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RESEARCH ARTICLE

Applying Data Governance Based on COBIT2019 Framework to Achieve Sustainable Development Goals

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Article Info.	Abstract
Article history: Received June 04 2020 Accepted July 16 2020 Published	Organizations should employ information technology to enhance their market positions; accelerate their activities, and reduce costs which lead to achieving sustainability. The use of information technology can expose the data of organizations to technological risks; may weaken information security in the organization that prevents the organization from achieving its desired goals. So, this research aims to identify the most important concepts of data governance, sustainable development goals, and related information technology. It also aims to clarify the influence of data governance on achieving the sustainable development goals by applying COBIT2019 framework. The researchers have designed a refereed questionnaire to collect data from the main 5 petroleum companies in Kurdistan region of Iraq then analyzed that data to test the hypotheses of this study. The researchers conclude that applying COBIT2019 framework can enhance the data governance in the organizations and help in achieving the sustainable development goals in information technology environment. Moreover, the study recommends that there is a need to strengthen data governance mechanisms essential to achieve the sustainable development goals. This suggested framework can apparently enhance the information technology infrastructure.

1. Introduction

Achieving the sustainable development goals (SDGs) has become one of the most important strategies of the organization today due to their current and future importance and their many benefits in providing a competitive advantage for organizations in the market. Preserving the environment and protecting natural resources and wealth for future generations seem very necessary. Data is one of the most important resources that organizations have in this digital age, therefore data governance (DG) is the most important principle to the organizations which mostly use information technologies (IT) to achieve their goals and provide their services and products.

Many frameworks and methods of DG have emerged under IT. One of the most important of these was COBIT framework that helps to reduce the gap and reduces the risks among information systems, technical needs and the basic business needs of the organization. Several versions of COBIT framework have appeared in recent years, the latest version is COBIT2019.

2. Problem Statement

Organizations must use IT to enhance their market positions, accelerate their activities and reduce costs which lead to achieve sustainability easily. The use of IT can expose the data of the organizations to technological risks that may weaken the information security in the organization and prevent the organization from achieving its desired goals. So, the main problem of this research can be formulated into the following question: *Can the application of COBIT 2019 framework significantly influence the efforts of organizations to achieve the SDGs?*

3. Research Objectives

The research aims to achieve the following:
- Identifying the most important concepts of DG, SDGs.
- Clarifying the important of DG in achieving the SDGs.
- Identifying the influence of DG on achieving the SDGs by applying COBIT2019 framework.

4. Research Importance

The importance of the research stems from the importance of DG in the organizations that relies on IT to execute the activities. The study highlights the role of applying COBIT2019 framework to reduce IT risks and to achieve SDGs

5. Research Hypotheses

This research hypothesizes the following:
H_1: The application of COBIT2019 framework can enhance the data governance in the organizations.
H_2: The application of COBIT2019 framework can contribute to achieve the sustainable development goals in the organization.

6. Data Governance (DG)

6.1 The DG Concept

Data governance (DG) is a term used on two levels, the first is a macro level and the second is a micro level. Whereas the DG concept through the macro level is related to political issues which shape part of the international relations and the management of the Internet, the DG concept through the micro level is the management which shapes part of corporate governance [1].

6.1.1 Macro Level
DG, at this level, indicates to the data flows managing across the international borders. It can furthermore be called the international data management. So, DG includes fundamentals and basics governing various forms of data [2].

6.1.2 Micro Level
DG, at this level, is related to data management in connection with the ability that enables an organization to confirm the availability with high data quality during the entire period of using data [3]. DG's main focus areas are: consistency, availability, data integrity, usability and data security as well as the processes establishing to confirm effective data management during lifecycle of organization such as accountability for the bad impacts of poor data quality. It mostly confirms that the data belonging to an organization can be used by the entire organization individuals [4].

6.2 The DG Goals

DG includes individuals, IT techniques, and processes required to build a coherent and suitable handling of an organization data across the business. So, DG can provide all practices of managing data with the necessary foundation, strategy, and framework that are needed to confirm that data. Meaningful information can be transformed and run as an asset by using these data[5]. Therefore, the goals of DG can be determined at all levels of organization which can be helpful to gain the users' acceptance for the processes. Therefore, the goals of DG can be summarized as follows [6]:
- Enhancing the level of consistency and confidence in the decision-making process.
- Reducing the level of regulatory fines risk
- Enhancing data security
- Verifying requirements of data distribution policies
- Increasing data income generating potential
- Appointing accountability polices to test quality of information
- Enhancing high quality planning by some expert supervisors
- Reducing rework
- Making staff effectiveness better

The DG goals can be realized by the applying DG programs or any actions that are used for modifying the techniques of management [7]. So, when organizations wish to control their data, they authorize their staff, arrange processes and obtain help from IT infrastructure to do that [8]. Based on some scholars, DG is a quality control discipline to evaluate, manage, implement, improve, monitor, maintain, and protect organizational information [9],[10]. DG can be a system which gives confirmation to making decisions for the information-related processes which are done and based on agreed-upon models characterizing who can take "what activities" with "what information", "when", "under what conditions", and "what techniques are to be employed" [11], [12].

6.3 The DG Drivers

Whilst DG initiatives can be moved by a wish to improve quality of data, DG initiatives are more often moved by leaders of high level in organization for responding to the external regulations such as SOX Act, Basel Accords (I, II, and III), cGMP, HIPAA, GDPR [13],[14], as well as a number of data privacy regulations. In other words, to obtain a good level of compliance to the regulations, processes of business and controls needs formal management processes to govern data subjected to the regulations [15].

Joint concepts between external regulations focus on the need of the risk in the managing. Risks can be financial misstatement, inadvertent release of sensitive data, or poor data quality for main decisions [16]. Some examples generally indicated that best practices and guidelines consist of COBIT, ISO/IEC 38500, and others [17]. The reproduction of standards and regulations makes new challenges for DG professionals, especially when various regulations overlap with the managed data [18]. Organizations often launch DG initiatives to classify the new challenges.

6.4 The DG Initiatives

DG initiatives continuously develop the quality of data by designating a working set in charge of data accuracy, integrity, consistency, timeliness and validity [19], as this set commonly includes executive leadership, project management, business line managers and data controllers [20] and this work sets or employs a kind of a plan to track, enhance and improve the data of the organization such as six sigma, data mapping, profiling, cleansing and data control [21].
DG initiatives aims to obtain many goals such as supplying better view for internal and external customers, obeying the recent regulations, making operations better after rapid growth of organizations, or enhancing the staff's efficiency to be able to know more about the organization [22]. Many DG initiatives are also inspired by some old efforts to repair the information quality at the level of department in the organization which can lead to conflicting and frequent operations of the data quality as well as the most large organizations that have several applications and databases that cannot exchange information easily [23]. Thus, most knowledge staff do not have the ability to get information which they need to do their activities. Even if there is an access to the data, the quality of this data can be poor. These problems can be decreased by providing a governance practice for DG or the data reference of the organization [24].

6.5 DG Initiative Implementation

Applying DG initiative can vary according to scope and origin. An executive mandate can be created to initiate an organization-wide effort. Sometimes, the mandate is used to create a pilot project limited in scope and objectives that aims to either solve the existing problems or to show the value [25]. Sometimes, an initiative pops up at the bottom of the organization's hierarchy is spread in a limited scope to display the value to some potential sponsors at the organization [26]. The initial scope of applying DG can also be different significantly; from a one-time IT system that reviews an inter-organizational initiative [27].

7. Sustainable Development Goals (SDGs)

7.1 The SDGs Concept

Sustainable development goals (SDGs) can be described as a group of 17 international objectives which are designed to be a "blueprint to achieve a better and more sustainable future for all"[28]. The SDGs, which was set in 2015 by the UN and prepared to be accomplished by 2030, are part of UN resolution 70/1[29].

7.2 The SDGs Background

Many governments met in Sweden in 1972 to attend the UN Conference of the human environment for the purpose of considering the family's rights to have a healthy and productive environment [30]. After 11 years, the UN created the world commission on environment and development (WCED) or Brundtland commission which defined the sustainable development as "a concept to meet the present's needs without compromising of the future generations' needs"[31]. At the end of the 20th century, the first UN Conference on Environment and Development (UNCED) of Agenda 21 was held in Brazil where the first agenda for environment and development was developed and adopted.
The UN Conference on Sustainable Development (UNCSD) or Rio+20 was held in 2012, where Colombia proposed the concept of the SDGs[32]. The outcome document proposed 17 sustainable development goals and associated targets. Among the main topics agreed on were poverty eradication, energy, water and sanitation, health, and human settlement.

7.3 The SDGs Goals

The Sustainable Development Goals are [33]:
- Reducing the level of poverty and raising standard of living
- Eliminating famines
- Improving level of health in societies
- Raising level of education quality in developing countries
- Achieving gender equality
- Providing clean water and sanitation
- Providing clean and cheap energy
- Providing job opportunities and achieving economic growth
- Enhancing industry sectors, and infrastructure
- Reducing inequality and racism
- Building sustainable cities and communities
- Reducing waste of raw materials
- Reducing air pollution and harmful emissions
- Reducing water pollution
- Reducing land pollution
- Achieving peace and justice and create strong organizations

- Participating among nations for a better life

The previous goals can be considered as being broad based and interdependent. So, each goal of the 17 SDGs has a group of targets which are evaluated by specific indicators to make the SDGs successful and achievable. These goals were also formulated to be easy and understandable [34].

8. The Framework of COBIT2019

8.1 Concept of COBIT2019

Control Objectives for Information and related Technology (COBIT2019) is a framework to address the challenges of IT governance in a holistic style, it represents a general framework for governance as well as a method for managing the organization's IT[35], [36].

COBIT2019 can be implemented by all companies and in all sectors, as it helps align business goals with IT goals by creating links among them to create solutions that contribute to bridge the gap between the IT and the management [37]. COBIT2019 has become popular all over the world because it has contributed significantly to support IT in general , develops and manages industries and technologies in particular[38].

8.2 Importance of COBIT2019

COBIT2019 is important because it can achieve the following [39], [40], [41]:
- Improving the value of companies using IT by maintaining a balance between achieving benefits and improving risk levels and the use of resources.
- Assisting companies in obtaining effective and highly efficient activities related to IT, it uses the system in coherence and consistency in order to reach a level of comfort in the operations that take place in the company.
- Facilitating the work of external and internal auditors, audit committees and regulators, as well as the boards of the directors and managers; it provides examples of auditing or guarantee programs related to risk management.
- Providing general guidance for all the processes in which IT activities are presented in details, and explaining how they are implemented.
- Prioritizing objectives in order to focus on key issues and linking the needs of the organization to the stakeholders.

8.3 Principles of COBIT2019

The main principles of the COBIT2019 framework are as follows [42]:
- Meet the needs of stakeholders
- Cover the functions of the organization and the activities done from beginning to end
- One integrated framework applied
- Enable holistic approach
- Separate governance from management

9. Research Methodology

9.1 Population and Sample

The target population of research included the petroleum companies in Kurdistan region of Iraq. The researchers have selected 5 main companies (Kar Group, Bazian Oil Refinery, ShaMaran Petroleum Corp., TAQA Energy, and Hunt Oil Company). 50 questionnaires have been distributed to the administrative staff of each company. The size of the samples is (250). The number of valid questionnaires for analysing is (112) representing (44.8%) of the research samples.

9.2 Research Tool

The researchers have designed a questionnaire based on the related studies, it consists of two parts. The 1st part contains the demographic variables of the respondents (age, educational qualification, position, and years of experience), whereas the 2nd part is related to the variables and dimensions of the main study. So , it is divided into 2 axes and as follows :
- The independent variables which are represented by DG based on COBIT2019 framework included 5 dimensions.
- The dependent variables which are represented by the SDGs included 3 dimensions.

Table (1) shows the main dimensions of the 2nd part of the questionnaire[1].

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[1] For more details about the questionnaire, see the appendix A

Table (1): The axes and dimensions of the questionnaire

Axis	Dimensions	Paragraphs	Codes
COBIT2019	Planning and organizing	5	PO
	Ownership and implementation	5	OI
	Support and delivery	5	SD
	Monitoring and evaluation	5	ME
	Guidance and oversight	5	GO
SDGs	Economic	5	EC
	Environmental	3	EL
	Social	7	SL
The total of paragraphs		40	

9.3 Data Analysis:

Cronbach's Alpha is used to test the stability of the questionnaire's paragraphs by the researchers. In addition, some of statistical tools (percentages and frequencies, standard deviations, arithmetical averages, T-test) have been employed to analyse the collected data and to test the research hypotheses.

9.3.1 Stability of the analysis

According to Cronbach's Alpha results $\alpha = 0.870$, and the reliability value of $\alpha = 0.751$ which means the paragraphs are accurate and consistent because $\alpha \geq 0.6$.

9.3.2 Data analysis and hypothesis testing

- Describing and analyzing the demographic variables of the research sample respondents:

Tables (2) to (5) show the frequencies and percentages of the demographic variables of the respondents (age, educational qualification, position, and years of experience).

Table (2): The age categories

Variable	Category	Frequency	%
Age	Less than 30 years	15	13%
	30 years – less than 40 years	34	30%
	40 years – less than 50 years	39	35%
	More than 50 years	24	21%
	Total	112	100%

Table 2 illustrates that the age category (Less than 30 years) has formed the smallest percentage of the respondents (13%) , while other age categories have formed greater percentages. So, this corresponds to the necessary age period to reach the leadership and administrative positions in the organizations.

Table (3): The educational qualification categories

Variable	Category	Frequency	%
Educational	B.Sc. or B.A.	47	42%
qualification	M.Sc. or MBA	25	22%
	Ph.D.	19	17%
	Others	21	19%
	Total	112	100%

Table 3 illustrates that the educational qualification category (B.Sc. or B.A.) has formed the largest percentage of the respondents (42%). So, this indicates that the employees of the upper and middle departments in the petroleum companies of Kurdistan region on Iraq possess the necessary scientific knowledge and qualifications that enable them to perform the activities and tasks assigned to them efficiently and effectively.

Table (4): The position categories

Variable	Category	Frequency	%
Position	Director or deputy director	17	15%
	Director of the department	39	35%
	Head of the department	56	50%
	Total	112	100%

Table 4 illustrates that the position category (Head of the department) has formed the largest percentage of the respondents (50%), while the position category (Director or deputy director) has formed the smallest percentage of the respondents (15%). So, this corresponds to the administrative hierarchy in the modern organizations. As the number is increasing, the orientation is towards the base of the hierarchy. The decreasing is whenever the orientation towards the top of the hierarchy.

Table (5): The years of experience category

Variable	Category	Frequency	%
Years of	Less than 5 years	16	14%
experience	5 years – less than 10 years	10	9%
	10 years – less than 15 years	21	19%
	15 years – less than 20 years	28	25%
	More than 20 years	37	33%
	Total	112	100%

Table 5 illustrates that the years of experience category (More than 20 years) has formed the largest percentage of the respondents (33%). This indicates that the respondents have the necessary and sufficient experiences to assume leadership and administrative positions in the petroleum companies in Kurdistan Region of Iraq and to perform the tasks and the duties assigned to them.
- The Hypotheses Test

H_1: The application of COBIT2019 framework can enhance the DG in the organizations.

Tables (6) to (10) show the results of analysing the dimensions related to the impact of applying COBIT2019 on the DG.

Table (6): Results of analysing the 1st dimension of COBIT2019

Code	A. average	Std. dev.	T-Test	Rank
PO1	4.21	0.798	5.37	2
PO2	4.01	0.824	5.89	4
PO3	3.99	0.762	6.17	5
PO4	4.23	0.901	6.24	1
PO5	4.04	0.785	5.82	3

Table (7): Results of analysing the 2nd dimension of COBIT2019

Code	A. average	Std. dev.	T-Test	Rank
OI1	3.65	0.808	5.43	5
OI2	4.08	0.905	5.91	1
OI3	4.01	0.877	6.23	2
OI4	3.87	0.827	4.97	3
OI5	3.72	0.792	5.27	4

Table (8): Results of analysing the 3rd dimension of COBIT2019

Code	A. average	Std. dev.	T-Test	Rank
SD1	4.05	0.811	5.87	3
SD2	4.12	0.795	5.67	2
SD3	3.79	0.899	6.16	5
SD4	3.95	0.907	6.02	4
SD5	4.19	0.819	4.95	1

Table (9): Results of analysing the 4th dimension of COBIT2019

Code	A. average	Std. dev.	T-Test	Rank
ME1	4.11	0.804	5.17	2
ME2	4.17	0.811	5.52	1
ME3	3.92	0.907	5.73	4
ME4	3.90	0.841	5.64	5
ME5	4.02	0.827	6.12	3

Table (10): Results of analysing the 5th dimension of COBIT2019

Code	A. average	Std. dev.	T-Test	Rank
GO1	3.62	0.823	6.72	5
GO2	3.75	0.795	6.16	4
GO3	4.09	0.921	5.82	1
GO4	4.01	0.793	5.67	2
GO5	3.87	0.813	6.08	3

Based on the previous results:
- Table (6) illustrates that PO4 obtains the highest rank among the other paragraphs of the 1st dimensions of COBIT2019 with (4.23), and the standard deviation value equals (0.901). So , it confirms that the applied IT in the organization meets the most of the DG needs. Also, the compatibility of respondents against the dimension's paragraphs is very good as the arithmetic average for (PO1-PO5) equals (4.096).
- Table (7) illustrates that OI2 obtains the highest rank among the other paragraphs of the 2nd dimensions of COBIT2019 with (4.08), and the standard deviation value equals (0.905). Thus, it confirms that IT infrastructure is maintained to increase the efficiency of the organization's DG. The compatibility of respondents against the dimension's paragraphs is very good as the arithmetic average for (OI1-OI5) equals (3.866).
- Table (8) illustrates that SD5 obtains the highest rank among the other paragraphs of the 3rd dimensions of COBIT2019 with (4.19), and the standard deviation value equals (0.819); it confirms that the organization's management works on the performance management and the capacity development to serve the DG goals. The compatibility of respondents against the dimension's paragraphs is very good as the arithmetic average for (SD1-SD5) equals (4.020).
- Table (9) illustrates that ME2 obtains the highest rank among the other paragraphs of the 1st dimensions of COBIT2019 with (4.17), and the standard deviation value equals (0.811). Thus, it confirms that appropriate controls are provided to ensure the safety of the organization DG internationally. The compatibility of respondents against the dimension's paragraphs is very good as the arithmetic average for (ME1-ME5) equals (4.024).
- Table (10) illustrates that GO3 obtains the highest rank among the other paragraphs of the 1st dimensions of COBIT2019 with (4.09), and the standard deviation value equals (0.921). So, it confirms that an appropriate approach and principles are established to monitor the organization's DG performance to verify that it is operating as planned. The compatibility of respondents against the dimension's paragraphs is very good as the arithmetic average for (GO1-GO5) equals (3.868).

The researchers can confirm that applying COBIT2019 framework can enhance the DG in the organizations and they can verify the 1st hypothesis H1.

H2: The application of COBIT2019 framework can contribute to achieve the sustainable development goals in the organization.
Tables (11) to (13) show the results of analysing the dimensions related to the impact of applying COBIT2019 on achieving the SDGs.

Table (11): Results of analysing the 1st dimension of SDGs

Code	A. average	Std. dev.	T-Test	Rank
EC1	3.99	0.799	6.01	3
EC2	4.11	0.899	4.99	1
EC3	3.87	0.811	5.08	5
EC4	3.94	0.921	5.27	4
EC5	4.01	0.889	5.84	2

Table (12): Results of analysing the 2nd dimension of SDGs

Code	A. average	Std. dev.	T-Test	Rank
EL1	4.51	0.827	6.17	2
EL2	4.28	0.915	5.74	3
EL3	4.55	0.908	6.26	1

Table (13): Results of analysing the 3rd dimension of SDGs

Code	A. average	Std. dev.	T-Test	Rank
SL1	3.39	0.712	5.17	5
SL2	3.75	0.743	5.27	2
SL3	3.41	0.735	5.62	4
SL4	3.49	0.781	4.98	3
SL5	3.38	0.772	6.12	7
SL6	3.81	0.743	5.79	1
SL7	3.40	0.747	4.83	6

Based on the previous results:
- Table (11) illustrates that EC2 obtains the highest rank among the other paragraphs of the 1st dimensions of SDGs with (4.11), and the standard deviation value equals (0.899); it confirms that applying COBIT2019 framework in the organizations can provide adequate compensation for land acquisition. The compatibility of respondents against the dimension's paragraphs is very good as the arithmetic average for (EC1-EC5) equals (3.984).
- Table (12) illustrates that EL3 obtains the highest rank among the other paragraphs of the 2nd dimensions of SDGs with (4.55), and the standard deviation value equals (0.908). Thus, it confirms that applying COBIT2019 in the organizations can reduce water pollutions. The compatibility of respondents against the dimension's paragraphs is excellent as the arithmetic average for (EL1-EL5) equals (4.447).
- Table (13) illustrates that SL6 obtains the highest rank among the other paragraphs of the 3rd dimensions of SDGs with (3.81), and the standard deviation value equals (0.743). So, it confirms that applying COBIT2019 in the organizations can reduce the quality failures. The compatibility of respondents against the dimension's paragraphs is good as the arithmetic average for (SL1-SL5) equals (3.519).

Consequently, the researchers confirm that applying COBIT2019 framework can contribute to achieve SDGs in the organizations, and they can validate the 2nd hypothesis H2.

10. Conclusions and Recommendations

9.1 Conclusions:

- The results show that there is a good level of interest by respondents in Iraq to apply COBIT2019 as an effective framework in increasing the efficiency of DG and enhancing the opportunities of achieving the SDGs.
- Many of the respondents believe that applying COBIT2019 framework can be easy and soft due to their accumulated knowledge, acceptable level of IT infrastructure, and their educational qualification.
- SDGs can be achieved easily by implementing IT techniques in the functions of the organizations.
- Applying COBIT2019 framework in the organization's DG can be helpful to maintain the continuity of the organization in proportion to its plans recently and in the future.
- Applying COBIT2019 framework can help the organization to be a green organization or Eco-friendly by reducing many types of pollutions.

9.2 Recommendations:

- The IT infrastructure must be enhanced in Iraq to apply COBIT2019 efficiently.
- Many goals of sustainable development can be achieved easily in Iraq so that the government works and prepares the most important tools.
- DG, SDGs, and COBIT2019 have good motivations to strengthen the IT infrastructure in Iraq.
- Government should organize meetings, seminars, and conferences to increase the public awareness of DG.

- The organizations have to train their staff for the best strategies of applying COBIT2019.

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Appendix A

The paragraphs of the questionnaire's dimensions:

COBIT2019

- Planning and organizing
PO1: There is an emergency plan to manage the urgent changes of the data governance.
PO2: The continuous update of data governance strategies is within a specified time plan.
PO3: There is a plan to manage the expected risks that the data governance can be exposed to.
PO4: The applied IT in the organization meets all the data governance needs.
PO5: The applied organizational structure in the organization serves the data governance's long-term objectives.
- Ownership and implementation
OI1: The appropriate infrastructure is being set up to implement the data governance effectively.
OI2: IT infrastructure is maintained to increase the efficiency of the organization's data governance systems.
OI3: The staff working on data governance is highly qualified and skilled.
OI4: Information security applications are built to increase the efficiency and entrepreneurship of the organization's data governance.
OI5: The organization has clear policies to deal with the expected risks from implementing the data governance efficiently.
- Support and delivery
SD1: The senior management of the organization provides the necessary support to implement the data governance effectively.
SD2: Security controls of all kinds, preventive, exploratory and corrective, are applied against the environmental risks surrounding data governance.
SD3: Management is keen to manage data and maintain it periodically in proportion to the changes surrounding it.
SD4: The organization's data governance helps to maintain the continuity of the organization in proportion to its plans recently and in the future.
SD5: The organization's management works on performance management and capacity development to serve data governance goals.
- Monitoring and evaluation
ME1: Ensuring that the data governance goals are achieved efficiently and effectively.
ME2: Appropriate controls are provided to ensure the safety of organization information locally and internationally.
ME3: The management of the organization is informed of all its evaluation results to determine the real surrounding problems and solve them.
ME4: IT controls help to achieve balance and benefit of data governance.
ME5: Ensuring that information is transparent to shareholders in a timely manner.
- Guidance and oversight
GO1: The efficiency of the internal control systems is evaluated in proportion to its control directions.
GO2: The results of the system application are evaluated and the deviations are adjusted.

GO3: An appropriate approach and principles are established to monitor the organization's data governance performance to verify that it is operating as planned.

GO4: The suggestions of the external users of the user's system are taken into consideration.

GO5: Control and evaluate the compliance with external requirements of data governance.

SDGs:

- Economic:

EC1: Applying COBIT2019 framework in organizations can reduce the high prices of goods and services.

EC2: Applying COBIT2019 framework in organizations can provide adequate compensation for land acquisition.

EC3: Applying COBIT2019 framework can decrease the construction delay.

EC4: Applying COBIT2019 in organizations can reduce the frequent repairs in the operation.

EC5: Applying COBIT2019 in organizations can keep on the rate of salary of employees in alternative industries.

- Environmental

EL1: Applying COBIT2019 in organizations can reduce the noise pollutions.

EL2: Applying COBIT2019 in organizations can reduce the air pollutions.

EL3: Applying COBIT2019 in organizations can reduce the water pollutions.

- Social

SL1: Applying COBIT2019 in organizations can reduce the unemployment due to land acquisition

SL2: Applying COBIT2019 in organizations can reduce construction safety and accidents.

SL3: Applying COBIT2019 in organizations can reduce the damages of cultural heritage

SL4: Applying COBIT2019 in organizations can control on the poor public service due to low prices

SL5: Applying COBIT2019 in organizations can reduce the traffic congestion.

SL6: Applying COBIT2019 in organizations can reduce the quality failures.

SL7: Applying COBIT2019 in organizations can increase the adequate facilities surrounding the projects.