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Evolution of e-Government Narratives in the United Nations e-Government Survey Reports (2001-2020)

Master's thesis

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E-valitsuse Narratiivide areng Ühendrahvad e-Valitsuse Uuringuaruannetes (2001 –2020)

Magistritöö

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Author’s declaration of originality

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

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Abstract

To foster and support global development in e-government, the United Nations started producing the UN e-government surveys in 2001. Published once in two years, these e-government surveys provide a global ranking, show the challenges at hand, and propose best practices to member states. This research aims at identifying the presence of e-government narratives in the surveys and their evolution over time. The analysis is done within the lens of Draheim et al. (2020) pre-determined e-government narratives, i.e., democratic, technocratic, tech-savvy, and implementation narrative. The research aims at reviewing the development of e-government over the past 20 years from the perspective of the UN. More importantly, it contributes to the limited research work related to narratives in the field of e-government.

The researcher employs a thematic analysis methodology to code and analyze the surveys' content. The analysis shows that e-government narratives set in the UN e-government surveys have evolved over time. Overall, the implementation narrative has continuously been dominant with a slight upward trend, the technocratic narrative comes second with a nearly flat trend, and the democratic narrative follows with a steep upward trend, whereas the tech-savvy narrative comes last with a steep downward trend.

This thesis is written in English and is **forty-seven** pages long, including **six** chapters, **six** figures and **six** tables.

Annotatsioon

Ülemaailmse arengu soodustamiseks ja toetamiseks e-valitsuses alustas Ühinenud Rahvaste Organisatsioon 2001. aastal ÜRO e-valitsuse küsitluste koostamist. Avaldatud kord kahe aasta jooksul, annavad need e-valitsuse uuringud ülemaailmse reitingu, näitavad praeguseid väljakutseid ja pakuvad liikmesriikidele parimaid tavasid. Selle uuringu eesmärk on teha kindlaks e-valitsuse narratiivide olemasolu vaatlustes ja nende areng aja jooksul. Analüüs tehakse Draheim et al läätsede sees. (2020) eelnevalt kindlaks määratud e-valitsuse narratiivid nimelt; demokraatlikud, tehnokraatlikud, tech-savvy ning rakendamise narratiivid. Selle uurimistöö eesmärk on vaadata läbi e-valitsuse areng viimase 20 aasta jooksul ÜRO objektiivis. Veelgi olulisem on see, et see aitab kaasa narratiividega seotud piiratud uurimistööle e-valitsuse valdkonnas.

Teadlane kasutab temaatilist analüüsi metoodikat, kasutades Microsoft Exceli ja Adobe Acrobat Readeri tööriista küsitluste sisu kodeerimiseks ja analüüsimiseks. Analüüs näitab, et ÜRO e-valitsuses seatud e-valitsuse narratiivid on arenenud ületundideks. Üldiselt on rakendusjutustus olnud pidevalt domineeriv kerge tõusutrendiga, tehnokraatlik jutustus tuleb teiseks peaaegu lameda trendiga ning demokraatlik jutustus järgneb järsu tõusutrendiga, samas kui tehnilis-sakraalne jutustus tuleb viimasena järsu langustrendiga.

Lõputöö on kirjutatud Inglise keeles ning sisaldab teksti nelikümmend seitse leheküljel, kuus peatükki, kuus joonist, kuus tabelit.

List of abbreviations and terms

AI	Artificial Intelligence
PWC	Price Waterhouse Coopers
IMF	International Monetary Fund
OECD	Organization for Economic Co-operation and Development
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
UNPAN	United Nations Public Administration Network
MDGs	Millennium Development Goals
SDGs	Sustainable Development Goals
OECD	Organization for Economic Co-operation and Development
COVID-19	Coronavirus Disease of 2019
DPIDG	Division for Public Institutions and Digital Government
EGDI	E-government Development Index
OGD	Open Government Data
EU	European Union
GDP	Gross Domestic Product
ICT	Information and Communication Technology
IAC	International Academy of CIO
USSD	Unstructured Supplementary Service Data
SMS	Short Message Service

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1. Introduction

Over the past two decades, e-government has evolved from a novelty governance approach to global new governance normal. This shift is mainly fueled by the ever-growing demand for improved public services; hand in hand with the rapid development of new technologies (Kang & Wang, 2018). New ICTs allow individuals, private enterprises and governmental institutions to perform different administrative, operational and communication tasks in a new way; which leads to faster, automated and cost-efficient implementation of tasks at hand, among other benefits.

But what makes the biggest difference is the continuous advancements in the technology sector, which implies the production of advanced ICTs. For example, simple technologies such as mobile phones that initially performed calls only evolved to also send messages, and later into a smartphone. By using a smartphone, an individual performs a range of tasks such as personal communication, work-related communication and tasks, as well as accessing public services. Such technological advancements provide a better platform like never before for governments to enhance public services for the citizens, which benefits both parties in terms of cost-saving, effectiveness, improved service quality, service innovation, participatory decision-making, transparency and improved public management overall (ibid). Looking ahead, it can be assumed that governments and the citizens will continue to leverage the new technologies for a better e-government environment and better governance in general.

The United Nations & e-Government

Established through a charter that was signed on June 26, 1945, the United Nations (UN) is an international organization with 193 member states, up until today (United Nations 1, n.d). It is also shown that the United Nations charter gives it power as a unique international organization that oversees and acts on global issues such as peace and security, climate change, sustainable development, human rights, disarmament, terrorism, humanitarian and health emergencies, gender equality, governance, food production, among others. To achieve this immense task, the United Nations comprises the General Assembly, the Security Council, the Economic and Social Council, and many other committees and bodies that handle different tasks. The global power vested in the United Nations is observed through the fact that it sets a global agenda/ goals.

Millennium Development Goals (MDGs) that were set in 2000 guided the global development of all member states over the next 15 years, as they were due in 2015. The Millennium Development Goals, titled 2015 Time for Global Action for People and Planet are listed as follows:

1. “Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, Malaria and other diseases
7. Ensure environmental sustainability
8. Global partnership for development. ” (United Nations 2, n.d)

In line with continuous global development, another global agenda/ goals were set in 2015 to sustain the achievement of the MDGs; these are known as Sustainable Development Goals (SDGs). The latter was set in 2015 and they are due in 2030, with a 15 years’ timeline. The Sustainable Development Goals found under the 2030 Agenda for Sustainable Development lists the following goals:

1. “No poverty
2. Zero hunger
3. Good health and well-being
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry, innovation and infrastructure
10. Reduced inequalities
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace, justice and strong institutions

17. Partnerships for the goals. ” (UNDESA 1, n.d)

The aforementioned global agenda/ goals are set specifically by the United Nations Department of Economic and Social Affairs (UNDESA). This department focuses on global development and provides countries with all necessary guidance, tools and information towards achieving sustainable development and solving domestic solutions for holistic global development (UNDESA 2, n.d). Among the multiple divisions of the UNDESA includes the Division for Public Institutions and Digital Government (DPIDG). United Nations Public Administration (n.d) explains that the division aims at assisting United Nations member states to foster efficient, effective, accountable, transparent, innovative and inclusive public governance, and promote innovation in public administration—hand in hand with advancing the implementation of the 2030 Agenda and the Sustainable Development Goals (SDGs). In line with its responsibility, the DPIDG produces the United Nations e-government surveys. Debuted in 2001, these e-government surveys are released each other year and they provide a global overview of e-government development, contains a ranking of countries regarding e-government advancements, and recommends a way forward for countries lagging as well as high ranked countries to ensure continuous development in the field.

1.1 Research Objective

This research aims at identifying the evolution of e-government narratives in United Nations e-government survey reports that were published over the past two decades, the earliest having been published in 2001, and the latest having been published in August 2020. The United Nations e-government survey reports are produced by the Division for Public Institutions and Digital Government (DPIDG), a division of the United Nations Department of Economic and Social Affairs (UNDESA). United Nations Public Administration 1 (n.d) explains that the division aims at assisting United Nations member states to foster efficient, effective, accountable, transparent, innovative and inclusive public governance, and promote innovation in public administration—hand in hand with advancing the implementation of the 2030 Agenda and the Sustainable Development Goals (SDGs). The United Nations e-government survey reports at hand will be analyzed through the lens of Draheim et al. (2020) e-government narratives findings; the technocratic narrative, the tech-savvy narrative, the democratic narrative,

and the implementation narrative. In addition to identifying the various narratives present in the survey reports, this paper establishes a map that portrays the narratives´ patterns. This map shows the different faces that e-government has taken over the past 20 years, in the perspective of the United Nations, through its department of economic and social affairs (UNDESA). In order to achieve the research objectives, the author bases the research on the research questions briefed out in the next section.

1.2 Research Questions

Main research question: How did e-government narratives change in the United Nations e-government survey reports from 2001 to 2020?

The main research question aims at observing and analyzing the presence of various e-government narratives throughout the UN e-government surveys over the past 20 years, a period of time that has seen major global changes and development in all aspects of life; economically, technologically, and socially.

Research sub-question 1: How does the e-government development indexes (EGDI) relate to the e-government narratives observed in the UN e-government surveys?

This sub-question aims at analyzing the relation between EGDI levels and e-government narratives presented in the surveys. For example, if most countries improved their EGDI by investing in more government systems and training public servants, does it imply that the survey builds on this to immediately set a technocratic narrative?

Research sub-question 2: How are the statements justified when setting the narratives?

"While initially the political and managerial focus was on developing e-services within each public institution, with limited consideration being given to cross-organizational coherence, the focus today has clearly shifted towards coordinated services offering one-stop shops to citizens and businesses." (UNDESA, 2008). This sub-question aims at analyzing how the UN establishes such statements that heavily contribute to setting the narratives throughout the surveys.

1.3 Motivation for the Research

The researcher is motivated to carry out this research, because he seeks to analyze the development in the e-government field on a global scale, as observed in the lens of the United Nations. The UN e-government surveys stand out of the usual academic or institutional research in the field considering the power vested in the United Nations and its global influence. These surveys present e-government in a different light by analyzing the global progress, and making recommendations/ setting the agenda for the future; which is an interesting set of dynamics. In addition, the researcher is motivated to analyze these UN e-government surveys as there are very limited previous research works that analyze the surveys and their impact on the global development of the e-government field; which is quite surprising considering the fact that the United Nations reserves a lot of global power. Nevertheless, the e-government research field is still growing, and the researcher aims to make their contribution with this research paper.

In terms of research gap, the researcher observed that there is a very limited number of research related to UN e-government surveys in the e-government literature. Primarily, this might be the consequence of the long-term unavailability of the surveys on the UNPAN website for public viewing and download. However, there are various researchers who have studied the UN e-government surveys such as Ayanso et al. (2011), Lnenicka (2015), (Kabbar & Dell, 2013), Whitmore (2012), among others. For the limited literature available, the scope of the studies remains solely around the global e-government ranking, otherwise referred to as E-government development index (EGDI), or previously referred to as E-government readiness index. The researchers analyze and criticize the index, its framework as well as its formulation. It is no doubt that the E-government development index (EGDI) is a crucial part of the UN e-government surveys, but the reports contain other valuable information as well. In this same line, the researcher studies another important part of the surveys, which is the presence of e-government narratives and their evolution over time.

1.4 Structure of Work

The author structures this research paper in different sections intending to convey the research information in a logical manner for the readers to have a clear understanding of the research from its beginning until the end. The research paper structure is explained below:

- **Introduction:** This section provides a general introduction to the e-government research field, from its emergence in the late 90s up until today. Also, this section gives an overview of the United Nations (UN) operations with a focus on the Division for Public Institutions and Digital Government (DPIDG), a division under the United Nations Department of Economic and Social Affairs (UNDESA) that is responsible for the production of the UN E-government surveys, which are the base for this research paper. In addition, this section outlines the research question.
- **Literature review:** This section provides an overview of previous research work related to the fundamental concepts of this research paper, which are UN e-government surveys, e-government narratives, as well as e-government in general.
- **Theoretical background:** This section of the research paper introduces the reader to the different theories that serve as the base for the various e-government narratives.
- **Research methodology:** This section dives into the techniques that were used to conduct the research and to analyse the results. The techniques, process and tools used to conduct this research are clearly explained in this section.
- **Research findings & discussion:** After understanding the way the research was conducted from the research methodology section, this section shares the research findings and contains a discussion part where the author dives deeper into the research findings.
- **Conclusion & future research:** As the final section, it contains a summary of the research and provides a direction for further research work that could be conducted, in line with this research paper.

2. Literature Review

2.1 Introduction

In the attempt of defining the term ‘e-government’, various scholars, institutions and international organizations have established different definitions. To get the full picture of the field, it is important to examine all the different definitions available, to identify common points in the literature and adopt a working definition for this research. Definitions.net (2021) defines a working definition as a definition that is chosen to be used for a specific project/ occasion, which might not fully align with well-known or established definitions.

Estevez & Janowski (2013) referring to OECD (2013) presents four definitions of e-government: internet service delivery and other internet-based activities by the government; all uses of ICT by the government; transforming public administration through the use of ICT; and the use of ICT, particularly the internet, as a tool to achieve a better government. All the four aforementioned definitions present a number of similarities, as discussed below. Firstly, there is an emphasis on leveraging Information communication technologies (ICTs), which imply the use of computers, servers, internet connectivity, computer systems, tablets, smartphones, and other technological tools by the government. Leading to the second point, the ICTs is solely dedicated to delivering public services to different stakeholders. Lastly, the end goal for e-government is presented as improving the government as a whole, but more specifically the public administration. Earlier on, Al Gore (1997) introduced e-government as the use of ICTs to improve government operations and to offer better services to citizens, in the various aspects of a government: justice system, social benefits, healthcare, official documents, etc. The then Vice president of the United States of America was ahead of his time, as he was also envisioning an advanced public administration, powered by ICTs. Two decades later, most of the ideas he had mentioned in his paper, which seemed very ambitious and far-fetched by then, have come to life. The technology advancements presented governments with opportunities to digitize the public sector and provide public services online, commonly referred to today as e-government.

Until today, the e-government field is perceived as a relatively young field. Nevertheless, it is obtaining a lot of interest from researchers, hence the emerging e-

government research field. The latter is not yet an established field compared to mature field such as public administration; but the continuous establishment of e-government study programs in various institutions, promises exponential growth of the field. On the flip side, the upward trend of implementation of various e-government initiatives by different countries calls for more research. An increase in research in the field will benefit governments as it will provide them with tools to analyze their projects, learn from each other and make better-informed investments in terms of e-government. On an international level, it is also noticed that international organizations are pushing for the e-government agenda in different ways, as seen in United Nations Sustainable Development Goals and other global development goals. It can be predicted that the field will keep growing, with more research work, at the same time Heeks & Bailur (2007) point out that as the field grows, special attention should be on the direction and the quality of the research projects. On a side note, it should be noted that e-government research field literature reviews such as Heeks & Bailur (2007) and others, mostly have academic articles as their data source. It was observed that official publications such as United Nations e-government survey reports or OECD digital government index are not commonly used as sources of data for academic articles in the e-government research field.

2.2 United Nations Perspective on e-Government

According to United Nations Public Administration 2 (n.d), the UN defines 'e-government' as the use of ICTs in government operations to offer services to citizens and business in an efficient and effective way. Since the research is centered on United Nations e-government surveys, this will be the working definition. Also, it is explained that the e-government principle is improving public sector operations to deliver better and faster public services, at a cheaper cost. As a result, e-government enables governments to achieve the following; ability to respond to citizen demands, transparency, accountability, social inclusion and citizen trust. This definition covers various aspects and provides a guideline to the UN Member States as they implement e-government projects. To offer hands-on guidance, the UNDESA started publishing E-government surveys, refer to Table 1 for all the titles and subtitles of UN e-government surveys published from 2001-2020. United Nations Public Administration 3 (n.d) explains that United Nations E-government Surveys present a systematic assessment of

the application of ICTs towards the transformation of the public sector to achieve effectiveness, efficiency, access to public services, accountability as well as citizen participation for all the Member States. It is argued that since the launch of UN E-government surveys in 2001, they have become invaluable tools for ranking, mapping and measuring e-government development for various stakeholders such as policymakers, digital ministers, analysts and academics (ibid). An example is the Estonian government that celebrated ranking 3rd place in the UN e-government survey 2020, moving up from 16th place in the 2018 survey (e-Estonia, 2020).

Table 1. UN e-government surveys titles and subtitles (2001-2020)

Year	**Survey Main Title**	**Survey Subtitle**
2001	Benchmarking E-government: A Global Perspective	Assessing the Progress of UN Member States
2003	UN Global E-government Survey 2003	--
2004	Global E-government Readiness Report 2004	Towards Access for Opportunity
2005	Global E-government Readiness Report 2005	From E-government to E-inclusion
2008	UN E-government Survey 2008	From E-government to Connected Governance
2010	UN E-government Survey 2010	Leveraging E-government at a time of Financial and Economic Crisis
2012	UN E-government Survey 2012	E-government for the People
2014	UN E-government Survey 2014	E-government for the Future We Want
2016	UN E-government Survey 2016	E-government in Support of Sustainable Development
2018	UN E-government Survey 2018	Gearing E-government to Support Transformation Towards Sustainable and Resilient Societies
2020	E-government Survey 2020	Digital Government in the Decade of Action for Sustainable Development—With Addendum on COVID-19 Response

It is observed that while UN e-government surveys are specifically dedicated to the e-government field, they still touch on different global aspects such as social phenomena, economical situations, health crises and natural disasters, among others. For instance, UNDESA (2010) through the 2010 UN e-government survey sheds some light on how e-government could be leveraged for financial regulation and monitoring, as the economy rebooted. It is worth mentioning that this survey was released during times of a global financial crisis. Despite the situation, the survey presents investing in e-government as a wise decision for governments, despite the economic hardships that were faced at the time, because it promised a lot of benefits in the years to come. Another interesting case is UNDESA (2012); the 2012 UN e-government survey emphasizes the then global change where the people/ the citizens were being more empowered through increased access to information. This global shift implied that businesses and governments had to adjust to the people's wants and lifestyle in order to reach them, in other words, the consumer had to be provided with a lot of options for them to choose what is more comfortable. A shift that can be linked to the emergence of the smartphone, which is literally a mini-computer on its own. The survey manages to co-relate this phenomenon to the e-government field, more specifically the service delivery aspect.

Furthermore, UNDESA (2020) through the 2020 UN e-government survey, and the most recent, was published with addendum on COVID-19 response, an ongoing health crisis. The survey portrays how e-government took the center stage more than ever before, given that it became the essential channel for leadership, collaboration and communication between governments and their citizens—keeping in mind that the COVID-19 health policies and public restrictions are keen on avoiding face to face interactions at all cost. While UN e-government surveys are long reports, the main highlight for various stakeholders remains the e-government development index (EGDI). Statista (2021) defines EGDI as a ranking that assesses e-government development on a country's level and builds on three aspects; telecommunication infrastructure index, human capital index, and online service index. It should be noted that the assessment is only done for UN member states.

2.3 Other e-Government Assessment Initiatives

While the UN e-government surveys remain probably the most recognized e-government global assessment initiative, there are other assessments that are conducted by various institutions both on regional and national levels. Through an explorative study, Alarabiat et al (2018) brings to light various e-government assessments. At regional levels, the following initiatives were mentioned. First, the European Union E-government Benchmark. The primary initiative for this benchmark debuted in 2002. This study aims at identifying trends, challenges, innovative practices and opportunities of e-government for EU member states as well as other European countries. In line with the European e-government action plan, the benchmark focuses on these key aspects:

i. "Modernize public administration with ICTS,
ii. Use key digital enablers,
iii. Enable cross-border mobility with interoperable digital public services,
iv. Facilitate digital interaction between administrations and citizens/ businesses for high-quality public services." (ibid, p.4)

Second, the WASEDA-IAC International Digital Government Ranking. The study is conducted by the Institute of e-government at Waseda University in Tokyo, Japan, in partnership with the International Academy of CIO. Initiated in 2005, the benchmark aims at observing e-government development progress, to identify new trends and recommend best practices to participating countries, which amounts to 64 countries. The study builds upon the following indicators:

i. "Network preparedness/ digital infrastructure,
ii. Management optimization,
iii. Online service/ applications,
iv. National portal/ homepage,
v. Government chief information officer,
vi. Digital government promotion,
vii. E-participation and digital inclusion,
viii. Open government data,
ix. Cyber security,
x. The use of emerging ICT." (ibid, p.4)

Third, the OECD digital government studies. The organization that has been conducting various studies on digital government since 2003, debuted more specific studies about

e-government in 2014 based on the OECD Recommendation of the Council on Digital Government Strategies. The studies focus on the evaluation of OECD member countries plus two partner countries' progress towards the implementation of OECD Recommendation and overall progress in public sector digitization. These objectives are achieved through two surveys; the Digital Government Performance survey and the open Government Data survey. The OECD recommendations are structured in three main pillars and in 12 principles:

i. "Openness and engagement pillar:
    a. Transparency and inclusiveness,
    b. Engagement and participation,
    c. Creation of a data-driven culture in the public sector,
    d. Protecting and ensuring security,
ii. Governance and coordination pillar:
    a. Leadership and political commitment,
    b. Coherent use of digital technology across policy areas,
    c. Effective organizational and governance frameworks,
    d. Strengthen international co-operation with other governments,
iii. Capacities to support implementation pillar:
    a. Development of clear business cases,
    b. Reinforced ICT project management capacities,
    c. Procurement of digital technologies,
    d. Legal and regulatory framework" (ibid, p.5)

At national levels, Alarabiat et al (2018) identified a number of e-government assessment initiatives. To begin with, the Norwegian e-government assessment. The agency for Public Management and e-Government (Difi) in Norway is in charge of leading the digital government strategy, and part of its responsibilities includes monitoring the progress of the strategy. Annually, Difi produces statistics and reviews using an instrument that encompasses six aspects:

i. "Website and services are easy to find,
ii. Website and services are credible,
iii. Website and services are safe to use,
iv. Website and services work well,
v. Website and services are easy to use for everyone,

vi. It is easy to get help" (ibid, p.6).

Another mentioned initiative is e-Government MONITOR in Germany. The initiative focuses on the design of e-government online services and their acceptance; it relies on collecting information on user behaviors and preferences. Since 2012, Austria and Switzerland are included in the study. The report published in the German language builds on a quantitative survey that gathers information from 3000 citizens in the three countries. The survey focuses on the usage and acceptance of e-government services, privacy issues, the satisfaction of citizens, as well as drivers and challenges facing e-government. Next, the Indian Ministry of Electronics and Information Technology (MeitY) conducts national assessments, as part of the monitoring and evaluation of the "Digital India" initiative that aims at transforming the country's economy and society through digital technologies. The assessment analyzes various e-government projects at state levels, as well as on the national level. The assessment builds upon a framework that comprises of the following dimensions:

i. "The cost of the service,
ii. The quality of the service,
iii. The quality of governance,
iv. Overall assessment" (ibid, p.7).

Furthermore, the e-government Transformation Measurement in Saudi Arabia is also mentioned. As part of the nation's e-government program "YESSER", the project was launched to evaluate the progress of e-government implementation in various government agencies. The YESSER program established a framework that shows the different phases of e-government application upon which agencies are benchmarked. The phases are listed as follows:

i. "The building phase,
ii. The availability phase,
iii. The excellence and enhancement phase,
iv. The integration phase" (ibid, p.7).

Lastly, the Smart Government Indices in the United Arab Emirates (UAE). This project is managed by the Telecommunications Regulatory Authority and the Prime Minister's Office, and it aims at strengthening the public sector in UAE by assessing the development of governmental online and mobile services. This is possible by

recommending an online survey tool to government agencies, which they use to measure various indices. The indices focus on three elements:

i. "The level of public awareness,
ii. The usage,
iii. The satisfaction of electronic/ mobile services" (ibid, p.8).

2.4 Previous Research Work

2.4.1 UN e-Government Surveys Related Research

Reading through the UN e-government surveys from 2001 until 2020, it is observed the there was a continuous expansion in their scope, the number of topics covered keeps increasing; which can be linked to the continuous development in the e-government field. Nevertheless, the highlight of UN e-government surveys remains the E-government Development Index (EGDI). As shown below, this index remains the main critic for various scholars who analyze the UN e-government surveys; with the majority making a detailed analysis of the index calculation and criticizing its formulation. As a result, a number of flaws have been pointed out by various scholars; while others have proposed a better formulation and calculation of the index. Prior to looking at the different critics in the academic literature, it is important to note that the EGDI has gone through some terminology over time. As seen in the UN e-government surveys from 2001 until 2008, the global e-government ranking was referred to as the E-government Readiness Index; whereas the UN e-government survey from 2010 until the 2020 one refers to the global ranking as E-government Development Index, the late which has since been known and adopted.

To begin with, Lnenicka (2015) explains that the EGDI is a ranking that builds on the average score of three essential e-government dimensions, namely; telecommunication connectivity, provision of online services, and human capacity. Respectively, these dimensions provide the following indexes; Telecommunication Infrastructure Index (TTI), Online Service Index (OSI), and Human Capacity Index (HCI). It is explained that the EGDI aims at providing a ranking to compare the e-government levels of development between countries, and it is noted that its conceptual framework remains unchanged since its establishment in 2001 (ibid). "The EGDI is not telling the full story; therefore the index needs to be adjusted to take into account cultural and economic

factors. While the index has been renamed 'development', it still measures e-government readiness" (Kabbar & Dell, 2013). These authors make a straight critic that shows some of the weaknesses of the EGDI with a spotlight on social aspects such as willingness, cultural behavior and economical aspects such as GDP, which the index seems to not reflect fully. Henceforth, it is argued that despite the change of terminology, the index still measures the e-government readiness instead of the e-government development (ibid). Whitmore (2012) brings in another contribution by criticizing the grouping of variables under the three main indices that are used to calculate the EGDI; namely online service index, telecommunication infrastructure index, and human capital index. It is argued that the variables are grouped by intuition instead of basing on statistical evidence. The analytical study adds that a failure in the statistical validation of the grouping leads to indexes that are less credible and statistically flawed.

Moreover, Ayanso et al. (2011) point out that UNDESA (2010) acknowledges the presence of some concerns related to the composition of the EGDI in the UN e-government surveys. It mentions the lack of a global e-government measurement framework and how it should be designed to be a silver bullet that will remain relevant over time.

2.4.2 e-Government Narratives Related Research

Currently, the "narrative" research topic rarely appears in the e-government literature. Cambridge Dictionary (n.d) defines narrative as a specific way to explain or understand an event. In other words, it is how the story about something is told; it can be a person, a topic, an event, among others. The narrative is important because it affects the way the topic being presented is perceived, either positively or negatively, boring or interesting, and can eventually make that specific topic a trend or not. When it comes to a research field, researchers produce their work while setting various narratives, both consciously and unconsciously. Because in the end, the research wants their work to be perceived and received in a certain way. Narrowing the focus to the e-government research field, there is a limited number of research works on e-government narratives. Below is presented some of the previous research works on the e-government narrative topic.

First, Yildiz & Saylam (2013) researched e-government discourses in Turkey. The inductive analysis paper offers a new perspective about the understanding of e-

government in Turkey, through a public value framework. The research analyzes news and commentaries related to e-government projects in Turkey. The data is obtained from the three major Turkish newspapers in their publications made only in the year 2010. As results, the authors identified nine discourses. Five positive discourses; government reform, inevitability, increase in government revenues, creating equality of opportunity, and harmonization with the world and the EU; on the flip side, four negative discourses: overcoming technical problems, overcoming performance problem in government, overcoming information security breaches, and overcoming participation problems. The aforementioned were the discourses used by selected newspapers while presenting e-government projects to the general audience. No doubt, it can be argued that these discourses greatly contributed to shaping the Turkish citizens' perception and understanding of e-government. Bekkers & Meijer (2015) also presented a metatheory of e-government paper, which relates to narratives presented in the e-government research field. Through a systematic literature review, the paper tests and develops a tri-dimensional metatheory; which could be used to guide the e-government research field. Earlier on, Bekkers & Homburg (2007) sought to identify the different myths about e-government that were being presented in the literature and how they were affecting the implementation of e-government projects and the establishment of e-government policies. In other words, this research work was analyzing how the story of e-government was being told and presented by researchers and other stakeholders.

Recently, Draheim et al. (2020) published a paper about narratives and background narratives of e-government. This paper utilizes a thematic analysis methodology to analyze the top 100 cited e-government papers, plus an additional 20 papers published between 2018-2019. Unlike the aforementioned previous research works related to the topic that focuses on a specific context or have a limited scope, this paper focuses solely on analyzing the various narratives that are present in the current e-government literature, as a whole. As a result, the researchers identified four e-government narratives namely; the technocratic narrative, the democratic narrative, the tech-savvy narrative, and the implementation narrative. Wijk, Lemke & Draheim (2020) builds upon the narratives established by Draheim et al. (2020) to conduct a comparative case study about democratic and technocratic e-government narratives in post-soviet states. The research uses a mixed research methodology of literature review

and surveys to analyze the perception of digital initiatives in post-soviet states, in the scope of democratic and technocratic e-government narratives.

To sum up this section, a look back at the past 20 years shows that the e-government field is exponentially growing with the implementation of various e-government projects by governments around the world, hand in hand with the continuous development of novel technologies that governments leverage towards improving public services, and the public administration sector as a whole. It is also observed that e-government has attention from various international, regional and national organizations; which shows potential in the field and promises a continuous growth. On the side of academic research, e-government as a research field is growing as observed through the ever increasing amount of literature. However, as the research field grows, it is important to be mindful about the narratives and how e-government is presented to different stakeholders. This paper builds upon the four e-government narratives established by Draheim et al (2020) to analyse the UN e-government surveys that were published over the past 20 years. While research on e-government narratives topic remains limited, this paper seeks to contribute to the topic related literature and potentially foster more interest regarding the research topic.

3. Theoretical Background

Draheim et al. (2020), a paper about narratives and background narratives of e-government, established four e-government narratives i.e., the technocratic narrative, the democratic narrative, the tech-savvy narrative, and the implementation narrative. In order to provide a clear background and understanding of the narratives upon which this research work utilizes, below is provided a detailed discussion of each narrative and its background theory/ concept.

3.1 The Technocratic Narrative

The technocratic narrative is one of the four e-government narratives that were established by Draheim et al. (2020). It is presented as the face of e-government that solely focuses on implementing e-government initiatives to reduce public sector spending. In the same line, Wijk, Lemke & Draheim (2020) explain that the technocratic narrative revolves around the idea of treating a citizen as a customer. This narrative builds on the concept of New Public Management, hereinafter referred as NPM. According to Hood (1991), NPM is a public sector management that focuses on a better allocation of public resources through borrowing well-proven tools and techniques from the private sector. As a result, this allows governments to improve their performance, be more accountable, and use fewer resources to deliver more results. NPM places an emphasis on efficiency in delivering public services. Diefenbach (2009) adds that NPM also touches upon change management in the public sector, which implies the change from a decentralized organizational structure to a more flexible and less hierarchical structures. It is mentioned that this leads to simpler internal processes, quick decision making, as well as fast delivery of services.

3.2 The Democratic Narrative

On the other hand, Draheim et al. (2020) present the democratic narrative as the face of e-government that aims at putting citizens at the center of governance. This narrative is very keen on the involvement of citizens in public decision making. Similarly, Wijk, Lemke & Draheim (2020) explain that the democratic narrative is founded on the idea of treating a citizen as a citizen. Emerging e-democratic terms such as e-participation, e-budgeting, e-democracy, and e-voting, among others can be classified under this narrative. When it comes to democracy in the scope of e-government, it is worth noting that various e-government models such as Wescott, (2001); Hiller & Belanger (2001) and Ronaghan (2001) mention digital democracy or participation step of e-government among the higher maturity levels, as discussed by Norris & Coursey (2008). They add that these e-government models suggest that high presence of e-government will lead to an improved relationship between the citizens and the government.

It can be argued that the democratic narrative builds on the concept of democracy. Dahl (1994) explains that the origins of democracy can be traced back to Greece in the fifth century B.C. He continues to show that it kept developing with time, throughout city-states within Europe. At this point, democracy was manifested by the entitlement of the citizen to participate in the city assembly. Afterwards, the establishment of nation-states brought new implications to the concept of democracy. By the end of the twentieth century and arguably up until today, democracy is observed through the rights of every adult citizen to participate in governmental decisions through voting, running for office, express their political opinions freely, and form independent organizations either politically affiliated or related to other interests (ibid).

3.3 The Tech-savvy Narrative

Next, Draheim et al. (2020) present the tech-savvy narrative as the face of e-government that focuses on transformation of the government and the society as a whole, due to technology. Projected in real-life government, they mention that this narrative implies that governments are led by technocrats. This narrative is the most criticized because of its promise in the transformation of the government through the use of disruptive technologies such as the trendy blockchain and AI terms, the jargons repeatedly used by the majority of leaders today, to sound tech-savvy and modern. Critics like (Norris, 2010) often point out that e-government will remain service-oriented and informational, rather than transformational as preached by tech-savvy narrative supporters.

> "In 2020, there will be a good bit more e-government, but it will not be significantly different from today. Governmental websites will be more sophisticated (mainly because of continuing innovations in IT), and they will have a better look and feel, greater ease of use, more and better-quality applications, and more information and services. But e-government will not provide a substantially greater range of transactions or a greater degree of interactivity, will not provide much more by way of e-participation or democracy, and will not have produced e-transformation" (ibid, p.181).

Nevertheless, this comment by Norris can be criticized for bias based on the U.S e-government. This is because there are other countries, notably in the EU that were able to achieve some degree of e-transformation. An example would be Estonia, with its re-

known e-voting, which has been operating with high level of success for more than a decade. As outlined by Gibson, Krimmer, Teague and Pomares (2016), Estonia e-voting has achieved a remarkable global level of success, and other countries such as Australia and India are conducting large-scale trials in terms of e-voting. Also, it is shown that Finland, Lithuania, Iceland and the United Kingdom are still reluctant about the transformation, but slowly walking in the e-voting direction.

3.4 The Implementation Narrative

Lastly, Draheim et al. (2020) present the implementation narrative. This narrative stresses the fact that e-government is not all about technology, which is a common misconception. It is rather explained that e-government goes beyond the technology aspect to include the legal aspect, the change in business process, as well as the shift in mindset of the public servants and the society in general (ibid). Simply put, this narrative presents e-government as a multifaceted field.

4. Research Methodology

4.1 Introduction

This section provides a detailed account of the research process. It starts with explaining the research methodology that the research employed, and continues to show its application on this specific research paper. This section also explains the data collection process, its analysis, and outlines the various tools that were used.

4.2 Methodology

This research analyzes the evolution of e-government narratives throughout 11 UN e-government survey reports that were published between 2001 and 2020. Since this research requires identifying narratives in long texts, the researcher was directly prompted to use a qualitative research method. In this case, the researcher decided to

employ a thematic analysis methodology. Braun & Clarke (2006) present thematic analysis as a method that allows researchers to conduct a detailed analysis of data in order to identify themes present in the data. Thematic analysis is presented as a methodology that organizes, simplifies and describe the data at hand in great detail. The method comprises of six phases namely;

- "Familiarizing with the data,
- Generating initial codes,
- Searching for themes,
- Reviewing themes,
- Defining and naming themes,
- Producing the report." (ibid, p.16-23)

Thematic analysis is used to analyze qualitative data sets that can include interviews, speeches, broadcasts, focus group discussions, and other audio-visual formats. On the other side, it is used to analyze a range of text data such as articles, reports, surveys, among others. (ibid)

4.2.1 Step 1: Familiarizing with the data

As shown by Braun & Clarke (2006), after collecting or receiving the research data, the very first step for thematic analysis consists of reading through the data. This step allows the researcher to get familiar with the data and have initial ideas about the data set, prior to beginning the actual coding. For audio-visual data, it is in this phase that all the data must be transcribed, since the next steps will require data in text format. In this line, it is recommended to do a repeated reading of the data to grasp its depth, as it already allows the researcher to observe some early patterns within the data. This familiarization helps a lot throughout the analysis done in the next steps. In addition, Maguire & Delahunt (2017) recommends taking some rough notes about first impressions about the data.

4.2.2 Step 2: Generating initial codes

This phase is where the researcher beings to systematically organize their data in a meaningful way, which is done in line with the research questions and the analysis technique. Thematic analysis offers two data coding/ analysis choices; theoretical or inductive (ibid). Otherwise referred to as theory-driven or data-driven analysis, Braun &

Clarke (2006) explain that theory-driven analysis is done in regard to a specific scope in which the researcher wants to analyze the data; whereas the data-driven analysis will analyze the whole data set. In other words, the theory driven coding approaches the data set with a particular interest or agenda; while the data driven coding approaches the data with curiosity to find out information present within the entire data set. For both analysis techniques, it is recommended to identify as many codes as possible at this phase, which are narrowed down to a small number in the following steps (ibid). The logic is to avoid ignoring any codes, since any of them might prove to be significant later in the process.

As the researcher codes, this phase simultaneously requires to identify data extracts and match them to respective codes. For printed data, using highlighters, colored pens, and post-it notes are some of the recommended techniques for coding (ibid). For digital data, Maguire & Delahunt (2017) recommends various techniques such as using Microsoft Excel for the coding. Also, qualitative data analytic software such as Nvivo and ATLAS are recommended for massive data sets. In case of a research team project, it is recommended for team members to perform coding separately, compare and merge the various codes generated at the end of this phase.

4.2.3 Step 3: Searching for themes

According to Braun & Clarke (2006), this is the phase where codes start to be organized in smaller groups, known as themes. The process is done by identifying codes with more or less the same theme, and grouping them together. It might not be a straightforward phase; therefore the researcher might need to play around with placing various codes in different themes to see where it fits better. In case there are codes that don't seem to fit anywhere, it is recommended to have a 'miscellaneous' theme to come back to as the analysis progresses. Also, it is mentioned that using visual representation tools such as tables, mind-maps, or pieces of paper can be very helpful in this phase. The aforementioned will allow the researcher to develop a preliminary thematic map, which will be refined in the next steps. At the end of this phase, the researcher is expected to have preliminary themes, sub-themes, and related coded data extracts (ibid).

4.2.4 Step 4: Reviewing themes

Braun & Clarke (2006) explain that this phase consists of revising, reordering and refining the preliminary themes. At this point, some themes can be grouped together into one and others can be removed, it all depends on the researchers' reflection on the analysis. It is suggested to perform this phase in two parts; part one consists of reviewing all the data extracts based on their relevance and cohesion with the specific code they are linked to. Once this is completed, part two consists of doing the same process of review, but focusing on the theme and their relevance and cohesion to the whole data set. At the end of this phase, the researcher is expected to have a revised thematic map, with the revised themes and codes, if necessary. To complete this phase, Maguire & Delahunt (2017) propose to researchers to use these guiding questions:

- "Do the themes make sense?
- Does the data support the themes?
- Am I trying to fit too much into a theme?
- If themes overlap, are they really separate themes?
- Are there themes within themes (subthemes)?
- Are there other themes within the data? " (ibid, p.3358)

4.2.5 Step 5: Defining and naming themes

This phase consists of understanding each theme, and how they relate to each other, which is illustrated by the final thematic map (ibid). Braun & Clarke (2006) add that this phase requires the researcher to refine, define and analyze each theme thoroughly in order to understand its background narrative. At this point, the researcher should be able to explain each theme in a few sentences. Also, the researcher should establish final names/ titles of the themes, which should be concise and self-explanatory.

4.2.6 Step 6: Producing the report

The final phase of the thematic analysis methodology consists of presenting the findings in a report. The report write-up process is defined as telling the complex story of the data at hand in an engaging and valid manner for the readers. The report should present

the findings in a logical, non-repetitive, concise and coherent manner. It is highly advised to use examples of data extracts within the report to provide evidence of the theme in the data (Braun & Clarke, 2006). Also, it is mentioned that the report should be more than data presentation and description. The researcher should set an analytical narrative and make arguments in respect to the research questions and objectives (ibid).

4.3 Application of the Chosen Methodology

4.3.1 Overview

This research analyzes 11 United Nations e-government survey reports that were published between 2001 and 2020. The research data collection was done through internet search, more specifically all the data was gathered from the United Nations public administration research open-source website (https://publicadministration.un.org/en/Research/UN-e-government-Surveys) as of September 2020. The total volume of textual content of the surveys amounts to more than 2000 pages, which is a large data set. In line with this research paper's scope and timeline, the researcher decided to only analyze some parts of the surveys namely; either the foreword or the executive summary for introductory sections, with respect to their presence in the surveys, as well as the conclusion section. The decision of analyzing specific parts of the surveys can also be backed up by the common academic practice of portraying a research paper's general idea, methodology and findings in the introductory parts i.e. abstract and introduction, as well as in the conclusion.

To perform this rigorous work, the researcher employed a thematic analysis methodology. Although, it is important to note that this research was not done within the standard thematic analysis six steps framework, since the researcher used pre-set codes and themes/ narratives. The process is known as deductive coding. Medelyan (2020) explains deductive coding also called concept-driven coding as analyzing qualitative data using a thematic analysis methodology, but have predefined codes or themes that are then applied to the research data. It is shown that these codes and themes might be generated from pre-defined research goals or from previous research; which is the case for this research paper. The researcher analyzed UN surveys in the lens of the lens of e-government narratives established by Draheim et al. (2020); the technocratic narrative, the tech-savvy narrative, the democratic narrative, and the

implementation narrative. Consequently, the researcher also used pre-existing codes and themes/ narratives that were previously set by Draheim et al. (2020). For the list of the codes, refer Table 2, Table 3, Table 4, and Table 5.

Table 2. Codes under the implementation narrative

Implementation narrative			
▪ Acceptance/ adoption ▪ Change management ▪ Cultural differences ▪ Ease of use ▪ Holistic endeavor ▪ Implementation (general)	▪ Law and policies ▪ Legacy process integration ▪ Maturity ▪ Obstacles in general ▪ Proposing best practices	▪ Risk management ▪ Satisfaction with e-services ▪ Security ▪ Sufficient funding ▪ System quality	▪ Technical systems ▪ Top-level support ▪ Trust in e-services ▪ Ultra-large scale system ▪ Usefulness

Table 3. Codes under the technocratic narrative

Technocratic narrative			
▪ Availability ▪ Citizen as customer ▪ Economic growth	▪ E-government assessment ▪ Increase effectiveness ▪ Increase efficiency	▪ Increase quality ▪ Increase reach ▪ Increase reactiveness ▪ New public management	▪ Public private partnership (PPP) ▪ Service innovation ▪ Slim state

Table 4. Codes under the democratic narrative

Democratic narrative			
▪ Care for grand challenges ▪ Open society	▪ Citizen participation ▪ E-government as	▪ Increase transparency ▪ Strengthen	▪ Social activities ▪ Social

	national asset	democracy ▪ Trust in government	inclusion ▪ Social innovation

Table 5. Codes under the tech-savvy narrative

Tech-savvy narrative			
▪ Disruption of daily lives and work	▪ Disruption of society ▪ Technology first	▪ Technological progressivism	▪ Transformation of government

4.3.2 Data analysis process

After the collection of all the data in form of UN e-government surveys, the researcher saved all the data both offline and on the cloud in folders called "UN surveys". Securing the research data was important for the research, given the unavailability of UN surveys on the UNPAN website. It should be noted that the researcher conducted the data analysis process by using two data analysis tools, but all the coding was done manually. To code the selected parts of the surveys i.e. the introductory sections and the conclusion, Adobe Acrobat Reader was the first analysis tool employed by the researcher. Secondly, the researcher employed Microsoft Excel for extracting the data. The researcher created a Microsoft Excel Worksheet named "Coding", which had various sheets for various purposes including; copying all the data extracts, collating them to specific codes and themes/ narratives, and for inserting various tables and illustrations. The data analysis was done in a three steps process, and each of the steps was diligently performed to avoid any issues within the next step of the process. All the coded research data are available in a public repository (https://github.com/norbertndashimye/Thematic-coding-UN-e-gov-surveys.git)

Step 1: Understanding the Codes & Reading through the Text

After accessing the codes used on the research of on narratives and background narratives of e-government (Draheim et al., 2020), the researcher took time to familiarize and understand the codes and the themes. This was a crucial part of the process given that these codes and themes were generated by other researchers. The

researcher needed to have a clear understanding of their research work and scope, in order to apply their framework to this research, especially considering that no iterations were done on the codes. Medelyan (2020) recommends adjusting the pre-defined codes if necessary, but for the scope of this research, the codes and themes were used exactly as obtained from Draheim et al. (2020). The other part of this step was reading through the data to familiarize and get some initial insights, prior to performing the actual coding. For this part, the researcher employed Adobe Acrobat Reader, since all the UN e-government surveys were available in pdf format.

Step 2: Coding

Before providing a detailed account of the coding process, the researcher shares some quick insights in the magnitude of the data at hand. Firstly, all the UN e-government surveys had the executive summary section except the 2010 survey. For that specific survey, the foreword was analyzed instead. Throughout the surveys, the research noted a variation in the length of the executive summary sections, ranging from 1 to 12 pages. On the other side, all the surveys had conclusion sections. However, it was observed that from 2010 onwards, the surveys started to be produced with a conclusion section for each chapter. Similarly to the executive summary sections, the researcher noted a variation in the length of the conclusion sections throughout the surveys, with a range between 1 to 15 pages.

The actual coding process started with creating an Excel Worksheet named “Coding”. The worksheet had two sheets; “coding 2001-2020”, hereinafter referred to as Sheet 1 and “analysis”, hereinafter referred to as Sheet 2. For this step, the researcher was solely working on the Sheet 1. The researcher performed a number of iterations on Sheet 1 towards finding the most effective and convenient table structure to serve the purpose of this research.

Theme column: This column was placed first since the researcher planned to use a table that respects the hierarchical order from left to right, which implies that the biggest would be on the left and the items that fall under that set would be in the next column towards the right and so forth. The researcher used the cell merging feature in Microsoft Excel to merge cells for each theme to cover its respective codes. The theme column listed four themes; implementation, technocratic, democratic and tech-savvy. For visual clarity, each theme was assigned a specific background color, which allowed the

researcher to clearly recognize the end and the start of each theme. The implementation theme was assigned the white color, the technocratic theme was assigned the grey color, whereas the democratic theme was assigned the yellow color, and finally the tech-savvy theme was assigned the orange color.

Code column: This column was placed second to collate the specific codes under their specific themes as shown in Table 2, Table 3, Table 4, and Table 5. Similarly to the theme column, the code column assigned background colors to all the cells, with respect to their themes. To avoid any errors in the next steps, the codes that had more than one extract, the code was copied to the next row together with the data extract. It is important to note that there was no cell merging at this level.

Extract column: This column was placed third to collate data extracts to specific codes. Similarly to the theme and code columns, the cells in the extract column were also assigned background colors respective to their themes. Data extracts in this column range from simple phrases to three lines long sentences. Since each extract was unique, no cell merging was performed at this level.

Year column: This column was placed last so that the data extracts can be classified to their specific survey release year. It should be noted that the year and the data extracts were the only changing variables in this analysis, since the codes and themes were unchanged as obtained from Draheim et al. (2020).

Filter buttons: It is important to notice the filter buttons that were applied to all the columns. The filter feature was employed by the researcher to be able to select a specific type of data without having to scroll through the 865 rows of data. Data extracts could be sorted by year, by theme, or by code. In addition, the filter button feature became very useful in the next steps of analysis.

Now that the structure of the coding table is clear, the researcher will explain the actual data extraction process from the data sets. As previously mentioned, the surveys were opened using Adobe Acrobat Reader, the same tool that was also used to do the coding. The researcher used the highlighter tool to highlight the specific parts of the text that fell under the codes, and these text extracts were then copied in the “Extract” column in the “Coding” worksheet. As recommended by Medelyan (2020), the researcher coded the text line-by-line to capture as much details as possible. For each line of text, the researcher cross-checked the worksheet to identify if there is any potential matching code. To do the cross-checking, the researcher could either find contextual resemblance

or look for the presence of keywords from the codes in the piece of text. It should be noted that some text extracts fitted in more than one code, the situation dictated the researcher to copy extract to all the matching codes. Attached is Appendix 9 that shows the frequency of the individual codes throughout the surveys. In order to perform this crucial part of the analysis, the researcher used two screen monitors to capture all the details and perform the coding in an accurate, efficient and timely manner.

Step 3: Data analysis

At this step, the researcher started using Sheet 2 to analyze data from Sheet 1. This step involved the creation of pivot tables and graphs. Microsoft (n.d) defines a pivot table as a tool that analyzes, calculates and summarizes data in Microsoft Excel. It is explained that the tool allows the identify trends and patterns in the data, as well as doing comparisons. It is at this point that the filter feature used on the coding table became important, since it allowed to analyze specific parts of the data. This implies that visual summaries in form of pivot table and graph could be generated sorting data by code, theme or year. Depending on the filters applied on the pivot table, various graphs were generated. In order to analyze findings in various ways, the researcher two summary tables for the count of code extracts for all narratives i.e. absolute count and relative count table. Attached are Appendix 2 that shows the absolute count summary and Appendix 8 for the relative count summary. The researcher used line and bar graphs to illustrate the findings from the data analysis, as shown in the next section i.e. Research findings & discussion.

5. Research Findings & Discussion

5.1 Introduction

This section presents the findings of the data analysis, and engages a discussion around them. The researcher presents the findings using visual representation in form of bar and line graphs, which were generated from Microsoft Excel. The two types of graphs were selected based on their well-known reputation of portraying the changes of values over time. As recommended by Cisneros (2020), line graphs are best to show the changes

and trends over time. They use a simple line display, which gives an immediate understanding. In addition, they allow to compare a wide range of data. Similarly, the bar graph otherwise called column chart uses vertical or horizontal bars to represent data. Dragani (2018) emphasizes that bar graphs are easily understood and they are best at mapping changes and trends over time. Henceforth, the researcher decided to visualize the findings with these the aforementioned types of graphs. The first part of this section shows bar graphs that represent the evolution of individual narratives throughout the UN e-government surveys (2001-2020), each graph accompanied by a detailed discussion about the specific narrative and its development over time. The second part shows two overall graphs, a line graph and a bar graph; which illustrates and compares all the four narratives and their evolution over time, as seen in the surveys.

5.2 Findings

This part contains graphs and detailed discussions about the evolution of individual narratives throughout the UN e-government surveys (2001-2020).

5.2.1 The Implementation Narrative

Figure 1 below shows the relative count of the implementation narrative code extracts in relation to the total code extracts for each year. Based on the trend line, it is observed that the implementation narrative had a slight increase over-time. Although, Appendix 3 that builds upon the absolute count of implementation narrative code extracts shows a different trend line. It shows a steeper increasing trend line; which is a result of the increase in code extracts over-time due to the ever-increasing page count of the introductory and conclusion sections of the UN surveys; which were the data sources for this research. In this line, it was noted that Appendix 3 shows a flawed trend line, whereas Figure 1 shows an accurate trend line.

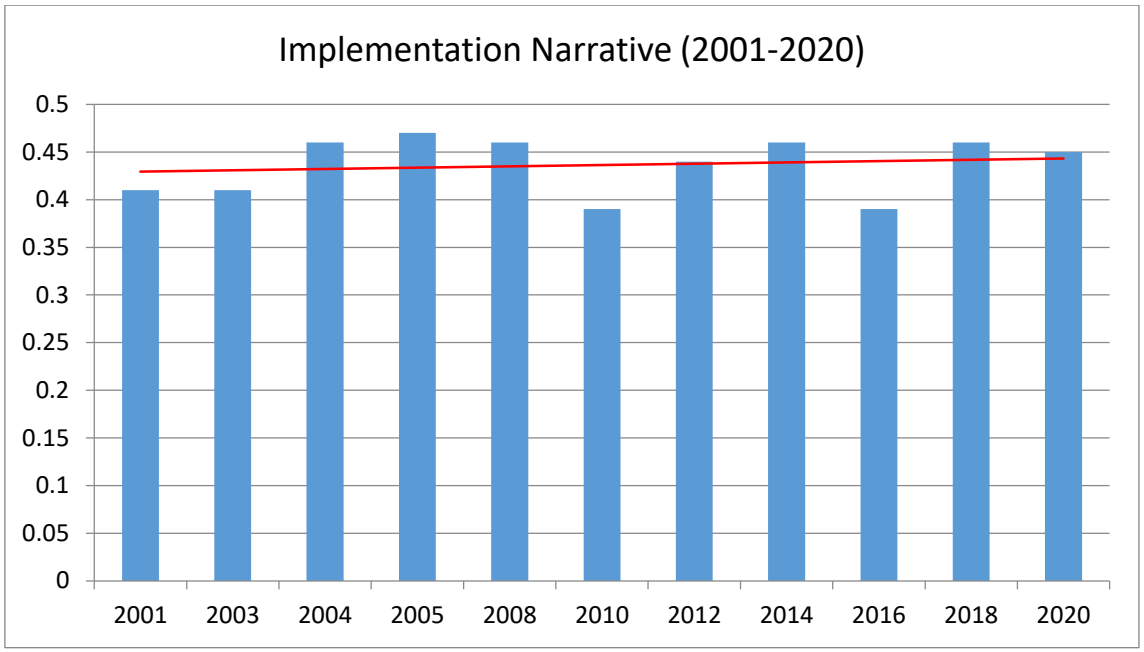

Figure 1. Relative frequency of text extracts with the codes from the implementation narrative in UN e-goverment surveys 2001-2020 (author's assessment)

In a logical order, below is a detailed discussion about the main e-government trends that set the implementation narrative over time, as seen in the UN e-government surveys (2001-2020):

- **E-government & ICTs for economic development**: Throughout the surveys, there was a continuous trend of presenting the advantages and the possibility of leveraging the use of ICTs and e-government towards economic development. For example, an extract from the 2004 survey, titled 'Global E-government Readiness Report 2004' states the following:

  > "E-government and ICT goals should be clearly articulated in terms of economic development and quality of life enhancements for all members of society." (p. xii)

  Among others, this extract emphasizes the need for governments to leverage e-government and ICTs to drive economic growth and improve the society's well-being in general.

- **Integration of all government systems:** This is another trend that was observed over time, and it comprises two parts. The first part touches upon the

organization structure of public institutions, and advocates for the need for change management. Here is an extract from the UN e-government survey 2014:

> "…there is a critical need for new forms of collaborative leadership and shared organizational culture, including re-shaping values, mindset, attitudes and behaviours in the public sector through visible guiding principles and leadership." (p.7)

The above extract points out the need for changes in public institutions leadership towards a more open and collaborative system, which allows various institutions to cooperate smoothly. In other words, it advocates for the end of bureaucracy. Once this step is achieved, it would lead to the second step of integration; which is integrating all government systems. The latter allows the various government systems to exchange information flawlessly; which in return leads to fast service delivery through the various e-government portals and e-service points. This extract from the UN e-government survey 2008 explains it better:

> "…governments are increasingly looking towards e-government-as-a-whole concept which focuses on the provision of services at the front-end supported by integration, consolidation and innovation in back-end processes and systems to achieve maximum cost savings and improved service delivery." (p. xv)

- **Legal framework for e-government:** Another trend that was observed under the implementation them is related to the regulation of the e-government and the new technologies. Primarily, there was need to regulate e-government in the public sector perspective. This implies putting in places laws and policies that dictate the use and the power vested in the various e-service points; which was very crucial considering the shift from in-person to online service provision. Both the public servants and the citizens need a legal framework to direct their interactions. This extract from the UN e-government survey 2014 emphasizes it:

> "At the most fundamental level, e-government policy must focus on the demand side of the equation, instead of just focussing on the supply side of e-government services." (p.160)

Secondly, the need to regulate the general use of ICTs by the society was presented. In the age of information, where everyone has the power to access and manipulate a range of information, thanks to the internet and various technology devices; there is a critical need to have regulations in place. The regulations need to be established to ensure safety, accountability, and security of all users. In the UN e-government survey 2012, the following is stated:

> "One of its key functions has been to provide an integrated framework of policies, laws and regulations and develop institutions and processes that allow the private sector to provide – and the people to partake of – the benefits of newer technologies. " (p.2)

- **Regional and international cooperation:** The need for cooperation at different levels also appears in the trends. The UN being an international organization itself, it only makes sense that they emphasize the need for cooperation among countries within the e-government field. As normally observed in other fields such as politics and economy, different countries within the different geo-politics have fostered cooperation and development, and e-government could not be an exception in this case.

- **Best practices:** A number of e-government best practices from various governments, international organization and academic researchers were shared throughout the surveys. The recommendations covered a range of topics from e-service delivery to risk management of newer technologies. Below are shown extracts that portray the wide topic coverage:

> "Promoting literacy and education and technical skills should receive the highest priority." (UNDESA, 2005)

> "Leveraging social media for the benefit of e-service uptake is another area where a greater effort can make a difference." (UNDESA, 2012)

> "…for e-government to truly contribute to improving peoples' lives, it is vital to increase public access to the Internet and promote digital literacy." (UNDESA, 2016)

"Policy makers should seize the COVID-19 crisis as an opportunity to establish tailor-made digital government tools, strategies and collaborations for the future." (UNDESA, 2020)

5.2.2 The Technocratic Narrative

Figure 2 below shows the relative count of the technocratic narrative code extracts in relation to the total code extracts for each year. Based on the trend line, it is observed that the technocratic narrative had a nearly flat curve over-time. On the other side, Appendix 4 that builds upon the absolute count of the technocratic narrative code extracts shows a different trend line. It shows a steep increasing trend line; which is a result of the increase in code extracts over-time due to the ever-increasing page count of the introductory and conclusion sections of the UN surveys; which were the data sources for this research. Therefore, it should be noted that Appendix 4 presents a flawed trend line, while Figure 2 presents an accurate trend line.

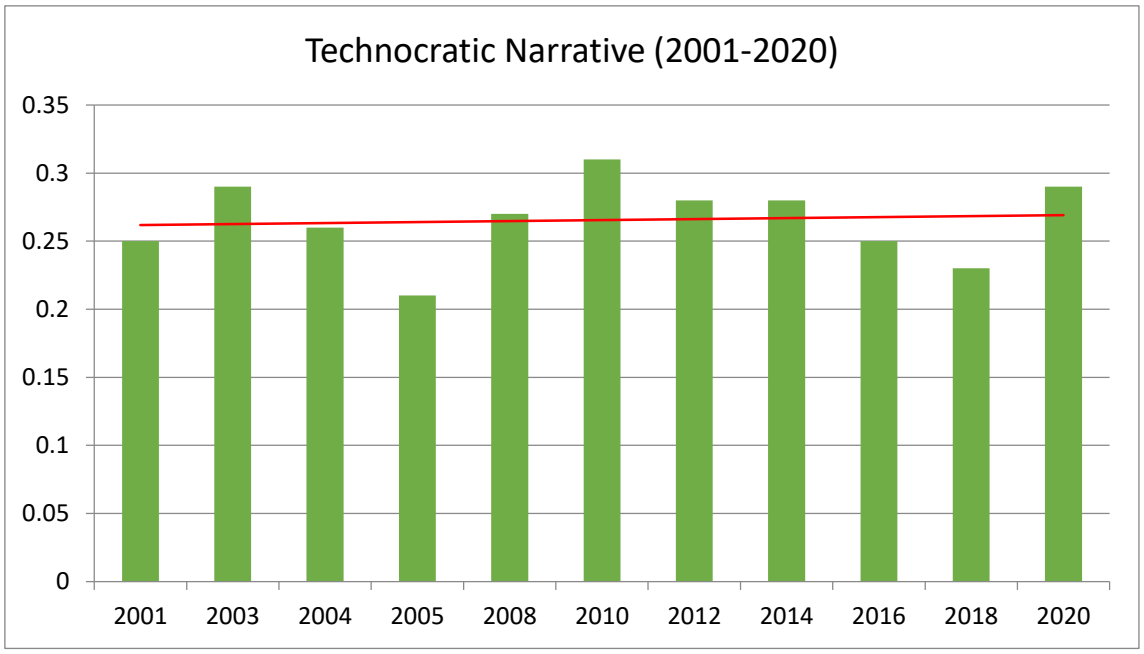

Figure 2. Relative frequency of text extracts with the codes from the technocratic narrative in UN e-government surveys 2001-2020 (author's assessment)

Below is a detailed discussion about the main e-government trends that set the technocratic narrative over time, as seen in the UN e-government surveys (2001-2020):

- **ICTs for efficiency & effectiveness**: The first trend that set the technocratic narrative emphasizes the opportunity presented by ICTs to the public sector to

minimize their costs and improve their processes, simultaneously. Governments are rather presented with a challenge of providing the best service quality using less financial resources; a challenge that requires innovative ways of thinking and solutions. The following extract outlines it better:

> "The underlying principle of e-government, supported by an effective e-governance institutional framework, is to improve the internal workings of the public sector by reducing financial costs." (UNDESA, 2012)

In line with finding innovative ways to deliver, new co-production partnerships between the government and the private sector were developed. Terms such as private-public partnership (PPP) were coined, as well as outsourcing. These partnerships not only allow governments to minimize costs, but they also contribute to the improvement of the quality of the service delivered to citizens. A good example is the case of developing the HOIA App in Estonia. The Covid-19 contact tracing app was built in 2020 by a consortium of 12 private volunteering companies, under the supervision of the Ministry of Social Affairs, the Welfare Information Systems' Centre (TEHIK), as well as the Estonian Health Board specialists (Kirik, n.d). This was a special case that had special partnership arrangements, but it can be argued that it builds on the exciting private-public partnership environment in the Estonia public sector. The extract below adds on the essence of the aforementioned partnerships:

> "…allowing for the co-production of public services at minimal costs for governments and, consequently, for taxpayers" (UNDESA, 2010)

- **Establishment of online portals & websites**: The development of e-service portals and websites also appears among the trends that set the technocratic narrative. Here is an extract that highlights the trend:

> "…implementing integrated portals to facilitate access to the citizen by making all government information and services available through 'one-stop shops' and e-service portals." (UNDESA, 2004)

The portals and websites that are considered the face of e-government have experienced tremendous development over time—since their visual and technical design highly affected the use of e-services, the trust in the public sector, and the overall adoption of e-government by the citizens. A remarkable development in e-service websites and portals was to make them mobile friendly, with the uptake and penetration of smartphones within the global society.

- **Treating a citizen as a customer**: This trend represents the business aspect of e-government, where governments ensure the provision of high quality service to the citizens. Disregarding their monopolistic power, the government aims at creating high value to their customers, who are the citizens in this case.

- **E-government assessment**: This trend was observed through constant reflections on what has been achieved in the e-government field over the past years. This trend provided a space to learn from past mistakes and celebrate past wins, as governments design their future e-government projects. Moreover, this trend provided an overview about the surveys, as well as a general idea of the current state of e-government related affairs in UN member states.

5.2.3 The Democratic Narrative

Figure 3 below shows the relative count of the democratic narrative code extracts in relation to the total code extracts for each year. Based on the trend line, it is observed that the democratic narrative had a slight increase over-time. However, Appendix 5 that builds upon the absolute count of democratic narrative code extracts shows a different trend line. It shows a steeper increasing trend line; which is a result of the increase in code extracts over-time due to the ever-increasing page count of the introductory and conclusion sections of the UN surveys; which were the data sources for this research. Hereon, it is noted that Appendix 5 represents a flawed trend line, while Figure 3 shows an accurate trend line.

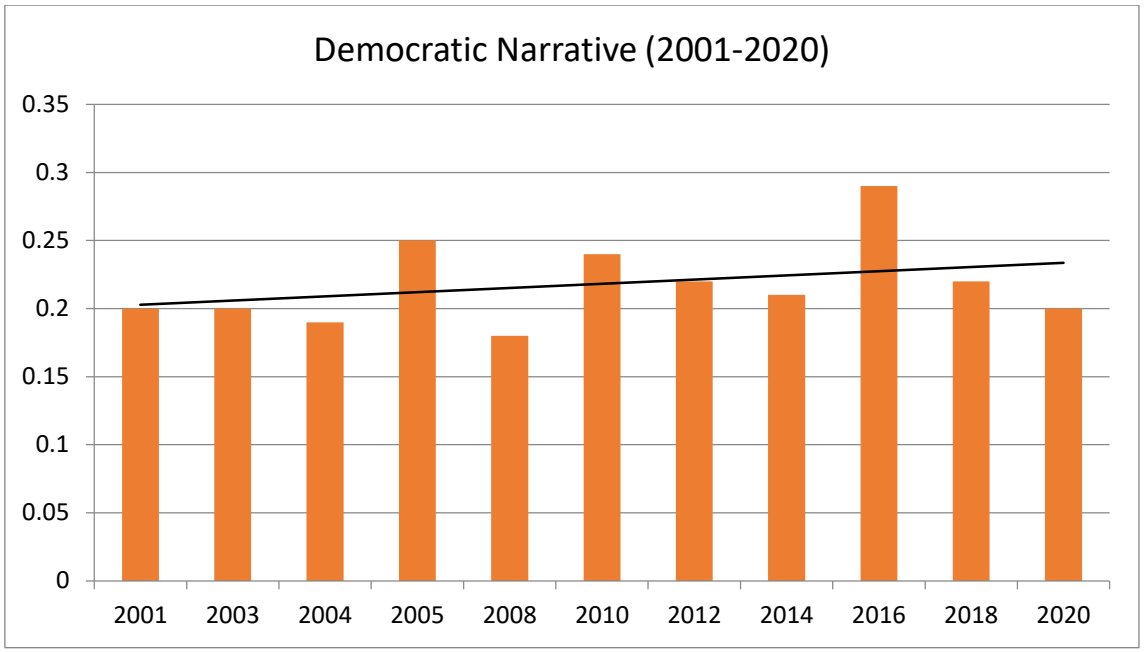

Figure 3. Relative frequency of text extracts with the codes from the democratic narrative in UN e-government surveys 2001-2020 (author's assessment)

In a logical order, below is a detailed discussion about the main e-government trends that set the democratic narrative over time, as seen in the UN e-government surveys (2001-2020):

- **Citizen participation:** This is the first trend that set the democratic narrative and revolves around the participation of the citizens in public affairs within the scope of e-government. The trend that coined the term 'e-participation' aims at finding various engagement channels between the citizens and the public administration. At this point, some of the common channels used for this purpose include; online consultation forums via social media or various websites, participatory budgeting via in-person or online discussions, as well as social media platforms in general. With the digitization of the public sector, it was crucial to establish these participatory channels for holding the public servants accountable and prevent them to start blaming everything on the computers, while in reality, systems are operated by humans.

> "E-government provides the public with an opportunity to have their views expressed." (UNDESA, 2010)

> "Increasingly, there is a shift towards people-driven services whereby people play a more active role in the design and customization of services." (UNDESA, 2016)

The above extracts portray how e-government offered a better opportunity for citizens to interact with the government, especially through online channels; which was a harder process in the previous paper-based public administration system. On the other side, this interaction has proven to make citizens feel valued, as they express their opinions, and potentially contribute to the decision making process regarding various social issues. Simply put, citizen participation opened a door for the public sector to receive more inputs, feedback and suggestions from the citizens.

- **Building information societies:** The fast development of technologies that was observed in the late 90s and is still ongoing, presented the world with a new challenge; teaching the mass population 'How to'. This trend shows that ICTs were quickly introduced to the public sector, while it was still developing and before it even became mainstream. With the realization that this was a point of no return, different strategies were developed for the people to catch up with technology. There was a need to start building knowledge societies.

  > "Governments must integrate new technology tools and the culture of technology into public education strategies and curricula at all levels." (UNDESA, 2004)

  The process is still ongoing in different parts of the world, in line with the continuous technological advances. Bottom line, various governments keep investing in training citizens and public servants about the use of e-government services at all different levels. Moreover, various e-services are designed using simple technologies or other modified techniques, in order to meet the level of literacy and tech-savvy of various members of the society.

- **Social inclusion:** This trend captures the increasing demand for e-government to provide 'access-to-all', which implies that ICTs used to offer the services should be designed to meet the needs of all the members of the society, ranging from

blind-disabled senior citizens to asylum seekers. This extract explains the essence of this trend:

> "Close to 80 per cent of Member States offer specific digital services for youth, women, older people, persons with disabilities, migrants and/or those in poverty, contributing to efforts aimed at leaving no one behind." (UNDESA, 2020)

To accomplish this task, e-services are incorporating various features such as audio and contrast modes for the blind-disabled and other visually impaired people. Other features include simple interfaces for senior citizens or youth, as well as offering a wider range of 'log in' options for the various members of the society such as refugees and minors. In addition, e-services are also being offered using analog techniques such as SMS, phone calls, and USSD codes; which allow to reach other disadvantaged groups such as illiterates and rural communities with limited access to modern technology and infrastructure.

- **Open society:** This trend presents the ever-increasing demand of access to all data that comes with the digital age, where everyone can access any information by a single-click. In the specific scope of e-government, this trend implies that the government is expected to avail public information to the citizens. From here, the 'open government data' concept was developed. The extract below captures the rationale of the concept:

> "About 74 per cent of countries that have OGD portals and websites also provide guidance on using and navigating the complex datasets, encourage users to request new datasets, initiate hackathons and use public open data for creating online Apps." (UNDESA, 2018)

The trend keeps showing how governments are availing open-data and finding a way to engage the citizens and other stakeholders towards leveraging it, for the common benefit. The initiative has been leading to service innovation in various forms. Next, the openness of government data has greatly contributed to increasing transparency of public affairs. Consequently, this is leading to increased public trust in the government. Below is an extract that shows a good example:

> "A majority of Member States announce and provide the results of procurement/bidding processes online and have functional e-procurement platforms." (UNDESA, 2020)

5.2.4 The Tech-savvy Narrative

Figure 4 below presents the relative count of the tech-savvy narrative code extracts in relation to the total code extracts for each year. Based on the trend line, it is observed that the tech-savvy narrative experienced a steep decrease over-time. Although, Appendix 6 that builds upon the absolute count of the tech-savvy narrative code extracts shows a different trend line. It shows a nearly flat trend line; which is a result of the increase in code extracts over-time due to the ever-increasing page count of the introductory and conclusion sections of the UN surveys; which were the data sources for this research. In this line, it should be noted that Appendix 6 presents a flawed trend line, whereas Figure 4 presents an accurate trend line.

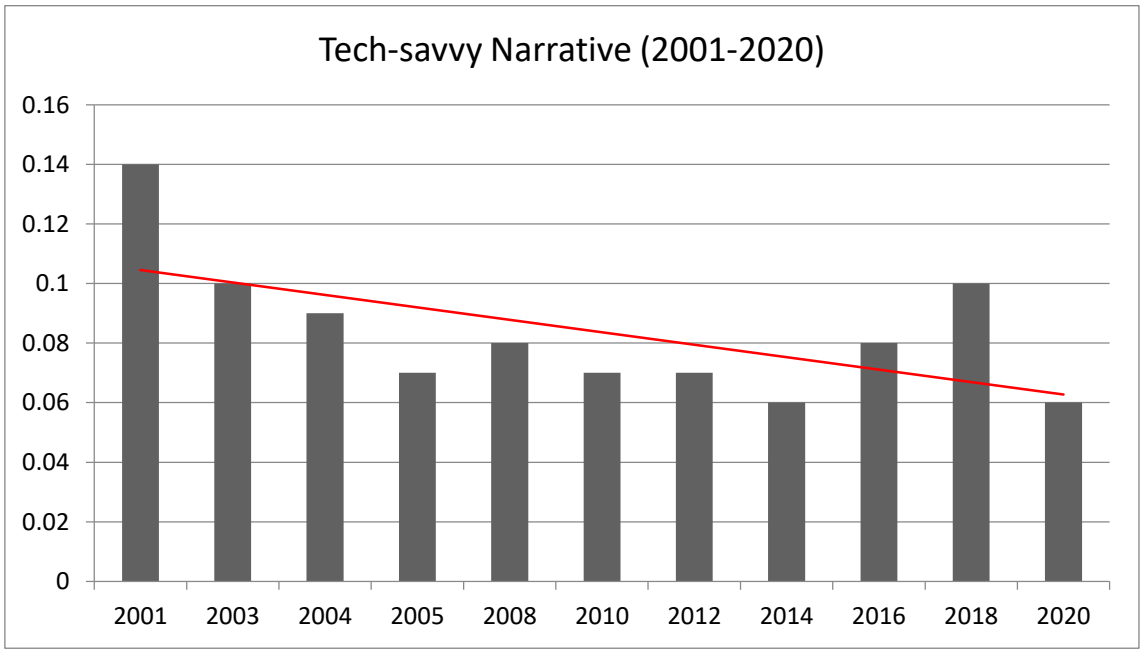

Figure 4. Relative frequency of text extracts with the codes from the tech-savvy narrative in UN e-government surveys 2001-2020 (author's assessment)

Below is a detailed discussion about the main e-government trends that set the tech-savvy narrative over time, as seen in the UN e-government surveys (2001-2020):

- **Continuous technological advancements:** This trend shows the technological progressivism attitude, which is observed within the global e-government sphere. At the same time, these technologies are being observed and seeking for ways to leverage it for e-government development. An example is how most public agencies have adopted a strategy of using social media for active engagement with the citizens and other stakeholders. While this does not serve as a real e-service channel, it still bridges the communication gap and improves the overall e-government experience for various stakeholders. The extract bellows supplements the example:

  > "The opportunities offered by the digital development of recent years, whether through online services, big data, social media, mobile apps, or cloud computing, are expanding the way we look at e-government." (UNDESA, 2014)

- **Transformation of the society:** This trend explains how the use of technology is transforming various aspects of people's life such as leadership, healthcare, work, education, among others. With a double edge, technology should be utilized for offering advanced public services and transforming the society, the world as a whole for the best. This trend saw the development of new concepts such as e-learning, digital healthcare, telecommuting, among others. From the surveys, these extracts supplement the discussion:

  > "…governments also need to encourage government agencies, businesses, their citizens and all of civil society to fully embrace the emerging global language and culture of technology." (UNDESA, 2004)

  > "In some settings, local governments are creating "smart cities", harnessing and leveraging cutting-edge technologies to accelerate sustainable development." (UNDESA, 2020)

- **Novel technologies:** This trend touches upon the most recent cutting edge technological concept namely; Artificial Intelligence, Internet of Things, Virtual Reality and Big data, and their application to the e-government field. At the core of these novel technologies lies the important need for data, hence data being the new 'oil'. While these technologies are still new and come with controversy,

they are rapidly being integrated in e-government systems, arguably due to the potential and promise of systems transformation they offer. These novel technologies are being used to enhance client support services, make faster decisions from quick data analytics, improve crisis management in various fields, and fasten the delivery of public services in general. The extract below captures the trend:

> "…strategies include using AI chatbots to improve service delivery and streamline internal workforce management; using big data and analytics to design and implement effective local government policies and to optimize urban public resources; using the Internet of Things to support smart applications in health care, transport, law enforcement and emergency situations; and using augmented reality and virtual reality to enhance navigation experiences and driver safety and to support rescue operations. " (UNDESA, 2020)

To add on to the first part of the findings, Table 6 below provides a summary of annual highlights that were observed in the UN e-government surveys, disregarding the e-government narratives. Through the highlights, the introduction of new e-government terms and concepts that was observed over time is portrayed.

Table 6. Highlights of UN e-government surveys (2001-2020)

Year	**Highlights (1-3 points)**
2001	• Presenting the opportunity to use the internet and the world wide web to provide public services • Presenting the long-term government efficiency benefits
2003	• E-government as a way to holistic development • Introducing citizen participation (e-participation)
2004	• Focus on building knowledge societies • Emphasis on citizen participation (e-participation) • Social inclusion (e-inclusion)
2005	• Emphasis on online presence (portals, websites, etc.) • Emphasis on social inclusion (e-inclusion) • Presenting the opportunity of ICTs for economic development

2008	• E-government for sustainable development • Change management in government organizational structure • Integration of government processes & systems
2010	• Citizen engagement • Presenting the need for e-government regulation • Expansion of online service delivery channels
2012	• E-government for sustainable development & social activism • Public-private partnerships for service provision & enhancement • Whole of government approach to e-government development
2014	• Presenting the potential of open government data • Emphasis on social inclusion & service reach • Emphasis on service innovation
2016	• Open government data for social innovation • Maturity levels of online service provision • Citizen e-services adoption
2018	• E-government for global resilience • Regulation of new disruptive technologies such as AI, and data usage & privacy • Focus on cybersecurity
2020	• Digital cooperation and cross border partnerships for sustainable development & crisis management on a global scale • Development of e-government at local levels • E-participation for meaningful impact in decision making • Data-centric e-government

5.3 Discussion

This part contains graphs and detailed discussions about the overall evolution of the four e-government narratives throughout the UN e-government surveys (2001-2020). Refer to Figure 5 & Figure 6 below to observe the various levels of e-government narratives evolution, as observed over time. Thereon, the researcher discusses observations and answers the research question and sub-questions.

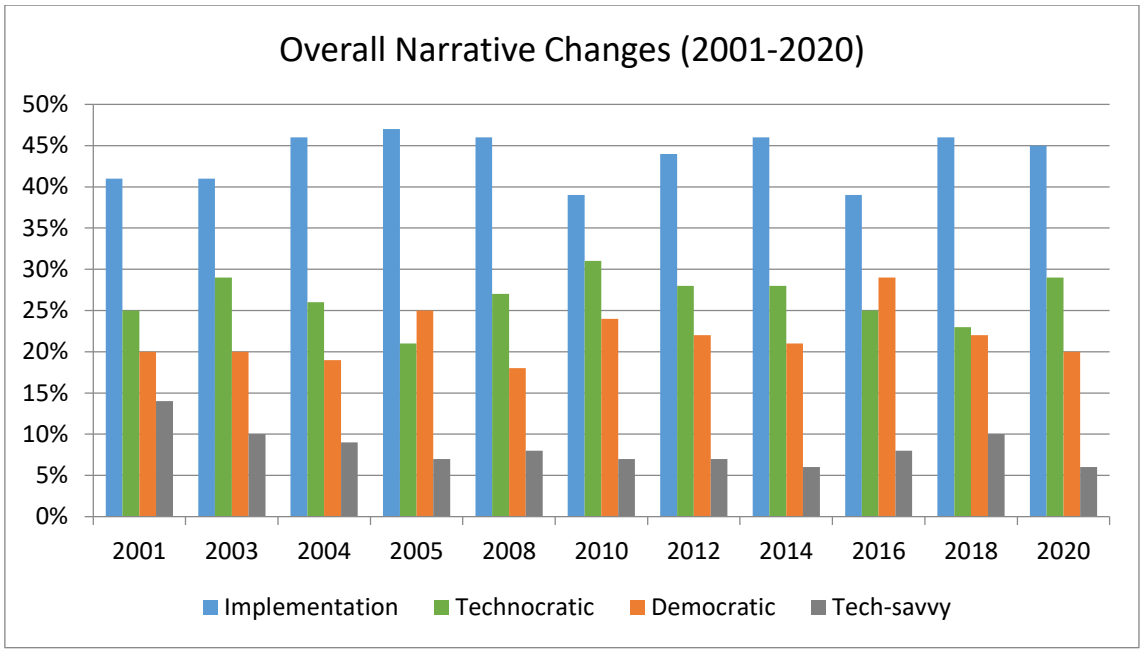

Figure 5. Percentage of text extracts with the codes from the four narratives in UN e-government surveys 2001-2020 (author's assessment)

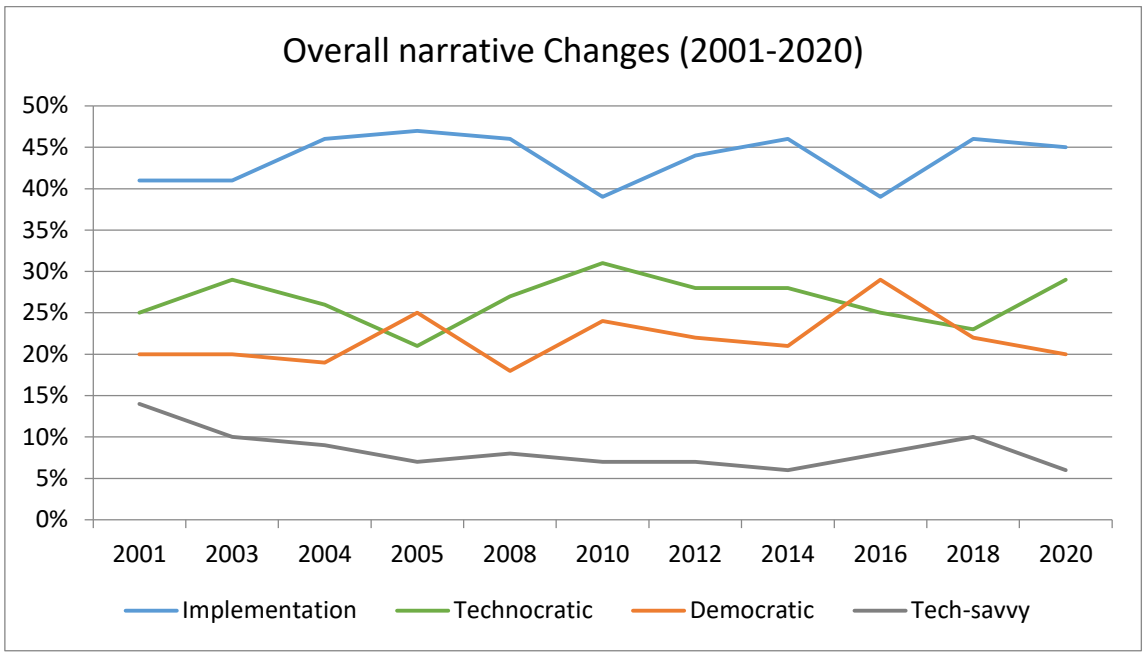

Figure 6. Percentage of text extracts with the codes from the four narratives in UN e-government surveys 2001-2020 (author's assessment)

Figure 5 and Figure 6 above present the general presence of the four narratives based on the relative count of code extracts for each year in percentages. From the figures above, it is generally observed that there was a nearly constant level of presence of the four e-

government narratives within the surveys over the past 20 years. However, what changed are the levels at which various narratives were discussed in surveys for different years. On the other side, Appendix 7 shows the general presence of the four narratives based on the absolute count of the code extracts for each year; which tells a different story. The graph shows an overall increasing curve; which is a misrepresentation of the changes on a relativity level. This results from the increase in code extracts over-time due to the ever-increasing page count of the introductory and conclusion sections of the UN surveys; which were the data sources for this research. Overall, the implementation narrative ranks first, followed by the technocratic narrative, the democratic narrative, and the tech-savvy narrative lastly. Refer to Appendix 8 to see all the relative count values of all data extracts for all narratives. Also, the above figures show that all the narratives have experienced some slight fluctuations from the 2001 until 2020, the researcher aims at finding an explanation to the phenomenon in the scope of narratives in function of time.

In the early 2000s, the focus was on establishing e-government systems (technocratic narrative), but soon after that governments noticed that the citizens needed to participate and use the systems (implementation narrative). Next, e-government is expected to align with modern politics (democratic narrative) in order to work for the people and by the people. On the sidelines, technology enthusiasts keep advancing technology and are continuously reimagining the transformation of societies by advanced technologies (tech-savvy narrative). Refer to Table 6 for more insights based on the individual survey highlights over-time. The aforementioned is the base storyline for e-government narratives presence in the UN surveys and their evolution over time, and the story will continue to unfold with time. According to United Nations Public Administration 3 (n.d), the data collection for the UN e-government survey 2022 is already ongoing.

RQ: How did e-government narratives change in the United Nations e-government survey reports from 2001 to 2020?

Overall, e-government narratives have experienced fluctuations in their presence in the UN surveys, but the general trend can be described as follows. The implementation narrative is dominantly present since e-government is being portrayed as a whole-transformation process and this remains relevant throughout time. The technocratic narrative follows because governments are expected and are working towards providing

better services at lower costs by leveraging technology; which also remains relevant up to date. Next, the democratic narrative follows because citizens are entitled to their rights more than ever and the increased transparency and openness gives room to the incorporation of various democratic principles within e-government. The tech savvy is constantly lower because it is not a priority yet, e-government is still focused on enhancing the already existing systems and process to offer better publics services; the next level of society transformation by using novel technologies remains a low priority.

SQ 1: How does the e-government development indexes (EGDI) relate to the e-government narratives observed in the UN e-government surveys?

Throughout the surveys, it was observed that the EGDI ranks presented in the surveys, do not necessarily relate to the narratives set. For example, the UN survey 2005 reflection on past efforts shows that there was a huge increase in the establishment of online portals and websites; which implied an improvement in e-service delivery. The latter was also reflected within the EGDI ranks. However, the survey sets a narrative that focuses on pushing for inclusive governance, as well as leveraging the potential of ICTs. In the end, the survey sets a predominantly democratic narrative; while the EGDI would have dictated an implementation narrative.

SQ 2: How are the statements justified when setting the narratives?

Throughout the surveys, the UN makes a number of policy recommendations and shares best practices; which highly contribute to setting the narratives. From the analysis, it was observed that the statements used are obtained from various sources. Primarily, the UN agenda, which is shared through statements that state what 'member states' are advised to do in various areas of e-government. Secondly, the statements are obtained from quoting expert opinions. Examples include Lloyd Blankfein, then CEO of Goldman Sachs Investment Group, comment on the multi-facet regulation process of various industries; which appeared in the UN e-government survey 2010. Another example is referencing the World Bank & International Monetary Fund Standards and Codes in 12 areas Report in the UN e-government survey 2010. Last example is this extract that clearly references OECD:

> "Drawing on OECD'S observations, governments around the world are realizing that continued expansion in e-services is not possible without some kind of integration of back-end government systems." (UNDESA, 2008)

In addition, the statements are also obtained from academic research work in the e-government field. An example is the reference to Mahapatra & Sahu (2008) research in the UN e-government survey 2012:

> "One of the study's most striking findings is that the most frequent guiding principle is to always consider efficiency while devising solutions." (UNDESA, 2012)

6. Conclusion

To sum up, this research paper titled 'Evolution of e-Government narratives in the United Nations e-government survey reports (2001-2020)' aimed at identifying the different e-government narratives that were presented in the UN e-government surveys from 2001 until 2020. Paying a close attention on analyzing their evolution over the past 20 years of publication of the surveys. For this, the researcher adopted pre-determined e-government narratives namely; the democratic, the technocratic, the tech-savvy, and the implementation narratives. The analysis was conducted by employing the thematic analysis methodology, which is commonly used for analyzing long text data sets. This paper aimed at contributing to the e-government literature, more specifically to research related to e-government narratives, which is still limited up to date.

As a result, the analysis showed that e-government narratives set in the UN e-government have evolved over time. Overall, the implementation narrative has continuously been dominant with a slight upward trend, the technocratic narrative comes second with a nearly flat trend, the democratic narrative follows with a steep upward trend, whereas the tech-savvy narrative comes last with a steep downward trend. The changes in the narratives trends reflect the constant developments and evolution of the various aspects of e-government, as seen in the surveys. Generally, the observed evolution of the e-government narratives are a good indicator of the growth that the

field went through over the past two decades, and gives an idea on what to be expected in the future.

To conclude, UN e-government survey are important resources for various stakeholders to understand the development of e-government. With the 2022 UN survey in the pipeline, a lot of viable information is expected. Although, the interest of academic researchers is still low in regards to the surveys, a shift in the interest rate is expected to happen.

6.1 Further Research

For future research, the researcher provides a recommendation on potential research work related to UN e-government surveys. The recommended research topic is analyzing the real-world implementation of UN e-government survey recommendations by UN member states. In other words, it is investigating the extent at which the UN e-government related recommendations actually guide or affect the design and implementation of e-government initiatives by various governments. Looking at the enormous effort that the UN puts into collecting data, writing case studies and gathering various expert opinions to put together the UN e-government surveys, it would be interesting to actually assess their impact on the development of the e-government field, in the real-world through government projects.

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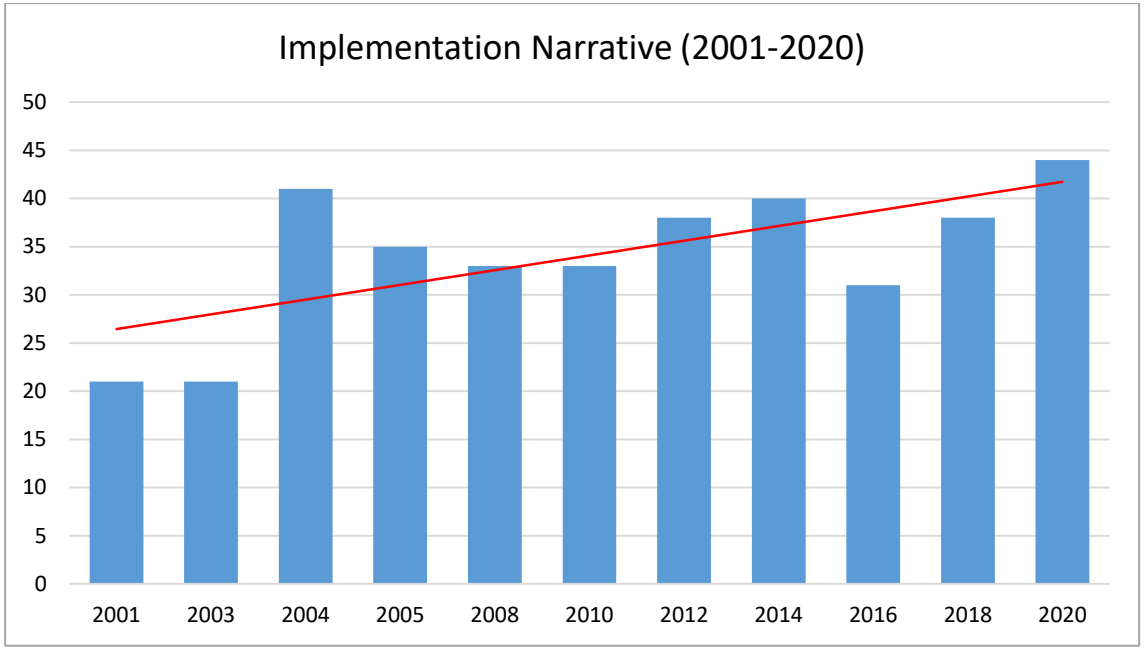
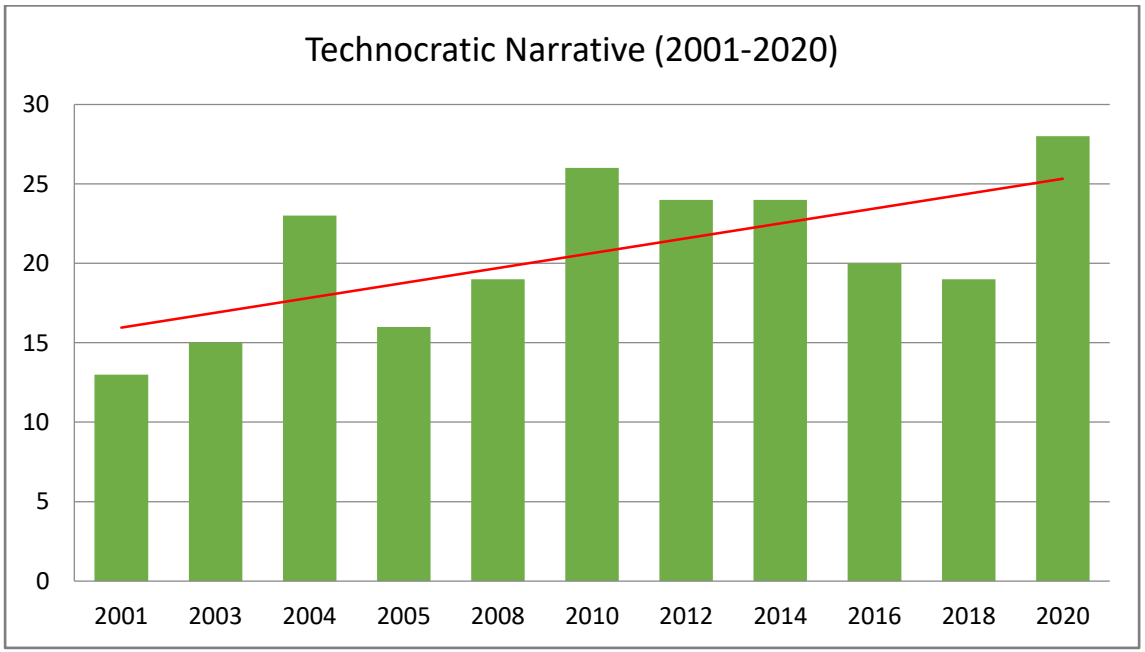
Appendix 2 – Absolute count of code extracts per narrative for each year

Year / Narrative	2001	2003	2004	2005	2008	2010	2012	2014	2016	2018	2020	Grand Total
Implementation	21	21	41	35	33	33	38	40	31	38	44	375
Technocratic	13	15	23	16	19	26	24	24	20	19	28	227
Democratic	10	10	17	19	13	20	19	18	23	18	19	186
Tech-savvy	7	5	8	5	6	6	6	5	6	8	6	68
Grand Total	**51**	**51**	**89**	**75**	**71**	**85**	**87**	**87**	**80**	**83**	**97**	**856**

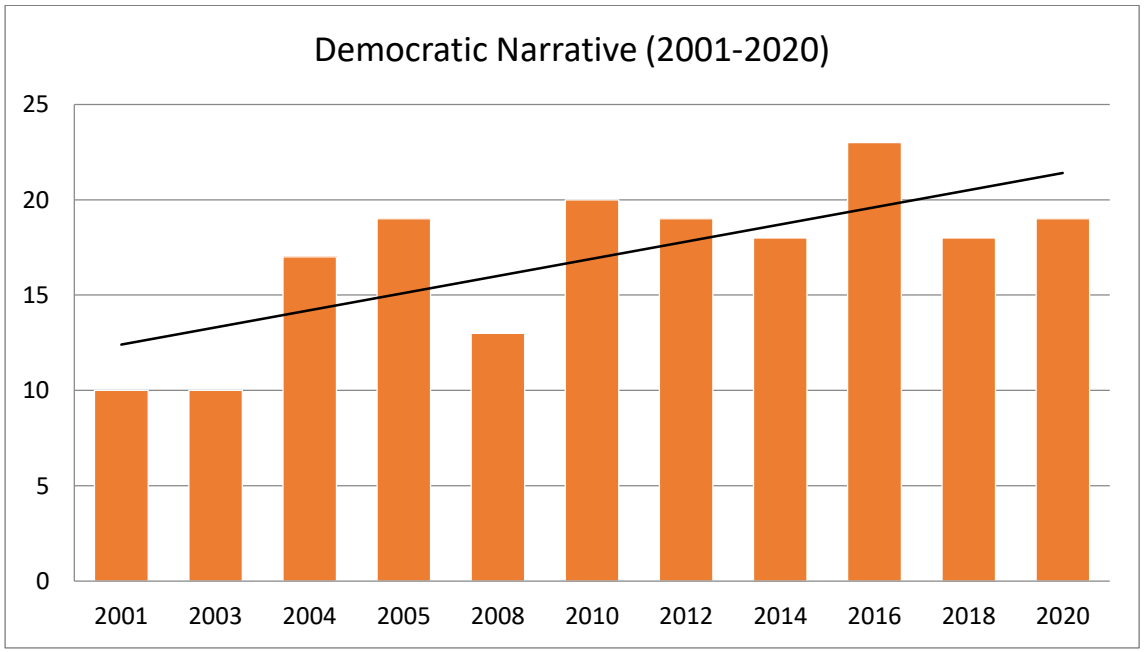
Appendix 3 – Absolute Frequency of Text Extracts with the Codes from the Implementation Narrative in UN e-Government Surveys 2001-2020 (author's assessment)



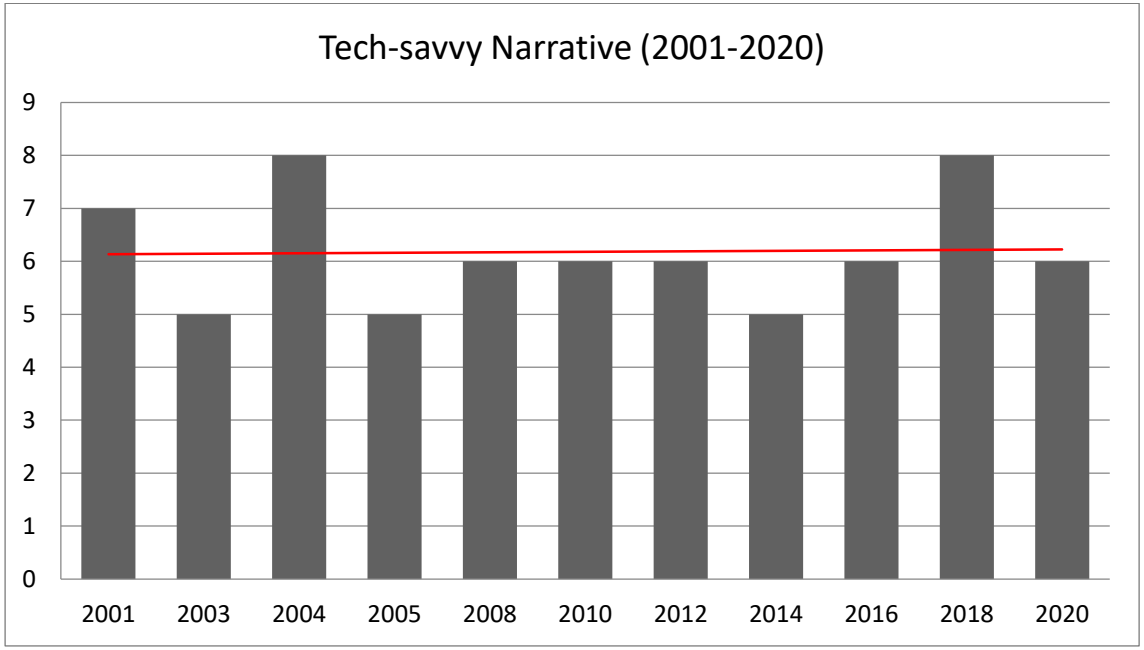
Appendix 4 – Absolute Frequency of Text Extracts with the Codes from the Technocratic Narrative n UN e-Government Surveys 2001-2020 (author's assessment)



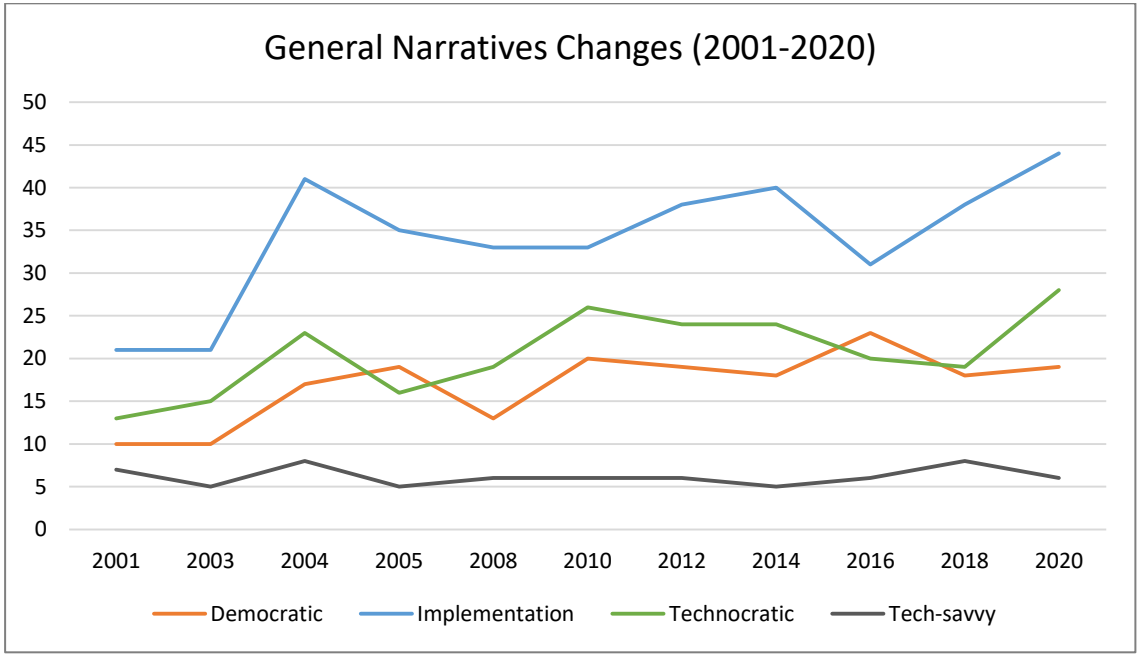
Appendix 5 – Absolute Frequency of Text Extracts with the Codes from the Democratic Narrative in UN e-Government Surveys 2001-2020 (author's assessment)



Appendix 6 – Absolute Frequency of Text Extracts with the Codes from the Tech-Savvy Narrative in UN e-Government Surveys 2001-2020 (author's assessment)



Appendix 7 – Presence of the Four Narratives in UN e-government surveys (2001-2020) based on the Absolute Count of Code Extracts



Appendix 8 – Relative Count of Code Extracts per Narrative for Each year

Year / Narrative	2001	2003	2004	2005	2008	2010	2012	2014	2016	2018	2020
Implementation	0.41	0.41	0.46	0.47	0.46	0.39	0.44	0.46	0.39	0.46	0.45
Technocratic	0.25	0.29	0.26	0.21	0.27	0.31	0.28	0.28	0.25	0.23	0.29
Democratic	0.20	0.20	0.19	0.25	0.18	0.24	0.22	0.21	0.29	0.22	0.20
Tech-savvy	0.14	0.10	0.09	0.07	0.08	0.07	0.07	0.06	0.08	0.10	0.06

Appendix 9 – Codes Frequency Summary

Row Labels	2001	2003	2004	2005	2008	2010	2012	2014	2016	2018	2020	Grand Total
Democratic	**10**	**10**	**17**	**19**	**13**	**20**	**19**	**18**	**23**	**18**	**19**	**186**
care for grand challenges	1	1	3	1	2	2	4	2	3	4	3	26
citizen participation	1	1	2	4	2	4	3	4	4	2	3	30
e-government as national asset	1	1	2	1	1	1	1	1	1	1	1	12
increase transparency	1	1	1	2	1	3	2	2	4	1	3	21
open society	1	1	1	1	1	2	1	2	3	1	2	16
social activities	1	1	1	1	1	1	1	1	1	1	1	11
social inclusion	1	1	4	5	1	1	4	3	3	4	3	30
social innovation	1	1	1	1	1	1	1	1	1	2	1	12
strengthen democracy	1	1	1	2	2	1	1	1	1	1	1	13

trust in government	1	1	1	1	1	4	1	1	2	1	1	15
Implementation	**21**	**21**	**41**	**35**	**33**	**33**	**38**	**40**	**31**	**38**	**44**	**375**
acceptance/ adoption	1	1	3	1	1	1	3	2	1	2	1	17
change management	1	1	1	1	4	1	2	2	1	1	2	17
cultural differences	1	1	1	1	1	1	1	1	1	1	1	11
ease of use	1	1	1	1	1	1	1	1	1	1	1	11
holistic endeavor	1	1	2	3	2	3	2	2	1	1	2	20
implementation (general)	1	1	4	1	1	1	1	1	1	1	3	16
law and policies	1	1	3	3	1	5	6	7	2	4	4	37
legacy process integration	1	1	1	1	4	1	2	2	1	1	1	16
maturity	1	1	1	1	2	1	1	2	3	2	4	19
obstacles in general	1	1	7	4	1	5	4	1	3	4	3	34

proposing best practices	1	1	7	6	4	3	5	7	3	5	9	51
risk management	1	1	1	1	1	1	1	1	1	4	2	15
satisfaction with e-services	1	1	1	1	1	1	1	1	1	1	1	11
security	1	1	1	1	1	1	1	2	1	3	1	14
sufficient funding	1	1	1	1	1	1	1	1	3	1	1	13
system quality	1	1	1	1	1	1	1	1	1	1	1	11
technical systems	1	1	1	1	2	1	1	1	1	1	1	12
top-level support	1	1	1	3	1	1	1	2	2	1	2	16
trust in e-services	1	1	1	1	1	1	1	1	1	1	1	11
ultra-large scale system	1	1	1	1	1	1	1	1	1	1	1	11
usefulness	1	1	1	1	1	1	1	1	1	1	2	12
Technocratic	**13**	**15**	**23**	**16**	**19**	**26**	**24**	**24**	**20**	**19**	**28**	**227**

availability	1	1	5	1	1	1	1	1	2	1	1	16
citizen as customer	1	1	1	1	2	1	3	1	1	1	1	14
economic growth	1	1	3	1	1	1	3	1	1	1	1	15
e-government assessment	1	3	1	4	1	6	3	5	6	6	12	48
increase effectiveness	1	1	2	1	1	2	2	1	1	1	1	14
increase efficiency	1	1	1	1	3	5	1	2	1	1	1	18
increase quality	1	1	3	1	2	2	1	2	1	1	1	16
increase reach	1	1	2	1	1	2	2	1	1	1	1	14
increase reactiveness	1	1	1	1	1	1	1	1	1	1	1	11
new public management	1	1	1	1	1	1	1	1	1	1	1	11
PPP	1	1	1	1	2	1	3	2	1	2	2	17
service innovation	1	1	1	1	2	2	2	5	2	1	4	22

slim state	1	1	1	1	1	1	1	1	1	1	1	11
Tech-savvy	**7**	**5**	**8**	**5**	**6**	**6**	**6**	**5**	**6**	**8**	**6**	**68**
disruption of daily lives and work	1	1	2	1	1	1	1	1	1	1	1	12
disruption of society	1	1	2	1	1	1	1	1	1	2	1	13
technological progressivism	1	1	1	1	1	2	2	1	2	2	2	16
technology first	1	1	1	1	1	1	1	1	1	1	1	11
transformation of government	3	1	2	1	2	1	1	1	1	2	1	16
Grand Total	**51**	**51**	**89**	**75**	**71**	**85**	**87**	**87**	**80**	**83**	**97**	**856**