مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص لملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات   (نوفمبر 2021) / ص519-531

E-Governance as an Imperative for Sustainable Development- Conceptual Framework

الحوكمة الإلكترونية كضرورة حتمية للتنمية المستدامة - الإطار المفاهيمي-

E-Governance as an Imperative for Sustainable Development- Conceptual Framework-

1. الموفق نبيلة Nabila EL-MOFFOCK ، جامعة الجزائر03، elmoffock.nabila@univ-alger3.dz

ملخص:

في العشرية الأخيرة اثر التحول الرقمي على الاقتصاد العالمي، إذ تعد الرقمنة و التنمية المستدامة من أهم الاتجاهات في وقتنا الراهن ، يعد التداخل بين هذه الجوانب مجالا لم يحظ بالكثير من العناية في الجانب النظري، حيث يحظى الرأي القائل بأن استخدام تقنيات الحوكمة الإلكترونية يمكن أن يوفر نهجًا متكاملًا لتنفيذ التنمية المستدامة قبولا على نطاق واسع بين العلماء وممثلي الحكومات. لكن تقاطع هذه الجوانب لا يزال مجالًا غير متطرق إليه إلى حد كبير ، بحيث تدرس الحوكمة الإلكترونية (EGOV) استخدام تكنولوجيا المعلومات والاتصالات (ICT) لتحسين عمليات الحوكمة. في حين تهتم أبحاث التنمية المستدامة(SD) إلى دراسة طرق التنمية الممكنة التي تلبي احتياجات الجيل الحالي دون المساس بقدرة الأجيال القادمة على تلبية احتياجاتهم الخاصة. على الرغم من التقدم الكبير في تطوير كلا المجالين بشكل مستقل ، إلا أن القليل من البحوث موجودة عند تقاطعهما - كيفية استخدام EGOV لدعم SD. نسمي هذا التقاطع "الحوكمة الإلكترونية من أجل التنمية المستدامة" (EGOV4SD). الهدف من هذا البحث هو دراسة الإطار المفاهيمي لـ EGOV4SD.

كلمات مفتاحية: الحوكمة الإلكترونية ، التنمية المستدامة ، الحوكمة الإلكترونية من أجل التنمية المستدامة.

Abstract:

In recent decades, digital transformation has been underway thereby influencing the global economy. Digitalization and sustainable development are the most important trends in modern life, but the intersection of these aspects remains a largely unexplored area. The opinion that the use of e-governance technologies can provide an integrated approach to the implementation of sustainable development is widely accepted among scholars and government representatives. Electronic Governance (EGOV) research studies the use of Information and Communication Technologies (ICTs) to improve governance processes. Sustainable Development (SD) research studies possible development routes that satisfy the needs of the present generation without compromising the ability of the future generations to meet their own needs. Despite substantial progress in advancing both domains independently, little research exists at their intersection — how to utilize EGOV in support of SD. We call this intersection Electronic Governance for Sustainable Development (EGOV4SD). The purpose of this research is to study the conceptual framework for EGOV4SD. The main contribution of the study is establishing a theoretical foundation for EGOV4SD research.

Keywords: *Electronic Governance, Sustainable Development, Electronic Governance for Sustainable Development.*

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص للملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   **531-519**ص/ (نوفمبر 2021)

Introduction :

Nowadays, Information and communication technologies (ICTs) are evolving rapidly and digital information is expanding. Indeed, public sectors are issued in digital format; hard copies and papers are outdated and even personal contacts occur with lower frequency. ICTs have become part of countries' development through a rapid and evolving market for the Internet and e-business. ICTs have tremendous potential to enhance the lives of people in general and, particularly, those in developing countries. ICTs have great impact on the direction of information. The information access and flow moved from a vertical, centralized and closed model to a horizontal, decentralized and open network. Fast-growing ICTs market forces to look at E-governance. The evolution of ICTs has dramatically changed how citizens interact with their governments, creating an important development in their expectations (Dodd, 2000). However, in some countries and regions central and local management work still relies primarily on traditional communications forms. In this context, e-governance comes with new opportunities, but at the same time it entails many challenges (Alsheri and Drew, 2010).

Thus, sustainable development is at the heart of present-day socio-economic development. Research has not developed much into evaluating the performance of e-governance as an avenue for sustainable development realization. As such, this research seeks to contribute to the body of knowledge within this novel but the growing sphere of scientific research.

Due to the contrasting strands of arguments, the aim of this research is to study how to utilize EGOV in support of sustainable development. The research is organized in four parts: the first section outlines the relationship between ICTs and Governance. The second section presents the key concepts of E-Governance and E-Government. The third section outlines the concept of sustainable development and the fourth section deals with the Electronic Governance for Sustainable Development.

1. ICTs and Governance the widespread:

Access of information is the key factor for making democracy successful. Due to the invention of Information and Communication Technology (ICT), the new global information had been mobilizing the institutional transformation in the sphere of mechanical and organic structure of society.

1.1. Definition of ICT (Information and Communication Technology):

ICT stands for Information and Communication Technologies. It refers to several sets of technological tools that can help to provide right to information and equal services to the people by minimal cost, time and effort.

According to Mohamed Taher "ICT (Information and Communications Technology – or Technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning" (Dwivedi et all, 2005,p37).

ESCAP (2001) defined ICT as technological tools that people use to share, distribute, gather information, and to communicate with one another, one by one, or in groups, through the use of computers and computer networks which had been interconnected (Bhattacharya, 2013).

Laurantine discussed "Information and Communication Technologies as the nervous system of contemporary society, transmitting and distributing seasons and controlling information and interconnectivity, a myriad of independent units" (Katyal, 2002,p07).

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص للملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   **519-531**ص/ **(2021 نوفمبر)**

The emergence of ICT has opened up new avenues for jobs by business process outsourcing or web enabled services. All credit to the internet, now developing countries also participate in the process of global economy.

1.2. Definition of Governance:

Governance refers to the processes of governing in which policies are made and implemented. In this process of governing the role of civil society, state and market is very important. "(Schmitter, 2019).

All these three important aspects of governance take a very crucial role in the decision making or policy making process and its implementation process as well. It has several types such as participatory governance, corporate governance, environmental governance, good governance, e-governance etc.

1.3. The relationship between ICT and Governance:

Through the application of ICT in public administrations, the governing processes are more effective and more efficient and also ensure sustainable development.

Through ICT a "new forms of dialogue and collaboration among public, private and civil society organizations enhance transparency and accountability that can create conditions of fair and open while expanding access so that everyone can participate and benefit from today's knowledge-based economy" (Bhattacharya: 2013).

Use of ICT in all aspects of governance can remove irrelevant human involvement in the processes of service delivery from the government to the citizens.

Hence, ICT has been promoting good governance by increasing transparency, accountability in public sectors. It helps to foster the process of decision making, public participation, and reinforcing fare delivery of goods and services to the people.

In this context the ICT developed the process of the assurance of the citizen's right to information and functions. Government sectors/institutions had been providing the information related to their accomplishments, achievements, programs, and plans through their websites or e-platform to the citizens.

Citizens also can send feedback or query on any plans, programs which are mostly affected to them from their home using the ICT tools. Through the online process, people can easily upload and download forms, filing taxes, doing financial transactions through e-banking services, getting jobs through different online job portals, etc.

2. E-Government and E-Governance: Theoretical background

### 2.1. Conceptualizing e-government and e-governance:

The concept of "governance comes equipped—explicitly or implicitly—with a qualifier that indicates that, whatever it is desirable and is a mechanism for managing common resources that can be applied to many goals such as sustainable, effective, sound, appropriate, honest, accountable, equitable, gender balanced and even democratic" (Schmitter, 2019). The e-government is considered to be a pivotal tool for modernizing government in the twenty-first century (United Nations, 2018).

2.1.1 Definitions of E-Government:

Both Electronic Government and Electronic Governance received numerous definitions in the literature, none of them becoming an accepted standard. For example, Organization for Economic Cooperation and Development (2006, p. 23) introduced four definitions of Electronic Government: 1) internet service delivery and other internet-based activities by government; 2) all uses of ICT by government; 3) transforming public administration through the use of ICT; and 4) the use of ICT, particularly the internet, as a tool to achieve a better government. As depicted in Figure. 1, further mapped these definitions into a democratic model of society with interrelated spheres of the political system, administrative system and

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص لملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   (نوفمبر 2021) / ص519-531

civil society and the four definitions of Electronic Government mapped into these spheres: definition 1 belongs to the intersection between the administrative system and the civil society, definition 2 belongs to the administrative system, definition 3 belongs to the intersections between the administrative and political systems and between the administrative system and the civil society, and definition 4 belongs to the intersection between all three spheres.

Figure N01: Democratic model of Society and Electronic Government
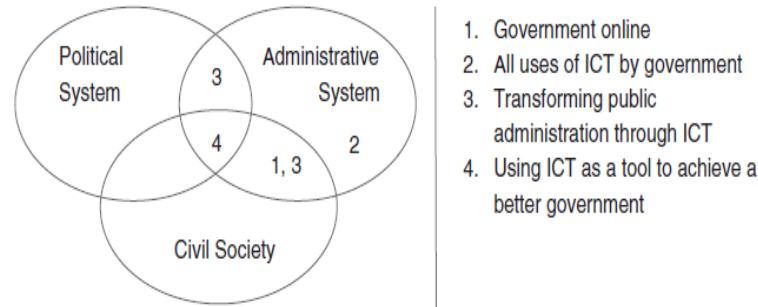
Source: Grönlund & Horan, 2005,p.72.

Gordon (2002) defines e-government as the use of ICT to improve the process of government. In a narrow sense it is sometimes defined as citizen's services, re-engineering with technology, or procurement over Internet (Signore *et al.*, 2005).

According to Spremić *et al.* (2009), e-government denotes the use of information technologies and the Internet for better delivery government services to citizens. It denotes also a more efficient management and improvement of interactions between government and citizens.

E-Government may be defined merely as an Internet-based instrument to deliver services for the public and enterprises, executing the e-government network require a necessary conversion of manufacturing operations in the public sector (Gustova, 2017). There are four pathways that must be considered, as described below:

2.1.2. Definitions of E-Governance:

The concept of e-governance started to appear in the early 1990 among American scholars. The prevailing ideas were "e-government", "electronic government", and "people online instead of in line". In that time, there were emergence of Internet and developments in processing capacity and data storage. This fact has significantly altered the environment for ICT use across society and in government.

UNESCO (2005) defines e-governance as the performance of governance via the electronic medium in order to facilitate an efficient, speedy and transparent process of disseminating information to the public, and other agencies, and for performing government administration activities.

E-governance is a concept larger than the concept of e-government since it can bring about a change in the way how citizens relate to government and to each other (Signore *et al.*, 2005). Indeed, e-governance embodies new concepts of citizenship, both in terms of citizen needs and responsibilities. Its objective is to engage, enable and empower the citizen.

Electronic Governance can be also defined as the application of technology by government to transform itself and its interactions with customers, in order to create impact on the society.

The definition clearly identifies five dimensions of EGOV, as shown in Table 1: government, technology, interaction, customers and society. Under each dimension, we list a number of defining elements like for example mission, role, values, operations, services, institutions, inspection and enforcement under the government dimension. The five

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص لملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   (نوفمبر 2021) / ص519-531

dimensions are meant to cover the whole EGOV space but the list of elements under each dimension is open-ended.

Table N01: Dimensions and elements of Electronic Governance.

Government	Technology	Interaction	Customers	Society
Mission	Equipment	Channels	Information needs	Demography
Role	Infrastructure	Channel Strategy	Service needs	Digital Inclusion
Value	Data	Interoperability	Producer roles	Institutional change
Operation	Social Media	Partnerships	Consumer roles	Social tension
Service	Services	Goals	Accessibility	Participation
Institution	Applications	Governance	Change	Globalization
Inspection		Transactions	Trust	Migration
Enforcement		Participation		Public value

Source: Grönlund & Horan, 2005.

2.3. Features of E Governance:

It has been proven from the concept of e-governance that it is a powerful means of public service in the present era. Some of its features can be found by observing the functioning of e-governance.

1. **De-bureaucratization:** Due to e-governance, the gap between the people and the government in all the services of the government is narrowing and the dependence of the people on the bureaucracy is also greatly reduced.

2. **E-Services:** Its main feature is the provision of services through the Internet. As a result, we get G2C, G2B, G2E, etc. services. This is already discussed in the section of 'types of governance'.

3. **International Services:** through e-governance, all the essential services can be delivered to the citizens who are living outside of their country for job purposes or any other reasons.

4. **Enhancing the right to express to the citizens:** Using the means of e-governance anyone can share their views with the government on any bill or act or decision taken by the government.

5. **Economic Development:** With the introduction of e-governance, various information like import-export, registration of companies, investment situations, etc. are available through the internet. As a result, time is saved, procrastination decreases, and economic dynamism increases.

6. **Reduce inequality:** using e-governance tools everyone can gather information and empower themselves. In this globalized world, knowledge is power, and means of e-governance empower us by providing relevant information at minimal cost, effort, and time.

2.2. Types of E-Governance:

E-Governance can be considered as the social inclusive policy for development of transparency and accountability of both people in society and administration. This policy involves providing the services to the people with collection of information through the institutional and communicational development.

It provides quality services in several ways. Those ways are also called as types of e-governance. These are mentioned below-

- Government to Government (G2G)
- Government to Citizens (G2C)

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص للملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   **531-519**ص / **(2021** نوفمبر**)**

   ▪ Government to Business (G2B)
   ▪ Citizens to Citizen (C2C)

All these possibilities are presented in figure N02.

Figure N02: Types of e-governance
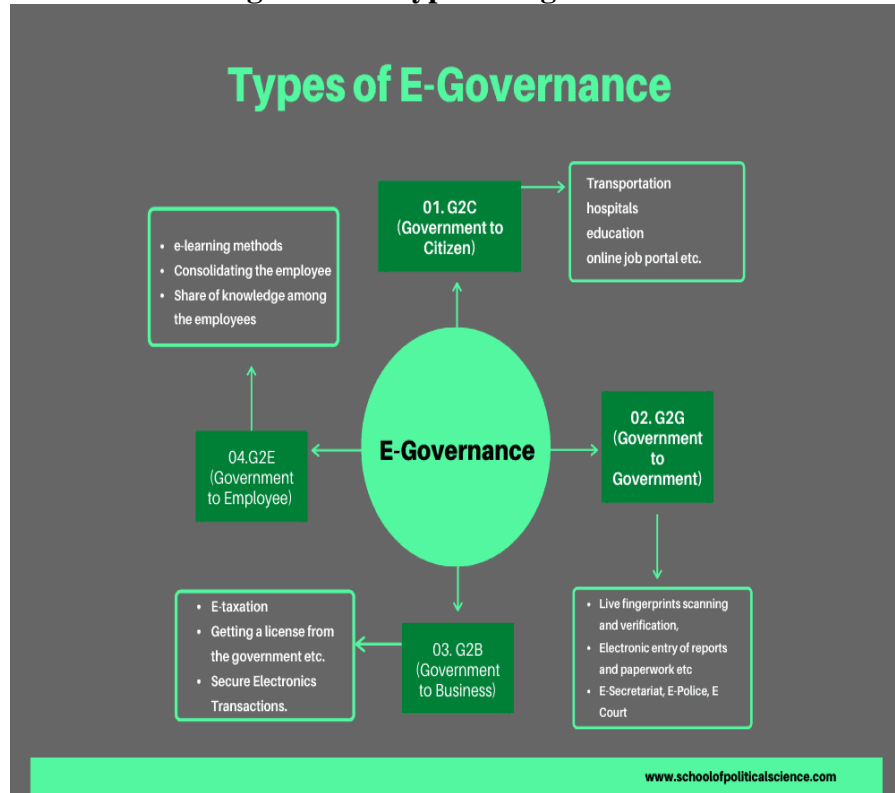
Source: Sakhri.E-Governance: Meaning, Objectives, Features, And 4 Types.

From last couple of years, scope of e-governance has been extended to a new dimension 'Employee to Employee (E2E), which links effective communication between employees of various departments and geographical regions.

The government-to-citizen (G2C) pathway furnishes citizens with the rights to search freely and transmit, produce, receive, and distribute information relevant to important issues such as state property management. These abilities increase the transparency of public authorities, monitoring citizen safety, budgetary process, and local governments.

The government-to-business (G2B) pathway focuses on interactivity among the government and private sector in the fields of customs clearance documentation, taxation, issuing licenses and certificates, registration and liquidation of legal entities, and the preparation and submission of reporting documentation. The use of IT in this form of interaction is to enable an upgrade to supply chain management and to maximize the country's competitiveness in business endeavors.

The government-to-government (G2G) pathway involves enhancing the capability of public authorities and local governments due to the utilization of an interdepartmental electronic information management system and the formation of new administrative practices. These actions, in turn, allow better coordination of public entities, cost reductions from an economic and social perspective.

Finally, the government-to-employee (G2E) pathway supports transactions such as payroll and pension plans, the level of satisfaction of employees, and enhancing the advancement of the labor market, which can indirectly improve labor productivity via altering national standards. This advanced IT intends to restore the unrestricted formation of political communication and furnish it to a more enlightened.

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص لملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   519-531ص / (2021 نوفمبر)

2.3. E-Government versus E-Governance:

E-government focuses on constituencies and stakeholders outside the organization, wether it is the government or public sector at the city, country, state, national or international levels. On the other hand, E-Governance focuses on administration and management within an organization, wether it is public or private, large or small.

E-Governance concerns internally- focused utilization of information and internet technologies to manage organizational resources-capital, human, material, machines and administer policies and procedures. E-Governance deals with the online activities of government employees. E-Government is a generic term for web-based services from agencies of local, state and federal governments.

Grönlund and Horan, (2005) pointed out the difference between Electronic Government referring to what is happening within government, and Electronic Governance (EGOV) referring to the whole system involved in managing the society (Dawes ,2008, p. 586).

The key difference between Electronic Government and Electronic Governance (EGOV) is that the former refers to what happens within the government, while the latter refers to the whole system involved in managing the society.

3. The opportunities of E-Governance:

ICTs have many features such as improvement public services, access to information, policy development framework, and citizen's engagement. Communication between government and citizens (G2C) and among citizens themselves (C2C) has shifted. The influence of world and the increasing demand from society has pushed some countries to establish technology initiatives and to develop policy framework to tackle and to cope with access to information Traditional government E-government Connected government Traditional models of E-services Value of services Service delivery and digital divides. Nowadays, it is well recognized that engagement in virtual electronic worlds is a must. The question is how and to what extent governments are able to use the ICTs to take advantage of e-governance. The new era entails multiples opportunities such as:

- Improvement of public services ;
- Access to information ;
- Citizen's engagement in governance ;
- Policy development.

3.1. Improvement of public services:

E-governance value for individuals is described usually through the saving citizen's time and avoiding complicated situations when dealing with public administration and acquiring different services for daily work life. Overall, e-governance reduce administrative burden and save time for citizens, which enhance the quality public service delivery.

3.2. Access to information:

Government agencies use ICTs to disclose information, provide public services and interact with citizens. In this context, agencies and institutions should disseminate information in a timely, equitable, efficient and appropriate manner. Overall, we can say that ICTs offer citizens and government a new way to create transparency, to promote accountability and to empower citizens.

3.3. Citizen's engagement on governance:

E-governance brings the opportunity of creating a two-way interaction among multiple stakeholders. Indeed, ICTs and networks facilitate interactions among individual citizens, business groups, and governmental institutions. Individuals and organizations interacting directly or indirectly with the government are known as the payers of e-government (Kolochalam, 2002).

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص لملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   (نوفمبر 2021) / ص519-531

E-government promises to make government more efficient, responsive, transparent and legitimate. Empirical studies have shown that certain gains are generated by the deployment of e-government systems (Kettani and Moulin, 2014).

3.4. Policy development:

Giving the new transformations, technology management and information access have to be enforced. Indeed, information policy framework should specify the rules and conditions under which information is gathered, used, protected, and shared by government, individuals and private sectors.

4. Sustainable Development:

In the last few years, there has been a tidal wave of organizations committing to "sustainability". They might set net zero carbon goals, diversify their workforce, or move into new, cleaner lines of organizations. And, this is just the front edge of the wave. The interest in sustainability is likely to grow even more over the next decade, as organizations feel pressure from social movements and environmental challenges.

4.1. Definition of Sustainable Development:

Following the World Commission on Environment and Development (1987), para. 27, we adopt the following definition of Sustainable Development (SD): Sustainable Development is the development that satisfies the needs of the present without compromising the ability of future generations to meet their own needs.

According to the World Commission on Environment and Development (1987), SD embodies two themes — egalitarianism and redistribution of wealth within and among generations, and environmental preservation and protection. In addition, the sustainability concept is refined into strong and weak sustainability (Andersen, 2007).

While strong sustainability does not permit the depletion of natural or other types of resources to be compensated through savings or investments in human, physical or other capital, weak sustainability allows for such compensation. Many authors use the term "sustainability" as equivalent to SD. For example, Allenby (2006) defines sustainability as "classical example of cultural construct, a symbol, idea, or phrase by which societies create and transmit meaning".

According to Adger and Jordan (2016), SD is underpinned by five principles:
1) to contribute to poverty alleviation;
2) to pursue environmental policy integration;
3) to achieve intra- and inter-generational equity;
4) to ensure public participation in decision-making ;
5) to address technological and environmental limits to growth.

Following these principles, SD goals include finding solutions to global problems affecting sustainability. To understand the complexities of SD problems, various models were developed. For example (Keiner, 2005):

1. Three pillars SD Model considers three dimensions of sustainability: economic growth, environmental protection and social progress.
2. Capital Stock SD Model formulates that the capital stock of SD is the sum of the capital stocks of the environment, the economy and the society.
3. Prism of Sustainability Model defines four dimensional goals of sustainability: 1) social — representing human capital and aimed at strengthening social coherence and justice, 2) environmental — depicting natural capital and aimed at safeguarding the environment, 3) economic — representing man-made capital and aimed at satisfying material needs, and 4) institutional — depicting social capital and promoting participation and co-decision making.

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص لملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   ص519-531 / (نوفمبر 2021)

4. Main Prism of Sustainability Model is a variation of the Prism of Sustainability Model with four dimensions: 1) nature — refers to the environment dimension and represents all natural capital, comprising stocks of renewable and non-renewable resources; 2) artifact — refers to the economic dimension and represents all man-made assets like roads, buildings, ports and others; 3) institution — refers to the institutional dimension and represents the organization of the society and the relationships between people; and 4) mind — refers to the social dimension and represents the individual awareness like worldview, knowledge and experience.

5. Egg of Sustainability Model is based upon the principle that a society is sustainable if people and the eco-system are both in good conditions. The aim of the model is to show the relationships between both elements, that people are inside the eco-system and both depend on each other.

4.2. The 3 Pillars of Corporate Sustainability:

Corporate sustainability has become a buzzword in companies big and small. Sustainability has three main pillars: economic, environmental, and social. These three pillars are informally referred to as people, planet and profits. Combined, these core components help corporations embrace sustainability in a way that is beneficial to efficiency, sustainable growth, and shareholder value (The Forum for Sustainable and Responsible Investment, 2020).

4.2.1. The Environmental Pillar: The environmental pillar is arguably the most important out of all three. Sustainable corporations are often the most innovative because they are constantly reviewing existing processes to find better, greener alternatives. By reducing their carbon footprint and packaging waste, corporations are also able to see a positive impact in their public reputation and financial returns.

4.2.2. The Social Pillar: The social pillar is all about having the support of employees, stakeholders, and the community. Treating employees fairly and having a respectful supply chain process leads to increased productivity and creativity, as well as strong retention and engagement. On the employee side, businesses refocus on retention and engagement strategies, including more responsive benefits such as flexible scheduling, and better learning and development opportunities. For community engagement, companies have come up with many ways to give back, including fundraising, sponsorship, scholarships and investment in local public projects.

4.2.3. The Economic Pillar: The economic pillar of sustainability is where most businesses feel they are on firm ground. To be sustainable, a business must be profitable. That said, profit cannot trump the other two pillars. In fact, profit at any cost is not at all what the economic pillar is about activities that fit under the economic pillar include compliance, proper governance and risk management.

5. Electronic Governance for Sustainable Development (EGOV4SD):

By Electronic Governance for Sustainable Development (EGOV4SD) we refer to ICT-enabled governance of the transition towards Sustainable Development. Based on the definitions of EGOV in Dawes (2008) and of SD in World Commission on Environment and Development (1987), we also propose the following comprehensive definition of EGOV4SD:

EGOV4SD is defined as the use of ICT to support public service, public administration and the interaction between government and the public while enabling public participation in government decision-making, promoting social equity and socio-economic development and protecting natural resources for future generations (Silvestre et al, 2019) as it is shown in table N02. EGOV4SD is distinct from the concept of sustainability of EGOV initiatives.

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص للملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   (نوفمبر 2021) / ص519-531

Table N02: E-Government for Sustainable Development

Social Sustainability	Economic Sustainability	Environmental Sustainability
• E-education • E-health services • Security • Transportation • Community planning • Inclusive social safety nets • Services to vulnerable groups • Welfare networks • Youth engagement • Silver innovation	• Online integrated business registration • Easy property registration systems • Open data licensed for commercial use • Easy tax payment systems • Innovative agricultural programmes • Employment opportunities portals	• MyEnvironment • Citizen-participating • Greenhouse emissions • Monitor energy, water consumption for savings • Green procurement • Disaster management

Source: prepared by the author

EGOV4SD comprises three primary and three secondary domains contributing. The primary domains are: Governance (GOV), Sustainable Development (SD) and Information and Communication Technology (ICT). The secondary domains are formed by intersections of any two domains: Electronic Governance (EGOV) is at the intersection of GOV and ICT, ICT for Sustainable Development (ICT4SD) is at the intersection of ICT and SD, and Governance for Sustainable Development (GOV4SD) is at the intersection of GOV and SD. The relationships between domains are generally asymmetric in the sense that one domain (solution domain) helps fulfill the goals of another domain (problem domain). SD is a problem domain in any relation, ICT is always a solution domain, and GOV is a problem domain in relation to ICT and a service domain in relation to SD. In the case of EGOV4SD, SD is the problem domain and EGOV is the solution domain.

Figure N03: EGOV4SD primary and secondary domains and their relationships.
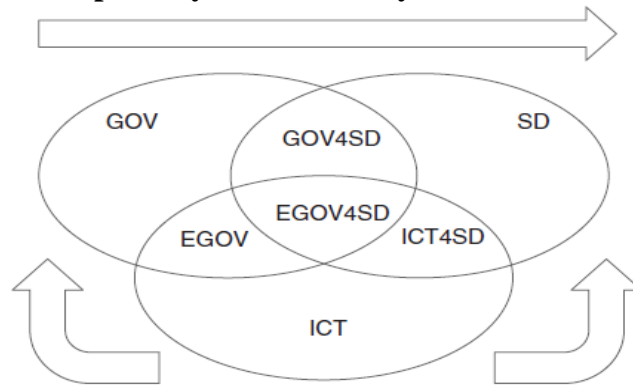
Source: Seele P., and Lock I (2017)

Figure N04 depicts the conceptual framework for EGOV4SD in detail, defined as a matrix between four dimensions of its problem domain and five dimensions of its solution domain. The cells of the matrix define the contribution space, matching problems and solutions across dimensions e.g. EGOV solution defined across the government, technology and interaction dimensions contributing to the social and environmental SD goals in Figure N04 (Contribution Space).

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية العدد الخاص لملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   ص519-531 / (نوفمبر 2021)

Figure N04: EGOV4SD conceptual framework

		EGOV				
		Government	Technology	Interaction	Customer	Society
		Solution Space				
SD	Social	Contribution Space				
	Environmental					
	Economic	Problem Space				
	Institutional					

Source: prepared by the author

By perceiving E-Gov practice through the lens of sustainability, the focus moves from being concerned with the success or failure of particular initiatives to looking at the fundamental structures that are continuously evolving, namely, decision making and information infrastructure. These two central aspects from fundamental backbone of E-Gov. If they are not working, it may result in lengthy discussions, costly projects and a lack of interoperability that would require citizens to navigate around a large number of different eServices. However, in the long run the issues might move to be even more problematic for the public sector as a whole, because of the increased cost of running separate eServices, and the continuous lack of overview and alignment of different services, processes and goals. Consequently, new challenges may emerge. In order to talk about sustainable E-Gov, we cannot assume, therefore, that all implementations actually contribute to a better public sector, rather, we must to be able to highlight how initiatives can be problematic also in terms of non-economic aspects. Technical, social and environmental factors to be considered, because such perspectives risk being diminished if economic incentives are focuses and ICT is seen as neutral.

Conclusion:

Digitalization has underpinned every aspect of our daily life. In this context, ICTs have enabled countries to develop e-governance initiatives. While there are opportunities available in implementing e-governance and in public service transformation, there are also many concerns. The new era entails multiple opportunities and also brings some challenges. Thus, ICTs should encompass certain principles and foundations regarding big data, information storage and management, dissemination/disclosure, etc. The concept of digitalization can also be an effective factor of sustainable development, so it should be embedded into the business, government and society core statement

In order to make progress in a new research area like Electronic Governance for Sustainable Development (EGOV4SD), there is a need to build a good understanding of the underlying concepts and to assess the state of this area and its immediate neighborhood. In order to fulfill this need, this research was set out to achieve three main objectives: 1) to propose a conceptual framework for EGOV4SD, 2) to define a research assessment framework for EGOV4SD based upon the conceptual framework, and 3) to determine the state of EGOV4SD research by applying the research assessment framework. These objectives were fulfilled as by a conceptual framework which was presented for EGOV4SD, building upon a conceptualization of EGOV and existing SD models. The framework identified two perspectives — EGOV and SD; five dimensions in the EGOV perspective — government, technology, interactions, customers and society; four dimensions in the SD perspective — social, economic, environmental and institutional sustainability; and six

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص للملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   **531-519**ص/ **(2021 نوفمبر)**

underlying domains — Governance (GOV), Sustainable Development (SD), Information and Communication Technology (ICT), Electronic Governance (EGOV), Governance for SD (GOV4SD), and ICT for SD (ICT4SD).

E-governance should be value-driven and not technology-driven. Benefits from e-governance do not take place simply by digitizing and placing it online. Instead, the aim is to provide better services to citizens and to the sustainable environment.

References:

1. Adger, W. N., & Jordan, A. (2016). *Sustainability: Exploring the processes and outcomes of governance. Governing Sustainability*. Cambridge University Press.

2. Allenby, B. (2006). The real death of environmentalism. *Environemntal Quality Management*, 16(1), 1–9.

3. Alsheri M. Drew S. (2010). E-government fundamentals. Proceedings of the IADIS International Conference ICT, Society and Human Beings 2010.

4. Andersen, M. S. (2007). *An introductory note on the environmental economics of the circular economy*. Public Health, 133–140. http://dx.doi.org/10.1007/s11625-006-0013-6.

5. Bhattacharya, M. (2013).*New horizons of public administration*. Jawahar Publishers. New Delhi.

6. Dawes, S. S. (2008). The evolution and continuing challenges of e-Governance. *Public Administration Review*, 68(6), 82–102.

7. Dodd, J. (2000). *Delivering on the E-government Promise. A Government Technology Industry Profile: NIC*. Retrieved from http://bilisimsurasi.org.tr/cg/egitim/kutuphane/NIC.qxd.pdf. Accessed on 13/ 8/ 2009 (consulted on 17/04/2021 at10h55)

8. Dwivedi, S., Bharti, A. (2005).E-Governance in India –Problems and acceptability. *Journal of Theoretical and Applied Information*, New delhi.

9. Gordon F.T. (2002). E-government-introduction. ERCIM News n.48.

10. Grönlund, A., & Horan, T. A. (2005). Introducing e-Gov: History, definitions, and issues. *Communications of the Association for Information Systems*, 15(1), 713–729.

11. Gustova, D. (2017). *The impact of e-government strategy on economic growth and social development*. ISCTE Business School, Departament of Economics. Spain.

12. Katyal, N. (2002).The white box administration. *Data Quest*. Jawahar Publishers. 20(14), 02-07.

13. Keiner, M. (2005). *History, definition(s) and models of "sustainable development*."Retrieved from http://e-collection.library.ethz.ch/eserv/eth:27943/eth-27943-01.pdf (consulted on 17/04/2021 at16h03)

14. Kettani D., Moulin B. (2014). E-*government for good governance in developing countries: Empirical evidence from the eFez Project*. International Development Research Centre.

15. Kolachalam S. (2002). *An overview of E-government. International symposium on earning management and technology development in the information and Internet age. The convergent paths of public and private organizations*. University of Bologna, November 2002.

16. Lau .E. (2003). *Challenges for e-government development. 5th Global Forum on Reinventing Government*. Mexico City, 2003.

17. Marthandan, G. and Tang, C. M. (2010). Information technology evaluation: Issues and challenges. *Journal of Systems and Information Technology*, 12(1), 37-55.

18. Organization for Economic Co-operation and Development (2006). Good practices in the national sustainable development strategies of OECD countries.

مجلة التميز الفكري للعلوم الاجتماعية والإنسانية   العدد الخاص للملتقى الافتراضي الدولي: الحوكمة الإلكترونية والتنمية المستدامة في الدول النامية الواقع والتحديات

E-Governance as an Imperative for Sustainable Development- Conceptual Framework   **531-519ص / (2021 نوفمبر)**

19. Sakhri,M. (2021).*E-Governance: Meaning, Objectives, Features, and 4 Types*. Retrieved from https://www.politics-dz.com/en/e-governance-meaning-objectives-features-and-4-types/ (consulted on 07/05/2021 at19h49)

20. Seele P., and Lock I (2017). The game-changing potential of digitalization for sustainability: possibilities, perils, and pathways. *Sustainability Science, 12* (2), 183–185

21. Signore O., Chesi F. Palloti M. (2005). *E-government: challenges and opportunities*.

22. Silvestre, B. S., and Ţîrcă, D. M (2019). Innovations for sustainable development: Moving toward a sustainable future. *Journal of Cleaner Production*, 2019 (Vol.208), 325-332

23. Spremić, M., imurina,N., aković, B., and Ivanov, M. (2009) . *E-Government in Transition Economies*. World Academy of Science, Engineering and Technology, Vol. 53. University of Zagreb, Croatia.

24. The Forum for Sustainable and Responsible Investment. (2020). *Sustainable Investing Basics*. https://www.ussif.org/sribasics (consulted on 23/04/2021 at14h11)

25. UNESCO. (2005). *E-government tool kit for developing countries*. Report

26. United Nations (2018). Report of the United Nations conference on sustainable development.

27. World Commission on Environment and Development (1987). *Our common future from one earth to one world*. Retrieved from http://www.un-documents.net/our-common-future.pdf (consulted on 13/04/2021 at14h09)