took various steps to strengthen its cyber-security network, particularly within the government entities. The country formed a new council last year to develop a comprehensive cyber-security strategy and help to create a safe and strong cyber infrastructure in the UAE. It is expected that the council will help develop a legal and regulatory framework. So that it can cover all types of cybercrimes and emerging technologies and establish a robust National Cyber National Incident Response Plan to enable a swift and coordinated response to cyber incidents in the country. However, no effort has yet been made that can contribute significantly enhancing the awareness and tech user's own effort for protecting the device. Furthermore, no effort has yet been seen to approach with piecemeal approach addressing the problem, even though it can play a significant role in addressing the cybercrime issues country-wise such as in the UAE. Also, no effort has yet been made by the government on having a self-driven insurance policy such as Voluntary Insurance based on the theme of Akim's Model (Rahman, 2018), which can be instrumental in addressing the problem sooner than delays.

Policy Adoption - Awareness & Own-Effort along with Cybercrime-Law in Place Country-Wise: Welfare Analysis: In an aim to examine benefits of investing tech user's time for awareness & self-efforts besides having cybercrime-law in place for protecting tech-user, this section is designed as follows. It is important for tech-user as well as for the government to get full information about the economic benefits of adopting cybercrime-law and encourage tech users' awareness & own effort for ensuing secure technology usages globally country-wise. Accordingly, welfare analysis is carried-out where findings can be instrumental to policy-makers for policy-adoption decisions. It can also be helpful to tech-user in decisions recognizing the importance of own-awareness and for investing own-efforts on protecting tech-user-self from perceived-risk of cybercrime.

Approaches other than Cybercrime-Law- Policy Guidance Country-Wise such as UAE: Evidence suggests that most governments country-wise have acknowledged the problem of cybercrime by having preventive laws, mostly known as Cybercrime Law. However, the UAE, like many countries has done little engaging tech users for awareness & own effort protecting tech usage. By doing so, people in UAE can be familiar with cybercrime & consequences and can recognize the importance of preventive measures from the tech user's side. It can also provide cyber-security awareness training for employees and develop prevention & response plans.

Guiding Tech-Users on Required Behaviors Facing Perceived-Risk of Cybercrime: In today's world, people are mostly driven by their benefits in multi-faucets such as financial, feeling good, self-recognition, self-pride, self-protection, etc. In this decision-making process, an individual can be a risk-averse or risk-taker. Thus using technology facilitation, the proposed guidance should be in such a way so that both groups can be benefitted aiming to face the perceived risk of cybercrime. Risk-benefit analyses can be useful in delivering the message for convincing tech-users on avoiding risk. Most humans make decisions fairly subconsciously. So, by actually thinking about the risks and benefits of tech users' actions, the tech-user can make better decisions in choices. On the own-efforts aspect, few options the tech-user can choose. They are as follows.

- Backing up data periodically
- Getting protection against malware
- Being smart with a password and making Changes periodically
- Review self-data before going for an IT security solution
- Being aware of phishers
- Buying voluntary insurance, particularly for digital banking services.

Emphasizing Factors that Increase Tech-User's Fondness on Being Safe-Side: In human society globally country-wise, it would not be overstated that using coercive measures such as threats, force, shouting, etc. can have a backfire effect rather than enhancing effective public engagement on a common issue such as the COVID-19 crisis. However, if authorities had devised policies or managed the procedure and explained the importance to follow lockdown laws, have-on-mask, etc. and authorities had provided regular updates about their actions, it would have increased perceptions of the legitimacy of the procedure among casualties

(Rahman, 2018). It would have inspired individuals for investing their own efforts from the beginning for their own safety. Thus, on cybercrime issue, policies are needed now than delaying for inspiring tech-users for own efforts on awareness & protecting self-devise from perceived-risk, the cybercrime.

Welfare Analysis of the Proposal Underpinning Nation's Cybercrime-law: Based on the proposal underpinning cybercrime law in place, the tech user's decision on securing tech-usage environment by setting MPC = MPB in Figure 7. Because of tech users' inspiration, market level of tech user's awareness & own-effort Q_1 and optimal level is Q^* that are generated underpinning nation's cybercrime-law and government's promotional efforts. Area K represents net social gains that are generated by joint efforts of Govt. and the Tech-user's effort. In Figure 8, area (A+B+C+D+E) is tech-user or defender's surplus. The government spending for cybercrime-law implementation is an area (E+B+C+D+F) that is collected from taxpayers. Net loss to UAE is (E+F). Area E reflects a net loss of producer (technology producers) surplus, underutilized resources better business or more selling opportunities. Area F is the deadweight loss that is just lost.

Figure 7: Welfare from Awareness & Own-Effort Under Cybercrime-Law Implementation

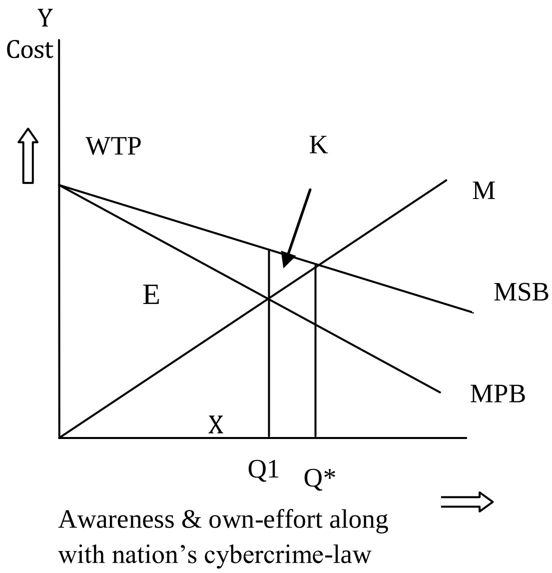
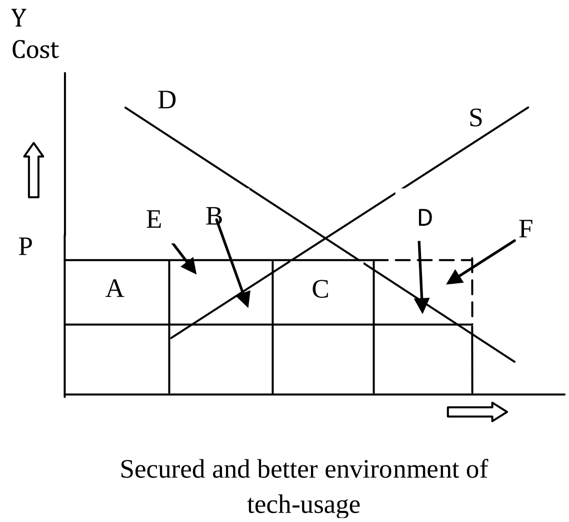


Figure 8: Welfare Aspect of Secured & better Environment of Tech-usage



Future Study: Since cybercrime is a vast and complicated arena, which may get worse parallel to the trends of a growing number of tech-users, it is warranted for taking effective & protective measures now than later. Since the current study is a theoretical one, after data collection from tech-users in different fields, empirical studies can be conducted for welfare analysis. Further studies can be conducted on the application of Voluntary Insurance in securing digital-banking underpinning Akim's Model (Rahman, 2018). It can further contribute to the understanding, prevention or correction of criminal behavior of cybercrime in digital-banking services. Lastly, an opinion-survey study can be conducted on how the tech-users feel about the proposal "awareness & own efforts" besides having cybercrime law in place country-wise such as the UAE.

5. Conclusion and Recommendations

Conclusion: Today's technology-driven world is counted more in the globe than ever before. The UAE society is no different in the globe. Thus, the decision factors mainly expectancy and cost-effectiveness have led human beings, organizations, agencies or businesses to welcome ICT-facilitations for usages in many folds. As a result, meeting society's needs, many sectors including the financial sector particularly banking services have been modernized. Here customers compete for comparative time-saving option (s) marginalizing its operating costs. With the increase of data usage, the number of tech-users, and devices, cybercrime has been on the rise, which is an all-time high ever since. Only until recent times, we are coming across more and more stories about data breaches and cybercriminal activities. Addressing the issue, like many other countries, the UAE is not out of control by laws.

Since human society is a formation of all characteristics of people & its behaviors, the law for its society is not always to eliminate a crime. This is because reducing the amount of crime to zero is not necessarily aligned with social interest. It can increase probable economic cost eliminating the crime, which could be higher than its harms to society. But it needs a framework that can ensure effective communications on cyber-security defense within and outside its agencies. Particularly, it needs a piecemeal approach in practice where the approach for one department may vary from the approach for another department. Raising tech users' awareness about risky online behaviors and accordingly tech-users are needed to put own-efforts underpinning the awareness about the crime and probable options available to the tech-users. Thus besides having cybercrime law in place, this study lays out the foundations, which can be called Akim's Mode-2021, of piecemeal approach along with tech user's awareness & own-efforts for protection using Behavior Theory of Consumer Choices.

It further carries-out welfare analysis of the costs country-wise such as the UAE with the aim to attract leaderships' attention for addressing cybercrime in a piece-meal approach. Findings show that tech user's actual benefit or utility that a tech user receives from awareness & self-efforts along with cybercrime law in place is not exactly equal to its total utility. Here a certain portion of utility comes from service-on-security derived from cybercrime law where total utility is greater than utility-received from cybercrime law. Thus the outcome of cybercrime prevention depends on strength of cybercrime laws and tech users' awareness & own preventive effort. It means the outcome of service-on-security depends on full utilization of cybercrime law, tech user's own awareness & self-effort, which can ensure the highest level of security. Thus it costs higher for ensuring the highest level of security. Any changes to these services-on-security may risk being a victim. It may cost lower but it can put the tech-user at risk. From on welfare analysis perspective, the findings show that tech users' actions including awareness & own effort, besides government law can create a net social gain.

Which significantly depends on the tech user's actions as a whole. In this case, the tech user's calculated economic surplus is greater than the government's expenses for the implementation of the cybercrime law, which is collected from the UAE taxpayers. Net loss to the government of the UAE is the sum of deadweight loss plus the net loss to tech producers because of underutilized resources better business or more selling opportunities. Today people are mostly driven by their own benefits in multi-faucets such as financial, feeling good, self-recognition, self-pride, self-protection, etc. Thus, the guidance of tech-users on required behaviors should be in such a way so that both government & tech-user can benefit aiming to face perceived-risk of cybercrime. Risk-benefit analyses can be useful in delivering messages thru multi-faucets for convincing tech-users on avoiding risk by their own actions. Furthermore, it can facilitate sharpening and ensuring an individual's own responsibility, which can be the by-product of Akim's Model-2021, no matter where tech-users reside in the globe.

Recommendations: Thus underpinning the findings, the recommendations in summary in this study are as follows,

- Provisions under the cybercrime law for ensuring tech user's own responsibilities on awareness and accordingly investing efforts in aim to protect the tech-user-self from bad activities out there such as rape-crime or cybercrime etc.
- Provisions must ensure a piecemeal approach where a newly established agency or commission can be instrumental for an effective outcome. Under this administration, responsibilities can be broken down based on the type of cybercrime in piecemeal options.
- The legal & regulatory framework related to cybercrime should be in such a way so that it can cover all types of cybercrimes and emerging technologies and establish a robust National Cyber National Incident Response Plan to enable a swift and coordinated response to cyber incidents.
- Provisions must ensure guiding tech-users on required behaviors facing perceived-risk of cybercrime. It must emphasize factors that increase tech users' fondness for being safe-side.

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