# Decoding the Impact of Leadership Multiplicity on Innovation Adoption: The Role of Dual Leadership in Data-Supported Decision-Making Adoption in the UK Local Government

Doctor of Philosophy

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**March 2024**

بسم الله الرحمن الرحيم

# ( وَقُلْ رَبِّ زِدْنِي عِلْماً)

صدق الله العلي العظيم

سورة طه: من الآية114

## Declaration of original authorship

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

Sumayya Tameem Jad

## Acknowledgement

*As white as this paper are the hearts of people who helped and supported me in my Ph.D. journey. For you, Thank you.*

I dedicate this paragraph to my soul partners: Omar, Anas, and Yazan. I first thank my genius boy – my Anas – for having the patience and understanding to accompany me in this entire journey from the start, and I hereby dedicate the hard work of this thesis to him. I second thank my little boy – my Yazan – for his courage in spending long hours without me while he is still a baby. A sincere thank you for my soulmate and my life partner and husband – my Omar – for always being there for me.

The second thank you paragraph is dedicated to people whom without I wouldn't have been able to continue my Ph.D. My Family: To Mama Shaheena & Sara, my backbone of support. Baba Salem, Seham & Hussain, for their forever support, and Farooha for playing with my little Yazan. My Mother, Father, and sisters: Fadwa, Tameem, Hind, Sara and Hiba – Thank you for your prayers and continuous emotional support.

I dedicate the third paragraph to thank my friends and colleagues, on top of whom is Dr. Omar Al-Arabiat, for his constant support in lifting up my self-esteem and fruitful academic discussions, Alaa Abu Saba'a for being the first supporting friend, my friends, PhD colleagues and professors for the knowledge and lovely conversations we used to have in the department corridor. Special thanks to Dr. Stuart Moran, for his friendly academic support, and Tim Adams for his tremendous support in the acquisition of the project data.

And above all, thank you, Professor Keiichi Nakata, for supervising my work. Thank you for your advice and continuous support and understanding, especially during the difficult times.

## Abstract

Data adoption in decision-making has been identified as a primary solution for the increasing challenges confronted by local government authorities in the United Kingdom, thus contributing to the improvement of public service provision. Consequently, numerous research is conducted to investigate data adoption in the UK local government. However, little is known about the impact of the dual leadership hierarchies on the adoption of data-supported decision-making (DSDM) within the specified context. Therefore, this thesis aims to investigate the role of dual leadership in the adoption DSDM in the UK local government. To achieve this, the thesis conducts an inductive qualitative comparative approach, where data is collected from 13 local authorities in the form of documentation and semi-structured interviews. As thematic analysis and constant comparative analysis methods are applied to analyse the data, it is found that there are three coexisting decision-making logics in the UK local government. Moreover, based on the Institutional Logics Perspective, it is found that the higher the instantiation of the profession institutional order in the decision-making logics, the higher the adoption of data-supported decision-making in local authorities. Furthermore, based on the Diffusion of Innovation in Organizations, it is found that the dual leadership schemes manifesting as a result of interactions occurring among the decision-making logics significantly impact the level of data-supported decision-making adoption within local authorities. In addition, five leadership-related factors are found to influence a local authority's level of DSDM adoption: level of delegation, dual leadership relationship direction, political arrangement and stability of a local authority, and the political experience of local authorities' leading councillors. These results contribute empirically to the research context by exploring the different dual leadership schemes and explaining each's influence on the adoption of the phenomenon. Moreover, this thesis contributes theoretically to literature by extending the Diffusion of Innovation in Organizations theory to include organizations with multiple leadership hierarchies by adding the multiple leadership schemes as a construct under the leadership dimension. Practical implication of the research is presented by proposing an enhancement to a data maturity model for local government.

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| | |
|---|---|
| LGA | Local Government Association in England and Wales |
| UK | United Kingdom |
| DSDM | Data-Supported Decision-Making |
| NDDM / IDDM | Non-Data Decision-Making / Interest-Driven Decision-Making |
| DEDM | Data-Evidenced Decision-Making |
| DIDM | Data-Informed Decision-Making |
| DDDM | Data-Driven Decision-Making |
| UTAUT | Unified Theory of Acceptance and Use of Technology |

# 1 Chapter One: Introduction

The local government in the United Kingdom has been confronted with continuously rising challenges, whether financial, strategic, social, as well as constitutional and governmental, consequently impacting the capacity and quality of public service provision negatively. Many initiatives, research, and projects have been launched in reaction to the deteriorating levels of local government resources. However, stemming from the substantial positive consequences reaped from adopting data that is validated by research and practice (Brynjolfsson & McElheran, 2016; Jetzek et al., 2014), data adoption in decision-making has been identified as an effective solution for the resource constraints encountered within the UK local authorities, leading to improved quality of public service provision (Chotvijit et al., 2018; Mervyn et al., 2014).

As a result, several initiatives by central government, public sector institutions, and local authorities in the UK have been developed to encourage the adoption of data in strategic and operational decision-making. For example, the central government have launched the national digital strategy and the digital transformation strategy to emphasize and promote the adoption of data for improved operations and accelerated service provision (*Government Transformation Strategy*, n.d.; *UK Digital Strategy - GOV.UK*, n.d.). Moreover, academic institutions have been given research grants from the public sector to study the influence of data adoption on public service provision (Chotvijit et al., 2018; Elliman et al., 2007; Mervyn et al., 2014). Nevertheless, the LGA – Local Government Association in England and Wales – have been launching several projects to encourage the adoption of data in local authorities, such as the Wise Council (Symons et al., 2016) and several councils' digital peer-challenges (*Outcomes: Corporate Peer Challenge Reports | Local Government Association*, n.d.).

Motivated by the LGA data maturity model, which is the only model found to support local government authorities in the UK adopt data in their operations and decision-making via data capability evaluation, this thesis is an effort to contribute to the UK local government adoption of data through investigating the role of its uniquely dual structured leadership in the adoption of data-supported decision-making.

## 1.1 Study Overview

In order to position and justify the research topic within literature, several topical themes have been critically and analytically reviewed. These themes are data-supported decision-making adoption, data adoption maturity models, the adoption of data-supported decision-making within the research context - the UK local government, and a review of potential theories serving as an explanatory background of the thesis investigation.

Starting with a review of definitions pertaining to data utilization in decision-making, five types of decision-making are identified and found to use the same terminologies interchangeably (Akinci, 2015; Elgendy et al., 2022; Maghsoodi et al., 2020; Shapey et al., 2021; Sippitt & Moy, 2020), emphasizing the need for definitions clarification. Moreover, stemming from its contribution to the comprehensive understanding of the phenomenon, the relationship between the types of decision-making and the level of decision-making is reviewed as well as, where operational level decisions are found to be more associated to data adoption than strategic decisions. The review proceeds with investigating the constituting elements of data-supported decision-making and segregate them from factors that influence the adoption of the phenomenon, which provides an additional clarity to the understanding of the topic. Literature is found to identify the organizational privileges reaped as a result of adopting data-supported decision-making, validating the importance of the research topic.

Motivated by the Local Government Association (LGA) data maturity model, and since capabilities' evaluation frameworks are identified as a factor contributing to the adoption of data-supported decision-making (Kamal & Alsudairi, 2009), an analytical structural appraisal of maturity models has been generically conducted, leading to the development of the maturity models structural analysis matrix that serves as an analytical assessment tool for domain specific capability maturity models. For a deep understanding of data adoption, the matrix has been utilized to assess data analytics and intelligence maturity models. The assessment results in the identification of a major research gap, which is the lack of leadership inclusion as an evaluation dimension, albeit its identification as a key factor for the adoption of data-supported decision-making (Haneem et al., 2019; Kamal & Alsudairi, 2009).

Narrowing down the topic to the context of the UK local government, the exploration of data-supported decision-making adoption within the specified context necessitates a preliminary examination of the prevailing decision-making processes and practices within the research landscape. As the Local Government Association (2024) indicates, the ultimate decision-making authority within a local authority rests with the full council. However, in councils that have adopted leader-cabinet or hybrid political models, executive members of the elected administration wield a secondary level of decision-making power. In contrast, committee system local councils delegate this secondary authority to committees managing specific service portfolios. These committees play a pivotal role in strategically and politically guiding service provision to the public. This stands in stark contrast to committees in leader-cabinet and hybrid structures, which primarily function in a scrutiny capacity, reviewing decisions made by the executive members but lacking the power to directly make or overturn such decisions. Although the impact of the differences in the decision-making power distribution is apparent, little has been discussed in literature this regard, highlighting a substantial literature gap that studies the decision-making power dynamics and its influence on the adoption of innovation in local government.

Focusing on innovation adoption in the UK local government, literature on the adoption of data-supported decision-making is examined. Context-specific factors influencing the adoption of data-supported decision-making are critically reviewed and compared to the generic data adoption factors. Utilizing the maturity models' structural analysis matrix to analyse the LGA data maturity model- since it is the only data maturity model found to be tailored to the requirements of the UK local government authorities - the absence of leadership as an evaluation dimension has been identified, similar to the gap identified in maturity models evaluating data adoption. As leadership in the UK local government is found to be uniquely structured with dual hierarchies – a political and managerial, studies on the effect of leadership duality on the adoption of data-supported decision-making is found to be scares. This has led to widening the review conceptually to include organizations with leadership multiplicity, resulting in the identification of an empirical and conceptual gap: the role of dual leadership in the adoption of data-supported decision-making in the UK Local government, and the role of leadership multiplicity in the adoption of innovations within organizations.

Considering the context and literature presented above and stemming from the significant of data-supported decision-making for effective public service delivery in local government, a critical topical, empirical and theoretical gaps exist regarding the impact of different multiple leadership structures on the adoption of data in decision-making. Therefore, this research addresses this gap by investigating the unique dual leadership model in UK local government, where both political and managerial leaders play a role. Understanding how this leadership duality influences data adoption can be instrumental in improving data-driven practices within local government. By leveraging this understudied relationship, the research has the potential to enhance decision-making, ultimately leading to better public services for citizens.

Directed by the identified research gap, a review of potential theoretical background to guide and ground the research investigation is conducted. Accordingly, two categories of theories are reviewed. The first category includes technology acceptance and adoption theories, from which the diffusion of innovation in organizations theory is selected. According to Rogers (2003), three organizational dimensions determine the adoption and diffusion of an innovation within an organization. These dimensions are the leadership characteristics of an organization, internal characteristics of an organization, and external characteristics of an organization. Since this research is focused on the role of UK local government's dual leadership on the adoption of data-supported decision-making – considered as the innovation understudy- the leadership characteristics dimension is investigated.

Since the diffusion of the innovation in organizations theory does not cover organizations with unique multiple leadership structure, another theoretical base that caters for leadership multiplicity explanation deems necessary. Therefore, a second category of theories with potential capability to explain leadership multiplicity in organizations is reviewed, from which the institutional logics perspective theory is selected. According to Thornton et al. (2012), multiple institutional logics can occur in institutionally complex organizations due to different factors, among which is the structure of organizations. Consequently, the diffusion of innovation in organizations theory is employed in the exploration of the research context, and the institutional logics perspective theory is employed in the explanation of the special dual leadership structure and its role in the innovation adoption within the UK local government.

## 1.2 Research Gap & Justification

As identified in the previous section, there has been insufficient explanation of the role of the leadership duality on the adoption of data-supported decision-making in the UK local government. Driven by this empirical gap, little is known about the role of leadership multiplicity in the adoption of innovation within organizations, leading to the identification of a theoretical gap.

Although two major research gaps are identified, there are several justifications for undertaking this study. Firstly, there is a topical and contextual literature gap. Little is known about the adoption of data in decision-making within the public sector, particularly within the context of the UK local government, which highlights the need for further investigation. Moreover, the lack of research on the impact of leadership duality on the adoption of data in decision-making serves as a primary motivation for conducting this study, presenting a valuable opportunity to make a substantive contribution to the topical and contextual literature.

Secondly, a theoretical framework or conceptual model explaining the impact of leadership duality or multiplicity on organizational functions and efficacy is notably lacking. Existing organizational adoption theories do not encompass specialized institutions with multiple leadership structures within their explanatory scope, underscoring the necessity for a theoretical foundation that delineates and anticipates the disparities arising from this distinctive attribute in the context of technology and innovation adoption.

Thirdly, there is a methodological gap in the literature of Information Systems discipline. Conducting quantitative studies is the norm in the information systems discipline as research in this area is often empirically grounded, raising the need for conducting qualitative studies that investigates the suitability of existing theorise to the field and developing new theoretical insights explaining discipline-related phenomena.

The fourth reason for conducting this research is the scarcity of existing maturity models evaluating and encouraging the applicating of data-supported decision-making in the UK local

government authorities. As the LGA data maturity model forms the motivation behind this research, contributing to its enhancement is one of this research objectives.

## 1.3 Research Questions

Guided by the identified gap, and starting from the general inquiry of why local councils vary in their adoption of data-supported decision-making, this research poses the following questions:

1. What is the existing decision-making power distribution between the political and managerial leaderships in the UK local government?
2. How does this power distribution influence the adoption of different data-supported decision-making types in the UK local government?
3. Are there any differences in power distribution among the individual local authorities and their corresponding level of data-supported decision-making adoption? And are there any context specific factors influencing this adoption?

## 1.4 Research Aim

Accordingly, the aim of this research is to demystify the role of the dual leadership; the political and managerial, in the adoption of the data-supported decision-making phenomenon.

## 1.5 Research Objectives

The research aim is attained by the accomplishment of the following objectives:

1. Clarifying the leadership hierarchical structure in the UK local government.
2. Identifying the existing integrating decision-making logics that is influenced by the identified leadership structure of the UK local government
3. Assessing the decision-making logics that contribute to the adoption of data-supported decision-making types within the UK local government.

4. Identifying different empirical manifestations of decision-making logics in individual local councils and their influence on the adoption of data-supported decision-making
5. Analysing context-specific factors affecting the adoption of data-supported decision-making in the UK local councils.

The first and second objectives are achieved in chapter 4, the third objective in chapter 5, and the fourth and fifth objectives are achieved in chapter 6.

## 1.6 Research Contribution

This thesis makes significant contributions to the knowledge base concerning data adoption in decision-making within UK local government. These contributions are both empirical and theoretical. The empirical contribution stems from the under-researched context of UK local government. By examining data-supported decision-making adoption in this context, the study provides empirical validation of existing knowledge and sheds light on the unique role of the dual leadership structure within these authorities. This unveils a previously unexplored aspect of leadership on data-supported decision-making adoption in the UK local government, particularly at the field level (meso-level). The presence of dual leadership hierarchies within local councils leads to the identification of multiple, coexisting decision-making logics. The study investigates the impact of these logics on data adoption, offering a novel contribution to the field of data-supported decision-making adoption.

Furthermore, the research delves deeper into the impact of dual leadership on data adoption in UK local government on the micro-level (individual local authorities). It expands upon Roger's (2003) model of organizational innovativeness, which identifies leadership attitude towards change as the sole leadership factor influencing data adoption in decision-making. This study proposes a broader range of leadership factors. Beyond confirming the influence of political and managerial leadership attitudes, the research identifies additional leadership factors including: the dual leadership relationship scheme, relationship direction, the level of delegation between political and managerial leaders, in addition to context-specific factors, which are the political arrangement of the local authority, the political experience of political leadership, and the local authority’s political stability.

The thesis also contributes theoretically by extending the Rogers Diffusion of Innovation in Organizations theory (Rogers, 2003), specifically the Organizational Innovativeness model. This model currently considers only "leadership attitude towards change" within the leadership characteristics dimension. This study proposes an expanded leadership characteristic dimension encompassing: multiple leadership relationship schemes, levels of delegation among the multiple leadership structures, and the direction of multiple leadership relationships. These additions enhance the explanatory power of the Diffusion of Innovation in Organizations theory by incorporating organizations with multifaceted leadership structures. The introduction of these factors as generic constructs within the leadership dimension represents a significant contribution to the theory, arising from the integration of coexisting institutional logics.

Furthermore, several secondary contributions can be acclaimed to be achieved through this thesis. First, the development of the four-analyses cycles method in chapter 3 - synthesizing established qualitative analysis methods for the purpose of increasing the robustness of the analysis results - can be acclaimed as a methodological contribution of the thesis. Second, the identification and redefinition of decision-making types with respect to data in chapter 2 can be acclaimed as a topical contribution to the literature of data adoption in decision-making. Third, the clarification, aggregation, and validation of the details of the dual leadership hierarchies in the UK local government in chapter 4 can be considered as another topical or contextual contribution. Fourth, the development of the maturity models' structural analysis matrix as an assessment tool in chapter 2 can be acclaimed as a contribution to the literature of maturity models. Fifth, conducting inductive qualitative research can be considered as a methodological contribution to the discipline of information systems as these methodologies are seen to be limited within this specified discipline (Orlikowski & Baroudi, 2011).

## 1.7 Thesis Structure & Chapters Summary

This thesis is presented in eight chapters. Chapter one is an introductory summary setting the scene of the thesis. It summarises the literature review conducted, and gaps found in literature. it proceeds with identifying and justifying the selected research gap as the topic of the thesis. Accordingly, the research questions, aim and objectives are presented, in addition to the thesis contributions. It ends by presenting the structure of the thesis and summarizing its chapters.

Chapter two reviews the literature surrounding the topic of the study. It critically and analytically appraises four themes in literature. The first theme reviewed is literature on data-supported decision-making adoption, where it identifies data adoption decision-making types, its structural and adoption components, and benefits organizations reap from its adoption. the second theme reviews literature on data analytics and business intelligence maturity models and identifies structural and dimensional gaps related to the adoption of the capability, topped by the shortage of leadership inclusion as an evaluation dimension of the capability adoption. The third theme reviews the context-specific literature on the adoption of data in decision making in the UK local government, assesses the LGA data maturity model, and reviews limited literature on the role of dual leadership in the adoption of data-supported decision-making in the UK local government. The chapter ends with a review of technology adoption and acceptance theories, as well as theories with potential explanatory capacity to leadership multiplicity in organizations.

Chapter three presents the methodology and design of the research. According to the research onion by Saunders et al. (2019a), the chapter reviews, delineates and justifies choices pertaining to the research philosophical stance, mode of inquiry, approaches and methodology, and design including the data collection and analysis methods applied, which is an inductive qualitative multi-method comparative research, where data is collected via documentation and semi-structured interviews, and analysed using thematic analysis and constant comparative analysis methods.

Chapter four presents and discusses results pertaining to the first research question. It sets the context of the research by explaining the leadership structure in the UK local government and proceeds with identifying existing decision-making logics within the context. It continues by identifying the relationship among the decision-making logics through the identification of dominancy and confliction in between.

Chapter five presents and discusses findings addressing the second research question. It identifies the types of decision-making with respect to data adoption in the UK local government and establishes the relationship between these types and the identified logics in the previous chapter, leading to the identification of decision-making logics contributing to the adoption of data-supported decision-making.

Chapter six presents and discusses results pertaining to the third research question. Moving from field-level to individual-level analysis, dual leadership schemes manifesting in practice as a result of decision-making logics integration are identified. In addition, the relationship between these schemes and the adoption of data-supported decision-making is established, as well as additional factors influencing the adoption of the phenomenon. This chapter reveals the answer to the core investigation of this thesis: the role of dual leadership in the adoption of data-supported decision-making in the UK local government.

Chapter seven presents a direct practical implication of the research by applying the findings to propose an enhanced version of the LGA data maturity model, the motivation of this study. It upgrades the model's capability to evaluate local authorities' adoption of data by improving the model's inclusion of the leadership dimension, as well as its accommodation of the data adopting decision-making types representing levels of data adoption, contributing to the adoption of data-supported decision-making in local government authorities in the United Kingdom.

Lastly, chapter eight concludes the thesis by revising its key components. It summarizes the topic of the thesis by restating the study gap, research importance and aim. It continues by summarizing the main results of the study, followed by the research contributions. It then reviews the organization of the thesis and concludes with stating the practical implication of the research, and a summary of the study limitations and future research.

## 1.8 Conclusion

This chapter introduced the thesis by presenting major milestones. It started by presenting the study motivation and importance, followed by a summary of conducted literature review. It proceeded with reporting the research gap and justified its selection as the topic of the thesis, followed by a summary of the research contributions. The chapter ended with a summary of the thesis structure. The next chapter reviews literature pertaining to the topic of the study: the role of dual leadership in the adoption of data-supported decision-making in the UK local government.

# 2 Chapter Two: Literature Review

## 2.1 Introduction

Prior to delving into the study investigation, it is important to review literature surrounding the topic of the research to be able to position and validate the study inquiry within the body of knowledge. Therefore, this chapter reviews the literature of data-supported decision-making – or DSDM hereafter- and its adoption in the UK local government authorities. The chapter commences with an introductory review of data supported decision-making literature: definitions and terminologies annotating the phenomenon, its association to decision-making level, its constituting and contributing adoption components, and evidenced benefits reaped from its adoption.

The second section in the chapter investigates data maturity models, which are evaluation frameworks utilized to assess and guide organizations in the adoption of DSDM capability. Since these models are found to be significant factors of technological innovation adoption in the UK local government (Kamal & Alsudairi, 2009) , a generic and domain specific structural analysis of maturity models from literature is conducted, leading to the identification of major literature gaps in DSDM adoption and the development of its maturity models.

Narrowing down the topic to the context of the UK local government, the third section reviews the context specific literature on DSDM adoption, maturity model, identifies literature gaps, reviews literature on the role of the dual leadership in the adoption of DSDM in the UK local authorities and selects the research inquiry topic. The chapter concludes with a review of possible theories to adopt as a base for conducting the study investigation and selects the theories: the Diffusion of Innovation and Institutional Logics Perspective.

## 2.2 Data-Supported Decision-Making Adoption (DSDM)

This section analytically reviews literature on organizational adoption of data in decision-making. It starts with reviewing and categorizing definitions and terminologies of decision-

making with respect to the use of data. It continues to identify the connection between decisions that uses data and the level of decision-making, strategic or operational. Next, it critically reviews literature on components constituting and contributing to the adoption of data-supported decision-making, segregating between what constitute the phenomenon and what influences it. The last part in this section reviews the benefits and advantages reaped from the adoption of data-supported decision-making, validating the significance of the selection of the topic to academic literature.

### 2.2.1 Types of Data-Supported Decision-Making

This subsection reviews and compares literature about the types of decision-making that utilizes data. Several terms are found in literature to indicate the adoption or non-adoption of data in decision-making, such as Data-Driven (Reeves & Chiang, 2018; Shapey et al., 2021; Veldof, 1999), Data-Informed (Schildkamp & Kuiper, 2010), Evidence-Based (Fleming & Rhodes, 2018a; Kelly et al., 2017; Stonebraker & Howard, 2018) and Interest-Based or Intuition-Based (Akinci, 2015; Cairney et al., 2016). Despite the fact that some of these terms are used interchangeably in literature, such as Data-Driven, Data-Informed, and Evidence-Based, discrepancies are found in the annotations of these terms. Five main definitions of decision-making are found in literature with respect to the use of data. These definitions are summarized and exhibited in table 2.1. What differ among these definitions are found to be primarily two parameters; the decision-making stage at which data is adopted within the process, and the level of decision-making reliance on data.

Table 2.1: Decision-Making Definitions with Respect to Data-Adoption

| No. | Definitions | Data Adoption Stage | Level of Decision's Reliance on Data | Terms from Literature | References |
|---|---|---|---|---|---|
| 1 | A decision-making process that adopts data to better inform decisions. | Unspecified. Can be at any stage | Unspecified | Data-Driven<br>Data-Informed<br>Evidence-Based<br>Community-Based | (Åkerman et al., 2018; Banner, 2002; Bärring et al., 2018; Graaf et al., 2021; Kelly et al., 2017; Li et al., 2016; Maghsoodi et al., 2020; Schildkamp & Kuiper, 2010; Staman et al., 2014; Wan, 2015) |
| 2 | A decision-making process that is totally reliant on data, ranging from only basing the final decision on data to the full automation of the decision-making process stages starting from the problem identification stage to the decision-making and results' evaluation stages. | All stages, with emphasis on adoption prior the making of the decision as it relies on data. | Completely and solely reliant (100%) | Data-Driven<br>Evidence-Based | (Arunachalam & Kumar, 2018; Ballou et al., 2018; Han et al., 2020; Honig & Coburn, 2007; Jia et al., 2015; Long, 2018; Provost & Fawcett, 2013; Reeves & Chiang, 2018, 2019; Shapey et al., 2021; Troisi et al., 2020; Veldof, 1999; L. Zhang et al., 2020; S. Zhang et al., 2019) |
| 3 | A decision-making process that substantially considers data in addition to other elements in making decisions | All stages, with emphasis on adoption prior the making of the decision as it substantially considers data with other elements | Conditional to the issue - Consistently considered but not totally reliant | Data-Driven<br>Evidence-Based | (Baba & HakemZadeh, 2012; Elgendy et al., 2022; Fleming & Rhodes, 2018; Greener & Greve, 2013; Reeves, 2017; Stonebraker & Howard, 2018; Xie & Wang, 2018; Zhu et al., 2020) |
| 4 | A decision-making process that bases decisions on personal interests and intuition and uses data that only supports that decision | After a decision is made | Zero reliance as decision is taken based on personal interests | Evidence-Based<br>Interest-Based | (Cairney et al., 2016; Greener & Greve, 2013; Sippitt & Moy, 2020) |
| 5 | A decision-making process that bases decisions on personal interests and intuition | No data adoption | None (0%) | Interest-Based<br>Intuition-Based | (Akinci, 2015; Diefenbach, 2013) |

The first type of decision-making generally annotates the adoption of data in the decision-making process to inform decisions. It neither specifies the decision-making stage at which data is adopted, nor it determines the level of decision reliance on data. Literature is found to associate this definition with the terms Data-Driven (Åkerman et al., 2018; Bärring et al., 2018; Staman et al., 2014), Data-Informed (Schildkamp & Kuiper, 2010), and Evidenced-Based decision-making (Graaf et al., 2021; Kelly et al., 2017). Moreover, some studies are found to assign this type of decision-making the term Community-Based decisions (Banner, 2002; Wan, 2015), indicating community involvement in the decision-making process. As with other terms, the degree of decisions dependence on community input is not specified, as well as the decision-making stage at which data is adopted.

The second type of decision-making involves the utilization of data insights prior to the decision-making stage. Furthermore, decisions made applying this decision-making process

solely rely on data. Whether data adoption is automated from the start of the process; identifying problems or opportunities, analysing, predicting, deciding and evaluating decisions' results (Ballou et al., 2018; Reeves & Chiang, 2018; Han et al., 2020; Shapey et al., 2021), or manually adopting data only in the step preceding the making of the decision (Long, 2018; Troisi et al., 2020), it is the adoption of data prior to the stage of making a decision, as well as the sole and complete reliance of making the decision on data that distinguishes this type of decision-making from the other types. Moreover, it is the highest type of decision-making in the adoption of data and analytics insights. This annotation of decision-making is found in literature under the terms Data-Driven (Arunachalam & Kumar, 2018; Han et al., 2020; Zhang et al., 2019) and Evidence-Based decision-making (Honig & Coburn, 2007; Jia et al., 2015; Zhang et al., 2020).

The third type of decision-making that adopts data significantly considers data prior to making a decision and throughout the decision-making process, however it contemplates other elements when making a decision, such as professional experience, culture, expenses, and time (Baba & HakemZadeh, 2012; Elgendy et al., 2022; Reeves, 2017). This type of decision-making is similar to the second type of decision-making in its adoption of data earlier to making decisions, however, is different in its conditional level of reliance on data as it considers additional elements when making decisions. This definition of decision-making is found in literature under the terms Data-Driven (Xie & Wang, 2018; Zhu et al., 2020) and Evidenced-Based (Fleming & Rhodes, 2018; Stonebraker & Howard, 2018) decision-making, which is identical to the terms found to describe the first and second definitions of data-supported decision-making.

Although the fourth type of decision-making utilizes data, decisions made applying this type are contingent upon personal interests and intuition, such as political ideologies and personal experiences. Data is only adopted to support these interest-driven decisions subsequent to their making. Some papers claim that this type of decision-making misuses data as it is adopted to support personal biases (Greener & Greve, 2013). This definition is found in literature to be named as Interest-Based (Greener & Greve, 2013) and Evidence-Based decision-making (Cairney et al., 2016; Sippitt & Moy, 2020).

The fifth type of decision-making does not adopt data. Instead, it bases decisions on personal interests and intuition. This type of decision-making is included in this review to emphasize

the various levels of decisions' utilization of and reliance on data. This type of decision-making is the opposite of the second data-supported decision-making type, which fully relies on data analysis and insights. The fifth type of decision-making is found in literature as Intuition-Based or Interest-Based decision-making (Akinci, 2015; Diefenbach, 2013).

Literature has been instrumental in delineating various forms of data-supported decision-making. However, it is important to recognize that these definitions have been identified using similar terminologies despite encompassing different connotations. For instance, the term "Evidence-Based decision-making" is employed to characterize four types of the identified decision-making, while "Data-Driven decision-making" encompasses three of the aforementioned decision-making types. Furthermore, some of these defined decision-making terms may encompass a broader spectrum of definitions, rendering them more general than others. For example, "Evidence-Based decision-making" is a term that can encompass all decisions utilizing data, irrespective of the level of data adoption or the degree of reliance on data in decision-making. Similarly, "Interest-Based decision-making" can encompass all decisions that are driven by interests, regardless of their utilization of data. This ambiguity and lack of clarity underscore the necessity to distinctly and clearly identify these different types of decision-making in the scholarly literature.

As investigating institutional decision-making with respect to data utilization is pivotal to the understanding of data-supported decision-making adoption, investigating a connection between the adoption of data-supported decision-making and the decision-making organizational level (strategic, tacit and operational) is important as well, which is reviewed next.

### 2.2.2 Data-Supported Decision-Making Types and Decision-Making Levels

This subsection investigates the literature concerning the relationship between the decision-making types reviewed in the previous subsection and the decision-making levels within organizations. Informing the decision-making process with data evidence is a topic that has been extensively discussed in literature (Brynjolfsson & Mcelheran, 2019; Mandinach, 2012; Provost & Fawcett, 2013). Likewise, studies differentiating decision-making levels – the Operational, Tactical and Strategic (Khalifa, 2021; Shivakumar, 2014) - and the constant

increase in the adoption of data for the making of these different-level decisions have been widely discussed in literature as well (Bessant, 2022; Eisenhardt, 1989). However, research studying the relationship between the level of data adoption in decision-making and the decision-making level is highly limited.

Two studies have been found to support the notion suggesting the lower the level of decision-making, the higher the level of data adoption. In his discussion of data and decision-making, De Vries (2018) claims that the more a decision is operational or technical in nature, the higher the level of utilization and reliance on data, and the higher the level of decision making, the less is the adoption and reliance of data in decision-making. Moreover, Popovič et al. (2012) discuss in their study that using data for operational decision-making is easier than strategic decision-making, indicating a higher data adoption and reliance in operational decision-making than the strategic one. However, the scarcity of literature connecting the level of data adoption and the decision-making level confirms a research gap that can contribute to the understanding of organizational data-adoption in decision-making.

The next subsection reviews the components of data-supported decision-making as found in literature.

### 2.2.3 Data-Supported Decision-Making Aspects: Elements & Influencing Factors

This subsection reviews the aspects of data-supported decision-making from literature and presents an effort for a clearer understanding of factors surrounding the phenomenon by splitting them into two groups: elements constituting the phenomenon, and factors influencing it.

Due to the significantly positive influence of data-supported decision-making adoption on organizational performance (Jetzek et al., 2014; Kiron, 2017; Malomo & Sena, 2017) ,which is reviewed in the coming subsection 2.2.4, many studies have empirically investigated the different aspects that collectively constitute and influence the adoption of the phenomenon. These aspects are found to be categorized into three groups: organizational (Brynjolfsson & McElheran, 2016; DeNard et al., 2019; Hoeyer, 2019), technical (Jetzek et al., 2014; Lismont

et al., 2017; Ryan et al., 2014), and environmental aspects (Athey, 2017; Gürdür et al., 2019; Wimmer & Aasheim, 2019). Table 2.2 lists data-supported decision-making aspects as categorized in literature.

Table 2.2: Data-Supported Decision-Making Aspects by Category

| Category | Aspect | References |
|---|---|---|
| **Organizational** | Organization size<br>Organizational learning<br>Investment<br>Organizational culture<br>Leadership<br>KPI<br>Change Management<br>Time availability<br>Innovation Awareness<br>Resource management<br>Strategy<br>Communication<br>Agile management<br>Operation process<br>Problem solving skills<br>Organizational structure | (Berndtsson et al., 2018; Brynjolfsson & McElheran, 2016; DeNard et al., 2019; Dremel, 2017; Etsy & Rushing, 2007; Gürdür et al., 2019; Hoeyer, 2019; Jetzek et al., 2014; Kiron, 2017; Lismont et al., 2017; McBride et al., 2019; Queiroz Tourinho et al., 2019; Ryan et al., 2014; Tang & Ho, 2019) |
| **Technological** | Information technology<br>Data Infrastructure<br>Data Analytics<br>Data Skills<br>Data governance and quality<br>Data strategy<br>Data privacy and security<br>Data integration and management | (Athey, 2017; Berndtsson et al., 2018; Brynjolfsson & McElheran, 2016; Chun et al., 2018; DeNard et al., 2019; Dremel, 2017; Etsy & Rushing, 2007; Ghosh & Scott, 2011; Gürdür et al., 2019; Hoeyer, 2019; Jetzek et al., 2014; Kiron, 2017; Lismont et al., 2017; Queiroz Tourinho et al., 2019; Ryan et al., 2014; Tang & Ho, 2019; Wimmer & Aasheim, 2019) |
| **Environmental** | Openness of sector organizations and data<br>Availability of resources<br>Stakeholders' engagement<br>Crowdsourcing<br>Open-source software<br>Partnerships<br>External stakeholders' opinions | (Athey, 2017; Chun et al., 2018; Etsy & Rushing, 2007; Gürdür et al., 2019; Jetzek et al., 2014; Kiron, 2017; McBride et al., 2019; Tang & Ho, 2019; Wimmer & Aasheim, 2019) |

The elements and factors of data-supported decision-making adoption are found to be inseparable in literature. However, it is imperative to distinguish between constituting elements of the phenomenon and factors influencing its adoption. According to the definitions reviewed in subsection 2.2.1, decision makers, or leadership, and data analytics capability are the two elements constituting data-supported decision-making. The remaining aspects represent factors that influence the adoption of data-supported decision-making and can be classified as either internal or external organizational factors. This distinction provides a clearer comprehension of the dynamics involved in this phenomenon. Figure 2.1 presents a reorganized representation of the aspects of data-supported decision-making, illustrating the interrelationships among them.

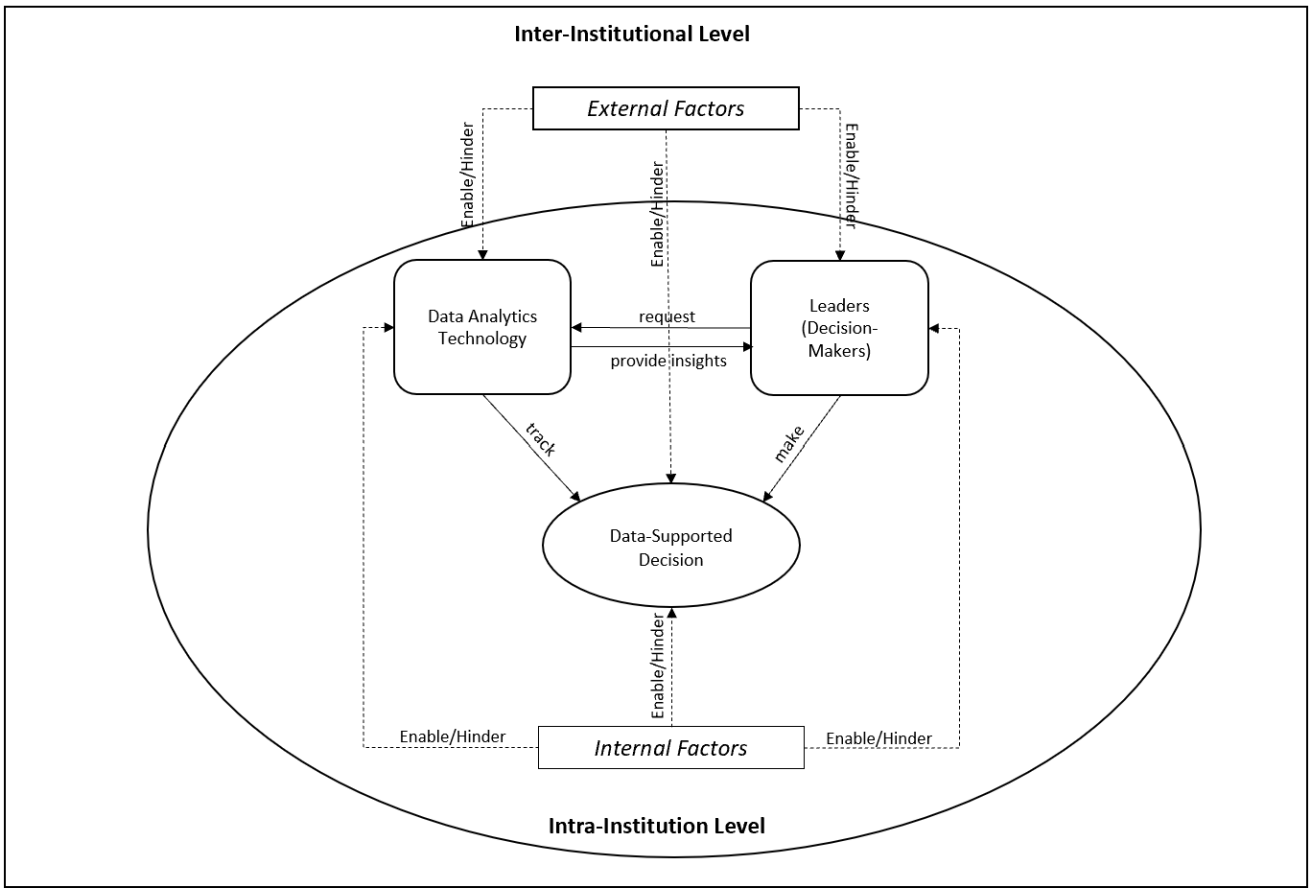



Figure 2.1: Data-Supported Decision-Making Aspects

Synthesized from literature, Figure 2.1 provides a more nuanced illustration of the elements, mechanisms, and influencing factors pertinent to the adoption of data-supported decision-making within an institutional context. This reorganized representation takes into account the delineation of institutional boundaries, highlighting distinctions between internal and external factors (Etsy & Rushing, 2007; Jetzek et al., 2014; McBride et al., 2019). The elements of data-supported decision-making are depicted in square shapes, representing data analytics capability and leadership or decision-makers (Åkerman et al., 2018; Bärring et al., 2018). Arrows interconnecting these elements and the data-supported decision, which is the event or the phenomenon, represents mechanisms and internal relationships within the institutional boundaries (Jetzek et al., 2014; Jimerson et al., 2021; Kiron, 2017). This visual representation illustrates the process wherein a decision-maker requests data from the institutional data analytics capability, receives the requested data insights, and utilizes them in the decision-making process. Furthermore, the outcomes of the data-supported decision can be tracked or evaluated through the institutional data analytics capability.

In addition, the illustration categorizes factors influencing data-supported decision-making adoption into internal and external factors (DeNard et al., 2019; Jetzek et al., 2014; McBride et al., 2019). A comparison between the factors' categorization in Table 2.2 and Figure 2.1 reveals a substantial alignment, wherein the internal factors in the diagram correspond to the organizational and technical factors in the table, encompassing aspects such as organizational culture and investment. Similarly, the external factors in the diagram align with the environmental factors in the table, such as external partnerships and open data sources. Both internal and external factors are linked to the phenomenon and its elements, as they possess the capacity to exert direct influence on the adoption of data-supported decision-making, either independently or through their impact on the elements of the phenomenon.

Figure 2.1 makes a significant contribution to the literature of data-supported decision-making by identifying the constituting elements of the phenomenon and the factors that contribute to its adoption. Notably, it recognizes leadership (or the decision-maker) as a central agent in the process, an element that has been overlooked in a considerable body of literature discussing the same concept (Athey, 2017; Brynjolfsson & McElheran, 2016; Hoeyer, 2019; Mandinach, 2012). Furthermore, it comprehensively synthesizes the landscape of data-supported decision-making, encompassing its elements, factors, and the interrelationships among them within a single diagram at a conceptual level, irrespective of the type of data-supported decision-making, or degree of technological advancement in its application. Whether data-supported decision-making is fully automated within an organization with sophisticated integrated analytics tools (Han et al., 2020) or is executed manually by human agents (Åkerman et al., 2018; Xie & Wang, 2018), utilizes data before making the decision (Ballou et al., 2018), or only to support an interest-driven decision (Cairney et al., 2016), the diagram accommodates all scenarios at an abstract level, representing a significant stride towards a comprehensive understanding of the concept.

Subsequently, the following subsection explores the advantages and benefits of adopting data-supported decision-making, which serve as the driving forces behind organizations' decision to adopt this practice.

### 2.2.4 Organizational Benefits and Advantages of Adopting Data-Supported Decision-Making

The recognition of the outcome values stemming from adopting data in decision-making has been found to motivate organizations towards higher levels of data utilization. Research confirms that the higher the adoption level of data analytics in decision-making, the higher the organizations' economic and social values (Janssen et al., 2017; Kiron, 2017; Schoenherr & Speier-Pero, 2015), the higher the institutional visibility and transparency (Brynjolfsson & McElheran, 2016; Janssen et al., 2017;Veenstra et al., 2020), the lower the risk and cost (Cao et al., 2019; Janssen et al., 2017; Schoenherr & Speier-Pero, 2015), and the higher the efficiency of service delivery and business operations processes (Cao et al., 2015; Malomo & Sena, 2017; S. Zhang et al., 2019).

Furthermore, adopting data analytics and intelligence in decision-making is significantly correlated with enhanced strategic planning and budgeting (Kiron, 2017; Malomo & Sena, 2017; Nutt, 2006), higher customer acquisition and business network and partnerships(Cao et al., 2015; Grabińska & Ziora, 2019; Kiron, 2017) , higher adoption of innovation (Grabińska & Ziora, 2019; Janssen et al., 2017; Jetzek et al., 2014), and an overall improved decision-making process (Desouza & Jacob, 2014; Shorfuzzaman, 2017; Volosova & Matiukhina, 2020). Table 2.2 summarizes organizational benefits and advantages gained from the adoption of data to decision-making processes from literature. These benefits are recognized by organizations from both private (Grabińska & Ziora, 2019; Popovič et al., 2012; Volosova & Matiukhina, 2020)and public sectors (Janssen et al., 2017; Jetzek et al., 2014; Malomo & Sena, 2017).

As best organizational practices emphasize the association of higher gains with higher levels of data-supported decision-making adoption (Symons et al., 2016), capability assessment tools are developed to support organizations assess their data adoption levels. Among those tools are maturity models, which is discussed next.

Table 2.3: Advantages of Adopting Data-Supported Decision-Making

| No. | Advantages | References |
|---|---|---|
| 1 | Improved Decision-Making Process | (Brynjolfsson & McElheran, 2016; Desouza & Jacob, 2014; Shorfuzzaman, 2017; Volosova & Matiukhina, 2020) |
| 2 | Increase Social Value | (Janssen et al., 2017; Jetzek et al., 2014) |
| 3 | Enhance Innovation & Creates Opportunities | (Grabińska & Ziora, 2019; Janssen et al., 2017; Jetzek et al., 2014; Kiron, 2017) |
| 4 | Improve Productivity & Performance | (Kiron, 2017; Popovič et al., 2012; Schoenherr & Speier-Pero, 2015) |
| 5 | Facilitates Business Networks & Partnerships | (Grabińska & Ziora, 2019; Kiron, 2017) |
| 6 | Increase Economic Value: Sales, Revenues | (Brynjolfsson & McElheran, 2016; Jetzek et al., 2014; Kiron, 2017; Schoenherr & Speier-Pero, 2015) |
| 7 | Improve Procurement & Commissioning | (Choi et al., 2018; Kiron, 2017) |
| 8 | Enhance Strategic Planning | (Cao et al., 2019; Janssen et al., 2017; Kiron, 2017; Malomo & Sena, 2017) |
| 9 | Increase Visibility | (Brynjolfsson & McElheran, 2016; Schoenherr & Speier-Pero, 2015) |
| 10 | Improved Risk Assessment | (Brynjolfsson & McElheran, 2016; Cao et al., 2019; Schoenherr & Speier-Pero, 2015) |
| 11 | Improve Service Delivery Efficiency | (Janssen et al., 2017; Malomo & Sena, 2017) |
| 12 | Time Reduction & Management | (Janssen et al., 2017) |
| 14 | Improved Transparency | (Janssen et al., 2017; Veenstra et al., 2020) |
| 15 | Improved Budgeting | (Nutt, 2006) |
| 16 | Enhanced Business & Operational Processes | (Cao et al., 2015, Zhang et al., 2017) |
| 17 | Enhanced Customer Retention & Acquisition | (Cao et al., 2015) |

## 2.3 Data Maturity Models: Assessing the Adoption of Data-Supported Decision-Making

According to Kamal & Alsudairi (2009), evaluation frameworks is a significant factor influencing the adoption of technologies within local government. Hence, validating the importance of maturity models as adoption assessment tools, which is the motivation of conducting this research. Consequently, this section reviews and analyses literature on maturity models generally, then it specifies it to the review and analysis of maturity models assessing organizational adoption of data analytics and business intelligence in decision-making. The section starts with general overview of maturity model.

The section moves forward to generically review the structure of maturity models, and consequently develops a structural analysis matrix that can be applied to analyse and support the development of maturity models. It next selects from literature data analytics maturity models evaluating organizational capability to adopt data in decision-making and analyse them by applying the structural analysis matrix and embedding a comparison of DSDM adoption aspects with models' dimensions within, which results in identifying major gaps in the literature of data adoption maturity models.

### 2.3.1 Maturity Models: Overview

This subsection briefly reviews maturity models literature. A maturity model is a construct designed in the form of a table or framework that serves three purposes: assessment of a certain organizational capability, benchmarking, and process guidance for capability development (O'donovan et al., 2016; Wetering & Batenburg, 2009; Williams et al., 2019). Stemming from organizations' requirement for data and technology assessment, consulting firms, such as Accenture, SAS, Gartner, TDWI -with the support of IBM, Cloudera and HP, have been developing and promoting "Analytics Maturity Models", or maturity models that measure the level of data analytics adoption in decision-making (Andrews et al., 2018; Assessing Your Business Analytics Maturity: Eight Metrics That Matter, 2016; Halper & Krishnan, 2013; Vries, 2015). Numerous studies have developed data analytics and business intelligence maturity models (Athe & Dinh, 2019; Fernando & Engel, 2018; Gimenez et al., 2017; Huang & Handfield, 2015; Spruit & Sacu, 2015; Zheng et al., 2018). However, limited research is found to focus on the structural aspect of maturity models and its effect on models' functionality and purpose attainment. Hence, a structural analysis of maturity models in literature is conducted in the next subsection to deepen the understanding of maturity models as a capability assessment tool.

### 2.3.2 Structural Analysis of Maturity Models

This subsection deconstructs maturity models into their primary components to identify their structural impact on functionality and goal achievement and – in a later stage – aid the enhancement of the LGA Data Maturity Model, the motivation of this research. To accomplish this, Scopus research database was used to search for peer-reviewed articles that is mainly about maturity models using the terms "maturity model" or "maturity assessment" in the search field. No additional filtration or criteria was required as the review aims to generically investigate maturity models' structure regardless the field of the study. a total of 49 peer-reviewed journal articles focusing on maturity models published from 2005 onwards across various domains; supply chain, management, government services, human resource, manufacturing, and education, were selected randomly. Among these, 29 papers were chosen for analysis as they specifically develop maturity models from inception rather than utilizing pre-existing ones. The initial findings of this analysis indicate that maturity models exhibit

consistent structural components, albeit with minor variations attributable to differences in domain and intended purpose.

Four generic structural component groups, under which 12 sub-components, are identified as principal elements of maturity models. The Skeleton, Evaluation, Validation and Model Tool are the four major parts found to constitute maturity models. Table 2.4 summarizes these components as found in literature and organizes them in groups and sub-groups of elements based on purpose and functionality.

#### 2.3.2.1 The Skeleton Elements

The first group of maturity models' components is the Skeleton, which encompasses the basic defining elements of a maturity model. A maturity model skeleton is found to include five element sub-groups. The first element sub-group is the maturity levels', representing the consecutive developmental stages of the capability under assessment. All maturity models have at least two maturity levels (Chen et al., 2010) exhibiting an evolution of a certain capability and can range up to five or six levels (Eom & Kim, 2014; Labaka et al., 2019; Reefke et al., 2014; Vereecke et al., 2018).

The second skeletal component sub-group is the evaluation dimensions', which encompasses the parameters or attributes upon which a capability's maturity is evaluated. Maturity models are found to have at least two evaluating dimensions of the maturing capability and can go up to 9 evaluation dimensions (Andersen & Henriksen, 2006; Chapman, 2019; Concha et al., 2012). In some maturity models, evaluating dimensions disseminate to sub-dimensions, increasing the granularity of the capability maturity assessment (el-Gayar et al., 2011; Neff et al., 2014; Valdés et al., 2011).

The third sub-group of elements under maturity models' skeleton is called the additional elements group. As its name implies, it is a sub-group that incorporates all elements associated with maturity levels other than the evaluation dimensions, such as values, objectives, and best practices (Kahn et al., 2006; Vereecke et al., 2018). These elements demonstrate capability status and goals expected to be attained at every maturity level, therefore providing a clearer explanation of capability levels to users by example. These

additional elements are not present in all maturity models depending on the level of model practical and conceptual development.

Table 2.4: Maturity Models Structural Components

| No. | Structural Group | Elements/Sub-Group | Element Types & Description |
|---|---|---|---|
| **1** | Skeleton | a) Maturity levels | Two or more titled or numbered levels (Boughzala & De Vreede, 2015; Chen et al., 2010) |
| | | b) Evaluation dimensions | One level dimension or more (sub-levels) (Concha et al., 2012; Kahn et al., 2006) |
| | | c) Additional elements | Values, objectives, or best practices linked to maturity levels (Chapman, 2019) |
| | | d) Element-to-maturity level description | Defining the status of an element in a level (Reefke et al., 2014; Solar et al., 2013) |
| | | e) Dimension relationships/dependencies | - **Intra-dimensional**: relationship(s) occurring between/among dimensions of a model (Valdés et al., 2011)<br>- **Inter-dimensional**: relationship(s) occurring between model dimensions and external factors (Vereecke et al., 2018) |
| **2** | Evaluation | a) Method | - **Objective**: using numbers to evaluate. Can be simple, moderate, or complex calculation method (Powell et al., 2013)<br>- **Subjective:** based on opinions (el-Gayar et al., 2011)<br>- **Mixed:** use of numbers and opinions (Huang & Handfield, 2015) |
| | | b) Scope | - **Granular**: evaluating on the level of each dimension/sub-dimension (Kahn et al., 2006)<br>- **Overall**: one high-level evaluation of capability (Lee & Kwak, 2012)<br>- **Comprehensive**: evaluating on both granular and overall levels ((Neff et al., 2014) |
| | | c) Progression visualization | - **Single-Linear**: maturity progression route represented as a single straight line (Labaka et al., 2019)<br>- **Single-non-linear**: maturity progression route represented as a single curve (Andersen & Henriksen, 2006)<br>- **Multiple-Linear**: maturity progression route represented as many straight lines. (Arunachalam & Kumar, 2018)<br>- **Multiple-non-linear**: maturity progression route represented as many of curves (Davison et al., 2005) |
| | | d) Result form | - **Point:** resulting maturity level represented as a point in the maturity progression line graph)Powell et al., 2013(<br>- **Phase**: resulting maturity level represented as an interval or part of the maturity progression line graph (Ngai et al., 2013)<br>- **Point-in-a phase:** resulting maturity level is a point in a line interval representing one of the model's segmented maturity levels(Gastaldi et al., 2018)<br>- **Segmentation:** resulting maturity level is a category profiled and represented in a diagram or a matrix (Arunachalam & Kumar, 2018) |
| **3** | Validation | a) Qualitative | Using a qualitative research technique to validate the model – usually interviews, focus groups, and case-studies (Ngai et al., 2013) |
| | | b) Quantitative | Using a quantitative research technique to validate the model (Eom & Kim, 2014) |
| **4** | Model Tool | Digital Software/ Application | Developing an online survey or digital application/platform for an interactive accessible maturity model (Solar et al., 2013) |

The fourth skeletal element sub-group is the element-to-maturity level description. It is simply the description of the evaluation dimension or other elements in every maturity level. In other orders, this element defines the status and evolution stage of all dimensions and additional elements at a specified maturity level. Element-to-maturity level description is a mandatory element that is present in all maturity models (Reefke et al., 2014; Solar et al., 2013).

The last sub-group of elements under the skeleton group is dimensions relationships and dependencies. A well-developed maturity model considers the effect of the model dimensions on each other resulting from constructs relationships, positive or negative. These relationships can occur internally between the model's dimensions (Valdés et al., 2011), which is referred to as intra-dimensional relationship, or between the model's dimensions and external factors (Vereecke et al., 2018), and accordingly referred to as inter-dimensional relationship. Not all maturity models are tailored to consider these influential relationships in the development of the model. In fact, maturity models that are constructed upon an extensively validated theoretical framework are found to incorporate this element in the development of the models (Chen et al., 2010; Valdés et al., 2011; Vereecke et al., 2018).

As mentioned previously, skeletal elements form the physical structure of the model matrix or framework. To illustrate, a typical maturity model would be in a tabular format, where maturity levels are represented in an ascending order as the columns of the tables, and the evaluation dimensions and additional elements are the rows of the table. The intersecting cells between the columns and rows hold the element-to-maturity level descriptions, where the progression status of every element is defined in its corresponding maturity level. if considered in the model, dimensional relationships, whether intra-dimensional or inter-dimensional, are accommodated within the element-to-maturity level descriptions. Figure 2.2 illustrates the allocation of the skeleton group elements.

| Capability | | Maturity Level 1 | Maturity Level 2 | Maturity Level 3 | Maturity Level 4 | Maturity Level 5 |
|---|---|---|---|---|---|---|
| Evaluation Dimension 1 | sub-dimention 1 | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description |
| | sub-dimention 2 | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description |
| Evaluation Dimension 2 | | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description |
| Evaluation Dimension 3 | | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description |
| Additional Element 1 | | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description |
| Additional Element 2 | | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description | element-to-maturity level description |

Figure 2.2: Maturity Model Skeleton Elements

#### 2.3.2.2 The Evaluation Elements

The second group of maturity models' components is the evaluation elements group, which includes elements and mechanisms used to assess the capability under study. This group comprises four sub-groups of elements. The first sub-group is the evaluation method, which refers to the process employed in assessing a capability. This process can be entirely objective, involving a quantitative calculation or equation to derive the final assessment result (Powell et al., 2013), entirely subjective and based on human opinion (El-Gayar et al., 2011), or a combination of both objective and subjective approaches (Huang & Handfield, 2015).

The second sub-group of the evaluation components pertains to the assessment scope, which denotes the level of detail of the capability assessment. This may involve a highly detailed assessment at a sub-dimensional level (Kahn et al., 2006), an assessment of the capability as a whole (Lee & Kwak, 2012), or a comprehensive evaluation encompassing multiple levels (i.e., assessment of each dimension and the overall capability) (Neff et al., 2014). The third evaluation sub-group is the maturity progression visualization, which is an illustration representing the path of the capability evolution. This maturity illustration is found in literature to have four types: a single increasing line (single-linear) (Labaka et al., 2019), a single increasing curve (single-non-linear) (Andersen & Henriksen, 2006), multiple increasing lines (multiple-linear) (Arunachalam & Kumar, 2018), and multiple increasing curves (multiple-non-linear) (Davison et al., 2005). Table 2.5 illustrates and summarizes the various types of progression visualizations.

The fourth subgroup of evaluation is the maturity result form. This sub-group pertains to the representation of maturity results in various models, each of which depicts capability maturity levels differently. Some models conceptualize and illustrate maturity levels as discrete points, without considering the distance between two such points (Powell et al., 2013). Conversely, other models view maturity levels as phases, with the distance between two maturity levels representing the phase, irrespective of the specific location of the capability within that phase (Ngai et al., 2013). Some models represent maturity levels as descriptive segments illustrated in a matrix or a diagram (Arunachalam & Kumar, 2018; Lukman et al., 2011). Limited research exists on perceiving capability maturity levels as points within a maturity phase (Gastaldi et al., 2018).

#### 2.3.2.3 Model Validation

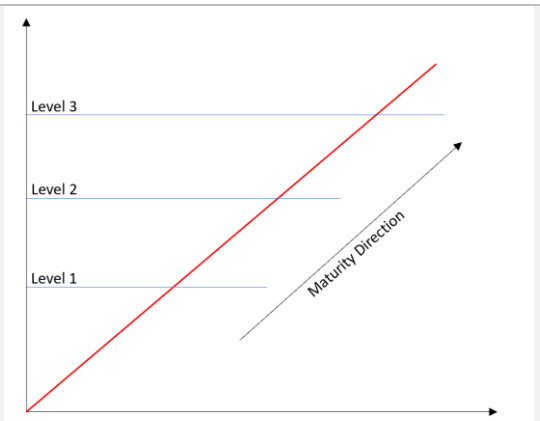
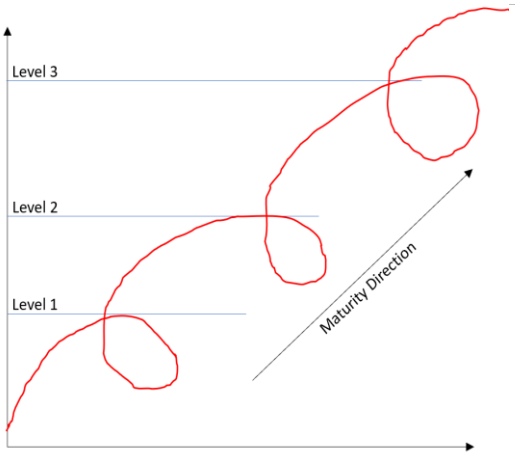
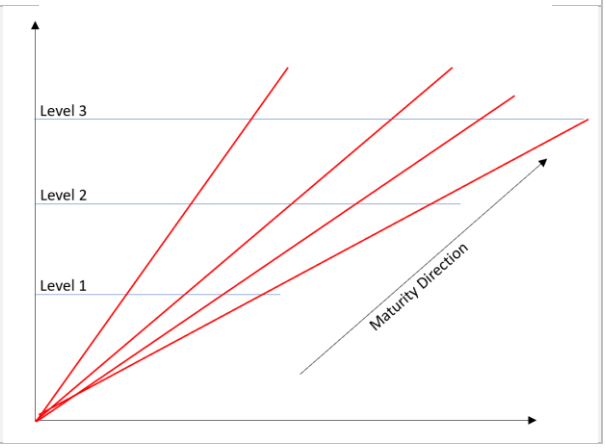
The third maturity model component is the model validation. which involves the research technique used to validate the model constructs. Model validation can take the form of either quantitative (Eom & Kim, 2014), or qualitative validation processes (Ngai et al., 2013). It is noticed that not all developed maturity models are validated or undergo validation process (Eckerson, 2004; Manikam et al., 2017).

#### 2.3.2.4 Model Tool

The fourth component of the maturity model identified in scholarly literature is the model tool. It can be available in an automated form of digital software or a web application (Solar et al., 2013; Weeserik & Spruit, 2018), or unautomated (Gastaldi et al., 2018). This tool operationalizes maturity models as it enables users to assess the capability maturity of their organization and view the evaluation results. Again, not all maturity models are aided by tools (Comuzzi & Patel, 2016a; Spruit & Sacu, 2015).

The maturity model's structural analysis and its summarizing table contributes significantly to the existing literature of maturity models. Firstly, it serves as an analytical instrument for evaluating and identifying the strengths and weaknesses of maturity models, thereby aiding in the enhancement of their structural components to effectively fulfil the intended model purpose. Secondly, it provides guidance for the development or enhancement of maturity models. Thirdly, it can be employed to scrutinize the literature of maturity models within a specific domain, thereby revealing potential research gaps. Consequently, this table has been applied to the literature pertaining to data-supported decision-making, or analytics maturity models maturity models, to identify anticipated gaps or limitations, which is discussed in the subsequent sub-section.

Table 2.5: Maturity Models Progression Visualizations

| Visualization Category | Description | References | Illustration |
|---|---|---|---|
| **Single-Linear** | A maturity model with one straight line maturity progression route | (Boughzala & De Vreede, 2015; Chapman, 2019; Concha et al., 2012; el-Gayar et al., 2011; Eom & Kim, 2014; Huang & Handfield, 2015; Kahn et al., 2006; Labaka et al., 2019; Lee & Kwak, 2012; Neff et al., 2014; Ngai et al., 2013; Powell et al., 2013; Solar et al., 2013; Valdés et al., 2011; Vereecke et al., 2018) |  |
| **Single-non-linear** | A maturity model with one curvy maturity progression route | (Andersen & Henriksen, 2006; Reefke et al., 2014) |  |
| **Multiple-Linear** | A maturity model with many straight-line maturity progression routes (lines) | (Arunachalam & Kumar, 2018; Chen et al., 2010) |  |

### 2.3.3 DSDM Adoption and Maturity Models: Data Analytics & Business Intelligence Maturity Models Assessment

Informed by the definitions of data-supported decision-making in subsection 2.2.1, its aspects in subsection 2.2.3, and guided by the maturity models structural analysis in subsection 2.3.2, this part analytically reviews the adoption of data-supported decision-making and its maturity models, aiming at identifying research gaps present in literature.

The definitions of data-supported decision-making have been utilized in the identification of maturity models aimed at evaluating the extent of adoption of this practice. The maturity models' structural analysis has been employed to establish a comprehensive analytical framework for the critical examination of literature pertaining to data-supported decision-making maturity models. The components of data-supported decision-making, encompassing the elements and factors, have been utilized to inspect the incorporation of the fundamental aspects contributing to the adoption of data-supported decision-making by comparing them against the evaluation dimensions of the selected maturity models.

The selection criteria for literature articles were similar to the ones used for the selection of the generic maturity models. However, additional criteria were applied as this review has a specific theme, which is data analytics and business intelligence. To achieve this, the terms "Analytics, Data Analytics and Business Intelligence" were entered in addition to the terms searching for maturity models. Consequently, a total of 23 journal articles focusing on the development of data analytics and business intelligence maturity models for the purpose of supporting organizational decision-making have been selected and reviewed in the next subsections.

#### 2.3.3.1 The Skeleton Elements

DSDM maturity models are found to follow the same skeletal structure of the other maturity models; maturity levels, evaluation dimensions…etc. these models have an average of five maturity levels (Brooks et al., 2015; Spruit & Sacu, 2015), and six evaluation dimensions (Stoldt et al., 2019; Williams et al., 2019). Most of the reviewed models have two levels of dimensions: a basic dimensions' list and one level of sub-dimensions (Lak & Rezaeenour,

2018; Pramanik et al., 2019). Moreover, some of the models include additional elements, such as best practices, goals, business values and outcomes, linking them to the ascending maturity levels. Moreover, all reviewed models include Element-to-Level descriptions, where every evaluation dimension/sub-dimension and/or additional elements, such as goals and values, are described relative to the specific maturity level (Carvalho et al., 2019; Chuah, 2010).

Focusing the analytical comparison between the models' evaluation dimensions and the components of DSDM, it is found that the data analytics capability element- including the acquisition of technical skills, processes and resources- are present in all of the reviewed models (Boonsiritomachai et al., 2016; Manikam et al., 2017). Conversely, the leadership element has only been included in two maturity models (Coleman et al., 2016; Lak & Rezaeenour, 2018), highlighting developmental and literature gap in DSDM maturity models. In addition, the maturity models reviewed here emphasize DSDM adoption organizational factors, and rarely considers external or environmental factors (Valdez-de-Leon, 2016), highlighting another discrepancy between DSDM adoption components in literature and their inclusion as DSDM maturity models evaluation dimensions.

As for models' intra/inter-dimensional relationships, more than half of the reviewed models have been found to lack consideration of these relationships (Eckerson, 2004; Gastaldi et al., 2018; Lukman et al., 2011), which highlights a gap in these developed models.

#### 2.3.3.2 The Evaluation Elements

Half of reviewed maturity models are found to either have subjective evaluation methods (Carvalho et al., 2019; Valdez-de-Leon, 2016; Zheng et al., 2018) - methods that are prone to high bias - or no evaluation method at all (Arunachalam & Kumar, 2018; Manikam et al., 2017; Pramanik et al., 2019). This can possibly imply that these models are either incomplete, or purely conceptual and not put into practice. On the other hand, the other half of the models have objective evaluation methods, however, are found to heavily rely on Likert points scale in assessing the dimensions, which probably would result in assessment oversimplification (Boonsiritomachai et al., 2016; Lak & Rezaeenour, 2018). Moreover, two of the reviewed models are found to apply the mixed evaluation method, however for validation purposes only. (Comuzzi & Patel, 2016a; Donovan et al., 2016).

As for the scope of evaluation, most of the reviewed models evaluate analytics capabilities comprehensively (Brooks et al., 2015; Lukman et al., 2011; Odważny et al., 2019; Weeserik & Spruit, 2018). However, two of the reviewed models are found to evaluate analytics capabilities on an overall scope (Boonsiritomachai et al., 2016; Coleman et al., 2016) and another two are found to apply capability evaluations on a granular scope (Donovan et al., 2016; Valdez-de-Leon, 2016).

Moving to the third and fourth evaluation components, most of the reviewed models are found to visualize their capabilities' maturity progression following the single-linear illustration (Carvalho et al., 2019; Chuah & Wong, 2013; Donovan et al., 2016; Zheng et al., 2018). Moreover, most of the reviewed models represent the resulting maturity level in a point form positioned on the linear progression maturity line, (Chuah, 2010; Lak & Rezaeenour, 2018; Odważny et al., 2019; Stoldt et al., 2019). One of the missing results visualizations that has not been found in any of the reviewed maturity models is segmentation. Despite the profiling advantage this type of visualization adds, it has not been used or presented in any of the models included in this study review.

#### 2.3.3.3 Model Validation

Half of the reviewed analytics models are found to be invalidated (Chuah, 2010; Manikam et al., 2017; Pramanik et al., 2019; Stoldt et al., 2019), indicating an empirical gap in the development of these models. As for the validated models, the quantitative validation method is found to be more popular than the qualitative method (Brooks et al., 2015; Comuzzi & Patel, 2016a).

#### 2.3.3.4 Model Tool

Of the 23 selected analytics maturity models, only 4 models develop a model tool (Lak & Rezaeenour, 2018; Weeserik & Spruit, 2018), confirming the previously mentioned empirical developmental gap in analytics maturity research. The absence of a model evaluation tool limits the accessibility and usability of these developed models, indicating models' impracticality.

Consolidating the limitations of the analysis leads to the identification of two primary literature gaps in DSDM or analytics maturity models. The first gap, arising from the

examination of the skeletal components of the models, pertains to the absence of fundamental adoption components of DSDM, such as leadership - a crucial element of DSDM - and environmental factors. The second literature gap, resulting from the consolidation of limitations derived from the evaluation, validation, and tool components of maturity models, is the empirical inadequacy of the developed analytics maturity models. The scarcity of validated models, infrequent development of evaluation tools, and the prevalent use of subjective evaluation methods suggest that DSDM maturity models are predominantly conceptual or theoretical in nature. Table summarizes the research gaps in the literature on DSDM adoption and maturity models that stem from the analytical review conducted.

Table 2.6: DSDM Maturity Models Literature Gaps

| Structural Components | Limitations | Consolidated Limitations - Literature Gaps |
|---|---|---|
| Skeleton | -Absence of Leadership as an evaluation dimension<br>-Limited inclusion of Environmental/Extarnal factors as evaluation dimensions | Absence of fundemental DSDM adoption components |
| Evaluation | -Subjective evaluation method, indicating conceptual, unempirical models development.<br>-Lack of segmentation representation of evaluation results. | Unempirically developed models |
| Validation | Validation limitation, adhering to conceptual-only developed models | |
| Tool | Limited evaluation tool development | |

The following section narrows down the topic of data-supported decision-making adoption and maturity models to a specific context, which is the UK local Government.

## 2.4 The Adoption of Data-Supported Decision-Making in the UK Local Government

This section reviews literature of data adoption in decision-making and data maturity model in the context of the UK local government. it starts with reviewing context-specific adoption factors of data-supported decision-making. Then, it reviews and analyses the only data maturity model found to be developed for local authorities in the UK: the LGA Data Maturity Model. After identifying context-specific literature gaps, the section continues by selecting local authorities' dual leadership as the research topic of investigation and proceeds to identify the significant gap in the literature investigating the role of the unique dual leadership in the adoption of DDM in the UK local government authorities.

### 2.4.1 Context-Specific Adoption Factors

In the realm of DSDM adoption within the UK local government context, there is a shortage of research focusing on the adoption of technology innovation, let alone of data-supported decision-making adoption. Complemented by examination of the organizational change literature within this specific context, in addition to a comparison with the generic adoption components outlined in subsection 2.2.3, it is found that the factors influencing technology and innovation adoption in the UK local government are substantially similar. Various studies have categorized these factors into technological, organizational, and environmental domains. For instance, investments in technical and human resources, organizational learning, strategy and organizational structure, and governance have been identified as pivotal factors contributing to technology and innovation adoption in the UK local government (Elliott, 2020; Haneem et al., 2019; Sancino & Hudson, 2020).

Furthermore, factors such as openness and interconnectedness among internal and external stakeholders, trust and ethical considerations, risk perception, time, technological skills, risk, and population density play significant roles in the adoption of technology innovation within the UK local government (Haneem et al., 2019; Malomo & Sena, 2017; Martin, 2002). Leadership support emerges as a critical factor in innovation adoption within UK local authorities, with studies underscoring the importance of senior political and managerial leadership support as key enablers of innovation adoption (Alba & Navarro, 2006; Lewis, 2005; Symons et al., 2016).

Despite the similarities between the generic and context-specific data-supported decision-making adoption factors, several distinctions have been identified. Firstly, some studies introduce a social factors category, encompassing factors such as citizen trust, community satisfaction, and constituents' influence and engagement, highlighting the significance of citizens as stakeholders in the UK local government (Hanna, 2018; Sivarajah et al., 2014). Secondly, government regulations, policies, and support are context-specific factors that play a crucial role in DSDM adoption within the UK local government (Elliott, 2020; Hanna, 2018; Kamal & Alsudairi, 2009). Additionally, the influence of local government authorities on each other's adoption of DSDM and the separation between political and managerial leadership as influential adoption factors have been noted (Hambleton & Howard, 2013;

Sancino & Hudson, 2020). Table 2.7 summarizes DSDM adoption factors found in the UK local government literature.

An interesting factor that has been found to contribute to the adoption of data-supported decision-making is the application of evaluation frameworks to evaluate organizational capability to adoption data insights in decision-making (Kamal & Alsudairi, 2009). This validates the significance of the selected topic – data maturity models – which is the motivation of this research. The next subsection assesses the only data maturity model found to be tailors to the specifications of the UK local government authorities: the LGA Data Maturity Model.

Table 2.7: DSDM Adoption Factors in the UK Local Government

| Category | Factors | References |
|---|---|---|
| **Technological** | Technical & Data skills<br>Information Systems<br>Data access & Sharing<br>Evaluation Frameworks<br>Data Security & Privacy<br>IT Support<br>Technological Risks | (Haneem et al., 2019a; N. Hanna, 2018; Jones, 2005; Kamal et al., 2013; Kamal & Alsudairi, 2009; Malomo & Sena, 2017; Sancino & Hudson, 2020a; Sivarajah et al., 2014) |
| **Organizational** | Leadership<br>Governance<br>Funding & Investment<br>Organizational Learning<br>Risk Management<br>Firm Size<br>Time<br>Culture<br>Trust & Ethical Issues<br>Organizational Change<br>Managerial Skills | (Alba & Navarro, 2006; Beadle, 2018a; Elliott, 2020; Hambleton & Howard, 2013a; Haneem et al., 2019a; N. Hanna, 2018; Hartley & Rashman, 2018; Johnson, 2012; Jones, 2005; Kamal et al., 2013; Kamal & Alsudairi, 2009; Lewis, 2005; Malomo & Sena, 2017; Martin, 2002; Sancino & Hudson, 2020a; Sivarajah et al., 2014) |
| **Environmental** | Government Policy & Regulation<br>Openness & Networking<br>Government Financial Support<br>Population Density | (Alba & Navarro, 2006; Elliott, 2020; Hambleton & Howard, 2013; Haneem et al., 2019; Hanna, 2018; Kamal et al., 2013; Kamal & Alsudairi, 2009; Lewis, 2005.; Martin, 2002; Panagiotopoulos et al., 2014; Roy, 2013; Sancino & Hudson, 2020) |
| **Social** | Citizen Influence<br>Community Trust & Engagement<br>Other LGAs | (Hambleton & Howard, 2013; Haneem et al., 2019; Hanna, 2018; Kamal & Alsudairi, 2009; Sivarajah et al., 2014) |

### 2.4.2 Data Adoption Assessment: LGA Data Maturity Model

The LGA Data Maturity Model is a project initiated and developed by the Local Government Association of England and Wales – LGA- that aims to support local government authorities (or local councils in other words) to efficiently utilize data to inform their operations, service provision and decision-making processes. The project was first initiated in 2016 (Symons, 2016), resulting in the development, delivery and promotion of the Data Maturity Model in 2018 (Local Government Association, 2018).

To effectively describe, analyse, and identify potential enhancement areas in the LGA Data Maturity Model, the structural analysis matrix is adopted in the following subsections, providing an organized and comprehensive framework for presenting and analysing the artifact.

#### 2.4.2.1 LGA Data Maturity Model Description

To analytically describe the LGA Data Maturity Model, the structural analysis matrix is utilized. Starting with the skeletal components, the model encompasses five maturity levels (Boughzala & De Vreede, 2015); nascent, basic, intermediate, advanced, and datavore, where a nascent local authority is one with no or the least adoption of data capability, and the datavore is one with the highest data capability adoption. Furthermore, the model evaluates local authorities' data capability via five evaluation-dimensions (Concha et al., 2012), three of which are two-level dimensions, and the rest are one-level ones. These data capability dimensions are evaluated through responding to thirty-four assessment statements (Symons et al., 2016).

The first level evaluation-dimensions are local authorities' data management, data openness and governance, data use, data skills and data culture and awareness. A local authority's capability to manage its data is evaluated through its sub-level dimensions (Kahn et al., 2006), which are the ability to collect and organize data, in addition to its ability to maintain high data quality. As for a local authority's data governance and openness dimension, it is evaluated through the sub-level dimensions governance, evaluating the level of data protection and sharing within the council, and the openness of the local council's data in terms of its accessibility and level of digitization.

The third evaluation dimension of local councils' data capability is data use, where it is evaluated via three sub-dimensions (Kahn et al., 2006): data use in decision-making, performance and evaluation, and processes optimization and automation. The fourth evaluation dimension is the level of data skills a local authority possesses, which is a one level dimension, and the fifth and last evaluation dimension is local authorities' data culture and level of data awareness, which is a one level evaluation dimension as well. Comparing the model's dimensions to the DSDM adoption factors, the dimensions data skills, and data management fall under the technological factors category (Dremel, 2017), and the data culture and awareness, and data use relate to the organizational factors' category (Brynjolfsson et al., 2016). As for the data governance and openness, it is a dimension that relates to both organizational and environmental categories (Etsy et al., 2007), as data sharing is a dimension involving external stakeholders, such as other local authorities. The third skeletal component included in the LGA data maturity model is the dimension to level description (Reefke et al., 2014), which is classically and briefly incorporated in the model to describe the maturity level of each of the evaluated dimension and sub-dimensions.

Moving to the model evaluation component, the LGA data maturity model employed a mixed evaluation method (Huang et al., 2015), where the capability dimensions are evaluated subjectively based on a 7-points Likert scale and transforms the subjective evaluation to numbers that are used in simple evaluation and comparison formulas. As for the level of evaluation, the LGA data maturity model adopts a comprehensive level evaluation (Neff et al., 2014), where it provides an overall score and description of the data capability maturity in a local authority, and granularly evaluates the maturity of each dimension and sub-dimension. The evaluation results are presented in the form of "point in a phase" (Gastaldi et al., 2018) and visualized as a single non-linear maturation of dimensions in bar-charts (Andersen et al., 2006). To explain, the overall evaluation of the data capability of a local authority is visualized in a bar chart, where each of the main five dimensions is represented as a bar, demonstrating a single non-linear progression of data maturity. In addition, each of the dimensions is visualized separately in another bar chart, each or its corresponding sub-dimensions is represented in a bar, again showing a single non-linear maturation progression of each capability dimension.

The LGA data maturity model is digitized through an online assessment tool (Solar et al., 2013), accessible to the associates of the local authority being evaluated. It is easy to use and provides links to extra resources availed for data capability progression support. The next subsection further analyses the model incorporating adoption factor analysis and the identification of structural problems that can serve as future areas of enhancement.

#### 2.4.2.2 LGA Data Maturity Model: Problems Analysis

There are several problems identified in the LGA data maturity model resulting from the structural and factorial analyses applied. Starting with structural pitfalls, the LGA data maturity model does not consider or mention any dimensional dependencies or relationships (Valdes et al., 2011; Vereeke et al., 2018). Moreover, it does not consider any additional elements or dimensions that supports the adoption of data capabilities, such as showcasing best practices (Chapman, 2019). In addition, the absence of model validation, whether quantitatively or qualitatively, constitute one of the major downfalls of the model (Ngai et al., 2013; Eom et al., 2014).

Proceeding to the identified factorial problems, the evaluation dimensions included in the maturity model are insufficient for evaluating the adoption of data capability. As there are four major factorial adoption categories, the adoption factors included in the model are only technological in the first place (Haneem et al., 2019), and insufficiently organizational (Alba et al., 2006), environmental (Elliott, 2020), or social (Hambleton et al., 2013). Moreover, referring to the context specific adoption factors in subsection 2.4.1, although leadership is considered a crucial adoption factor in the UK local government (Alba et al., 2006), it is not considered in the LGA model dimensions.

Due to the significance and unique structure of leadership in the UK local government authorities, this research investigates its role in the adoption of data capabilities in decision-making, or data-supported decision-making in other words, in the UK local government authorities. Consequently, Literature on the role of the unique dual structure of leadership in the adoption of data-supported decision-making in the UK local government authorities is reviews in the next subsection.

### 2.4.3 The Role of the UK Local Government Leadership Duality in the Adoption of DSDM

This subsection critically examines the literature concerning the leadership duality within UK local government authorities and its impact on the adoption of technological innovation in general, and data-supported decision-making in particular. The unique dual political and administrative structure of local government authorities in the UK results in the presence of two distinct leadership hierarchies within each local authority, irrespective of its type: the political leadership hierarchy, headed by the leader of the council, who is elected by constituents, and the managerial leadership hierarchy, led by the chief executive of the local authority, who is employed on a permanent basis (Dacombe, 2011; Entwistle et al., 2005). As per the public administration reform in the UK local government, the political leadership of a local government authority is responsible for making policy and strategic decisions (Morrell & Hartley, 2006; Rose & Copus, 2020). Conversely, the managerial leadership of a local government authority is tasked with administrative and managerial duties as well as public service provision (ibid). Furthermore, in UK local government authorities, the managerial leadership ultimately operates under the guidance of the political leadership representatives, aligning with their political framework to facilitate the implementation of political policies and manifestos (Morrell & Hartley, 2006).

Despite the formal delineation of roles and relationships between the dual leadership structures in UK local government, empirical evidence suggests discrepancies between theory and practice (Baddeley, 2008; Fenwick et al., 2006; Goldsmith & Tonge, 1998). The literature identifies various dual leadership profiles in UK local authorities based on the roles of political and managerial leadership and their interplay. Alba & Navarro (2006) and Mouritzen & Svara (2002) argue that the conventional definitions of political and managerial leadership roles – identified in the previous paragraph - represent just one type of leadership profile in local authorities. Some local authorities exhibit managerial leadership as the primary decision-making entity within their councils, either formally or informally delegated control and authority by the distant political leadership. Another leadership profile observed in UK local councils involves integrated dual leadership, characterized by cooperation and synergy, resulting in overlapping roles (Alba & Navarro, 2006; Baddeley, 2008; Mouritzen & Svara, 2002).

Limited research has explored the connection between different dual leadership profiles and the adoption of innovation and technology. Some studies advocate for integration and hybridity between the dual leadership structures as crucial for technology and innovation adoption (Grant & Dollery, 2008; Hambleton & Howard, 2013; Roy, 2013). Conversely, other research suggests that the integration of dual leadership may lead to tensions and conflicts, hindering technology adoption in local government authorities (Alba & Navarro, 2006; Fenwick et al., 2006; Goldsmith & Tonge, 1998; Worthy, 2015). Further studies confirm the need for conducting research to understand the impact of dual leadership relationships on technology and innovation adoption in UK local authorities (Entwistle et al., 2005).

Another controversial aspect in the literature of the UK local authorities' dual leadership and its impact on DSDM adoption pertains to the relative importance of each leadership type in driving innovation adoption. While some studies emphasize the significance of managerial leadership in the adoption process within local government (Lewis, 2005; Sancino & Hudson, 2020), others argue that political leadership plays a more crucial role as the ultimate decision-making body in local councils (Grant & Dollery, 2008a; Morrell & Hartley, 2006; Roy, 2013; Symons et al., 2016).

Noteworthy findings in the literature highlight the role of delegation in innovation adoption within local government. Hambleton & Howard (2013) suggest that delegating authority from political to managerial leadership, especially during periods of heightened tension between the dual leadership, positively influences the adoption process. This assertion is supported by Johnston Miller & McTavish (2012), who suggest that increased delegation of roles to managerial leadership correlates with higher levels of technology adoption within local government.

The examination of literature on the political-managerial leadership roles in data-supported decision-making adoption within UK local government reveals a relatively under-researched area with conflicting findings. To address this gap, selecting an appropriate theoretical framework for further investigation is essential, as discussed in the subsequent section.

## 2.5 Theoretical Framework

This section reviews and selects theories that form the theoretical basis for exploring and explaining the role of dual leadership in the adoption of data-supported decision-making in the UK local government. It commences by reviewing and selecting a technology adoption theory; Diffusion of Innovation Theory and continues by reviewing theories used in literature to explain duality or multiplicity of organizational leadership and selecting an appropriate one in order to complement the adoption theory in explaining the role of dual leadership structure of the UK local government: the Institutional Logics Perspective.

### 2.5.1 Technology Acceptance and Adoption Theories

This part reviews in brief potential technology adoption theories for the study. Several theories are found to study technology adoption in the field of information systems. According to Venkatesh et al. (2003), eight theoretical models related to technology and information systems adoption are reviewed, such as Technology Acceptance Model, Theory of Reasoned Action, and Diffusion of Innovation. Moreover, a new unified theory is developed based on the review of the models, which is the Unified Theory of Acceptance and Use of Technology (UTAUT). All of the models reviewed in the paper study the process of accepting and adopting technologies, and the reasons leading to this acceptance and adoption (ibid).

It is noticed that all of the reviewed technology acceptance and adoption models by Venkatesh et al. (2003) focus on adoption by individuals, not organizations. However, the Diffusion of Innovation theory extends its model to explain diffusion in organizations, as well as directly relates leadership characteristics as a construct to innovation adoption (Rogers, 2003). Thus, the Diffusion of Innovation theory is selected as the basis for explaining the phenomenon.

#### 2.5.1.1 Diffusion of Innovation

The diffusion of innovation in organizations theory is found to be widely adopted in information systems research (Brynjolfsson & McElheran, 2016; Tang & Ho, 2019).

Moreover, it is found to be utilized in maturity models' research as well (Arunachalam et al., 2018; Boonsiritomachai et al., 2016), validating its selection as a theoretical base for this study.

According to Rogers (2003), an organization's innovativeness, or its adoption of innovation, is determined by three dimensions: leadership characteristics, organizational structure's internal characteristics, and organisation's external characteristics. Leadership characteristics refers to the attitude of the organization's leadership towards the adoption of the technology or phenomenon (ibid). Since this research studies the effect of leadership within an institutional setting, applying the diffusion of innovation theory from an organizational perspective suits the study inquiry.

As this research focuses on the first dimension of Rogers's Organizational Innovativeness model, which is the leadership dimension, it has been the only part considered in the model, dismissing the other two dimensions. Figure 2.3 demonstrate the organizational innovativeness model with an emphasis on the leadership dimension.

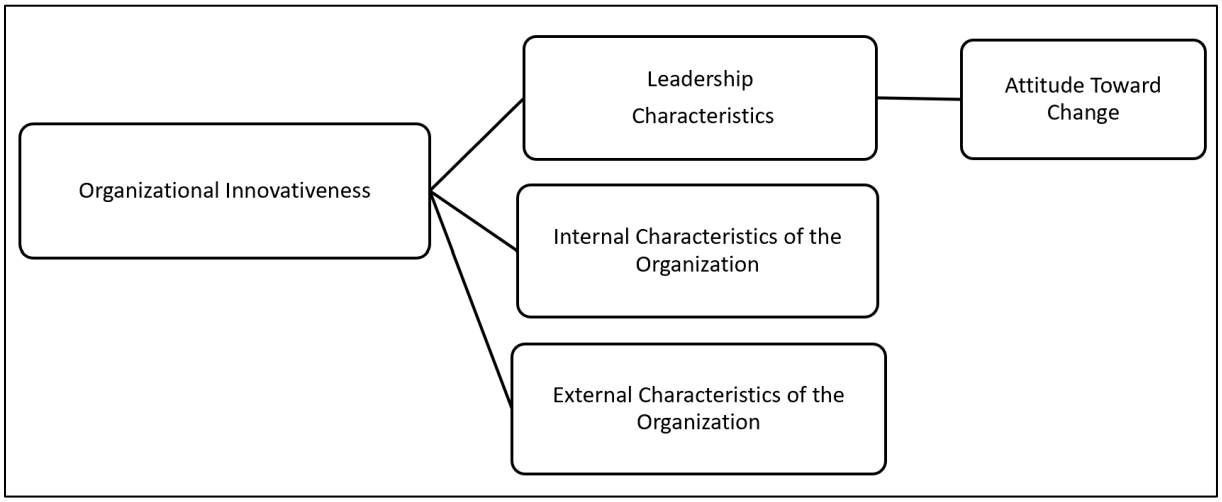



Figure 2.3: Organizational Innovativeness (Rogers, 2003)

Mobilizing the organizational innovativeness model within the context of the UK local government is expected to validate the political and managerial leadership attitudes towards change as a substantial factor in determining the adoption of data-supported decision-making in local authorities. However, although Diffusion of Innovation in Organizations can posit the role of leadership in innovation adoption, it does not extend to include organizations with

unique multiple leadership structure, whether dual or more. Therefore, another theory is required to complement the diffusion of innovation's theory to explain the role of dual leadership on DSDM adoption in the UK local government.

### 2.5.2 Dual Leadership Theories

This part presents potential theories pertaining to the topic of leadership multiplicity. Several theories are found in literature to explain leadership duality on organisational operations. On top of the theories applied in dual leadership context is Agency theory. According to Eisenhardt (1989), agency theory studies the relationship between principals and agents within an organization and focuses on solving principal-agent problems resulting from conflict of interests and different attitude towards dealing with risk. The theory has been validated in different domains, especially in the information system discipline as it emphasizes the value of information as an organizational asset (ibid).

Another theory that has been found to be used in studying leadership duality is Stewardship theory. According to Davis et al. (1997), it is a theory that studies the relationship between managers and agents as well as it focuses on the role of managers or principals as advocates to the organizations they represent. In their development of the Stewardship theory, Davis et al. (1997) compares between Agency and Stewardship theories as both focus on untangling the relationship between principals and agents but from opposite points of views.

Both theories, Agency and Stewardship, have been found to be applied to research investigating duality in leadership and its effect on organizational operations (Braun & Sharma, 2007; Elsayed, 2007). However, none has been found to be associated with the topic of technology adoption. However, an additional theory that is found to be promising in the study of leadership duality is the Institutional Logics Perspective.

#### 2.5.2.1 Institutional Logics Perspective

According to Thornton et al. (2012), Institutional Logics are institutional social systems encompassing factors that behave and interact in ways that create distinctive norms and rules governing the dynamics within, such as cultures, leadership, and organisational structures.

Numerous studies have applied Institutional Logics Perspectives to study conflicting or cooperating relationship dynamics and their effect on institutions (Thornton, 2002; Thornton et al., 2015). Moreover, it has been applied in studies investigating the effect of institutional interactions and relationship on technology and innovation adoption in a similar context to this research (Baroody & Hansen, 2012; Ferry & Eckersley, 2020; Korac et al., 2017).

Because of the leadership duality in the UK local government, multiple institutional logics are expected to coexist. Due to the institutional logics' theory explanatory strength in contexts where multiple sources of power are present and interacting, it is selected to explain the effect of leadership duality on DSDM adoption in the UK Local government.

## 2.6 Conclusion

This chapter critically and analytically reviewed literature related to data-supported decision-making and its adoption in the UK local government authorities. The first section reviewed the various definitions and terminologies associated to data-supported decision-making as they appeared in literature, in addition to its relation to decision-making levels, factors constituting and contributing to its adoption, and evidence on organizational benefits and advantages gained as a result of its adoption. The second section reviews data-supported decision-making adoption maturity models, develops a structural analysis matrix and identifies gaps within the analysed literature.

The chapter proceeded with reviewing literature on DSDM adoption within the research context: UK local government. Adoption factors and a maturity model was identified in literature and analysed, followed by a review of literature on the role of the UK local government's dual leadership in the adoption of DSDM, leading to the identification of major gaps chosen to be the topic of this study's investigation. The chapter concluded by reviewing and selecting possible theoretical basis to support the study investigation. Next chapter outlines the details of the research methods and design conducted to answer the study inquiry.

# 3 Chapter Three: Research Methodology & Design

## 3.1 Introduction

In the preceding chapter, a literature review pertaining to maturity models, data-supported decision-making adoption, and the influence of leadership in technology adoption was conducted. The impetus for this review was the development of a data maturity model by the Local Government Association in England and Wales, specifically tailored to meet the requirements of local government authorities. This unique model prompted an exploration into the role of the distinctively structured dual leadership in facilitating the adoption of data-supported decision-making within local government authorities in the UK. Consequently, an examination of literature on leadership duality and the adoption of data capabilities in decision-making within local government was undertaken. This endeavour led to the identification of a relatively underexplored phenomenon within the UK local government context: the adoption of data-supported decision-making (DSDM) and the potential influence of leadership duality on this adoption.

This study aims to explore and explain the leadership-related causal mechanisms underlying the adoption of data-supported decision-making (DSDM) within local government authorities in the UK. To achieve this aim, an inductive mode of inquiry was employed, utilizing a multi-method qualitative comparative approach. As such, this chapter presents the research methodology and design that was implemented to address the identified gap in the literature, with the anticipation of making both theoretical and empirical contributions to the field of information systems adoption.

The chapter commences by introducing the study and establishing the research context through a review of the technology adoption, ecosystem, and structural and procedural decision-making literature in the UK local government. Subsequently, philosophical underpinnings are selected to initiate the inquiry based on a review of philosophical paradigms pertaining to the type of the inquiry. The section concludes by connecting the study context, selected theoretical concepts in chapter 2, and the selected philosophical paradigm, creating an initial plan for the pursuit of the research inquiry.

The chapter proceeds by presenting the research methodology and design. It delineates the research approach, methodology, and provides details about the data collection and analysis techniques employed. Furthermore, it provides insights into ensuring research rigor, alongside a discussion of ethical considerations and encountered limitations throughout the study, closing in with the chapter's conclusion. A newly devised sampling and case selection method to address the challenge of selecting local authority cases is documented. Additionally, the chapter reports the development of a four-cycle analysis method, which enhances the qualitative rigor of the research by extending the reliability and validity of the research findings. This subsequently asserts a methodological contribution to the information systems literature.

## 3.2 The Role of Dual Leadership in DSDM Adoption in the UK Local Government: The Study

This section presents information about the research contextual background. It divides the contextual background of the research into three subsections: technology adoption in the public sector vs. the private sector, the UK local government ecosystem, and the UK local government structure & decision-making.

### 3.2.1 Technology Adoption: Public vs. Private Sectors

The context of the public sector differs from that of the private sector in terms of the factors influencing change and technology adoption. Thornton et al. (2012) asserts in their publication that the private sector typically leads the public sector in the adoption of innovation and technology. Private sector organizations are primarily motivated by the value proposition of gaining a competitive advantage and achieving economic benefits over other institutions, which propels them to embrace change and undertake technology projects. In contrast, the public sector, represented primarily by the government, does not operate within a competitive framework. Instead, the primary impetus for change and technology adoption in the public sector stems from the pursuit of social welfare and the enhancement of public service efficiency. Johnson (2012) corroborates the distinction in the drivers of change and innovation adoption between the two sectors, concluding that the underlying factors

propelling the adoption of innovation and technology in the public sector are rooted in the social, political, and economic welfare of the state.

### 3.2.2 UK Local Government Ecosystem

In the context of the government of the United Kingdom, a complex administrative structure is identified, which can be simplified for the purposes of this research into three main components. Firstly, the central government encompasses various ministries, including but not limited to the Ministry of Education, Ministry of Defence, and Ministry of Housing, Communities, and Local Government. These ministries are tasked with the development of policy frameworks for public governance and service provision (*How Government Works - GOV.UK*, n.d.). Secondly, the local government consists of nearly 400 local authorities, which are responsible for formulating detailed policies, implementing policies, and crucially, providing public services. Examples of such local authorities include the Reading Borough Council and the Manchester City Council (ibid). Thirdly, there are governmental agencies that are responsible for the regulation, inspection, and at times, provision of services. An example of such an agency is the Local Government and Social Care Ombudsman, which oversees the regulation of social care service provision by local government (ibid).

While the focus of this research is on the adoption of data-supported decision-making within local government in the UK, it is essential to comprehend the overarching government structure, as local authorities do not operate in isolation. The operations, policies, governance, and service provision of local authorities are not only influenced by other governmental bodies, but also by businesses and the citizens of the areas to which they are assigned. For instance, consider a public service commissioned by the local authority to a private sector business organization or a public agency that provides the service to citizens. The general policy governing the provision of such a service is legislated by a ministry of the central government and regulated and inspected by another governmental regulatory agency. Furthermore, decision-makers within the same local authority are elected by the same citizens to whom services are provided. All these stakeholders are interconnected with the local authority and have relationships that significantly influence the internal operations of the council.

### 3.2.3 UK Local Government Structure & Decision-Making

Upon delving further into the context, the focus shifts to the organizational structure of the local government in the United Kingdom. It is imperative to comprehend the structural framework of local authorities, particularly from the perspective of decision-making, as the adoption of technology in general, and Data-Supported Decision Making (DSDM) specifically, hinges on the "adoption decision" made by the senior leaders of a structurally centralized institution (Rogers, 2003). A typical British local authority, also known as a local council, comprises two primary teams: the political team and the managerial team. The political team typically consists of approximately forty elected councillors, who are responsible for formulating policies and making decisions for the council. The organizational structure of the political teams of local authorities generally follows two main arrangements. The first is the "cabinet-leader" style, where the elected councillors appoint one councillor as the leader of the council, who subsequently assembles a "cabinet" comprising councillors selected to represent the various departments of the council. The second arrangement is the "committee" style, where elected councillors are organized into committees, each with distinct sets of responsibilities (Morrell & Hartley, 2006a). In practice, a local authority may adopt a hybrid structure, incorporating elements of both the cabinet-leader and committee systems (Alba & Navarro, 2006; Entwistle et al., 2005; Leach, 1999).

In addition to the structural arrangement of the political team, every local authority possesses a managerial team responsible for implementing the policies set by the political team and overseeing daily operations (Morrell & Hartley, 2006). While the political structure is led by the leader of the council and the cabinet members, the managerial structure is headed by the chief executive and a team of senior directors managing staff across different departments. However, the political leader assumes leadership of the council, encompassing both the political and managerial structures.

A noteworthy aspect of local government operations is that in theory, decision-making within local authorities, including resource allocation and budgeting decisions, falls under the purview of the political team members – the councillors. Although strategies and long-term developmental projects in councils, such as digitization or technology innovation adoption, are planned and executed by management officers (Hambleton & Howard, 2013; Sancino & Hudson, 2020), these officers, regardless of their seniority and expertise, cannot make

decisions without explicit delegation from the council politicians. In theory, management officers are professionals tasked with providing expertise and advice to politicians when required, and executing decisions made by the political team (Roy, 2013). Another salient feature of local government operations is that councillors, as members of the political team, are elected at most every four years and are thus likely to change periodically, whereas managerial team officers are recruited on a permanent basis. These two factors give rise to a contentious situation that may lead to tension between council members and officers. The permanent employment status of officers is likely to result in a more knowledgeable and experienced understanding and service of the area population than councillors, as officers are more likely to spend more time working for a local authority (Goldsmith & Tonge, 1998). In such a scenario, it may be challenging for officers to accept sudden changes in agendas and the cancellation of long-term projects simply because a newly elected political team does not endorse the plans of their predecessors (Fenwick et al., 2006). This raises critical inquiries and sparks interest in investigating the nature of the leadership duality present in the UK local government and its influence on technology innovation adoption projects.

## 3.3 The Philosophical Perspectives

This section reports the philosophical paradigm chosen for conducting this study. According to Collins et al. (2018), underpinning research investigations with philosophical frameworks facilitate qualitative inquiries. Therefore, the first subsection presents research philosophical stances applied in the field of information systems and selects Critical Realism as an appropriate paradigm for the study. The second section weaves the research inquiry into its chosen theoretical and paradigmatic frames (as selected theories in chapter 2), creating a coherent start for the study investigation.

### 3.3.1 Philosophical Research Paradigms

This subsection provides a summary of the philosophical research paradigms found in the information systems discipline, along with the chosen paradigm for this research and the justification for this choice.

#### 3.3.1.1 Positivism, Interpretivism, and Critical Philosophy: The Traditional Paradigms

According to Orlikowski & Baroudi (2011), a research philosophical paradigm is a set of embraced notions and assumptions explaining perceptions about reality and approaches to knowledge acquisition, or ontological and epistemological stances. Ontology is the description of "What" reality is, whether it is independent from human understanding, or constructed by it (Vincent & O'Mahoney, 2018; Wynn & Williams, 2012), in addition to corroborating the perception about the monocity or multiplicity of this reality (Levers, 2013; Saunders et al., 2019a). Epistemology, on the other hand, is about "How" reality is perceived. It describes how the knowledge about reality or part of it is attained, whether through empirical evidence that is explicitly and objectively tested by human senses, or intangibly validated through human tacit knowledge and rationalization (Vincent & O'Mahoney, 2018; Wynn & Williams, 2012).

Three major philosophical paradigms are recognized in information systems research: Positivism, Interpretivism, and Critical philosophy (Liu & Myers, 2011; Orlikowski & Baroudi, 2011). What differentiates these philosophies are the ontological and epistemological stances. According to Klein & Myers (1999) and Orlikowski & Baroudi (2011), Positivism ontological stance concedes the singularity, objectiveness, and independence of reality from human understanding, whereas Interpretivism assumes the subjectivity and multiplicity of reality as it is constructed by the human perception. In between rests Critical perspective's ontological stance, where the existence of reality is accepted, however grounded in human conception (ibid).

Comparing the epistemological positions of the different philosophies, Positivism adopts Empiricism as an epistemological stance, adhering to tangible objective statistical evidence with respect to hypotheses as the appropriate approach to reality revelation (Klein & Myers, 1999; Orlikowski & Baroudi, 2011; Saunders et al., 2019), whereas Interpretivism accepts different conceptual rationalizations that subjectively construct reality through dialogue (ibid). Yet again, Critical philosophy's epistemological stance is situated in between, considering reality neither independently existent from human interaction, nor dependently constructed by human interaction, but socially and historically interdependent with human interaction (ibid). In other words, Critical Philosophy does not only validate or refute a phenomenon as Positivism, or only provides possible explanation to a phenomenon like Interpretivists but delves beyond Interpretivism constructed explanations in search of Positivists' reality

engraved in and influenced by human contextualization, however separately existent from it and subsequently juxtaposing both epistemological positions (Orlikowski & Baroudi, 2011).

Every philosophical paradigm has been found to have limitations. According to Orlikowski & Baroudi (2011), the major shortcoming of Positivism is its inability to capture contextual factors that influence the phenomenon under research. Moreover, Saunders et al. (2019) highlights Positivism's claim of researcher views exclusion from the research which is seen as an impossible endeavour. As for Interpretivism, its wide subjectivity and high specification limits its ability of findings generalization and methods replicability (Orlikowski & Baroudi, 2011; Saunders et al., 2019). Moreover, despite the middle position Critical Philosophy take in terms of the level of objectivity and subjectivity, it is accused of its excessive focus on emancipating the status quo and oppressive power dynamics, leading to ignorance of the unravelling explanations of the phenomenon in hand (Orlikowski & Baroudi, 2011).

The continuous and extensive critiquing of these all-time philosophical paradigms led to the development of other paradigms that are found to be of significance to the information systems discipline, such as Critical Realism.

#### 3.3.1.2 Critical Realism

A philosophical paradigm originally generated by Bhaskar (Allen et al., 2013; Fletcher, 2017; Mingers et al., 2013) and considered a form of the Critical Philosophy paradigm is Critical Realism (Cruickshank, 2002). It inherits its "criticality" from its conformity to Critical Philosophy's assumptions (ibid), and its "realism" from the conformity of its ontological stance to Realism (Saunders et al., 2019). What distinguishes Critical Realism is the ontological stratified structure it adds to the flat existence of reality. Here, reality is perceived to be stratified into layers and can only be partially accessed through two stages preceding reality: the empirical and the actual (Saunders et al., 2019; Vincent & O'Mahoney, 2018; Wynn & Williams, 2012).

Figure 3.1 provides a visual representation of Critical Realism's stratified ontology, consisting of three layers: the empirical, the actual, and the real. As explained by Bhaskar and referenced in Saunders et al. (2019), Vincent & O'Mahoney (2018), and Wynn & Williams (2012), events or experiences observed at the empirical level actually occur at the actual level by unobserved causal mechanisms occurring at the real level. Fletcher (2017) further clarifies this ontological structure using an iceberg analogy, where the visible tip represents the

empirical domain with observed events, the submerged portion signifies the actual level where events occur, and the concealed base symbolizes the real level housing the causal mechanisms behind observed events.

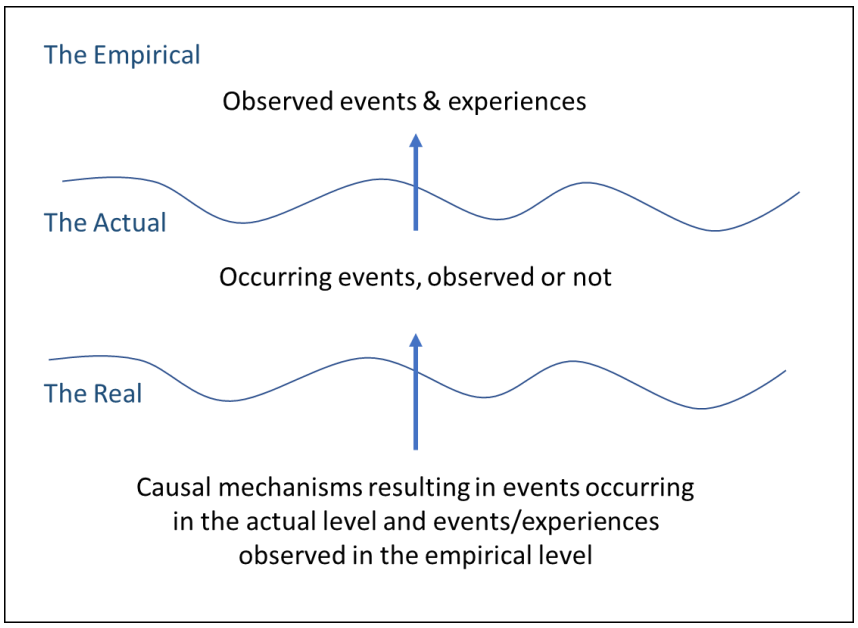



Figure 3.1: Critical Realism Stratified Ontology - adopted from Saunders et al. (2019), Vincent & O'Mahoney (2018), and Wynn & Williams (2012)

Critical Realism adopts the epistemological stance of Relativists, where knowledge about reality is assumed to be attained following various objective and subjective methods. To elaborate, Critical Realism's epistemology does not only accept human rationalisation and perceptions as evidence to reality but believe that reality cannot be revealed without using methods that are tied to the subjectivity of human experiences (Saunders et al., 2019; Vincent & O'Mahoney, 2018; Wynn & Williams, 2012)These assumptions are in line with Critical Philosophy's beliefs, which validates its consideration as a form of Critical Philosophy (Cruickshank, 2002).

There are several reasons why Critical Realism is an advantageous and desired research paradigm to follow. The most important advantage is its ability to account for objectivity and subjectivity simultaneously. Its unique ontological stance coincides with Positivism in structure and objectivity. Nevertheless, its epistemological position that considers reality's interdependence with human interaction, thus coinciding with the epistemological stance of interpretivism.

Despite the advantages Critical Realism provides to research through its plausible subjective and objective assumptions, it has been majorly criticized for its operationalization challenges as its stratified ontological structure poses an application difficulty and confusion to researchers (Mingers et al., 2013).

#### 3.3.1.3 The Role of Dual Leadership in DSDM Adoption: A Critical Realism Research

This sub-section presents the philosophical paradigm chosen for this research along with its justification. The focus of this research is to explore and explain the role of the dual leadership in UK local councils on the adoption of the phenomenon data-supported decision-making (DSDM). In other words, this research studies the influence of human interactions on the existence of the event or phenomenon DSDM.

Looking into the previously discussed philosophical paradigms, the following is found:

- The research focuses on DSDM adoption, which is a phenomenon that exists singularly and is interdependent with human interaction and contextual factors. It is neither independent from nor dependent on human perception. Thus, contradicting the epistemological stance of Positivism and the ontological stance of Interpretivism.
- The epistemological and ontological stances of Critical Philosophy is similar to the ones of the topic. However, Critical research is centred around human actions to emancipate prejudices, which does not relate to the topic of DSDM adoption.

Accordingly, Critical Realism is a more suitable paradigm matching the topic of the research than the other paradigms. The objectivity of the singular reality existence of DSDM adoption (either adopted of not), and the subjectivity of its occurrence's influence by human perception coincides with the epistemological and ontological stances of the Critical Realism paradigm. Moreover, since the existence of the phenomenon does not discuss human coercion or powers conflict – although the effect of conflicts between dual leaderships on DSDM adoption is included in the study – the phenomenon is looked at from Realism point of view, which fits the Critical Realism paradigm.

### 3.3.2 Putting It Together: Approaching the Topic Theoretically and Philosophically

This subsection weaves the research topic in its chosen theoretical base through the philosophical paradigm lens: Critical Realism. Applying Vincent & O'Mahoney's (2018) view of Critical Realism, the UK local government leadership duality is investigated as a rooted causal factor influencing the adoption of data-supported decision-making. Applying the theoretical background mentioned above, guided by the Critical Realism stratified ontological structure of reality, figure 3.2 proposes a possible explanation - to be validated through this research- of dual leadership's relationship in addition to their attitude towards DSDM adoption as a causal mechanism behind the adoption of data-supported decision-making in the UK local government.

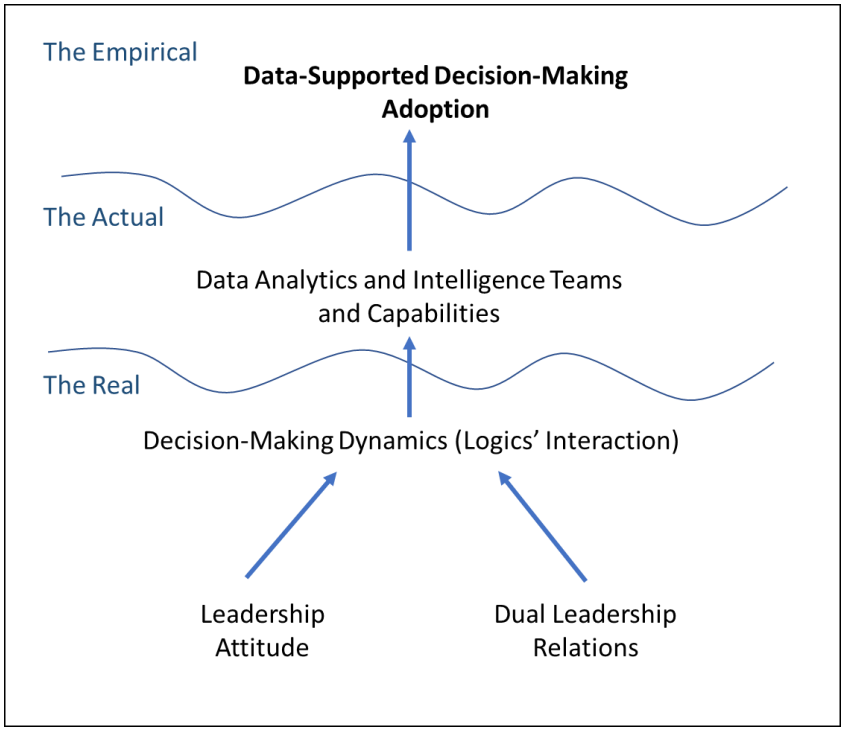



Figure 3.2: Research Paradigm (Based on figure 3.1)

As illustrated in figure 3.2 and based on figure 3.1 illustrating critical realism's ontological structure, the adoption of data-supported decision-making is an event that manifests in the empirical stage of reality's stratified structure. What leads to this event are observable or unobservable activities, experiences, or other events taking place in the actual stage. In this case, developing data capabilities within local councils, such as recruiting data analysts,

purchasing data analysis software and hardware, and providing data analysis training to councillors and officers are all evidence signifying the existence of the event. However, the causal powers and mechanisms of data-supported decision-making adopting in local authorities in the UK are assumed to be in the real stage. These mechanisms provide either a partial or a complete explanation of what leads a local council to adopt data-supported decision-making.

Using the theories selected in the previous section; diffusion of innovation in organizations and institutional logics perspective, initial propositions about causal mechanisms and powers leading to the adoption of data-supported decision-making within local authorities in the UK are suggested for investigation. These assumptions are:

- The leaderships' attitude towards DSDM adoption - both the political and managerial leaderships – are causal powers of the event, which is evident and validated according to (Rogers, 2003)
- The dual leaderships' relationship (the relationship between the political and managerial leaders) is a causal mechanism of DSDM adoption.
- Dual leaderships' attitude and relationship are mechanisms influencing decision-making logics' dynamics adopted in local authorities, which are causal mechanisms for DSDM adoption.

Guided by these assumptions, causal powers and mechanisms forming the single reality rooted to the existence or absence of the event of DSDM adoption are intended to be explored and explained. Consequently, inductive mode of inquiry is conducted as the exploration and understanding of a phenomenon within a unique context as well as the establishment of causal relationships between an event and casual mechanism are the research aims (Saunders et al., 2019a).

In the following section, description of the research design and methodology choices are presented and justified.

## 3.4 Research Approach & Methodology

This section presents the research approach and methodology selected for this study. There are several research approaches to theory development. According to Saunders et al. (2019) and Williamson (2002), a research approach to theoretical development indicates the direction between theory and empirics in conducting the research and concluding its findings. When research starts from a theory and aims to test a theoretical premise empirically for validation, it is called a deductive mode of inquiry (Saunders et al., 2019; Williamson, 2002). On the other hand, when research is concerned with exploring a new topic or research domain to develop new theoretical insights that are still untested, it is called an inductive mode of inquiry (ibid).

Furthermore, research methodology indicates the appropriate type of data required to be collected to answer research questions. Research can apply a quantitative, qualitative, or mixed methods methodology (Saunders et al., 2019). What differentiates research methodologies is the type of data collected and analysed. A quantitative research methodology deals with numeric data, a qualitative research methodology deals with non-numeric data, such as text, images and videos, and a mixed-method methodology deals with both (ibid).

Although the study evaluates an existing maturity model and utilizes theoretical findings to propose an improvement to the model, the core inquiry aims to explore and explain the causal powers and mechanisms of data-supported decision-making adoption in the UK local government authorities, and not to validate or test existing theoretical findings. Therefore, the inductive mode of inquiry is found to be more appropriate for the study. Moreover, since a new area of research is aimed to be delved in to answer the What, Why and How of a phenomenon within a new context, qualitative research methodology is adopted as it better served inductive research as well (Saunders et al., 2019). To ensure the validity of the research, triangulation is applied through the collection of data from multi sources, making it Multi-Method Qualitative research (ibid).

Reviewing the methodological literature of Information Systems research, conducting positivist deductive quantitative studies is found to be the tradition in the field (Orlikowski & Baroudi, 2011). However, the infrequency of conducting inductive qualitative research in Information Systems research does not confirm the inappropriateness of the qualitative method or the inductive approach to the field but on the contrary, it emphasizes a gap in its mode of inquiry and methodological literature.

## 3.5 Research Design

The research design section, as its name implies, presents detailed information about the study sample selection, data collection, and data analysis techniques. Due to challenges encountered in selecting a representative local authorities' sample, a new method is established utilizing secondary data provided by the Local Government Association (LGA), leading to the selection of thirteen local authority cases. Two types of data sources are collected for the study; primary data through semi-structured interview technique, and secondary data through archival and documentations published in the selected local authority cases websites. Data is analysed afterwards applying the four-cycle qualitative analysis method - developed and explained later in the chapter in subsection 3.5.2.3- that synthesizes well-established qualitative analysis techniques from literature, which incorporates Thematic Analysis and Constant Comparative Analysis methods. The collection and analysis of data has been conducted considering the rigor of the research throughout the collection and analysis processes. Information about research validity and reliability is reported as well to ensure the qualitative research rigor.

In order to answer the exploratory and explanatory questions of this research, a comparative cross-sectional multi-method design is chosen for this study. According to Flick (2007), the two basic designs of qualitative research are the case study and the comparative study designs. Both designs use cases as a unit of analysis. However, what determines the choice of design is the intended scope of analysis. Case study design conforms to studies that aim to comprehensively investigate cases in-depth, while comparative study design satisfies studies that focus on comparing specific attributes between cases on specific comparison levels (ibid). Because this research only focuses on the dual leaderships in local councils, and their relationship only to the use of data in decision-making, the comparative study design is selected.

In addition, according to Saunders et al. (2019) and Flick (2007), time is an essential element that affect the choice of research design. Studies that delve back into historical data are called retrospective research. On the other hand, studies that investigate a topic over a period of time in the future are called longitudinal research. As for studies that investigate a topic at one point in time and do not consider historical or futuristic data, they are called cross-sectional research. Based on these definitions, this research is cross-sectional as it investigates the DSDM adoption at one time point and does not consider studying the phenomenon over a period of time. For credibility and triangulation purposes, two methods of data collection were used: online archival documents and semi-structured interviews, which is explained in the coming subsection.

## 3.5.1 Data Collection Techniques

This subsection identifies applied techniques for the selection of the cases sample, as well as the collection of each of the cases data. It encompasses three main parts: the first part specifies the technique followed in the selection of the study sample, the second part provides details about the collections of the primary data for the case through semi-structured interviews, and the third part presents details about the secondary data collection for each of the cases as well.

### 3.5.1.1 Population and Sampling Techniques and Procedures: Cases Selection

This part reports the procedure followed in selecting the study cases sample. The United Kingdom's local government comprises over 400 local authorities across England, Scotland, Wales, and Northern Ireland, presenting a challenge in selecting appropriate sample cases for the study. According to Stake (2006), cases selection for investigating a phenomenon must be intricately linked to the specific in-focus attributes of that phenomenon, encompass possible potential variations in order to attain the highest possible comprehensive understanding of the "complexity" and distinctiveness of the phenomenon’s context. To achieve this, the local council cases’ sample have to include both DSDM adopting and non-adopting local councils, in addition to the inclusion of different types of local authorities, such as unitary, two-tier, district, and county local councils. Furthermore, given the study's focus on decision-making, it is crucial to include local councils adopting different political system structures, such as the leader-cabinet, committee, and hybrid structures. Moreover, the inclusion of local authorities

from the different UK countries would enhance the credibility of the selected sample, accordingly, achieving robust findings to be generalized.

Selecting a sample that fulfils the above criteria, especially cases resembling the existence and absence of the event was challenging. To explain, local authorities adopting data-supported decision-making adopting local authorities are well-documented, particularly in the context of projects such as the Wise Council project (Symons et al., 2016) and the Data Evolution project (Basker et al., 2016). These projects emphasize local authorities contributing to the proliferation of data adoption in decision-making, making these highlighted local authorities suitable for inclusion as cases in the study sample. However, it is uncommon to find local authorities openly admitting to not adopting data-supported decision-making, as this is viewed unfavourably. A solution that can overcome this challenge is to randomly select and investigate cases' adoption of DSDM until non-adopting local councils are found, which is inefficient as it is time consuming and subject to coincidence. Another solution for this dilemma is to find a data source that includes a list of local authorities and their DSDM adoption status, or any other variables that can be used as a proxy to DSDM adoption, which was pursued with the help of the Local Government Association (LGA).

The LGA Data Maturity Model project encompasses a self-assessment tool designed for associates of local authorities to assess their local councils' data capabilities. This tool was utilized by over a hundred associates from fifty-two local authorities across the United Kingdom, generating a dataset of the users of the tool and their assessment responses of their local councils. The dataset, obtained from the LGA in the form of an Excel spreadsheet, serves as a sampling framework (Saunders et al., 2019) for the selection of cases pertinent to the study, as it contains variables that can serve as indicators of local councils' adoption of Data-Supported Decision Making (DSDM). To ensure a robust sample selection, the local authorities were categorized by their adoption of DSDM and the positive attitude of their political leadership towards this adoption. This categorization facilitated a clear understanding of the similarities and differences relevant to the study's focus, ultimately leading to a more comprehensive sample (Stake, 2006).

The categorization of the fifty-two local government authorities was accomplished following several steps. the LGA dataset contain users' responses to thirty-four statements evaluating local authorities' data capability. Seeking relevant information to data-supported decision-

making adoption in the thirty-four evaluation statements, one evaluation statements, which is "Data analysis is most frequently requested after a decision has been made, as evidence to support the decision" – was found to indicate local authorities' adoption of interest-driven or data-evidenced decision-making. Another evaluation statement, which is "Political leaders have made statements that clearly demonstrate a high level of buy-in and understanding of using data more intelligently", was found to indicate the attitude of local authorities' political leadership towards the adoption of data-supported decision-making. Since no statement was found to represent local authorities' managerial leadership attitude towards the adoption of DSDM, the two evaluation statements mentioned in the previous paragraph were selected to categorize local councils in the data into four categories.

Responses to the selected evaluation statements were aggregated on a local council level. To achieve this, the 5-points Likert scale values were assigned numerical values: 5 was assigned to "strongly agree", 4 to "agree", 3 to "neutral", 2 to "disagree", and 1 to "strongly disagree". Then, users' responses to each of the statements were averaged, resulting in an overall evaluation score for each evaluated local council. With the X-axis representing values of DSDM adoption, and the Y-axis representing values of political leadership attitude towards DSDM adoption, local councils with an average value above 3 to the statement representing adoption of interest-driven or data-evidenced decision-making were placed on the negative side of the X-axis, indicating their non-adoption of DSDM. On the other hand, local councils with average responses value below 3 to the adoption of interest-driven or data-evidenced decision-making were assumed to be adopting DSDM – either data-informed or data-driven decision-making- and accordingly were placed in the positive side of the X-axis, indicating their DSDM adoption.

As for the political leadership attitude towards DSDM adoption, local councils with average responses values higher than 3 were placed on the positive side of the Y-axis, indicating positive (or supportive) political leadership attitude towards the adoption of DSDM and vice versa; local councils with average response value below 3 were placed on the negative side of the Y-axis, assuming negative (or unsupportive) political leadership attitude towards the adoption of DSDM. it is important to note that assumptions considered in the categorization of local authorities were corrected after the complete collection and analysis of data. Figure 3.3 illustrates the result of the categorization of local councils.

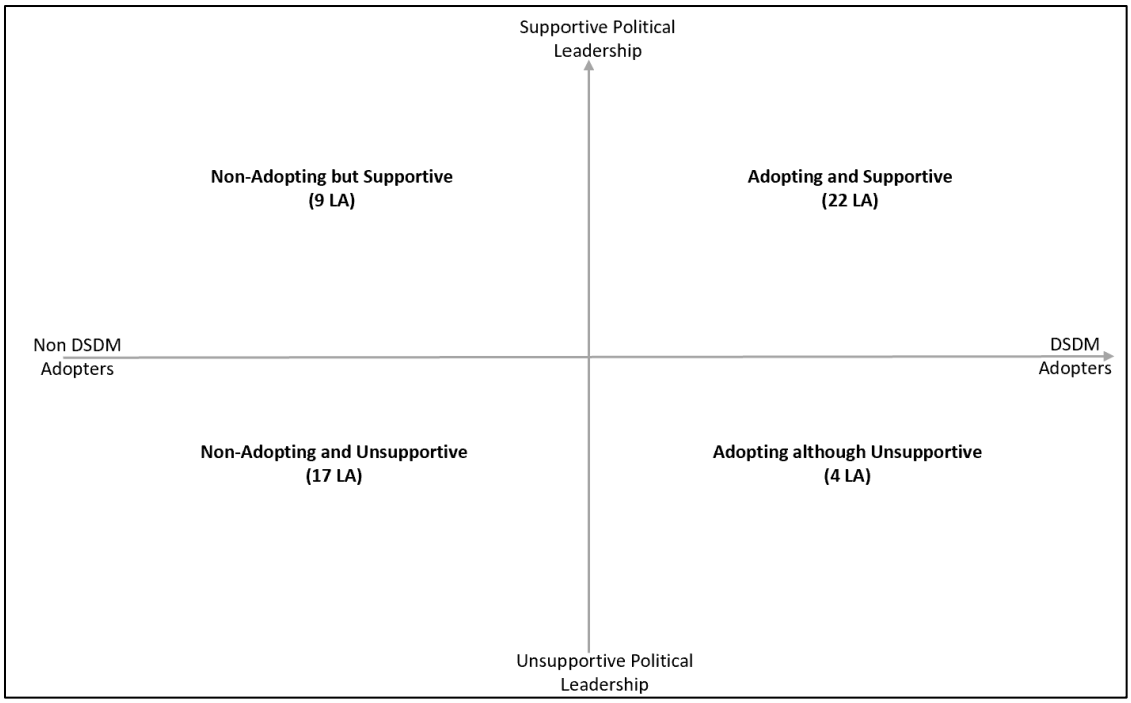



Figure 3.3: Local Authority's (LA) Categories

Figure 3.3 illustrates the local councils' segments represented by the different quadrants created as the X and Y axes intersect. The X-axis represents the DSDM adoption in local councils, and the Y-axis represents the attitude of the local council's political leadership towards DSDM adoption. These segments are:

1. Category 1 – DSDM Adopting with Supportive Political Leadership: these are local authorities that are adopting DSDM with the support of their political leaders. Of the fifty-two assessed local authorities, twenty-two fall into this segment.
2. Category 2 - Non-DSDM adopting and Unsupportive Political Leadership: these are local authorities that are non-DSDM adopting with unsupportive political leaders to the DSDM adoption. From the fifty-two assessed local authorities, seventeen are reported to not adopt DSDM with political leadership that is either ignorant or unsupportive to the adoption of DSDM.
3. Category 3 - Non-DSDM adopting but Supportive Political Leadership: these are local authorities that are reported to be non-adopting of DSDM although their political leadership have positive attitude towards DSDM adoption. Nine local authorities are included in his category out of the fifty-two.
4. Category 4 – DSDM Adopting although Unsupportive Political Leadership: these are local authorities that are reported to be adopting DSDM although their political

leadership is unsupportive to the adoption. Only four local authorities are included in this category out of the fifty-two evaluated ones.

There are two reasons for selecting 13 local council cases to study in this research. Since the maximum number of cases is preferred to be between 10 and 15 (Stake, 2006; Yin, 2018), thirteen cases were selected fulfilling the diversity criteria as much as possible (different council types, political system, countries). Three to four cases were selected from each category to ensure theoretical and empirical replication (Yin, 2018). Moreover, the collection of data was terminated at the saturation point, where no new findings were produced from newly collected data, which was at local authority number 13. Table 3.1 lists the selected local authorities and provides some information about their types and political arrangements. However, for ethical reasons, the names of the councils are anonymized.

Table 3.1: List of Selected Local Authority Cases

| Category | Anonymized Name | Country | Type | Political System |
|---|---|---|---|---|
| 1 | Local Authority 3 | Scotland | Unitary | Executive Hybrid |
| | Local Authority 7 | England | County | Cabinet |
| | Local Authority 8 | Scotland | Unitary | Executive Hybrid |
| 2 | Local Authority 2 | England | Unitary | Committee |
| | Local Authority 5 | England | Unitary | Cabinet |
| | Local Authority 12 | England | Metropolitan District | Cabinet |
| 3 | Local Authority 1 | England | Unitary | Cabinet |
| | Local Authority 4 | England | Metropolitan District | Cabinet |
| | Local Authority 6 | England | County | Cabinet |
| 4 | Local Authority 9 | England | District | Committee |
| | Local Authority 10 | England | District | Cabinet |
| | Local Authority 11 | England | London Borough | Cabinet |
| | Local Authority 13 | England | District | Cabinet |

Table 3.1 provides information about the selected cases for the study. Different types of local authorities were included in the study sample to cater for the diversity and contextuality criterion. According to Local Government Structure and Elections - GOV.UK (n.d.), local councils differ in types based on services they provide to the area constituents. Starting with the highest service provision, a Unitary authority comes first, followed by London Boroughs, then Metropolitan Districts. Two-tier councils come after as service provision is split between County and District councils, where County ones provide more services to the area than Districts, in addition to leading other District, Town and Parish councils within the same area.

Of the selected sample cases, there were five Unitary authorities, one London Borough, two Metropolitan District, and five Two-tier authorities with two County and three District local councils. Other types of local authorities such as town and parish councils were excluded from the sample due to their limited leadership responsibilities. Moreover, Combined authorities were excluded as well since they are newly formed as a result of the local government devolution project.

In addition to authority type diversification, cases were selected to account for the different political systems adopted in local government. According to Local Government Structure and Elections - GOV.UK (n.d.) , a political system or structure represents the decision-making scheme and power distribution within a local council. There are three major political systems in the UK local government: the Leader-Cabinet, The Committee, and The Hybrid systems (sometimes called Executive Hybrid). The Cabinet or Leader-Cabinet system centralizes most of the decision-making power to several elected councillors, who form a cabinet. The Committee system on the other hand provides every councillor with the same share of decision-making power through voting. For example, it is possible to find a cabinet councillor in a cabinet system council making decisions without the votes of the council, but not in the committee system adopting authority, where all decisions are made through voting. As for the Hybrid, or Executive Hybrid system both of the Cabinet and Committee systems' properties are adopted as its name implies. Authorities adopting the Hybrid system have committees and an executive team of elected members similar to the cabinet. However, a committee in a Hybrid system authority does not make decisions as they are consultative, unlike committees in the pure Committee system, and executive team members are not allowed to make decisions without the votes of the rest of the executive team's members, unlike the Cabinet system. In other words, only one committee, which is the Executive Committee, or the full council can make decisions by voting, making the Hybrid system a special type of Committee system. Of the selected sample cases, nine local authorities adopted the Leader-Cabinet System, two adopted the Committee system, and two adopted the Executive Hybrid system.

Furthermore, although the UK has four countries; England, Scotland, Wales and Northern Ireland, eleven local authority cases were from England and two from Scotland. None of the selected local authorities was either from Wales or Northern Ireland as the LGA local authorities list did not include any.

After selecting the sample cases for the study, two types of data collection tools were used: semi-structured interviews and archival documents.

#### 3.5.1.2 Data Collection Tool #1: Semi-Structured Interviews - The Primary Data source.

This part reports information about the primary data collection technique: semi-structured interviews, in addition to the procedure followed in selecting the participants and conducting the interviews. Details about managing the collected interview data is reported as well.

Semi-structured interview was selected for the research primary data collection. According to Saunders et al. (2019), interviews can be categorized into three types: structured, unstructured, and semi-structured. Structured interviews involve standardized questions and are commonly used in quantitative research to gather uniform data across participants. On the other hand, unstructured interviews are characterized by open-ended questions and are suitable for exploratory qualitative research aiming to develop theoretical frameworks for under-studied phenomena with limited existing literature. Lastly, semi-structured interviews strike a balance between the two previous types, as they involve predetermined yet flexible questions, allowing for in-depth exploration of specific aspects of phenomena while adapting to the contextual conditions of the subject under study. Sine this study aims to explore and explain the adoption of DSDM phenomenon, yet from the leadership angle, semi-structured interviewing deemed suitable as it allows for detailed and unrestricted yet focused insights and perspectives on the phenomenon.

##### *3.5.1.2.1 Developing the Interview Questions*

This part reports information about the development of the interview questions. The semi-structured interviews questions were designed depending on the research questions and objectives. To explain, interview questions were categorized into four groups that were set to investigate the theoretical propositions built upon adoption factors, decision-making logics, and relationship dynamics between the leadership types. The first draft of the interview questions was very close and considerate to these theoretically deduced propositions. However, with progression, some questions were updated and adapted, and new questions emerged as new influencing factors and causal powers were revealing, specifying aspects that are not in the original questions plan. Interview questions were designed to move from the

open general questions to the more specific ones. A maximum of nine questions were posed to each participant due to the necessity for extensive probing to elucidate the causality of the phenomenon (DeJonckheere & Vaughn, 2019). Furthermore, posing and probing beyond 7 to 9 questions would prolong the duration of the interviews, a matter deemed significant by members and officers of local councils. Details about the interview questions are included in the cases protocol appended to the thesis.

#### *3.5.1.2.2 Selecting Participants*

This part presents information about the selection of the interview's participants. The study aims to explore the influence of political and managerial leadership on the adoption of DSDM in UK local government authorities. The participants selected for the study were required to represent both political and managerial leadership levels, specifically from the top and middle tiers of the hierarchy. In the context of political leadership, individuals such as the leader of the council, portfolio holders, and committee chairs from the administration party, as well as members from opposition parties, were included to gain a comprehensive understanding of leadership dynamics and decision-making processes among different types of councillors.

In addition to political leaders, the study also encompassed leaders from the managerial hierarchy within local councils. This included individuals occupying positions within the management organizational structure, such as chief executives or heads of paid services, directors, and heads of services. A sample of management leaders was selected as participants in the case studies to provide insights into the dynamics and relationships associated with leadership and decision-making, including member-to-member interactions within the political leadership scope, officer-to-officer interactions within the management leadership scope, and interactions between members and officers, encompassing both political and management leadership scopes.

However, the selection of participants was constrained by the use of convenient sampling due to several encountered issues. Obtaining approval from local authorities' officers and members proved challenging, primarily due to concerns related to data privacy, which acted as a significant obstacle. Consequently, the study experienced a low response rate (54 interviewed participants from 1,576 contacted associates = 3% response rate) and encountered

reluctance among participants to candidly reflect the reality of their local councils' adoption of data in decision-making.

Another challenge encountered during the participant selection process was the difficulty in contacting local councils' management officers. While the names and contact information of political members of local authorities were readily available on councils' websites, the contact information of officers was not as accessible. Various channels, including local councils' customer services emails, social media accounts, and snowballing from member interviews, were utilized to obtain this information, but with limited success. To address this issue, an innovative two-step technique was implemented to reach out to officers. This involved accessing the "people" node under local authorities' pages on LinkedIn to identify and contact officers through the messaging option, as well as deducing the email structure of each local council based on the names of councillors and using this structure to gain access to officers. Excel functions were employed to generate leads for contacting officers.

Out of the 1,576 emails from the 13 selected cases that were initially contacted, 45 individuals responded and were subsequently interviewed. In order to achieve theoretical saturation, a second round of email communication was conducted with the remaining email recipients (excluding those who had already been interviewed), leading to nine additional interviews. However, these additional interviews did not yield significant new findings. Information about the interviewed 54 participants in terms of their leadership type and seniority level is summarized in the table 3.2.

Table 3.2: Participants Information

| Local Authority | Political Leaders (Members) | | Management Leaders(Officers) | | Totals |
|---|---|---|---|---|---|
| | 1st level | 2nd Level | 1st Level | 2nd Level | Total |
| Local Authority 1 | | 2 | 4 | | 6 |
| Local Authority 2 | 2 | 3 | 3 | | 8 |
| Local Authority 3 | 1 | 2 | 2 | 2 | 7 |
| Local Authority 4 | | 2 | | 1 | 3 |
| Local Authority 5 | 1 | 4 | 2 | | 7 |
| Local Authority 6 | 1 | | 3 | | 4 |
| Local Authority 7 | | 2 | | 2 | 4 |
| Local Authority 8 | 1 | | 2 | | 3 |
| Local Authority 9 | | 1 | | 1 | 2 |
| Local Authority 10 | | | 1 | 1 | 2 |
| Local Authority 11 | 1 | | 1 | 1 | 3 |
| Local Authority 12 | | | 1 | 2 | 3 |
| Local Authority 13 | 1 | | 1 | | 2 |
| Totals | 8 | 16 | 20 | 10 | 54 |

Table 3.2 provides information about interviewed participants with regards to their leadership type and level. Interviewed political leaders were categorized to two levels of leadership. The first level leaders were councillors with executive roles in their local authorities such as leaders of the councils, portfolio holders and committee chairs. The second level leaders were councillors with non-executive roles in the council, mainly ward councillors. As for the interviewed managerial leaders, they were categorized into two levels as well. The first level management leaders are those occupying positions in the first three tiers of the management structure, such are Chief Executives, Directors, and Heads of Services. The second level management leaders are basically senior middle managers, such as service leads and senior projects managers. In total, 24 political and 30 managerial leaders were interviewed.

While the quantity of interviews conducted for certain cases may appear limited, it is important to recognize that the quality of interviews, rather than their quantity, determines the richness of the collected data (Koerber & McMichael, 2008). This distinction accounts for the uneven distribution of participants as depicted in the table of interview participants. For instance, local authorities 9 and 10 each feature only two participants, yet these interviews yield substantial and valuable information. In contrast, local authorities 2, 3 and 5 boast a higher number of participants, contributing an equivalent depth of data.

#### *3.5.1.2.3 Interviewing Procedures*

The participants were engaged subsequent to obtaining the aforementioned approvals. A formal invitation letter, accompanied by the participants' information sheet and consent form, was meticulously prepared and dispatched to them via email. Upon request, the interview questions document was provided to the participants. Prior to the commencement of the interviews, participants were required to review the research information sheet, sign the consent form, and return it to the researcher in advance. In certain instances, consent was conveyed through written email correspondence. All consent forms, including those obtained via email, were systematically archived in a designated folder within the researcher's cloud account. As a precautionary measure, each participant was requested to provide verbal consent at the outset of the interview. Subsequently, all verbal consents were documented as part of the interview video and audio recordings, transcribed, and archived alongside the textual transcripts.

Due to constraints in participant accessibility as previously discussed, it was not feasible to conduct a formal pilot interview. However, the time required to respond to the questions was assessed, leading to the decision to limit the number of interview questions to seven by combining and prioritizing them.

The onset of the COVID-19 pandemic in March 2020 rendered the utilization of internet technologies for conducting interviews more convenient, particularly in light of the numerous national lockdowns and the widespread transition to remote work (Hanna, 2012; Saunders et al., 2019). Consequently, Microsoft Teams and Zoom software programs were employed for conducting the interviews, capitalizing on the communication paradigm shift brought about by the pandemic.

Despite the challenges posed by COVID-19, it had a positive impact on the collection of interview data. By inviting participants to engage in informal conversations during the interviews, the researcher was able to encourage interviewees to allocate time to discuss the research topic in a manner most relevant to them. Furthermore, as suggested by Adewale (2016), interviewing participants about a topic related to their professional responsibilities outside the confines of their offices, where concerns about data privacy and security are less pronounced, facilitated a more open and comfortable expression of their perspectives, provided that anonymity was assured.

In terms of the timing and duration of the interview sessions, all interviews were conducted during working hours, both in the morning and afternoon. The duration of the interview sessions ranged from a minimum of 25 minutes, characterized by straightforward responses from participants who were not inclined to provide in-depth explanations, to a maximum of 90 minutes, where participants expressed a keen interest in the topic and sought to thoroughly discuss and probe every relevant point. Notably, probing was emphasized as a crucial tool for identifying causal mechanisms and factors of the phenomenon, and it proved to be effective in this regard.

The initial phase of data collection spanned 10 months, commencing in February 2021, while the second phase extended over a period of two months, concluding in January 2022, resulting in a total data collection period of one year. It is worth noting that the extended duration of data collection was attributed to the challenges encountered in accessing participants and obtaining their approvals.

#### *3.5.1.2.4 Managing Interviews Data*

This part reports information about how interview data is managed. Data management was meticulously upheld throughout every phase of the data collection process, spanning from the initial stage of identifying potential participants to the culmination of the data analysis phase. This section elucidates the procedures employed for the storage and administration of data across the various stages of the research project.

The first phase of data collection entailed the compilation of participants' contact details, encompassing the names and email addresses of both members and officers affiliated with the selected cases. As previously indicated, the information pertaining to members was sourced from the official websites of the respective local councils. Conversely, the names of officers were obtained from their local councils' social media accounts, specifically LinkedIn, and their email addresses were generated in accordance with the procedure outlined in the "Selecting Participants" sub-section. A comprehensive database containing participants' information was established in an Excel file, with each local council being allocated a dedicated Excel sheet housing all pertinent participant contact details, along with their communication plan and the status of their communication response, whether successful or otherwise.

The subsequent phase of data collection involved the management of the consent forms obtained from participants who responded positively. These forms were systematically stored in computer folders, segregated and labelled based on the respective local council or cases.

The third phase centred on the storage of video and audio recordings of the interviews. This was facilitated by activating the recording function prior to each interview, enabling the comprehensive capture of the interviews, with the resulting records being uploaded to the interviewer's secure cloud accounts. Subsequently, these records were automatically

transcribed into text format and downloaded to the researcher's university cloud drive, where manual correction of the transcripts was undertaken. Following the correction process and preceding the analysis phase, personal identification details of participants, including the names of the local councils, were encoded to uphold the agreed-upon levels of anonymity and privacy as stipulated in the consent forms. Participants names were encoded as numerical identifiers (e.g., 01, 02, etc.) along with a label identifying the type and level of leadership (e.g. 1st level councillor, 2nd level officer), while local authorities were assigned a number randomly from 1 to 13.

The final phase in the data management journey pertained to the analysis stage. To this end, the text transcriptions were imported into NVIVO 12 Pro, a qualitative data analysis program, where a new project folder was established for the comprehensive analysis of all text transcripts, marking the commencement of the data analysis phase, which is explained in a separate section.

#### 3.5.1.3 Data Collection Tool #2: Archival Documents – The Secondary Data source

This sub-section presents information about the secondary data source used in this research, which is document data. It describes these documents, reason for selection, and the management of documents as data. Four types of archival documents were included in this study: a local authority's constitution, strategic/corporate plan, management structure, and digital strategy (if applicable). Utilizing secondary data sources in addition to the research primary data source enhances the robustness of the study as it ensures reliability and validity through the facilitation of data triangulation (Saunders et al., 2019; Yin, 2018). Furthermore, the utilization of documents as a secondary data source mitigates researcher bias, as it does not entail control over the creation or development of document data, thereby augmenting the credibility and reliability of the research findings (Saunders et al., 2019)

Details about included documentations in the study and how they were used are provided in the following sub-sections.

#### *3.5.1.3.1 Local Authority's Constitution*

A local authority's constitution is a comprehensive public document, typically spanning approximately 500 pages, that delineates the legal framework and regulations governing the operations, decision-making processes, citizens' rights, and the obligations of the authority's councillors and officers. In the context of this research, the constitutions were anticipated to enrich the research findings by validating the decision-making principles identified in the inductive study through the delineation of roles and responsibilities outlined in the constitution, as well as contrasting the theoretical underpinnings of decision-making (as articulated in the constitution) with its practical manifestation (as evidenced in the interviews)

Each local council maintains a single constitution, which is publicly available on the council's website. Consequently, these documents were procured from the respective local authorities' websites and stored in the researcher's cloud account within the designated folder for each local council, amounting to a total of 13 constitutional documents.

#### *3.5.1.3.2 Local Authority's Strategic/Corporate Plan*

A local authority's strategic plan is a formal document outlining the objectives and initiatives to be pursued by a local council over the forthcoming four to five years. It serves as a publicly available document designed to inform and engage the community, as well as to demonstrate the commitment of the current political administration to serving the public interest. The publication of a local council's strategic plan is contingent upon the approval of both the managerial and political leadership of the council. Consequently, any reference to the use of data in decision-making within a local council's strategic plan can be interpreted as indicative of a favourable stance by both leadership factions towards the adoption of this phenomenon.

The development of strategic plans among local councils varies, with some councils creating plans every three years, others every five years, and some every ten years. Given that this research focuses on the adoption phenomenon beginning in 2018, it examines strategies that encompass this timeframe. Each local council maintains at least one Corporate Plan, which is publicly accessible on the council's website. As a result, these documents were obtained from the websites of the respective local authorities and archived in the researcher's cloud account,

with each local council's documents being stored in a designated folder, resulting in a total of 13 constitutional documents.

#### *3.5.1.3.3 Local Authority's Management Structure*

The management structure of a local authority represents the organizational arrangement of the managerial leadership hierarchy and the reporting lines extending from junior management positions to senior roles. Within local councils, the managerial structure is typically overseen by the chief executive or the head of paid services. Additionally, the management structure illustrates the specific departments responsible for managing functions and services. This formal document is not publicly disseminated unless it receives approval from the senior leadership of the local council, both the political and managerial.

It was observed that certain local councils have established a dedicated team or sub-department tasked with overseeing functions related to business intelligence or data analytics. This allocation signifies the awareness of both leadership types within these specific local councils regarding the significance of leveraging data for the council's operations, leading to their endorsement of the establishment of a specialized team for this purpose. This information facilitated the inference of a positive attitude from both types of leadership towards the adoption of data. This led to the inclusion of management structures of local authorities in the research data selection and analysis.

Each local council maintains a single management structure, whether in a separate file or as part of the constitution, which is publicly available on the council's website. Subsequently, these documents were obtained from the respective local authorities' websites and stored in the researcher's cloud account within the designated folder for each local council, amounting to a total of 13 management structure documents.

#### *3.5.1.3.4 Local Authority's Digital Strategies*

Similar to local authorities' strategic plans, digital strategies are formulated by certain local councils to enhance their technical, digital, and informational capabilities. These strategies are designed to optimize the efficiency of both internal and external operations of the local

council, ultimately leading to improved public service delivery. Similar to other documents, these textual resources are not publicly disclosed unless they receive approval from the political and managerial leadership of the local council, indicating a favourable disposition of the leadership towards the adoption of data-driven decision-making.

It is important to note that not all local councils have digital strategies. As for the local authorities included in this study, 11 authorities had digital strategies that were included as data to be analysed. These documents were obtained from the websites of their respective local authorities and stored in the researcher's cloud drive with other secondary documents for the analysis phase.

To conclude, table 3.3 summarizes data collected for each local authority case, type of the data source, whether primary or secondary, data collection tools and expected contribution of each data source.

Table 3.3: Data Sources per Local Authority Case

| No. | Data Collection Tool | Data source Type | Number of Units per Case | Total | Expected Contribution |
|---|---|---|---|---|---|
| 1 | Interviews | Primary | 2 -7 | 54 | • Decision-making logics<br>• Leadership attitude towards data adoption<br>• Leadership relationships |
| 2 | Constitution | Secondary | 1 | 13 | Decision-making logics |
| 3 | Management Structure | Secondary | 1 | 13 | Leadership attitude towards data adoption |
| 4 | Strategic / Corporate Plan | Secondary | 1 | 13 | Leadership attitude towards data adoption |
| 5 | Digital Strategy | Secondary | 0 - 1 | 11 | Leadership attitude towards data adoption |
| Total Analyzed Units | | | | 104 | |

In the next section, details about the data analysis methods employed to tease out findings and answer the research questions are explained.

### 3.5.2 Data Analysis Methods

This subsection presents details about the data analysis techniques employed to the collected study data. Two data analysis techniques were employed to analyse the multiple sources of data in the study. The first method utilized was thematic analysis, a qualitative data analysis technique aimed at deriving theoretical and conceptual findings by identifying common patterns and relationships in the data through coding, as outlined by (Saunders et al., 2019) and King & Brooks (2018). Due to its flexibility and significance in generating viable results

from qualitative data, thematic analysis is well-suited for research with exploratory and explanatory purposes (King & Brooks, 2018). It can be used as a standalone data analysis method or as part of other analysis methods, such as template analysis and framework analysis, where common patterns of data are identified through coding similar text statements (ibid).

In addition to thematic analysis, the constant comparative analysis method was also employed. As themes emerged from the granular analysis perspective, the need to generalize analysis findings at the case level led to the application of the constant comparative analysis technique.

Given that this research explores and explains a phenomenon within a context that has been limitedly studied, a qualitative analysis technique that is reflexive yet credible, reliable, and flexible to accommodate different levels and cross-sectional case analysis is deemed necessary. Furthermore, due to the inclusion of multiple data sources varying in size and type, a generic qualitative data analysis technique is required. Thematic analysis fulfils the necessary criteria for analysing the data collected for the study (King & Brooks, 2018; Saunders et al., 2019), selecting it as the main data analysis method for the study. A point worth mentioning is the suitability of thematic analysis as a method to induce findings and causal mechanisms following critical realism philosophical stance (Fryer, 2022; Wiltshire & Ronkainen, 2021).

Figure 3.4 illustrates the roadmap from cases sampling and data analysis to findings generation. The figure starts with local authority cases sampling and selection techniques explained in previous section, continues to the analysis of collected interview and documentation data of local authorities' categories using thematic analysis and coding, and proceeds to case cross-sectional analysis employing constant comparative analysis method. Details about the preparation of study data, and the application of analysis techniques explaining the figure follows.

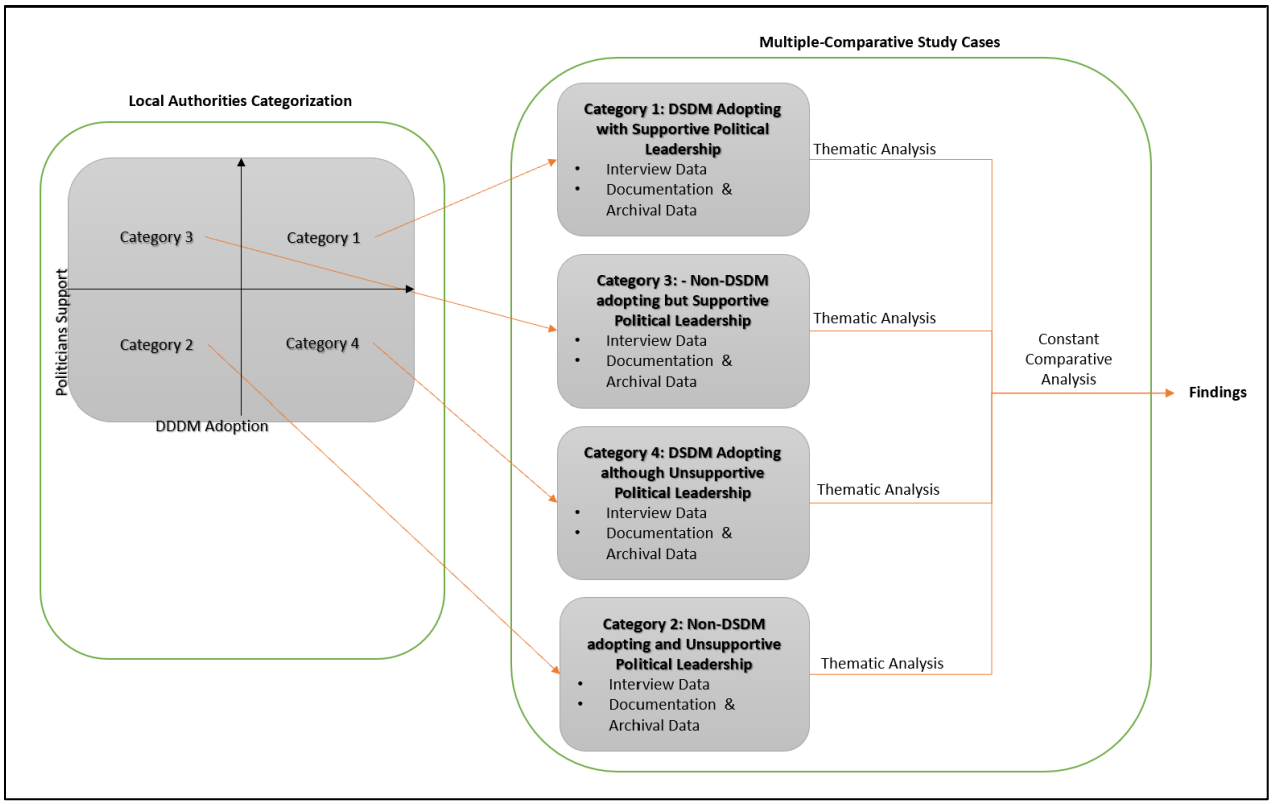



Figure 3.4: Data Analysis Roadmap

### 3.5.2.1 Ensuring The Qualitative Research Rigor

This section outlines the procedures implemented to ensure the quality and rigor of the conducted research and its findings. Qualitative inductive research methods have been criticized for their lack of rigor (Gioia et al., 2013). To address this concern, a four-cycle qualitative analysis method was developed, in addition to the application of four validity and reliability tests: construct validity, internal validity, external validity, and reliability tests (Yin, 2018).

To confirm the qualitative research rigor, three approaches to qualitative data analysis were synthesized and applied to the analysis of the study data, in addition to a fourth validation cycle. These approaches were developed by Gioia et al. (2013), Fryer (2022), and generically encompassed by Saldaña (2021). In their organizational study paper, Corley et al. (2004) developed a rigorous qualitative analysis approach through establishing three coding stages: first order coding, second order coding, and the level of aggregated dimensions. The first order coding was driven by data itself irrespective of theoretical or propositional concepts, whereas the second order coding accounted for theoretical coding and emerging conceptual

relationships, turning the data-driven concepts into themes. The third level analysis aggregated the resulting themes into dimensions that explained a phenomenon from an abstracted theoretical lens. Gioia et al. (2013) reviewed this approach and confirmed it as a rigorous qualitative inductive approach.

In addition to Corley et al. (2004) and Gioia et al. (2013)'s approach to qualitative analysis, Fryer (2022) developed a qualitative thematic analysis approach adhering to critical realists' philosophical stance for the purpose of unveiling causal mechanisms of occurring phenomena. What deems imperative in Fryer's approach is its emphasis on ensuring theoretical validity of the inductive thematic analysis process, which does not contradict with Gioia's approach, but sup it. Therefore, considering these approaches simultaneously adds to the credibility and rigor of the analysis method.

Furthermore, considering Saldaña (2021)'s approach to various types of cyclical qualitative coding supplements analysis flexibility and credibility. The application of specific coding types tailored to specific purposes through multiple analytical cycles ensures the reliability of the findings. For instance, in the initial cycle of analysis, open coding and process coding (given that the phenomenon under investigation manifests through a process) were employed to enhance familiarity with the data and to freely explore new concepts driven by the data. As the analysis progresses through subsequent cycles, a higher level of theoretical abstraction becomes necessary, which is achieved through theoretical and axial coding. Adhering to a well-defined set of analyses enhances the reproducibility of the findings.

Notwithstanding the methodological aggregation described above, an additional fourth cycle was incorporated into the analysis for validation purposes. This fourth analysis cycle involves the review of developed dimensions at a case level through cross-sectional analysis using the constant comparative method. The development of this four-cycle qualitative analysis method is visually depicted in the following figure to ensure reproducibility. Consequently, it can be considered as a methodological contribution that takes advantage of the existing methodological rigor through combining and structuring, adding to the credibility and validity of the analysis results.

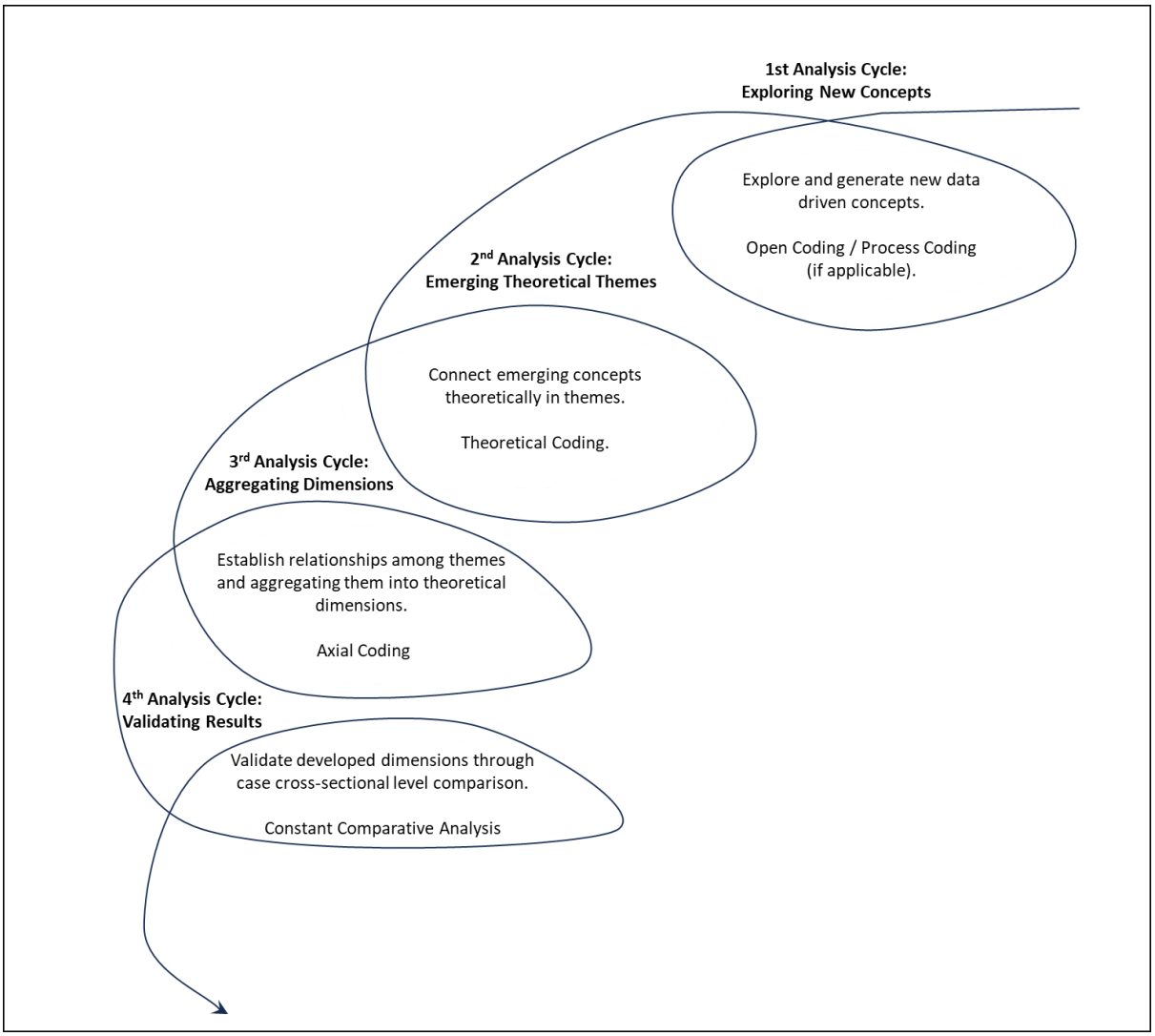



Figure 3.5: The Four-Cycle Qualitative Analysis Method

In addition to implementing the four-cycle method, four tests of validity and reliability were employed to uphold the credibility and trustworthiness of this research: construct validity, internal validity, external validity, and reliability tests. The construct validity test was utilized to ensure that the phenomenon was measured using the appropriate constructs, as advocated by Yin (2018). The selection of constructs for measuring the phenomenon was grounded in theory and literature, thereby ensuring their accuracy (Yin, 2018). Triangulation, involving the use of multiple sources of evidence to validate the phenomenon and its constructs, was employed to ensure the validity of the constructs, with evidence from various data sources converging in each individual case analysis (Yin, 2018).

Furthermore, given the objective of this study to reveal the causal mechanisms underlying the adoption of data-supported decision-making within UK local councils, the application of the

internal validity test holds significance. Internal validity pertains to the validation of inferences that explicate the phenomenon through the relationships of constructs considered as causes (Yin, 2018). To ensure the internal validity of the research, the pattern matching technique was employed in the analysis of the cases, where empirical findings from the cases were matched using the constant comparative analysis method (ibid). Additionally, the research coding diagram, serving as a "logic model," was designed to reflect the cause-and-effect relationships between the constructs and the phenomenon based on theory and literature, and was tested and refined through the collection and analysis of empirical data (ibid).

Additionally, the research findings underwent an External validity test to ascertain their generalizability (Yin, 2018). Within the specific context of this study, focusing on UK local government authorities, the generalization of results, as proposed by Yin (2018), was achieved through theoretical and literal replications. Literal replication involved the selection of multiple cases with the same construct values and empirical conditions, which were then analysed and compared to ensure valid and consistent results (ibid). Conversely, Theoretical replication entailed the selection of cases where the analysis results were anticipated to be contradictory based on the chosen theoretical research base (ibid). Both literal and theoretical replications were implemented by basing the selection of multiple cases from each of the LGA local authorities' categories, encompassing the selection of more than one case from the same category (literal replication), as well as cases from opposing categories with predicted opposing scenarios based on theory (theoretical replication).

The fourth research test in this section pertains to reliability. Research is considered reliable if the repetition of the same identified procedures yields consistent results (Yin, 2018). Ensuring research reliability, in addition to the development and application of an analysis method confirming replicability and reproducibility of results, involves the establishment of a database for the study data, where all evidence is linked, stored, and accessible (ibid). With the support of computer programs such as NVIVO and Microsoft Excel, research database and evidence have been created, stored, and made available for researcher access as needed.

#### 3.5.2.2 Data Preparation

The preparation of archival documents for analysis involved accessing these files online and downloading them from the respective local authorities' websites, as previously mentioned. Subsequently, the documents were imported into NVivo, a qualitative data analysis software, and organized into folders based on their types (e.g., Corporate Strategy folder, Constitutions folder) and further categorized by local authority cases to facilitate cross-sectional case analysis.

In contrast, the preparation of interview data followed a series of steps. Initially, interviews were automatically transcribed using the transcription features of MS Teams and Zoom. The auto-transcripts were then downloaded from the programs' cloud accounts in the form of text, audio, and video files, and subsequently uploaded to the NVivo qualitative analysis software, amounting to a total of 54 interviews. These interviews were organized within a designated folder labelled "interviews" and classified by local authority case. Further editing was conducted on the interview text files to streamline the analysis process, involving the organization of questions and answers in a tabular format, with each entry labelled with the pseudonyms of participants and the researcher.

To explain, every data source collected in this research was assigned a code that reveals part of its properties, but not the selected case identity. Staring with interview participants, each participant was coded with two letters and a number. The first letter was R indicating that the data pertains to the responses of an interview participant, where the second letter was either C indicating it was a response from a councillor, or O indicating it was a response from an officer. The numbers are assigned randomly from 1 to 54, which is the total number of interview participants. For example, code RC15 means it is data collected from the responses of a local authority's councillor participant number 15, where code RO2 means the data has been extracted from the responses of participant number 2, who is an officer within one of the selected 13 local council cases. Although every local authority case is coded with a number randomly selected from 1 to 13, these responses have not been linked to local authorities' numbering in order to ensure a higher level of anonymity.

Moving to documentation coding, as each local authority case was given a random number from 1 to 13, which is the total number of cases studied, and every document is given a code

of a shortcut text representing the type of the document, and a number pertaining to the local authority from where the document was collected. There are four types of documents collected from every local council case as mentioned in subsection 3.5.1.3. Accordingly, Constitutional documents were coded as [Const. No.] where Const. is the short form of constitution, and the number pertains to the number of the local authority case. Similarly, Corporate Plans were coded as [Corp-Plan No.], Management Structure as [Mgmt-Str. No.], and Digital Strategies as [Dig-Str. No.].

The final step in the preparation of interview data involved the manual review and correction of text transcripts, as variations in participants' language accents had resulted in textual errors. On average, four hours were spent on the revision and correction of each interview transcript, totalling 216 hours.

#### 3.5.2.3 Data Analysis: The Four Analyses Cycles

Synthesizing the qualitative thematic analysis approaches outlined by Corley et al. (2004), Saldaña (2021), and Fryer (2022), the analysis of the study data involved four distinct cycles. The initial cycle facilitated the generation of preliminary concepts from the textual data sources, while the subsequent cycle led to the identification of common themes. The third cycle involved the derivation of aggregated dimensions, capturing the relationships between second-order themes. Finally, the fourth cycle culminated in the formulation of cross-sectional conclusions at the case level.

##### *3.5.2.3.1 1st Analysis Cycle*

In the initial phase of analysis, the data was coded for the first time, with every word being labelled irrespective of its direct relevance to the research purpose or questions. This stage involved the application of open coding and process coding to the data, resulting in the generation of data-driven codes (Saunders et al., 2019). Open coding, initial coding, and free coding are synonymous terms denoting the method of labelling textual data with names derived directly from the data, without explicit links to theories (Saldaña, 2021; Saunders et al., 2019). In addition to open coding, process coding, which involves the specification of action verbs ending with "ing," was also employed during the first cycle of analysis (ibid). These coding techniques were selected to facilitate the exploration of new factors or concepts

related to the adoption of DSDM, which may not have been theoretically acknowledged by the adoption theories considered in this research. Furthermore, the application of process coding was anticipated to provide insights into the micro processes inherent within the process of decision-making in local government. Reflexive self-memos were utilized during this stage to document observed patterns and related variables.

#### *3.5.2.3.2 2nd Analysis Cycle*

In this cycle, the initial codes from the first cycle were scrutinized for recurring patterns or emerging themes relevant to the research objectives. The subsequent analysis involved an examination of the interrelationships between codes, as well as their connection to existing knowledge or theory (Corley et al., 2004). The codes from the initial round were organized into categories or themes, encompassing contextual or environmental data that were observed to influence the phenomenon. Reflexive self-memos were also employed in this stage to establish connections between the emerging themes, the research's theoretical framework, and to highlight new factors that could be conceptualized.

#### *3.5.2.3.3 3rd Analysis Cycle*

This cycle involved the aggregation of emergent themes and concepts to a higher abstract level, thereby progressing towards the development of theoretical constructs. As per Corley et al. (2004), this phase entailed the aggregation of themes into conceptual dimensions of the phenomenon, directly contributing to addressing the research questions for which the data was collected.

The three stages of qualitative data coding and analysis were executed manually and iteratively. Upon the completion of the analysis of the initial phase of data collection, the subsequent phase of data collection and analysis commenced. The second phase of data collection and analysis concluded upon achieving theoretical saturation. The outcome of the analysis practice was the formulation of a diagram or framework that elucidated the responses to the research questions. This framework was subsequently carried over to fourth analysis cycle for validation and finalization.

#### *3.5.2.3.4 4th Analysis Cycle*

During this phase, the coding diagram was validated and refined at the level of individual local authority cases through cross-sectional case analysis. By systematically comparing multiple cases using the constant comparative analysis method, the comprehensiveness and coherence of the findings were confirmed by establishing relationships between the presence or absence of identified dimensions and the occurrence or absence of the event or phenomenon, contributing to the overall explanation of the phenomenon.

Figure 3.6 illustrates the resulting developed and validated coding diagram through the four analyses cycles and pertaining to the research questions. The diagram commences with the first analysis cycle, which yields the first-level order concepts. These concepts are subsequently further analysed in relation to one another and grouped to generate the second-level order themes. These themes are further analysed, as explained in the third analysis cycle, at a theoretical abstraction level to generate aggregated dimensions. Dotted lines linking the dimensions indicate relationships in between. Detailed explanation of the diagram is reported and discussed in the next three chapters.

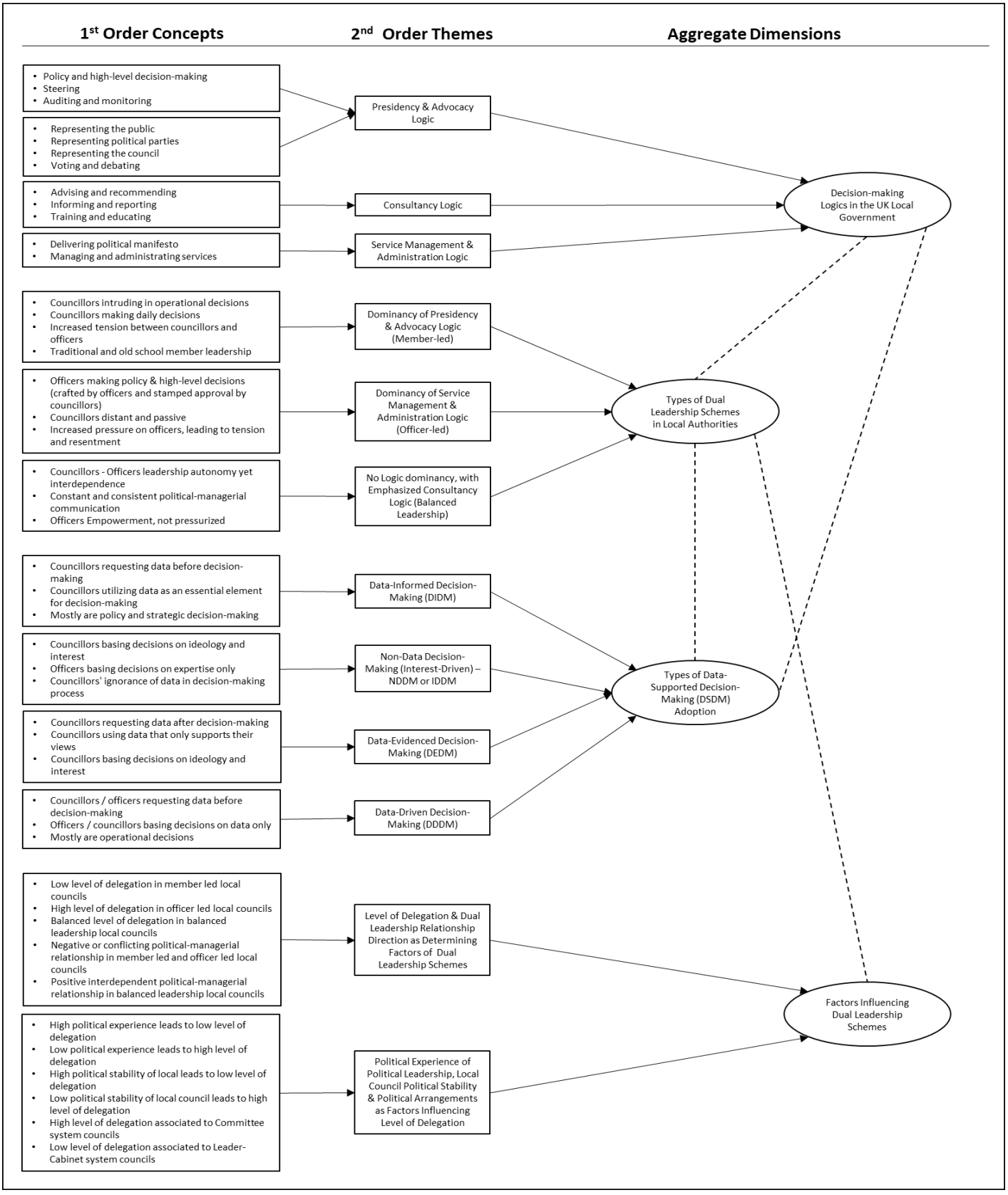



Figure 3.6: Research Coding

## 3.6 Ethical Issues

This section provides information about ethical considerations and issues encountered in conducting the study. Certain protocols were completed before approaching participants from local councils. Ethical approval was obtained through Henley Business School research ethics approval process. To secure the approval, a participant information sheet, consent form, and the research interview questions documents were requested to be submitted to the approval committee beforehand, attached to an approval request form. Getting the approvals were granted in a one-week time.

Ensuring the acquisition of participants' informed consent was another ethical issue solved by protocol application. Approaching potential participants through invitation emails, along with participants information sheet encouraged participation. Moreover, a question-and-answer session, either before the interview or through email, was another procedure followed to ensure participants knowledge of their rights and information security and privacy.

A noteworthy incident pertains to the withdrawal of one of the interview participants. Subsequent to the complete acquisition and preparation of the data, a participant communicated their decision to withdraw from the study via email, citing undisclosed reasons. In adherence to research ethics and the terms of the consent agreement, all data collected from this participant was deleted.

## 3.7 Limitations of the Study

This section outlines the major limitations of the study. Several limitations were encountered during the collection and analysis of the research data. Despite the interesting holistic view of local authorities provided by the LGA data categorization, the insufficient number of respondents evaluating their respective local authorities posed the first limitation as it this affects the credibility of the local authorities' categorization. This limitation was minimized by the preliminary consideration of the categorization exercise in the selection of cases sample, where more than one case was selected from each group to facilitate data diversity. The true categorization of local councils was revealed through the collection of the full study

data. Moreover, evaluated local authorities with the highest number of respondents were only the ones included in the categorization.

Another limitation imposed by the LGA data was the absence of the evaluation of the role of managerial leadership in the adoption of data. In other words, none of the evaluating statements specify the role of the managerial leadership in the adoption of data in councils' decision-making processes. This resulted in categorizing the local councils only with regards to the political leadership, providing a fragmented reality. This limitation was eliminated with the collection of data as plenty of questions about the role of managerial as well as political leadership were incorporated in the investigation.
A third limitation in the study was the limited accessibility to top level political and managerial leadership. Winning Chief Executives and Leaders of the sample local authorities deemed challenging. This could be due to their occupied schedules resulting from the COVID situation (since the data collection period was during the second COVID lockdown). Furthermore, the inclusion of local councils from England and Scotland only in the LGA data posed a fourth challenge, in addition to the inequality in cases selection between English and Scottish local authorities, an acknowledged limitation that can lead to further research validating the study findings in the Welsh, Northern Irish, and Scottish local authorities.

## 3.8 Conclusion

This chapter reported research methodology and design choices conducted to answer the study's questions about the role of the political and managerial leadership in the adoption of DSDM in the UK local authorities. It started with presenting contextual information about the UK local government. Philosophical stance options and selection were presented afterwards. The chapter continued with discussing and reporting research methodology and design options and decisions. Details about the study data collection and analysis techniques were presented, reporting challenges confronted during conducting the study and creating novel techniques to overcome or at least minimize the encountered disadvantages. The chapter ended with the consideration of research ethical issues and limitations acknowledgement. The next three chapters report and discuss the research findings with respect to the three main research questions, where every chapter aims at answering a question.

# 4 Chapter 4: Setting-Up the Contextual Foundation: Leadership Structure & Decision-Making Institutional Logics in the UK Local Government

## 4.1 Introduction

This chapter answers the first research question by establishing the contextual background of the research, defining the dual leadership structure, and identifying the decision-making institutional logics within the UK local government. It presents, analyses, and discusses the research data on an institutional field-level, which provides a wide explanatory background that fits all investigated local authority types within the UK local government.

The chapter's first section presents and discusses the research findings about the dual leadership structure of the UK local government. It starts with presenting results about the act of leading in the UK local government and proceeds with identifying the structural details of each of the political and managerial leadership hierarchies, how each is positioned, and how both are aligned to each other based on the elements: superiority and delegation. The section ends with a diagram synthesizing these presented and discussed findings.

The second section presents the empirical results about the functions, actions and processes held and performed by the dual leadership structure actors. There functions are grouped into four main categories, which are ruling and governing, democratizing, decision supporting, and delivering, managing & administrating. Each of the categories are divided into sub-sections describing in details actions included in each category.

The third section theoretically discusses the results presented in the second section. Applying the Institutional Logics Perspective by Thornton et al. (2012), a three ideal types of decision-making institutional logics are defined, analysed in terms of their institutional orders' instantiations, and described in terms of dominancy and confliction. The section ends with a table summarizing the ideal types of the decision-making institutional logics, their societal-level instantiations, actors, dominancy, and conflict configuration among the logics.

The fourth section consolidates the presented and discussed results and concepts in the chapter by developing a diagram illustrating the leadership structure and the decision-making institutional logics within the UK local government. This diagram includes the details about how the dual leadership structure and decision-making institutional logics are connected.

## 4.2 Leadership Structure in the UK Local Government

This section presents and discusses the empirical results about the leadership social processes, actions, and structure in the UK local government. It starts with describing leadership as a function and a role, and continues to identify its unique nature, which is its duality, and proceeds with identifying the structural features of the dual leadership hierarchies', which are positioning and alignment, though the elements of leadership superiority and direction of delegation.

### 4.2.1 Leadership as a Function in the UK Local government

Leading is found to be on top of the functions performed in every local authority by both political members and management officers. All selected local council cases are found to have two types of leadership. The first type is the political leadership that heads all elected political party members of the council. The political leadership team of a local council is called "The Administration" and it consists of the leader of the council and the cabinet members or committee chairs.

> *I'm the leader of [authority 13] and as such I'm in charge of the political element of the Council…so we make the framework decisions under which the staff that work for [authority13] work and our chief executive is the one who puts those decisions into practice, so we shouldn't really be mak[ing] it. Well, we're not making day-to-day decisions on the organization, but we set the policy framework within which our chief exec does do that. [RC25]*

> *I'm the deputy leader of the council and cabinet member for finance, corporate and traded services. What that means is I have oversight across all of my fellow cabinet members… [RC18]*

> *I am deputy leader at [authority 2] and I'm also chair of the Children, Young People, and Skills Committee. Part of my role as deputy leader involves being the council's lead on digital, so our Council is currently working on a digital strategy and I'm the councillor lead for that. [RC7]*

> *The green councillors form the official administration of the council so … they do all the committee chairs …So the people running the council are known as the administration [RC3]*

The previous quotes confirm the political leadership as a type of leadership in local councils. Moreover, the quotes demonstrate various leadership roles political leaders hold within a local authority. The positions identified in the quotes (for example a *leader*, a *deputy leader*, a *chair*, and a *cabinet member*) indicate that there is a hierarchical structure organizing these political leaders in lines of reporting within councils. This result agrees with the publications (Barrance, 2015; John & Cole, 1999; Mcateer & Orr, 2003) stating that the political leadership in the UK local government is hierarchical. It is interesting to note the wide time span among these literature articles confirming the political leadership hierarchical structure of the UK local government. This indicates that the political leadership system in the UK local government has been resistant to change and accordingly continues to mostly adhere to the Weberian bureaucratic structure (Elcock & Fenwick, 2012).

The second type of leadership found in UK local authorities is the managerial leadership. Represented by the chief executive or the head of paid services, department directors and heads of public services, managerial leaders are found to lead the officers or staff of local councils. Local authority constitutions demonstrate the managerial leadership hierarchy as one of its formal articles in a form of a chart depicting all management lines of reporting and levels of seniority *[Auth1-OrgStr.] [Auth4-OrgStr.] [Auth6-OrgStr.]*.

Moreover, Interview participants' responses confirm that managerial leadership in local authorities is hierarchical as well.

> *Chief executive, lead the officers. [RC2]*
>
> *The chief exec pretty much runs things through the executive leadership team. [RC6]*
>
> *We have Chief Executive Director, Assistant Director and then heads of service to that kind of the structure [RO12]*
>
> *I have a service manager and a team of seven or eight people there who I lead. [RO13]*

These quotes confirm the existence of managerial leadership as another leadership type in local councils, which implies that leading is a function that is not only held by political members, but officers too. Moreover, the quotes demonstrate various leadership positions managerial leaders hold in a local authority. For example, *chief executive, director, assistant director*, and *heads of service [RO12]* are all roles held by managerial leaders. These positions indicate a managerial hierarchical structure mirroring the political one.

This result confirms the existent literature claims that the managerial leadership in the UK local government is hierarchical as well (Bäck et al., 2006; Ford, 2006; Gains, 2009; Mcateer & Orr, 2003). However, unlike the bureaucratic hierarchical structure local authorities' political leadership complies to (Elcock & Fenwick, 2012), the managerial leadership hierarchy is "professional" as its structure is grounded in organizational career concepts (Ford, 2006).

Evidence on the existence of the political and managerial leadership hierarchies in UK local authorities suggests that leadership in the UK local government is dual, which is acknowledged in the literature (Alba & Navarro, 2006; Baddeley, 2008; Entwistle et al., 2005), yet insufficiently investigated in terms of the dual leadership relationship and its effect on local councils' (Hambleton & Howard, 2013; Haneem et al., 2019; Roy, 2013; Sancino & Hudson, 2020). These issues are intended to be demystified and explained in this chapter.

Realizing the duality of leadership in the UK local government stresses on the importance of identifying the alignment of these two separate hierarchies; whether they are vertically aligned, signifying the superiority of one hierarchy over the other, horizontally aligned, demonstrating equality, cooperation, or rivalry and conflict. Moreover, it is important too to identify the position of each hierarchy, whether it is positioned upwards to indicate a regular structure topped by an individual leader, or downwards indicating a structure that provides superiority to collectivity, not individuality. Leadership hierarchies' structural alignment and positioning are analyzed and discussed in the next sub-section.

## 4.2.2 Dual Leadership Setting in Local Government: Positioning & Alignment

This section describes the setting of the political and managerial leadership hierarchies. It presents evidence that confirms the positioning and alignment of the two leadership hierarchies. In other words, this section answers these key questions:

1. How are the two leadership hierarchies aligned? Are they vertically or horizontally aligned?
2. How is each of the leadership hierarchies individually positioned?

Evidence to hierarchies' alignment is acquired through direct responses from interviewees as well as text extracts from local authorities' constitutional documents. As for the hierarchies' positioning, evidence is acquired through investigating the role of delegation and its direction in local government.

### 4.2.2.1 Alignment of the Dual Leadership Hierarchies

When investigating the dual leaderships' alignment within the UK local government, political leadership is found to be superior to managerial leadership. Constitutional documentation confirmed local government councilors' superiority over officers. All constitutions of the local authority cases described councilors as the *ultimate policymakers [Auth1, Auth2, Auth4, Auth7, Auth 10, Auth12].* Another constitutional document described the power that resides

with councilors in decision making as the *ultimate power of council [Auth3].* A third constitutional document clearly confirmed that decision-making ultimate power resided with political members and not officers:

> *Officer will provide such advice, but must ultimately leave the individual member to take his/her own decision [Auth12]*

Interviews confirmed political leadership superiority over managerial leadership in the UK local government authorities as well. Some participants were sharp and direct in confirming the superiority of the political leadership over the managerial one. One of the officers claimed that *officers [were] subordinates to members. [RO16].* Another councilor described political leaders' seniority to officers in the quote *if I said jump, an officer would say how high do you want me to jump [RC23],* indicating officers' obedience and subordination to political members.

In addition, one of the participants, who was a leader of a local council, confirmed the seniority of councilors over officers by explaining the relationship between the leader of the council – the most senior person in the political leadership hierarchy- and the chief executive of the council -the most senior person in the managerial leadership hierarchy:

> Well, *there is [subordination between the leader and the chief executive] because, I don't know if you're aware of this, but effectively I am the chief executive. Well, the Councilor is a chief executive employee, but I have in effect to the line manager. So, every year the chief executive and I will sit down. I will review her performance and, in this instance, because it's a lady I will review her performance against various targets over the last year and then we will set her targets for the year coming and during the year, will review those targets, whether she's meeting them … it was exactly the same that I did at work. … so, the Chief Executive reports to me so. If, for instance, she wants to take Holidays. She has to let me know that she's going to be, you know, she wants to take three weeks to go to South Africa or whatever it is. And as I say at the end of the year, then we'll do a review and … she will be appraised against what was set down for at the start of that year. [RC25]*

It is important to notice that the previous quote identified the chief executive of the council as a direct report to the leader of the council, placing the council's leader, who is the representative of the local authority's political leadership, on top of the managerial leadership hierarchy. This led to the inquiry about the identity of appraisers of the local council's leader, who were found to be the other elected members within the council. They evaluated the leader in the form of re-electing him/her for a new political term if they were satisfied with his/her performance or changing the leader by electing a new one if not satisfied.

> *The people who hold me account will be those in my group who elect me as leader, or at some point will decide they do not want me as leader anymore and elect somebody else as leader, so they effectively hold me to account. [RO25]*

In addition, a generous number of participants agreed on the superiority of political leadership over the managerial one, but in a less sharp tone. They highlighted that councilors are the rulers and ultimate decision makers within a local council. For example, officers described their formal relationship with members by conveying that *[they are] officers of the council [and they have] to service the administration, the cabinet members, whoever is in power. [Auth1-RO4].* Another officer described officers' roles as *to assist [their] members in delivering their manifesto commitments [RO3].* A third officer confirmed officers' service to political members by describing his role as *to make sure that [he is] contributing to delivering what it [is] that the elected members [are] looking to achieve [RO20].*

Overall, the extracted quotes from interviews and documents confirm the vertical alignment of the two identified types of leaderships. In other words, the empirical data of the research validates the superiority of councilors over officers, indicating the position of the political leadership hierarchy on top of the managerial leadership one.

Literature confirms the result of political leadership seniority over managerial leadership. For example, Elcock & Fenwick (2012) supports political leadership superiority over the managerial one through stating that the line of command in the UK local government start from political leaders to senior managers and down to civil servants. Moreover, Roy (2013) and Morrell & Hartley (2006) claim political leadership superiority over managerial leadership in decision-making, regardless the strong influence senior managers exert on the process.

The next sub-section presents evidence to the second question, which is the hierarchies' individual positioning through understanding the role of delegation in local authorities.

#### 4.2.2.2 Positioning of the Dual Leadership Hierarchies

Evidence to the second dual leadership setting inquiry, which is the individual hierarchies' positioning, has been attained through the identification and understanding of the details of the delegation role in local government. Reference to Oxford dictionary, to delegate is "to give part of your work, power, or authority to someone in a lower position than you" (*Delegate_2 Verb - Definition, Pictures, Pronunciation and Usage Notes | Oxford Advanced American Dictionary at OxfordLearnersDictionaries.Com*, n.d.) . Accordingly, delegation is a leadership function that entails cascading responsibility from top positions downwards. Evidence confirming the positioning of the political leadership hierarchy is presented first, followed by ones confirming the positioning of the managerial leadership hierarchy.

##### 4.2.2.2.1.1 Positioning of the Political Leadership Hierarchy

When investigating the chain of delegation in local authorities, it was found that the full council, which is the full group of elected councilors, formed the top link in the chain from where decision-making delegation starts. To illustrate, all constitutional documents of local authorities have a section called "the full council" and describes it as *the principal body for determining the Council's budget and setting the Council's Policy Framework [Auth10-Const.]*, which are the most senior decisions made in a local council. Moreover, it lists the types of decisions that cannot be made by or delegated to any other bodies or individuals in the council than the full council such as *Appointing the Leader of the Council [Auth9-Const.]*.

Another type of decisions the section of full council lists are decisions that are either made or delegated by full council. For example, to *annually [appoint] representatives to outside bodies* is a decision that cannot be made by any other body but the full councils *unless the appointment …[is] delegated by the Council [Auth10-Const.]*. Moreover, decisions that are *in respect of functions which are not the responsibility of the Cabinet* are under the responsibility of the full council unless *delegated by the Council to Committees, Sub-Committees, or officers [Auth7-Const.]*.

Further evidence confirming the full council as the top and starting point of decision-making and decision delegation was found in local councils' constitutions too, in a section called the "scheme of delegation". This section defines how different functions and decisions held by the various members and officers are delegated within the council. For example, the scheme of delegation of one of the councils starts with a statement that confirms full council as the starting point of delegations within the council.

> *Full Council may delegate reserved powers and functions to Council Committees or Officers in line with the legislation and statutory guidance underpinning the power or function [Auth6-Const.].*

Another local authority starts its scheme of delegation section with the statement *non-executive functions shall be delegated by the Council. Executive functions shall be delegated as determined by the Leader of the Council [Auth11-Const.].* A third local council clearly and sharply states that *The Council sits at the top of the decision-making structure [Auth3-Const.].* These extracted quotes indicate that the full council is the body with the ultimate authority for making and delegating decisions in a local council.

The second level of decision-making authority in the political leadership hierarchy in UK local government exhibits heterogeneity. This is due to the variation in political structures adopted by individual local councils. As outlined by the Local Government Association (2024) in section 1.1 of Chapter 1, a Leader-Cabinet structured local council vests decision-making authority in the cabinet and its leader. This authority is delegated directly from the full council, positioning them as the second in the line of authority. Committees in Leader-Cabinet local councils are only formed for decisions' scrutiny and advisory purposes and do not possess any authority over the decision-making process. Conversely, a Committee structured local council delegates decision-making authority to service committees, precluding individual decision-making by elected administration members.
A Hybrid structured local council presents a more nuanced scenario. Here, the "City Committee" or "Administration Committee" assumes the delegated decision-making authority from the full council. This structure shares similarities with the Leader-Cabinet model as both empower administration members to make decisions, and all committees - apart from the Administration Committee in the Hybrid model- are advisory and do not possess any authority power over decisions. However, in a Hybrid local council, such decisions require

collective voting, akin to the Committee model. Notably, unlike the Leader-Cabinet system, a Hybrid Administration Committee is not solely composed of the governing party's members. Instead, they incorporate opposition members based on their proportional representation in the full council. Table 4.1 summarizes the similarities and distinctions among the three political arrangements existing in the UK local government.

Table 4.1: Political Arrangements and Decision-Making Power/Authority

| Political Model | Leader-Cabinet | Committee | Hybrid |
|---|---|---|---|
| Delegated Authority Description | Power rests with the leader of the council and cabinet member forming the council administration. Decisions can be made individually and do not require voting. | Power distributed to service committees constituted by elected members. Each committee is chaired by a member of the administration. These committees make decisions by voting. No individual decision-making is allowed | Power delegated to the City Administration committee, a committee of elected party and opposition members selected proportionate to the full council. All Decisions of the council are made by this committee collectively. No individual decision-making is allowed |
| Council Committees Powers | No power – only for advisory and scrutiny | Each committee leads a service portfolio and makes decisions for the allocated service collectively | No power – only for advisory and scrutiny, apart from the City Administration committee |

These findings are important as they suggest that the top of the political leadership hierarchy is not the leader of the council, but the complete base elected members. Accordingly, the political leadership hierarchy can be illustrated as an inverted triangular shape, topped by a wide base representing the council’s elected members, and narrows down to represent the councils’ delegated leader and the ruling administration.

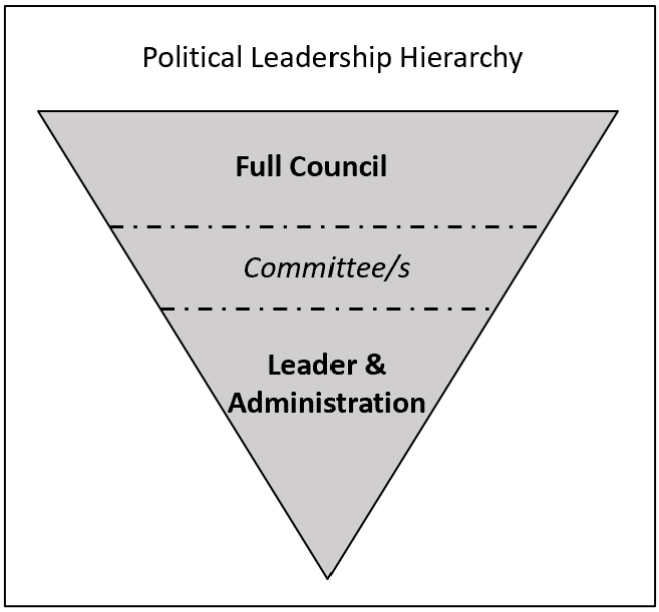



Figure 4.1: Political Leadership Hierarchy as an Inverted triangle

Figure 4.1 illustrates the inverted triangular shape representing the UK local government's political leadership hierarchy. Due to the political structure differences among local councils, the middle layer representing "Committees" is dotted to indicate that it exists in the case of Committee and Hybrid structures, but not in the Leader-Cabinet. To elaborate, a Leader-Cabinet local council has the leader of the council and the cabinet members immediately under the full council, where the middle layer of committees does not exist as committees in such a local council  do not have decision-making power. On the other hand, a Committee structured local council has its committees as second in the authority line represented with the word "committees" in plural, whereas a Hybrid local council has its administration committee as the sole committee in the authority line under the full council, represented with the middle layes and the word "Committee" in singular form. A worth mentioning note is that this structure is a simplified representation capturing the main characteristics of the actual hierarchy with regards to decision-making authority delegation and distribution and does not include all variations and details present in reality.

Comparing the political leadership hierarchy findings with literature results in neither similarities nor differences as limited research is found on this topic. Although several research papers are found to confirm the existence of the political leadership hierarchy in every local council as previously mentioned, limited research is found to order the seniority of councilors within the political leadership hierarchy. Although Gains (2009) touches on the political hierarchy positions by mentioning "political elites" and "backbenchers", his research

does not clearly and explicitly order the different political roles. Nevertheless, Mcateer & Orr (2003) discuss in their paper the importance of the different types of councillors in the process of decision-making in local councils. Although they provide a sort of ranking to councillors in regard to their influence on decision-making through segmenting them to "leader councillors", "officer-bearing councillors", and "non-office-bearing councillors", it still does not rank councillors based on their individual titles. In addition, empirical data is found to include documentation of the managerial leadership hierarchy details in every local council's constitution, but nothing on the ranking order of the political hierarchy. The only reference found to depict a similar political leadership hierarchy is the political leadership diagram illustrated in the Tameside Metropolitan Borough Council's website (*Your Council @ Work - Home Page*, n.d.). The diagram shows a sort of inverted triangular shape of the hierarchy with the full council and committees on the top and the leader and the cabinet team on the bottom.

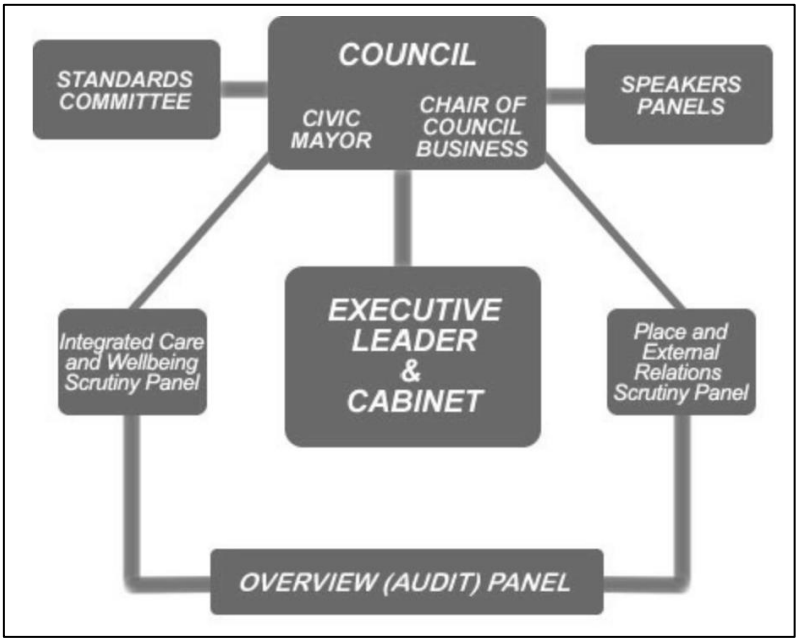



Figure 4.2: "your council at work" diagram from Tameside metropolitan borough website (Your Council @ Work - Home Page, n.d.)

There are two possible explanations of the above finding. The first one is because of the various ranking possibilities resulting from the different types of political systems, no one political leadership hierarchy is suggested. For example, a local authority adopting a committee political structure considers the committee members collectively more important to decision-making than the chair of the committee, who is always part of the council administration team, whereas in a leader-cabinet system adopting local council, a cabinet

member influence on decision-making is much higher than collective committee members. However, this is an explanation that can be found in practice but not as a general theoretical rule. Local government constitutions stress on democracy and that an individual opinion cannot be more important than a collection of voices. Moreover, the general rule in local government constitutions always refer significant matters in councils to full council regardless of the adopted political system, where decisions are made by majority votes. Consequently, this indicates that full council votes are the ultimate decision-making tool in local authorities.

Another possible explanation for not explicitly detailing political hierarchy ranking or seniority is because of the various possibilities resulting from political delegation cases, no one political hierarchy ranks is proposed. In practice, the full council can issue any delegation to any political member or management officer in the council. Although delegations to management officers follow the managerial hierarchy's positions (as discussed in the next sub-section), delegations to politicians does not. However, this has not been found in any of the studied cases. The ultimate delegation on constitutions and interviews (theory and practice) starts from the full council. In addition, although the leader of the council position is perceived to be the most superior and the highest in power, the full council can overrule decisions made regardless of political seniority, confirming full council's ultimate decision-making power prevalence.

#### *4.2.2.2.2 Positioning of the Managerial Leadership Hierarchy*

Delegation to the managerial leadership hierarchy commences from the political leadership. As mentioned previously, delegated responsibility can be assigned directly by the full council or other political individuals or committees. Once delegation reaches the managerial leadership hierarchy, it is found that the delegated role follows the line of reporting up and down the leadership hierarchy. To explain, a delegated role to a director is found to be exercised by that director and all his/her senior reports upwards the hierarchy. Not only that, but that same director can sub-delegate the same responsibility down the reporting line to junior officers.

> *An Officer in receipt of a delegation or sub-delegation may at any time refer a decision back to the Officer from whom they received the delegation or if received from an Executive Member, back to the Executive Member [Auth6-Const.]*

> *If a matter is regarded by an Officer as involving an issue of a sensitive nature, the Officer shall not exercise delegated powers in respect of that matter but shall refer the matter to a more senior Officer, the Cabinet or a Committee of the Council for decision as the case may be [Auth11-Const.]*
>
> *Any manager may exercise any power delegated to an Officer for whom they have supervisory responsibility [Auth6-Const.]*

These extracted statements confirm that regardless of the seniority of the officer with the delegated powers, these powers follow the line of seniority within the managerial hierarchy. Moreover, stating that a delegated officer can always refer the delegated matter up to the senior officer or member confirms two points:

- Political leadership is always more senior than the managerial one.
- Delegated authorities always follow the seniority hierarchy of the managerial leadership from the chief executive down to the heads of services.

Considering the above comment indicates that delegation from the political leadership hierarchy to the managerial one follows the line of seniority of the management structure from the chief executive (or head of paid services) down the reporting line to heads of services and other junior officers. This suggests that the managerial leadership hierarchy can be illustrated in a regular upward triangular shape, starting from the narrowest point that represents the local council's chief executive, and widens down to represent heads of services and junior operational officers.

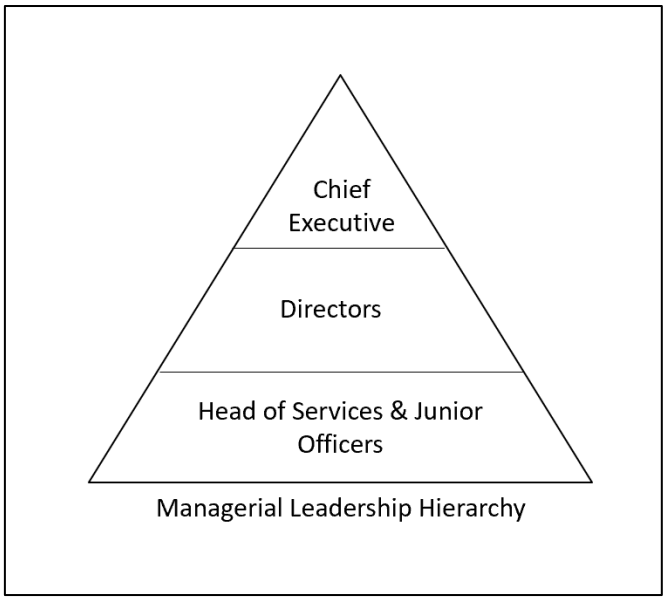



Figure 4.3: Managerial Leadership Hierarchy as an Upward Triangle.

The resulting managerial leadership hierarchy is found to be supported by local councils' constitutions and literature. As previously mentioned, local authorities' constitutions illustrate the managerial leadership hierarchy of the councils in the form of a management structure chart, depicting all positions and lines of reporting [Auth1-Const.] [Auth4-Const.] [Auth8-Const]. As for literature, the managerial leadership hierarchy is described by Gains (2009) as a "departmental structure" headed by the "professionalized officers", clearly indicating the upward triangular shape of the hierarchy. This description is supported by many references such as Ford (2006), Bäck et al. (2006) and Beadle (2018), confirming the acclaimed result of the managerial leadership hierarchy's structural positioning.

#### 4.2.2.3 Putting It Together: Leadership in the UK Local Government – A Conceptual Diagram

This section combines the results of the dual leadership setting in the UK local government in a conceptual diagram to present a comprehensive understanding about how the political and managerial leadership hierarchies are configured, linked, and collectively operate, consequently identifying the decision-making rules within this context.

Combining the results of the dual leadership hierarchy's vertical alignment (political leadership on top of the managerial one), the political leadership hierarchy's downward triangular shape, and the managerial leadership hierarchy's upward triangular shape, the

leadership of the UK local government can be reflected in the conceptual diagram (figure 4.4).

Figure 4.4 reflects the overall view, settings, and rules of decision-making by leadership in the UK local government. It demonstrates the dual leadership hierarchies; political and managerial, the vertical alignment of the leadership hierarchies; the political on top of the managerial, and the positioning of each of the hierarchies, the inverted political hierarchy mirroring the upward positioned managerial hierarchical triangle. Moreover, it illustrates delegation with an arrow starting from the top of the political leadership hierarchy, indicating the full council as the first link in the chain of delegation, down to the bottom of the political leadership hierarchy; administration and leader of the council, managerial leadership hierarchy starting from the top; chief executive, and downwards to heads of services and junior officers. The downward arrow representing delegation signifies the one direction of delegation: from full council in the political hierarchy to junior officers in the managerial one.

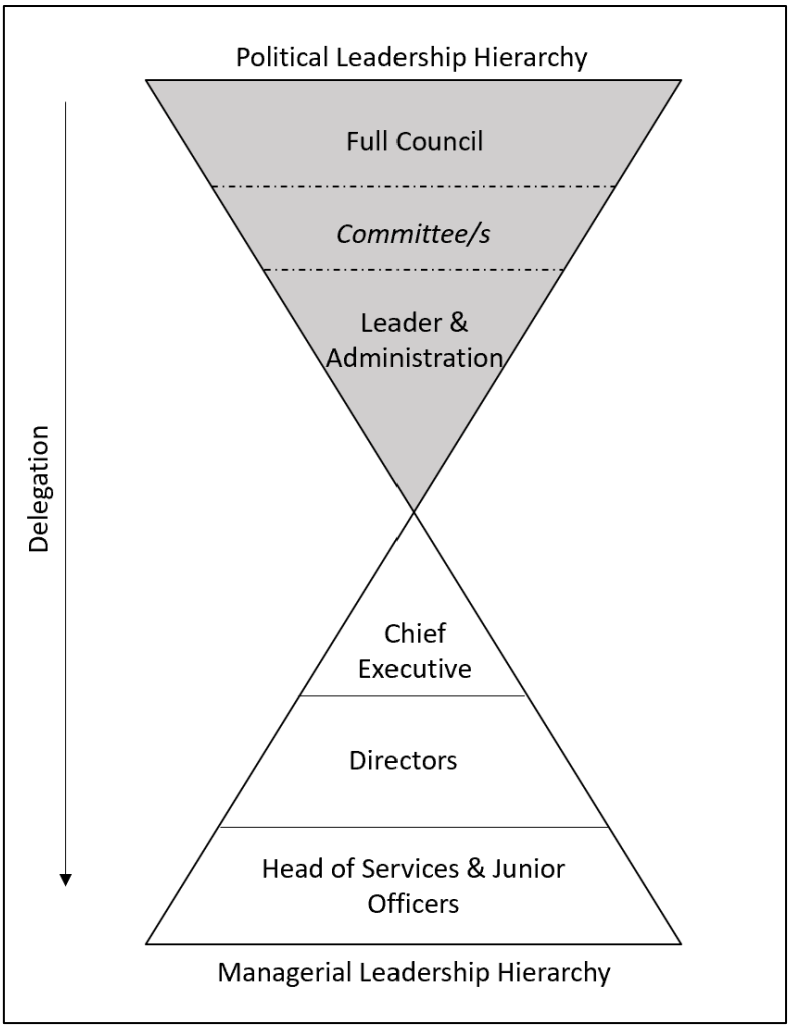



Figure 4.4:Dual Leadership Hierarchies in the UK Local Government

To sum up, this section investigated the overarching leading role in the UK local government, which led to the confirmation of the duality, alignment, and mirror-positioning of its leadership. The identification and understanding of the local government's dual leadership is significant for the realization and interpretation of the agency role in decision-making logics and the adoption of data-evidence decision-making, which this research aims to achieve.

## 4.3 Decision-Making Institutional Logics in the UK Local Government: Results

Based on the data collected via semi-interviews and archival documents, this section presents the major functions, actions and processes performed by the leadership of the UK local

government. These functions are grouped into four main categories, where each category includes sub-categories of functions describing the overall category function. The section starts with presenting the ruling and governing category, then proceeds with the democratizing, decision supporting and managing & administrating functions.

### 4.3.1 Ruling and Governing in Local Authorities

Another function that was found to be vital in a UK local authority is ruling and governing. The political leadership councillors, including the administration and the leader of the council were claimed to be the ruling, governing and the decision-making body of the local authority. This meant that developing and approving policies, setting budgets and financial plans of the council, reviewing, and updating the council's constitution, as well as steering the managerial leadership team in terms of any matters related to the council and its constituents are all responsibilities performed by councillors and led by the administration and leader of the council.

Local councils' constitutions confirmed political leadership role as rulers and governors of local authorities. For example, one of the local authorities' constitutions stated that it is the responsibility of councilors to *exercise the governance, management, and legislative functions of the Council [Auth11].* Another local authority's constitution defined *provid[ing] political leadership and direction* as one of *Members Commitments to Officers [Auth7-Const.].* A third local council's constitution confirmed that it was the responsibility of councillors to *ensure that the Constitution operates effectively [Auth 5-Const.].*

In addition, interviews participants confirmed result found in constitutional documents.

> *Definitely the administration rules the rest of [the council] … They make basically the policy decisions. [RC21]*

> *We spend more time with the leader and the Cabinet members because they are the administration, they are actually running the Council from a political perspective. [RO15]*

> *Ultimately, members run the council, members tell us what to do. We don't do anything the council shouldn't be doing … unless it's got the say so of members [RO7]*

These quotes confirm that elected councilors, who form the full council, committees, administration, and opposition in a local authority are the rulers, governors, and ultimate runners of the local council they were elected for. However, the role of a ruler and a governor is wide and can include other sub-roles. Therefore, this function has been sub-categorized into two major categories: high-level decision-making & managerial leadership directing, and auditing & monitoring.

#### 4.3.1.1 Making High-Level Decisions and Directing the Managerial Leadership

When granularly investigating the role of ruling and governing in a local council, local councils' constitutions confirmed the role of making policy, budgetary and strategic decisions as the responsibility of the councils' political leadership. For instance, a local authority's constitution stated that *councilors decide the Council's overall policies and set the budget each year [Auth1-Const.]*. Another emphasized that councilors should *focus on service improvement and efficiency at a strategic and political level [Auth5-Const.]*. A third constitution mentioned that *the leader leads on developing the budget and plans, and strategies included within the Policy Framework [Auth6-Const.]*.

Moreover, almost all interviewed participants, whether councilors or officers, agreed that decisions concerning political issues, developing, amending a new policy, or even cancelling one, setting the councils' budgets, financial plans and making councils' strategic decisions resided with the political leadership. For example, interviewees stated that *policy decisions are made and set out by the elected Members [RO20]*. Moreover, they stated that *strategy decisions are made by counsellors* as well *[RC5]*. To elaborate, these decisions are basically related to the *political framework of the executive members at[a] political level; what they believe, what they've stated on their priorities, how they operate, ... the debate frames, the policy formulation stage of the decision, or the options development stage. [RO16]*. In addition, it was reported that councillors *set the budget [RO5]* and *make decisions in relation to revenue expenditure [RO15]*.

Nevertheless, interviewees highlighted that the administration of the council steered and directed managerial leaders according to the governing policies set by the full council and the manifesto of the council administration. For example, one of the councillors explained that he *[gives officers] a steer as to how [he] feels [politicians] should deal with [the matter] from a political point of view [RC25].* Another political leader described how a cabinet member directed officers during the planning and execution of a new school project as follows:

> *I mentioned we are building a new school, the cabinet member for Children and Education and Attainment would be responsible for that. So, he would be instructing officers to look at personnel, get the funding, make sure the funding is in place, and then instruct officers to do a business case for the new school [RC14]*

In addition, one of the officers described that it was essential to get a political steer from the administration in matters that are controversial: *if it's going to be too controversial or I'm not sure how the counselors would see it in relation to policy, then I might take a steer from, we call it "taking a steer from" the lead member [RO5].*

The previous quotes confirm that high-level decisions, such as policy development, budgetary setting, strategic planning, and decisions concerning constituents or politics, are all made by local councils' political leadership. Moreover, directing and steering a council's managerial leadership also falls under the responsibility of the political leadership generally, and the administration of the council specifically.

#### 4.3.1.2 Auditing and Monitoring

The second sub-category under ruling and governing a local council is auditing and monitoring. These two roles are essential governance functions ensuring fair and appropriate implementation of local authorities' set policies.

It was found that both political and managerial leadership hold the responsibility of monitoring and auditing decisions and performances in a local council. However, auditing and monitoring responsibilities held by councils differ than the once performed by officers. It was found that councilors audited decisions made by the administration against facts, political

philosophies, and what looked better for their constituents.

> *[Scrutiny councilors] monitor, question and investigate the performance of the Cabinet, individual decisionmakers and council services [Auth5-Const.].*

> *You would have another committee called order and scrutiny. and they basically, it's kind of audit, well audit and scrutiny it says in the name, isn't it? but then it kind of looks at the structures of decision-making and also the accounts of the Council [RC21]*

On the other hand, officers were found to audit and monitor council decisions against the local government legislation, to ensure that decisions made by the council do not defy the country's local government laws.

> *We've got to make sure that we look to achieve ambitions whilst doing it in a legal way and in a way which complies with national policy and guidance [RO20]*

> *The Monitoring Officer and the Chief Finance Officer have specific duties to ensure that the council operates within the law and uses resources wisely [Auth5-Const]*

> *Some officers have a specific duty to ensure that the Council acts within the law and uses its resources wisely [ Auth7-Const.] [Auth1-Const] [Auth9-Const.] [Auth10-Const.] [Auth13-Const.]*

The previous quotes confirm that both political and managerial leaderships have auditing and monitoring responsibilities in the local councils. Regardless of whether auditing is made based on constituents' demands, or compared against the law, these functions govern the process of decision-making to ensure it is executed efficiently and effectively. A new group of functions found to be performed by local councils' leaderships is presented in the next section.

## 4.3.2 Democratizing in Local Authorities

As the title implies, this section presents a group of functions that were found to be mutually representative of democracy. According to Oxford Dictionary, a democratic "(country, state, system, etc.) is controlled by representatives who are elected by the people of a country; connected with this system" (*Democratic Adjective - Definition, Pictures, Pronunciation and Usage Notes | Oxford Advanced Learner's Dictionary at OxfordLearnersDictionaries.Com*, n.d.). Therefore, it has been found that politicians in local government are responsible of acting democratically and ensuring that all politicians are democratic within their local councils through fairly representing the public, the council, and the political parties. Moreover, debating topics before making decisions, and deciding through voting are functions found to represent democracy. The following sub-sections demonstrate these functions individually.

### 4.3.2.1 Representing The Public

The major reason behind the existence of the role of a councilor in local government is to represent the community in the council, bring its voice to political decision-making to support in solving its problems and have better lives [Auth8-Corp Plan] [Auth7-Corp Plan] [Auth6-Corp Plan]. A councilor's representation of the community includes individual residents, businesses, and all other third-party agencies [RO2] [RO11] [Auth1-Const.] [Auth12-Corp Plan].

The empirical data provides evidence to the importance of the political leadership representation of public communities as there was not a single interview or constitution document or a local council corporate plan found to not mention councilors' responsibility to represent their residents and communities. For example, local councils' constitutions confirmed political leadership responsibility of representing their communities. Every single local authority constitution stated councillors' representation of their residents and communities as the first function under their responsibility. For instance, one of the constitutions described councilors as *democratically accountable to residents of their ward* and that *the overriding duty of councilors is to the whole community [Auth1- Const].* Another constitutional document explained the role of a councilor as to *represent their communities and bring their views into the council's decision-making process, i.e., become the advocates*

*of and for their communities [Auth2-Const.].* A third constitutional document asserted that one of its main purposes was to *help councilors represent their constituents more effectively [Auth11-Const.]*

Local authorities' corporate plans were found to confirm the role of politicians as representatives of their communities as well. Corporate plans documents were found to claim the *Increase [of] the level and value of engagement with local businesses* as one of its strategic goals *[Auth10-Corp Plan1].* Another plan had a declaration of its political leader to their residents to better represent and involve them in decisions. The declaration was as follows:

> *We promise to listen, learn and respond to our communities and engage them in our decision-making so that everyone is a part of making our plans a success. We promise to be open and transparent in everything we do. [Auth12-Corp Plan]*

In addition, interview responses approved political leadership's responsibility towards its constituents. An officer clearly stated that councilors *have that mandate from residents to represent them in the Council Chamber [RO6].* Another councilor described the role of representing communities as *the routine part that [they] all do have been the ward member[s], the champion[s] in [their] local community [RC12].* It is as one councilor summarized it as *it's all about supporting residents [RC18].*

All the quotes presented from different data sources corroborate councilors' representation of their communities as a key democratic role. However, it is not the only representation role councilors hold. Representing political parties in the council's internal discussions, and the council with external bodies and parties, are the two other representation roles that are discussed in the next sections.

#### 4.3.2.2 Representing Political Parties

Local authorities in the UK can be composed of variety of political party groups depending on elected members' political party affiliations. In fact, elected councillors were found to have an affiliation to a political party, whether it was to the Conservatives, Labours, Liberal

Democrats, Greens party, or Independent, indicating no affiliation to any of the official political parties.

> *Where a change in the political proportionality of the Council occurs, (proportionality addresses the number of Council seats held by each confirmed political group and the number of committee places allocated in proportion), the Council will as a consequence review this Constitution and make such changes as are appropriate to reflect the new position and which are consistent with the law [Auth1-Const].*

> *The Council is divided up into political groups and even the Independents form a group, believe it or not. There are four groups: Lib Dems [the short for Liberal Democrats] Tories [the short for Conservatives] Independents and Labors. [RC1]*

A local council is declared to be ruled by the party with the highest number of elected councilors, which is called the Administration. The remaining parties with fewer elected councilors form groups of their own called the Opposition. To illustrate, one of the selected councils was declared to have a *Lib Dem administration [RC1],* which means that most of its elected members were affiliates of the Liberal Democrats party. Moreover, one of the interviewed councilors stated that *the Labor Group … [was] in opposition, so [it was] the official opposition [RC3],* implying that the council's administration was not from the Labor party, and accordingly all political groups other than the administration were considered as the opposition parties, including the Labors.

In addition, each political group was found to have a representative. For example, one of the councilors introduced himself as *the group leader of the Conservatives* [RC6] implying that he was the leader representing the group of councilors affiliated to the Conservatives party in the council. Leaders of the opposition represent their political parties in council debates, as they are the ones responsible of bringing forward their parties' opinion and ideology to the council.

> *The Chair shall invite the Leaders of any Political Group … to indicate if they require a 10-minute (maximum) debate on any issue raised in a particular question [Auth1-Const.]*

Councilors' representations of their political parties are crucial to local authorities as all key decisions, policies and strategies are significantly influenced by their political stances. For example, local councils' plans, projects, and deliverables are developed upon the administration's political manifesto, which represents the party's principals, policies and objectives.

> *There's [a] political manifesto, political objectives. So, in our case the Green Administration, the Green council, any Council in the country which is Green… basically what they do is they take their manifesto and their principles, they say … turn it into a set of deliverable[s]. … so [officers turn] them [to a] corporate strategy. [RO7]*

Moreover, a local council's key plans and projects are discussed, debated, and scrutinized by the opposition councilors before they are approved. These debates are usually partisan and therefore politically affect the direction of the council's decision-making.

> *It's an audit and scrutiny committee, which tends to be led by the leader of the opposition [RO21]*

> *The Committees monitor decisions of the Cabinet and can 'call-in' decisions which have been made but not yet implemented. This enables them to consider whether the decision is appropriate [Auth11-Const.]*

> *You [are] going to present a particular topic, particular decision and due to sort of the politics they ask questions that take you down a totally different route that you've not gone in for which can be often very difficult for more inexperienced members of staff. So, I think you know it's sometimes the politics plays out in those meetings which I suppose you'd expect. [RO17]*

The above quotes illustrate how political differences influence a council's process of decision-making. It is important to note that councilors' representation of their political groups is performed internally during debates. Whereas representation of the council is performed with external bodies of businesses and organizations, which is discussed next.

#### 4.3.2.3 Representing The Council

Representing a local authority to external bodies is the third type of democratic representation. However, unlike representing the public and political parties, representing the council was found to be a role performed by both political and managerial leadership of a local council. This kind of representation was not emphasized by the interviewees as the scope of the research focuses on the internal process of decision-making. But it is worth mentioning as it was stated as a responsibility of the councils' leaderships in all constitutional documents.

> *[The leader of the council should] represent the Council in sub-regional, regional and national bodies as appropriate [Auth1-Const.]*

> *The Leader, Cabinet Members and Chairs of Committees may represent the Council in press, radio and television interviews on matters relevant to their office [Auth6-Const.]*

> *[Councilors should] balance different interests and represent the Council as a whole [and] be available to represent the Council on other bodies [Auth9-Const.]*

These quotes set some examples of councilors' responsibility to represent the council. However, it is not a function that is held solely by the political leadership but as previously mentioned, by the managerial leadership too.

> *[The Chief Executive of the council should] represent the Council on partnership and external bodies (as required by statute or by the Council) [Auth1- Const.]*

> *[Leader of the Council] can authorize any Officer to represent the Council [Auth2-Const.]*

> *It shall be clear that officers put forward to represent the Council on partnerships and external bodies are there on the Council's behalf and to ensure that the Council's interests, position and aspirations are protected [Auth1-Const.]*

Although representing the council with external bodies is confirmed as a function held by both leaderships, it is important to note that managerial leadership representation of the council is held upon councilors' delegation. In other words, officers, regardless of their seniority, cannot represent the council unless *required by statue [Auth1-Const.]* or *delegated by councilors [Auth2-Const.]*. This confirms political leadership superiority over the managerial one as mentioned previously in section 4.2.

#### 4.3.2.4 Voting and Debating

Voting and debating were found to be functions in the suite of democracy that influence the process of decision-making. Performed by local councils' political leadership, councilors were found to practice their democratic right of voting whenever a key decision is to be taken in full council, or a new leader of the council is to be elected.

> *Every question at a meeting of the Joint Committee shall be decided by a majority vote of those members present [Auth9 – Const.]*
>
> *All Core Members, and their named substitute, will have the right to vote [Auth7-Const.]*
>
> *Any decision to remove the Convener or Vice-Convener from office must have the support of at least two-thirds of the Members present and voting [Auth8-Const.]*
>
> *We have a vote on who the leader is going to be [RC25]*
>
> *The Cabinet vote on what is recommended to full council for the whole Council to vote on, and that is the final decision before something become a policy [RC14]*
>
> *There will be a proposal put forward and then the whole of the Council vote on the proposal [RC19]*

As for debating, it was found to be a democratic process taking place whenever a decision is made or to be made. To elaborate, decisions that are retained to full council were found to be

debated in full council meetings before the voting process took place. Moreover, decisions that were made by the council administration without political discussion and debate with opposition can be called in by any councilor for further debate and scrutiny.

> *To ensure that the Council meeting is a forum for the debate of matters of concern to the local community [Auth1-Const.]*

> *All the counselors meet and rather, like House of Commons or Parliament, it debates the issues [RC21].*

> *The cabinet will make that decision independently and tell you what that decision is, and then there's a 20-day ,28 day I think it is period for local counselors to what they call "Call it in" and then you can start the process of gush around if they're not happy with the way to go [RC19].*

The quotes above confirm the functions of voting and debating as roles acted by political leadership of the local government. As the word "democratic" implies, it is important to understand that every single political member, regardless of whether he or she is part of the administration or opposition, has the right to vote and debate and accordingly take part in the process of local government decision-making.

To sum up, representing the public, political parties, the council, debating, and voting were the democratic roles presented and discussed in this section. These democratic functions are important as they either constitute part of the decision-making process in local councils or significantly influence it. For example, the opinions of the public and political parties greatly influence the process of decision-making, whereas debating and voting do not only influence decision-making, but are considered part of the process. Next section presents several functions that support the process of decision-making, and accordingly is named as the decision supporting role.

### 4.3.3 Decision Supporting in Local Authorities

This section presents and discusses the functions that support the process of decision-making. A decision supporting function entails providing decision makers with information and other requirements to support them make better decisions (Bohanec, 2003). These functions are advising & recommending, informing & reporting, and training & educating. Almost merely, these functions are found to be performed by the managerial leadership, and on some occasions by the political leadership of local authorities. Each of these functions is presented and discussed separately next.

#### 4.3.3.1 Advising & Recommending

Advising and recommending are roles found to be the major responsibility outlined for the managerial leadership of local government. Senior officers of a local council, such as the chief executive, directors, and heads of services – were found to be obliged by law and local council's constitution to provide professional advisory services to political leaders as their employment is based on the professional expertise in the various service fields provided by the council.

> *[Officers' role in a local council is the] provision of professional advice to all parties in the decision-making process [Auth10-Const.]*

> *[Officers] provide advice [Auth10-Const.] [Auth11-Const] [Auth12-Const.] [Auth13-Const.] [Auth7-Const.]*

> *We will provide advice and guidance and respond to queries from any counselor. I think the relationship I would describe it as professional advisors, so our role is to advise and to provide evidence and to inform in order for those cabinet members to make informed decisions and informed choices it's also important for us to set out the choices and consequences and the alternative options, the risks and the risk mitigation [RO15].*

> *Officers have a key role in advising elected Members [RO21]*

The previous quotes extracted from interviews and constitutional documents confirm that officers are considered as advisors to a local council's political leadership. They are the ones responsible for providing professional advice and evidence for local council decisions to be made. Moreover, managerial leaders of a council are anticipated to research decision matters, provide evidence, and recommend solutions to politicians, supporting them in making better decisions.

Although advising is acclaimed to be the major function of local councils' officials, politicians were found to provide advice and recommendations as well when consulted by political leaders or managerial officers.

> *The Council's Cabinet of councilors collectively will make recommendations to the Council about the policy framework [Auth1-Const.]*

> *If [decisions] are, say, political with a small p in nature, or have a major impact on the population, [political leaders] would speak to each of the three [opposition] groups, the representation of the three. So they speak to a counselor from Labor, one from the Greens and one from the Conservatives to gauge what view they might have [RC3].*

> *The Committees are consulted by the Cabinet on the development of policy and the Council's budget [Auth11-Const.]*

The previous quotes from interviews and constitutional documents confirm that advising and recommending are also provided by councilors. However, when comparing the types of advice provided by officers and councilors, the existence of the political element in councilors' advising is what differentiates between the two types of advice. In other words, councilors are found to provide advice in decision matters that are purely *political … in nature or have a major impact on the population [RC3]*, the high-level decisions concerning constituents, policy, or budgetary matters as defined in section 4.3.1. Provision of advice in these matters can be interpreted as politicians performing their democratic role of contributing to the process of decision-making, debating, and scrutinizing a decision. Whereas the advice

and recommendation provided by officers is as a separate stand-alone responsibility described in constitution. It is the objective *professional advice [Auth10-Const.*] resulting from the knowledge, education, and expertise on which the employment of these officers is based. The next subsection presents the function of informing and reporting.

#### 4.3.3.2 Informing & Reporting

Informing and reporting are functions highly related to advising. Therefore, local council officers were found to hold the responsibility of its provision not only to the political leadership, but to the managerial one as well. Managers and officers were found to provide information to the council's decision-makers either verbally through briefing meetings and presentations or in written format through reporting. Whether verbal communication is delivered or not, written reports were found to be the principal format of communicating information. Reports were found to be prepared constantly and continuously as a step in the decision-making process. The importance of writing these reports stems from the transparency and openness criteria as part of the UK local government legislation.

> *Informing the relevant Select Committee Chairman or the Committee Members by notice in writing of decisions to be made, where it has been impracticable to comply with the publicity requirements (in the "Forward Plan") and making available for public inspection notices relating to this [Auth1-Const.].*

> *The officers provide that sort of background research detail, information which can then inform policy decision going forward [RC20].*

> *We talk to cabinet members and keep them informed and brief them on a regular basis [RO27].*

> *The Chief Executive relies on senior officers of the Council informing him of the up-to-date position of an operation [Auth3-Const.].*

> *Members are briefed and then they get their reports [RO30].*

> *At the end of the day reports, you know, are the main tool for decisions to be made. They tend really. They tend to follow an establish structure. So, uhm. I don't recall having any significant input from a cabinet member to reports I think they inform the policy direction, and they may comment on the content, but only to tweak things rather than substantively change something [RO14].*

The quotes above from interviews and constitution documents confirm that it is officers' role to inform, brief and report information to councilors and senior officers as a decision-making supporting function. Written reports are the formal form of communicating information to decision makers. Reports are required by law to be presented with every decision-making exercise. Whereas verbal communication of information through meetings and presentations is considered as a preparatory stage before writing the decision reports.

The next section presents the role of managerial leadership in training and educating local authorities' affiliates.

#### 4.3.3.3 Training & Educating

Training and educating are another face of informing. It entails providing knowledge to a local councils' members and officers to better perform their duties. Local government officers were found to hold the responsibility of providing local councils' members and officers with the training programs required for their professional development in providing more efficient and effective services to the public.

> *[Officers] ensure that Elected Members have adequate access to financial skills and are provided with an appropriate level of financial training on an ongoing basis [Auth3-Const.]*

> *You found that officers are doing a lot of coaching, particularly with new young administrations. [RO5]*

> *We've got a training session scheduled in with the members where I'm going be doing training with them around antisocial behavior [RO28]*

> *It's quite a lot of training is driven by what we determined to be the needs of fast staff and in relation to the situation [RO2]*

The quotes confirm that educating and training are functions held by officers and provided to both political members and managerial officers for better role performance.

This section presented and discussed the decision-supporting role majorly held by the managerial leadership through its sub-roles, advising & recommending, Informing & reporting, and training & education. In the next section, a group of roles essential for the running and operation of any organization is presented and discussed, which is the role of administering and operationally managing local councils.

### 4.3.4 Political Agenda Delivering, Managing & Administrating Services in Local Authorities

This section presents the role of managing and administrating local councils. Managerial leaderships were found to lead the day-to-day operations and decision-making of local councils, in addition to managing the provision of public services to residents and administrating it. For better presentation of this role, it is divided in the following sub-roles: political agenda delivery and managing & administrating local council services.

#### 4.3.4.1 Political Agenda Executing & Delivering

This sub-section presents the function of executing policy and delivering the political agenda of a local council's administration. These roles were found to be performed by the managerial leadership. If a political leaders' responsibility is to develop and approve a policy, it is the responsibility of officers to deliver and execute them through turning them into corporate plans and strategies.

> *[Officers] implement decisions [Auth1-Const.] [Auth2-Const.] [Auth5-Const.] [Auth6-Const.] [Auth9-Const.]*

> *My role to make sure that I'm contributing to delivering what it is that the elected members are looking to achieve [RO20]*
>
> *Our role is to assist our members in delivering their manifesto commitments [RO3].*
>
> *Once that party becomes the administration that that those commitments and manifesto commitments are turned into a city plan document so that city plan document is an action or a set of actions that are now required to be undertaken by the administration, and that's where the officers deliver [RO10].*
>
> *[Political leadership] make the framework decisions under which the staff that work for [the council] and our Chief executive is the one who puts those decisions into practice [RC25]*

These quotes confirm managerial officers' responsibility towards executing political decisions and manifesto of the administration of the local council.

#### 4.3.4.2 Managing & Administrating Services

Another important role for successfully running local government is management & administration services and operations. Again, officers were found to completely hold this responsibility. Managing service provision from strategic planning for them to day-to-day case handling is delivered by a full line of officers, starting from the chief executive and directors to the head of services and junior officers and civil servants. Moreover, Writing and preparing reports for decision-making, managing individual requests and complaints of officers, councilors, and residents, commissioning services, evaluating performances, administrating financial, organizational, and other matters of the council are all held by officers as well.

> *I'm usually making decisions that are on a kind of relatively small scale in terms of you know how I manage services, new things I want to do [RO1].*

*We are also, you know, managerially and operationally responsible for running our services [RO15]*

*Day-to-day managerial and operational decisions remain the responsibility of the Corporate Directors and other Officers [Auth6-Const.] [Auth2-Const.] [Auth1-Const.] [Auth8-Const.] [Auth9-Const.]*

*My role also involves performance monitoring so how are we getting on with our KPI's and how do we benchmark against others [RO6]*

*[officers are] to ensure that decisions of the Executive, together with the reasons for those decisions, and the relevant officer reports and background papers, are made publicly available in accordance with the Access to Information Procedure Rules [Auth13-Const.]*

*I have a responsibility to report progress to elected members or counselors [RO8]*

These examples confirm that it is the responsibility of officers to provide administration to the services and operations of a local council.

## 4.4 Decision-Making Institutional Logics in the UK Local Government: Discussion

This section discusses the results presented in section 4.3 on an institutional field-level in different stages. It first defines the ideal types of decision-making institutional logics prevailing in the UK Local Government. The second stage analyses the defined ideal type logics by decomposing them to the institutional orders they instantiate on the societal level to theoretically confirm the focus of attention of each logic. The third stage identifies the dominancy and confliction settings of the three coexisting ideal types, and the fourth stage compares the developed institutional logics of the UK local government to the literature.

### 4.4.1 Defining The Ideal Types of the Decision-Making Institutional Logics

This stage defines the ideal types of decision-making institutional logics prevailing in the UK local government. It uses the Institutional Logics Perspective by Thornton et al. (2012) as an analysis method to cross sectionally identify the decision-making institutional logics ideal types persisting within the context under study.

Consequently, three coexisting ideal types of decision-making institutional logics are defined. These logics are the presidential and advocacy logic, the service management and administration logic, and the consultancy logic.

#### 4.4.1.1 The Presidential & Advocacy Logic

This section describes the first and most dominant institutional logic found in the UK local government, which is the Presidential & Advocacy logic. A local council is a small to middle sized public organization that majorly serves and oversees residents' issues through elected councilors. Councilors are responsible for representing residents, reflecting their views and demands, and solving their problems through making policy decisions in the best interest of the public, as explained in sections 4.3.1 and 4.3.2. Simultaneously, every councilor in the local council holds a political identity affiliated to one of the country's political parties. These political identities influence the process of decision making, especially high-level decisions and policy development as explained in section 5.3.1 since every councilor becomes partisan during the process as explained in section 4.3.2.2.

Because of the duality of representation, councilors'– including the political administration of the council – focus of attention is dual too. Councilors seek personal popularity among their electorates and politicians' peers by trying to satisfy electorates' demands, resulting in being re-elected as councilors in the new election term. Simultaneously, counselors try to satisfy their political peers through abiding to the party agenda, leading to winning peers' voices when electing a leader for the council in the new election period.

Councilors' source of authority and legitimacy to decision-making stem from three facts: democratic participation and deliberation as per government legislation, commitment to

residents demands and political ideology, and bureaucratic position in the political hierarchy. An important fact to emphasize is that regardless of the decision-maker focus of attention, decisions in this logic are highly regulated and drawn by the legislation of the country, which leaves a moderate to low space for decision-makers' attentions to affect these decisions.

#### 4.4.1.2 The Service Management & Administration Logic

This section describes the second coexisting ideal type institutional logic, which is the Service Management & Administration logic. If high level policy decisions are made by councilors, day to day and service operation decisions are made by officers, who are the actors of this logic. Officers of a local council are professionals, who are employed by the council based on their academic and expertise qualifications in different fields related to the services and operations of the council. These professionals are responsible for the execution and delivery of the budget and policies set by councilors, and the management of public services provided to residents. Each local authority has a managerial leadership hierarchy that is horizontally split by department (or a profession) and vertically structured by seniority in experience.

Because officers' main responsibilities are around the execution and delivery of political plans and service operation management, in addition to local council's internal affairs as explained in section 4.3.4, their decisions are focused on using their professions to increase the efficiency and effectiveness of plans and service delivery, which leads to better individual professional status and higher position up the managerial leadership hierarchy.

What legitimize and authorize officers to deliver strategic plans, manage services and make daily operational are their professional experience and knowledge, and their position in the managerial leadership hierarchy. The higher their expertise, the better the results they deliver and consequently the higher their seniority position up the managerial leadership hierarchy.

#### 4.4.1.3 The Consultancy Logic

This section introduces the third coexisting institutional logic ideal type in the UK local government, which is the consultancy logic. What differentiates this logic from the two previously mentioned ones is that decisions are not made by the roles of this logic but influenced by them. As its name implies, the consultancy logic can best be described as a system of meanings and processes related to professional research, information analysis, and recommendations provision to decision makers, whether political or managerial, in order to make decisions that maximizes benefits and minimizes losses (Thornton et al., 2005).

Both councilors and officers are found to be the actors of this logic. In specific, councilors who are on the top of the political hierarchy (mostly from the administration team: executive councilors), and councilors who are members of scrutiny committees are actors of this logics, in addition to the leaders on the top of the managerial hierarchy, as they possess the required skills and experience supporting specialized decision-making.

To elaborate, every decision made in a local authority is backed up by a report prepared by the officers, which presents professional research and information insights about a matter for which a decision is made. This report includes a list of all alternative decisions, the effect of each decision, and a decision recommendation that best tackles the issue, as demonstrated in section 4.3.3. Officers' provision of advisory to councilors is the prominent form of actions under this logic. However, if the matter at hand is political in nature, administration councilors step in to lead the consultancy process, with the support of top officers and scrutiny members.

Another form of consultancy services prevailing in the UK local authorities and provided by officers are training and education services, as explained in section 4.3.3.3. Because training programs are knowledge based, it is provided by or at least arranged by the local council professional officers. Consequently, the sources of authority and legitimacy of the actors of the consultancy logic stem first from the level of professional knowledge and experience, then from the position in the leadership hierarchy, whether it is the managerial or the political one.

Regardless the type of consultancy provided, the actors in this logic are focused on providing professional, specialized and knowledge-based or experience-based evidence supporting the

decision that maximizes the benefits and minimizes drawbacks affecting service delivery, resource allocation, political agenda delivery and residents' satisfactions. The better informed is a decision-maker, the better the decision made.

It is important to notice the role duality of executive councilors under this logic. In other words, as a result of holding political and administrative roles simultaneously, executive councilors face confliction between their adherence to political agenda and following professional expertise, an area of tension between the two logics -the presidential and the administrative- practices by the same actors; executive councilors. Political deliberation and top management leadership support are found to be one of the solutions to this dilemma.

The coexistence of these multiple institutional logics indicates that the UK local government is institutionally complex (Thornton et al., 2012, p.57). Consequently, it is important to analyze these logics further by decomposing them to the ideal types of institutional orders (Thornton et al., 2012, p.73) in order to theoretically confirm each logic's focus of attention, and identify the logics setting in terms of dominancy, confliction, centrality and compatibility (Besharov & Smith, 2014; Thornton & Ocasio, 2008).

### 4.4.2 Analysing Institutional Logics: Field-Level Institutional Orders' Instantiations

This section continues to analyze the coexisting ideal types of decision-making institutional logics by distinguishing the instantiations of the institutional orders on the societal level (macro-level) in the defined decision-making coexisting institutional logics ideal types on the UK local government field-level (meso-level) (Thornton et al., 2012). This is expected to contribute to a clearer understanding of the institutional complexity of the UK local government (Greenwood et al., 2011) . To elaborate, this part sheds the light on the societal-level institutional orders instantiated by the defined multiple institutional logics on the UK local government field-level, and theoretically confirm decisions' focus of attention in each of them, which is central to the explanation of the DSDM adoption phenomenon presented in the next chapter.

Starting from the presidential and advocacy logic, this logic is found to be an instantiation of both the state and community institutional orders. As defined in section 4.4.1.1, the actors (or agents in other words) of this logic, the full set of the political leadership, are empirically found to focus on two major elements: the welfare of their constituents and the philosophical goals of their political party affiliation. State logic is the building block of the presidential and advocacy logic since local authorities' operations, actions and social materials are defined and regulated by the UK central government legislation. Focusing on the welfare of residents, the bureaucratic domination of councillors, and leading through a system of democratic participation are all indicators of the presidential & advocacy logic's instantiation of the state logic.

On the other hand, the different political party affiliations of councillors and their influence on decision-making, basing local councils' manifestos on political administration's political biases, and the partisan influence on debating and voting processes - as defined in sub-section 4.3.2.4 -indicate that the presidential and advocacy logic is also an instantiation of the political community logic, which focuses on serving the public through party's political ideology and practices. The instantiation of the political community logic mirrors the UK central government parliament political composition of the different parties representing different political values and ideologies.

Proceeding to the service management and administration logic, performed by the managerial leadership hierarchy, this logic is an instantiation of two societal-level institutional orders: the profession and the corporate logics. Having a managerial leadership hierarchy that manages the efficiency and effectiveness of a local council's performance like a private sector corporation indicates that the UK local government is instantiating the corporate logic. At the same time, having a managerial leadership hierarchy, where the seniority levels are dependent on the level of professional expertise and knowledge possessed by the staff officers is an indication that the profession logic is instantiated by this logic as well, however nested within the corporate logic (Greenwood et al., 2011; Lawrence & Suddaby, 2006). This nesting blends the focus of attention attribute of the service management and administration logic to result in decisions focusing on improving the effectiveness and efficiency of the local government through the possession of higher expertise and professionalism. Institutional logics nesting concept conforms to the near-decomposability concept (Thornton et al., 2012) stating the possible fragmentation and aggregation of institutional logics depending on the analysis

granularity level conducted. Near- decomposability or partial autonomy of institutional orders reflects the significant explanatory potential possessed by the institutional logics perspective meta-theory.

As for the consultancy logic, it is found to be an instantiation of the profession institutional order as well. Supporting the local council's leadership make better decisions and acquire better field-knowledge, as explained in sub-section 4.4.1.3, by utilizing the professional expertise and knowledge of both senior officers and councillors to positively influence the process of decision-making, is a clear indicator that this logic is an instantiation of the profession institutional order. The source of authority and legitimacy of the actors advising decision-makers are their professional reputation built upon the level of experience they have, which is validated via their seniority in the leadership hierarchy. The main strategy of consultancy provision is to maximise benefits and minimize losses of the local council and its residents in whole, which is the reason behind the importance of the level of profession here as rationalization and consideration of all possible scenarios is required.

### 4.4.3 Identifying Decision-Making Institutional Logics Dominancy and Confliction

This section identifies the dominancy and conflict settings among the coexisting multiple decision-making institutional logics in the UK local government. According to Thornton (2002) and Thornton & Ocasio (2008), the dominant institutional logic in an organization is the one that most of the structures, actions, strategies, and social behaviors adhere to. Based on the rules governing the field of the UK local government as per the empirical constitutional data examined of the 13 local authority cases, identified leadership structure in section 4.2, and action and processes in 4.3, the presidential and advocacy logic is the dominant institutional logic governing the field. The fact that political leaders are the top decision-makers in the UK local government as explained in sub-section 4.2.2.1 justifies their dominancy over all other actors within the domain, as their sources of legitimacy and authority stem from the country's government legislation and democracy via democratic participation, deliberation and bureaucratic domination as mentioned previously.

Moreover, service management and administration and consultancy logics are secondary logics to the presidential & advocacy one. The adherence of major functions and responsibilities in each of these institutional logics, such as informing, advising, and delivering political manifesto, justifies that these logics are secondary and cooperative – in theory - to the dominant logic.

Possible logics' competition and conflict can occur in areas of intersecting functions or overlapping roles. The existence of competing political parties within a local authority and the nature of local councils' democratic debate is the main ground exhibiting partisan competition among the several community orders. However, since the conflict analysis in on the logic level, not order, this type of conflict can be defined as an intra-logic conflict, not an inter-logic one.

Furthermore, because the consultancy logic forms an intersection area between the presidential & advocacy and the service management & administration logics' actors, it can be an area of either contentious conflict between the actors, an area of hybridisation (Baddeley, 2008; Entwistle et al., 2005; Fenwick et al., 2006), where politicians are managerialized and managers are politicised (Morrell & Hartley, 2006). However, existing local government institutional logics in theory conform to the dominant institutional logic, as stated in constitutional documents of local authorities,

Moreover, due to the dilemma of executive councillors' role and profession duality – political and administrative- the concept of loose coupling is found to be applied in situation where the consultancy logic is activated. For example, in a situation of decision discussion where political and professional advice are required. Executive councillors in such situations are found to choose one of their conflicting roles and act upon it, presenting a case of loose coupling or partial autonomy of roles (Jones, 2005; Thornton et al., 2012).

To corroborate and these conclusions with theoretical literature, the multiple institutional logics framework developed by Besharov & Smith (2014) is adopted to detect centrality and compatibility among the instantiated institutional orders, delineating dominancy and confliction among the logics identified.

Besharov & Smith (2014) framework suggests that organizations with multiple coexisting institutional logics experience different levels of conflict or harmony based on two dimensions: the level of centrality, which indicates the concentration of each logic contribution to the core features, norms and strategies of the organization, and the level of compatibility, which indicates the level of unity and harmony among the multiple logics in terms contribution to the achievement of the main organizational goal (ibid). Consequently, organizations can be segregated into four categories based on the two mentioned dimensions as per the framework.

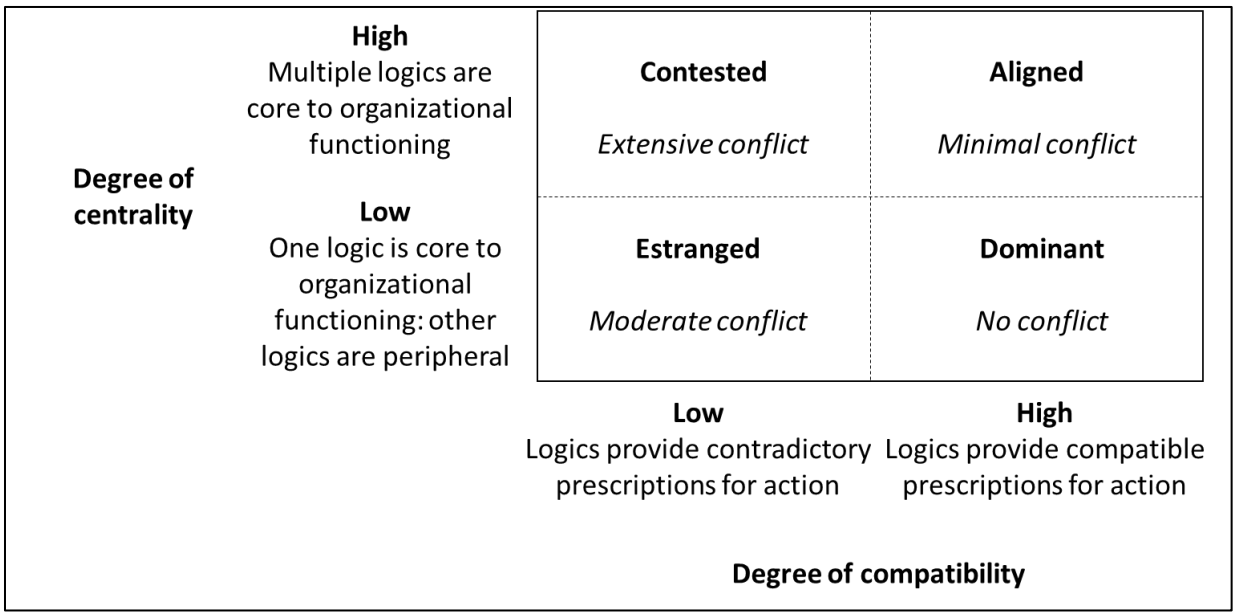



Figure 4.5: Types of Logics Multiplicity Within Organizations (Besharov & Smith, 2014)

Considering the multiple logics' instantiations analysis in section 4.4.2 and the description of these logics' dominancy and confliction, the decision-making dynamics in the UK local government can fall under the "dominant organizations" category. With the presidential & advocacy logic serving as the dominant logic (one logic), and the service management & administration and the consultancy logics as compatible logics to the dominant one, this conveys a position of multiple institutional logics with low centrality and high compatibility. Yet, it is important to note that the analysis of dominancy and confliction of the decision-making dynamics in the UK local government is on the field-level. Because on the organizational level (micro-level), the coexisting institutional logics can be configured differently. Some of the local authorities are found to have a higher level of conflict on the

micro level, leading to a better or worse adoption of DSDM, which is thoroughly discussed and explained in chapter 6.

To corroborate the resulting decision-making logics with empirical literature of local government, Nederhand et al. (2019) and Ferry et al. (2018) are found to have similar results in terms of institutional logics. To elaborate, Nederhand et al. (2019) bureaucratic, management and network logics are similar in description to the presidential & advocacy, service management & administration, and consultancy logics in order. However, the context of the study is slightly different as it is conducted on the Netherland local government, in addition to the different focus of the study, which is on the institutional logics in the Dutch local government that supports or hinder the emergence of the network logic.

Moreover, several studies are found to confirm the existence of the resulting institutional logics in this research. For example, Gillett et al. (2019) support the existence of the state and community logics in the UK local government. Ferry & Eckersley (2020) indicates support for the political community logic, whereas Alexander et al. (2018) and Ferry et al. (2019) confirm the state logics only, and implicitly convey a supporting indication to the consultancy logic. Fred (2020) supports the presidential & advocacy logic as it confirms the existence of the bureaucratic and political logics, which are equivalent to the state and political community logics.

As for the multiple institutional logics' dominancy and confliction, literature is found to support the dominance of the state logic within the context of the UK local government. Ferry & Eckersley (2020), Gillett et al. (2019), and Ferry et al. (2018) confirm that the institutional logic that instantiates the state logic is the dominant one among the rest of the UK local government logics. This is similar to the research empirical finding stating the presidential & advocacy logic, which instantiates the state logic, as the dominant one among the others. However, several studies are found to contradict the finding claiming the non-existence of conflict among the coexisting multiple decision-making institutional logics in the UK local government. For example, Gillett et al. (2019) claims that the state and community logics contradict the market or commercial logic in the UK local government. Similar findings are acclaimed by Ferry & Eckersley (2020), Fred (2020) and Nederhand et al. (2019). However, the unmatching research perspectives among the research, and the unidentical context among

some of them – as previously mentioned – provide a possible explanation of the results discrepancies between the literature and this research.

Considering the similarities and differences between literature and empirical findings, and all provided possible explanations behind these differences, the fact that literature on institutional logics in the context of the UK local government is limited, in addition to the absence of literature studying decision-making institutional logics in this specific domain justifies the importance and contribution this research adds to the body of knowledge. Table 4.1 summarizes the results of this chapter, presenting the three coexisting ideal types of decision-making logics found in the UK local government and their corresponding attributes.

Table 4.2: Decision-Making Logics in the UK Local Government

| Logics/Elements | Presidential & Advocacy | Service Management & Administration | Consultancy |
|---|---|---|---|
| Legitimacy & Authority | Democratic participation & deliberation, bureaucratic domination, position in political hierarchy, and commitment to electorates and political agenda values & ideology | Employment based on professional expertise & position in the managerial hierarchy | Professional experience |
| Focus of attention | popularity through satisfying electorates and political party agenda | Promotion to higher position in the hierarchy through higher professional status leading to increased operation and delivery efficiency | Professionally supporting decisions leading to maximizing benefits and minimizing losses |
| Type of Decisions | High -level policy and strategic decisions | Daily operational level and local council departmental and internal affairs | Moderate to high-level strategic decisions influencing residents and financial position of the council |
| Actors | Political Leadership | Managerial Leadership | Political and Managerial Leadership |
| Institutional Orders Instantiation | State + Community | Profession + Corporate | Profession |
| Dominancy | Dominant | Supplementary | Supplementary |
| Conflict | Partisan competition (within logic) | Cooperative | Cooperative |

## 4.5 Linking It All: Dual leadership Structure & Decision-Making Institutional Logics in the UK Local Government

This section concludes the chapter by combining the major findings to produce a full picture of the leadership structure and its corresponding functionality in the UK local government.

The two components, which are the leadership structure, and the decision-making logics are linked together through the defined actors and their decision-making focus of attention.

The following diagram synthesizes the chapter findings through representing the full details of the dual leadership structure of the UK local government (presented and discussed in section 4.2) along the decision-making institutional logics presented and discussed in sections 4.3 and 4.4.

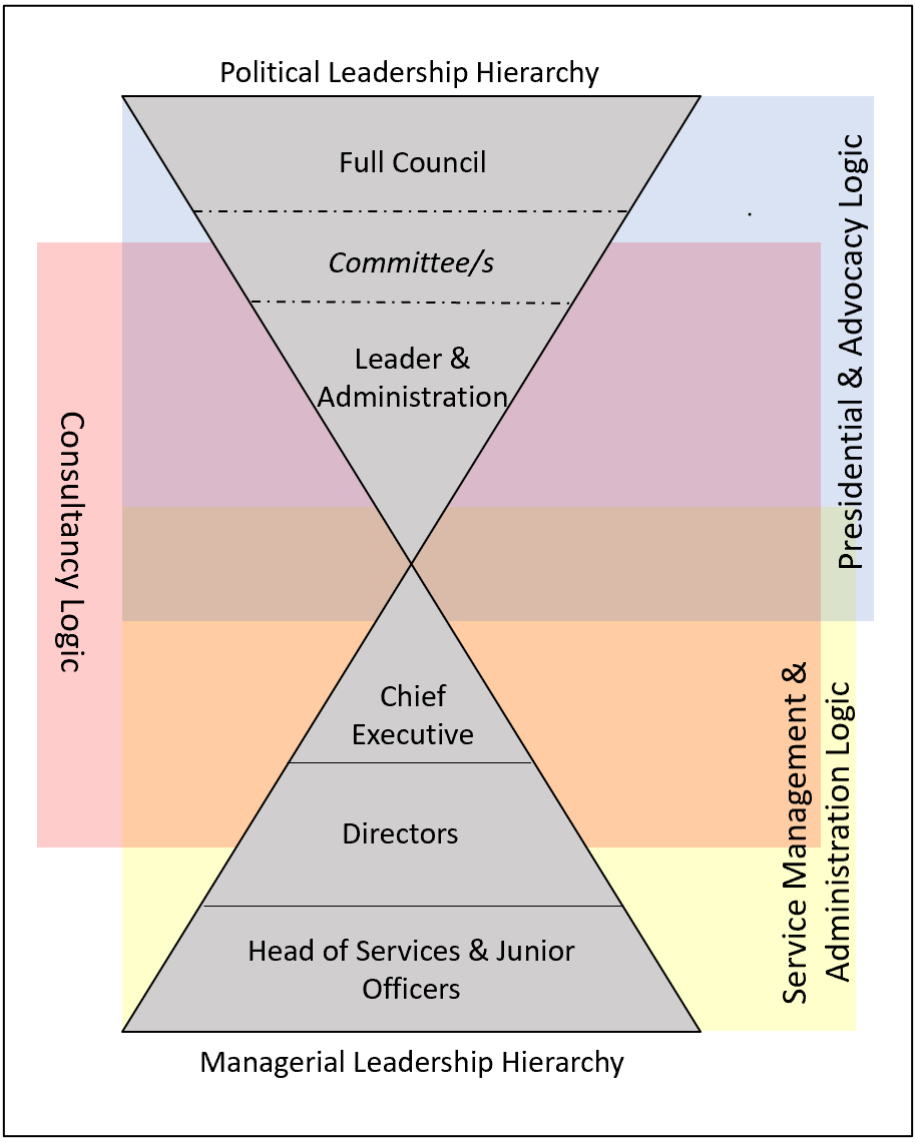



Figure 4.6: Leadership Structure and Decision-Making Institutional Logics in the UK Local Government

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The diagram demonstrates the connection between the UK local government dual leadership structure and the decision-making institutional logics. The decision-making logics are distributed based on the location of its actors. Since the actors of the presidential & advocacy logic are political councillors, including the administration and non-administration one, the logic covers the complete area of the top political leadership hierarchy. On the other side, the service management & administration logic is found to shadow the area of the managerial leadership hierarchy as they are the actors of functions, actions, and processes of this logic.

The middle area of the leadership structure, where the niche politicians (usually administration and scrutiny members) and the most senior managers are positions, is the area where the consultancy logic overshadows. Since this logic is based on extensive knowledge and professional experience, the most senior officers and members are the logic actors, as explained previously in section 4.4.1.3.

It is important to understand that the leadership structure analysis and the decision-making institutional logics analysis in this chapter is applied on the field-level (Thornton & Ocasio, 2008). Dual leadership dynamics differ among local councils (micro-level), influencing the adoption or non-adoption of DSDM within individual local councils' cases, which is explained in chapter 6.

## 4.6 Conclusion

This chapter answers the first question of this research, which aims to set up the contextual background of the study by defining its leadership structure and the decision-making logics within the UK local government. Accordingly, this chapter introduced, discussed, and explained the first part of the research empirical results overlying the foundation of the research major contextual components: the leadership structure and the decision-making dynamics of the UK local government. The analysis of the domain was held on a field-level, producing a foundational model that is used in the following chapters to investigate the adoption of the DSDM and its relationship to the context leadership structural aspect.

The chapter started with a comprehensive look into the leadership structure of the UK local government. Based on collected empirical evidence from interviews and documents,

comparing it with literature, a full description of the dual leadership hierarchies was provided and demonstrated, including the position of each and alignment of both to each other, and considering some important elements: superiority and delegation.

The second section presented the processes and functions performed by the dual leadership. These functions were combined into four categories, which are ruling and governing, democratizing, decision supporting and delivering, managing & administrating. Each category included a set of sub-functions that were empirically presented and evidenced.

The third section discussed the leadership functions presented in the previous section. The discussion was developed based on the theory of institutional logics perspective (Thornton et al., 2012) and literature comparisons. Based on theory, the section started with defining the decision-making institutional logics, analyzing their social-level instantiations, and identifying their dominancy and confliction configurations.

The last section combined the major results of the chapter, which are the leadership structure and the decision-making institutional logics, demonstrating roles overlapping areas. The next chapter establishes the relationship between the adoption of DSDM types and the identified decision-making logics.

# 5 Chapter Five: Data Adoption and Decision-Making Logics

## 5.1 Introduction

This chapter reports and discusses findings about data adoption in relation to the decision-making logics in the UK local government. It answers the second question of this research, which investigates the decision-making logics contribution to the adoption of data in decision-making.

This chapter has three sections. The first section reports results about the types of decision-making found in the UK local authorities in relation to the use of data. The second section discusses and explains these results in three parts. The first part discusses the definitions of the decision-making types in comparison to literature. The second part discusses the adoption of data in decision-making by empirically explaining the relationship between the data-adopting decision-making types found and the decision-making logics conceptualised in chapter 4. The third part theoretically discusses and explains the same relationship using the institutional logics perspective by Thornton et al. (2012), which unveils the decision-making logics contributing to the adoption of data in decision-making in the UK local government. the last section in this chapter concludes the results presented and discussed, highlighting the contribution of this chapter to the body of knowledge.

It is important to note these relationships are recognized on field-level (meso-level) – Local government authorities overall. Discrepancies in relationships among the individual cases are discussed on organizational-level (micro-level)- individual local council- which is discussed in the next chapter.

## 5.2 Decision-Making Types in the UK Local Government

This section reports findings pertaining to the types of decision-making found in the UK local government authorities with respect to the use of data. Guided by the data-adopting decision-making types' table in chapter 2 (Table 2.1), data-adopting decision-making types were identified upon information about the decision-making stage at which data was adopted, and the level of the decision reliance on data. Moreover, based on the identification of decision-making level/purpose (high/med/low - political/strategic/operational), relationship between these types of decision-making and the decision-making logics identified in chapter 4 is established, resulting in the identification of logics that contribute to the adoption of data in decision-making.

The investigation resulted in the identification of four decision-making types: the non-data or interest-driven, the data-driven, the data-evidenced and the data-informed. The last three types of decision-making are grouped and named as data-supported decision-making, since they incorporate the use of data in their process.

### 5.2.1 Non-Data Decision-Making or Interest- Driven Decision-Making (NDDM or IDDM)

The first type of decision-making found is the non-data or the interest-driven decision-making. These decisions, as their name implies, are driven by interests such as personal experience and preference, overseeing data and its analytical insights.

Examining local councils' documentation and archival data – secondary data – for references to interest-driven decision-making resulted in few findings. In fact, decisions driven by public interest were the only type of interest-driven decision-making found in this type of data.

> *You have a duty to take decisions solely in terms of the public interest [Auth8-Const.]*

> *As a council, we will not be complacent. We will continually strive to make things better, to do things differently and to ensure that our decisions are driven by local people's values and priorities. [Auth5-Corp. Plan]*

On the other hand, findings about interest-driven decision making from the interviews data, which is the research primary data source, were many. Several types of interests driving decision-making were reported by participants. For example, Intuition was one of the frequently mentioned interests driving decisions in local councils.

> *I think a lot of decisions are made on intuition. [RO1]*

> *I think it's an intuition … [councilors] tend to become counselors because they've gotten a passion or a need or a want. And that usually overrides any other thing. Nobody becomes a counselor because they want to interrogate data and become a logical solution…Counselors come there for [a]driving passion and it's almost impossible then to take that away from them just because we have been provided data that might conflict with some of their views. [RO18]*

Moreover, political ideology was another frequently mentioned interest driving decision making in local councils. RC2, RO3, RO4, RC6, and RO6 claimed that decisions in their local councils were mostly "*ideology driven*". Moreover, personal philosophy and beliefs were also found to be interests driving decision-making in local authorities. For instance, RC12 and RC 18 explicitly stated that as decision makers, *"[decisions] are driven around [their] philosophy, [their] belief*".

Furthermore, public interest was a third type of interest driving decisions made by politicians, confirming the interest-based decisions found in the documents.

> *When it came to making political decisions that [councilors] knew would damage them reputationally, they shied away from it. So, for example we had a service area that was constantly and still is that overspent and running at a loss for years. But because it's a public thing and so. It's a Civic Center. Basically, and, but because it's loved by the people of [Authority 10]. [RO23]*

> *People [meaning councilors] take public positions. [RC9]*

It has been noticed that the reported Interest-driven decisions are primarily made by politicians. Decisions found in local councils' documents are all political as they are extracts from documents that are published by councilors and by their consent. As for the ones found in the interviews, they are either partisan, personal to councilors, or related to the public – which in addition makes them political in nature as they aim for personal popularity and votes winning.

> *Taking a view on an issue which is actually a partisan view, it's a view they're taking because they believe it will play well with the public and as opposed to truly believing in their heart of hearts that it's the correct position, often because they know they won't win the vote [RC9]*

> *[Councilors] might make a decision for a political gain [RO6]*

These quotes are examples of participants' responses confirming politicians' decision-making driven by political interest, whether winning constituents or their peers' votes.

### 5.2.2 Data-Supported Decision-Making (DSDM)

This sub-section groups the three decision-making types: data-driven, data-evidenced and data-informed under the umbrella of "data-supported decision-making", which refers in this research to the types of decision-making that incorporate the use of data. Data can be utilized for problem identification, problem-solving, or picked to support an interest. Each of the data-supported decision-making types is presented in a separate section below.

#### 5.2.2.1 Data-Driven Decision-Making (DDDM)

The second type of decision-making found in the data is data-driven decision-making (DDDM). What distinguishes this type of decisions is that data is the only element considered in all the decision-making process stages: the problem or opportunity identification for which the decision is made, the elements considered for the analysis of the problem or opportunity in

hand, and the basis for making the final decision. This makes these decisions very objective, placing them in the extreme opposite side to the interest-driven decision-making.

Following the above definition when investigating data-driven decision-making in local councils' archival data, many findings were cited to either use the terminology "data-driven" or its defining words like "problem identified by data" and "decisions made solely based on data":

> *The monitoring information and modelling data will be used to measure provision of landfill, the need for capacity and indicate any need to review policy and allocations to ensure sufficient capacity is being delivered. [Auth5-Corp. Plan1]*

> *Making decisions based on data and evidence and in an open and accountable way. [Auth5 – Corp. Plan 2]*

> *We have embedded a culture of data driven decision making across the city [Auth3 – Digital Strategy]*

Despite the mentioning of data-driven decision-making or what defines it, councils' documents were found to use the terms "data-driven" and "evidence-based" interchangeably "*Decisions will be evidence led and data driven*." [Auth13-Digital strategy]. Therefore, it was crucial to provide the interview participants with the definitions of "data-driven" and "evidenced-based or data-evidenced" decisions when collecting the primary data of the research.

Accordingly, when inquired about the type of decision-making in their local councils, some participants responded by describing their councils, teams, or divisions as data driven.

> *I think in the area of Adult Social Care, that is clearly data driven… we are paying extra on the council tax because the data says we need to. [RC2]*

> *I do think that our spending [on]our services is data- driven. [RO19]*

Moreover, other participants reported that data-driven decision-making is mostly associated with operational decisions in the councils.

> *The contact center has been very data driven and it has to be data driven, you know, literally on a day-to-day basis [RO25]*

> *The best example from our point of view where data has driven our activity is our implementation of the Clean Air Zone. [RO3]*

> *It is absolutely crucial that managers use this to manage day-to-day operations [RO6]*

> *Operational, day-to-day decision making I think in some areas is already very largely led by data. [RC10]*

> *It's far easier to be data driven on operation, on basic operational matters. There's a lot of data, more sophisticated data analytics used in operational decisions. [RC8]*

> *I need to make sure I've got data that helps me understand what the operational effectiveness is. [RO20]*

Furthermore, the use of data in general and in making data-driven decisions in specific was found to be associated with officers more than councilors, as stated by participants.

> *I think perhaps members are more on the sort of philosophical side and officers and more on the hard evidence side. [RC20]*

> *[Our] recommendations as officer[s] [are] based on the data … it will be very difficult to run an organization from a managers/officer perspective without being data driven. [RO4]*

> *Officers make decisions on more data than [councilors] do. [RC12]*

The above findings suggest that data-driven decision-making tend to be linked to operational level decisions, and is more often made by administration officers, or in other words, the managerial leadership of local authorities, as explicitly reported in the data.

#### 5.2.2.2 Data-Evidenced Decision-Making (DEDM)

The third type of decision-making found in the research data is the data-evidenced decision-making (DEDM). It is the type of decision-making where the data is used to support an already made decision that is more likely driven by interest and not data. Constitutional documents were found to specify the need to present reason when making a decision. However, less than a handful of documents mentioned using data or evidence to decision-making.

> *Ensuring that decision making is supported by timely and robust evidence/ data where required. [Auth2 – Const.]*

> *Evidence Base: The information and data gathered by a Council to justify the 'soundness' of a Local Development Document, including information on the physical, economic, and social characteristics of the area. [Auth9 – Corp. Plan]*

> *Evidence which may be required to support this decision could include details of previous uses/business accounts. [Auth5- Corp. Plan]*

Moreover, when participants were asked about how decision-makers in their councils use data, many of them referred to their political leadership decisions as data-evidenced, and not data-driven, stressing on the point that these decisions are not driven by data, but by interest supported by data.

> *Well, let's try and collect some data and see whether it would justify what we think we would like to do. [RC9]*

> *You get the data quite a lot to back up what we want to do. [RC11]*

> *If [data] fits with the political priorities, then you know then then they'll be hungry for their data to support that. [RO7]*

It is important to note that using data as evidence to an interest-driven decision adds an element of objectivity to these decisions, however, does not make them objective.

#### 5.2.2.3 Data-Informed Decision-Making (DIDM)

Between the data-driven and the data-evidenced decisions lies the fourth type of decision-making emerging from the data, which is the data-informed decision-making (DIDM). It is the type of decision-making that considers all sorts of information to reach the most balanced and favourable decision for a situation. It is important to note that data here is not the base of these decisions but is contemplated as a vital element through the decision-making process.

References to making data-informed decisions were found abundantly in the examined local councils' documentations.

> *[Decision-making is] due consultation and proper advice is taken and alternative options considered before decisions are reached [Auth5- Const.]*

> *Using data platforms to gather intelligence about user experiences to inform planning and development of services that meet local needs. [Auth11- Digital Strategy]*

> *We continue to be close to our communities – involving more people in decisions about their area and their services … [and] Support and develop a workforce to deliver our ambitions with the right people in the right roles with the right skills and supported by digital technology. [Auth 13- Corp. Plan]*

The above text extractions from formal councils' documents clearly present local authorities' rigor to making data-informed decisions by taking into consideration subjective and objective sources of information. As for interviews, high-level leaders from both political and managerial leadership were the ones to mention making data-informed decisions when they were inquired about the type of decisions they thought were made in their local councils.

> *I think data will always come into all our decisions if whether it's financial health, educational, but it's never the whole of why something happens. It's [a] source for a discussion that brings in policy and you know practicality and public opinion and so on. … It doesn't mean that data is the only decision-making criteria, it's always more complicated. [RO1]*

> *Data doesn't solve those complex issues. It may help you make this call, [these] decisions, but it doesn't solve them. So, what's data driven decision making in that sense, its data informed. [RC8]*

> *My role is more about looking. At the data in each of those Departments and how we can combine that data to deliver greater insight to inform strategy and policy at the Council level as well As for the city [RO8]*

The above quotes depict participants' reluctance to claim that decisions made on the level of policy and strategy in their councils were data-driven, but rather data-informed. Here, it is important to notice that data-informed decisions are paired with policy and strategy-level decisions as they are complex and complicated to make. These high-level decisions have to consider different sources of information, whether subjective – such as the public interest- or objective – such as analytical insights, to reach the best set of balanced solutions.

To sum up, figure 5.1 illustrated the four types of decision-making found in the UK local government categorized and plotted with respect to levels of data and interest's consideration. With the X-axis representing the level of data dependency, and the Y-axis representing the level of decision's dependency on interest, the interest-driven and data-evidenced decision-making are the lost on their consideration of data and the highest on interest as both are solely dependent on interest, and only use data to support interest. On the other hand, data-driven decision-making is located at the highest spectrum of data but the lowest on interest as decisions are solely dependent on data. In between is positioned the data-informed decision-making as it considers both interest and data, but is made upon what deem necessary, which is the reason for the wide spread of its existence area, including the intersection area with the rest of the decision-making types.

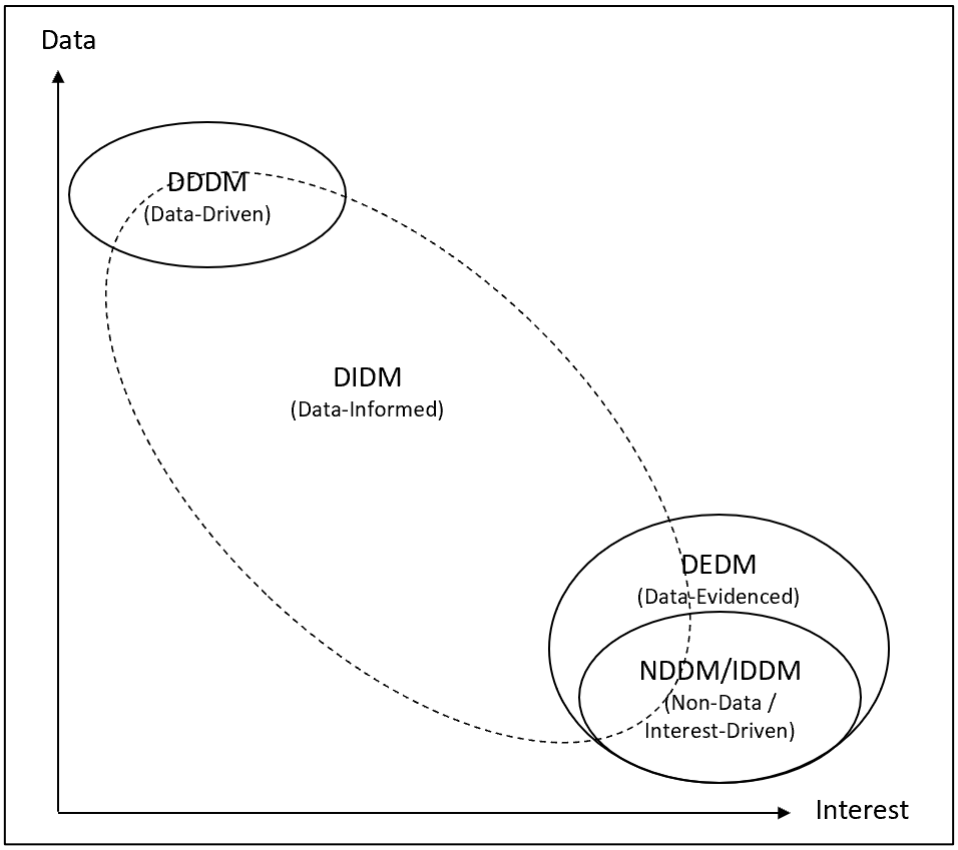


Figure 5.1: Decision-Making Types

This section reported the findings collected to answer the second research question. In the next section, these findings are discussed based on literature and theory.

## 5.3 Data Adoption in Decision-Making & Contributing Decision-Making Logics in the UK Local Government

This section discusses the findings reported in the previous section. It commences with comparing the definitions of the found decision-making types in the data with literature. Then, it establishes relationship between the data-adopting decision-making types identified in this chapter and the decision-making logics identified in chapter 4 via identifying decisions' level /purpose – political, strategic, or operational. It ends with identifying the logics contributing to the adoption of data-supported decision-making using the theoretical framework of the institutional logics perspective by Thornton et al. (2012).

### 5.3.1 Definitions

This sub-section discusses the definitions of the empirically found types of decision-making by comparing them to literature. These decision-making types are found to be supported by literature either directly – identical terms and definitions- or indirectly – under different terms.

Starting with interest-driven/non-data decision-making, it is found in literature as “interest-based decision-making” – which is almost the same as in the data - and defined as the subjective decision-making that is based on personal intuition, experience and ideology (Akinci, 2016; Diefenbach, 2013), which is identical to its definition in the data.

The second type of decision-making is the data-driven, which is found to hold the same name and definition in literature as in the data. It is the type of decision-making, where the identification of problems, opportunities, and the course of actions to take for solving or ceasing these problems and opportunities is solely based on data. (Han et al., 2020; Provost & Fawcett, 2013; Veldof, 1999). Data-driven decision-making can apply data science and analytics techniques that result in insights that support the problem-solving tasks organizations need to attend (ibid).

While the interest-driven and data-driven decision-making types are directly found in literature, the data-informed and data-evidenced decision-making are not. Literature is found to use the terms “data-driven” and “evidence-based” interchangeably but defines them differently. Some references assign these two terms definitions similar to the data-informed decision-making found in the data; a process that considers data as an element to inform decision-making, and other times similar to the data-evidenced one, which is the process that uses data to support decisions. For example, Provost & Fawcett (2013) and Reeves & Chiang (2019) define data-informed decision-making under the term “data-driven decisions”, whereas Fleming & Rhodes (2018) defines it under the term "evidence-based”. Moreover, Xie & Wang (2018) and Bärring et al. (2018) assign the term “data-driven” a definition that is similar to the data-evidenced decision-making found in the data, whereas Honig & Coburn (2008) and Zhu et al. (2020) give the same definition of data-evidenced decisions but under the term “evidence-based”.

However, defining data-evidenced decision-making as using data to specifically support interest-driven decision-making is supported by Kelly et al. (2017), Graaf et al. (2021), and Greener & Greve (2013) under the term “evidenced-based”. Interestingly, these three literature papers are found to discuss the notion of utilizing data to support interest-driven decisions made by politicians in the UK local government, the same context of this research.

Since literature uses the terms of data-supported decision-making interchangeably, this chapter contributes to knowledge by adding clarity and granularity to the topic through the identification and consolidation of the four types of decision-making. A possible explanation for this interchangeable use of terminologies could be due to the literature’s out focus of the details of decision-making in favor of technical topics such as data analytics and intelligence. Another possible explanation is the gradual maturation of the topic, leading to the demand of separating the different meanings sought under the similar terminologies, which is the motivation behind renaming the types of decision-making in this research. After the thorough identification of the different data-adopting decision-making types, their details, and their different utilization of data, understanding their connection to the decision-making logics is essential to identifying which of the logics contribute to the adoption of data in decision-making. This connection is discussed in the next sub-section.

### 5.3.2 Decision-making Types, Dual Leadership, & Decision-making Institutional Logics

Another finding from the data is the significant connection among the decision-making types, leadership types, and the decision-making logics constructed and discussed in the previous chapter (chapter 4). Few references are found to support this connection as literature in decision-making in the UK local government is extremely limited (Deng & Larkham, 2020).

Starting with the first decision-making type, it is found that interest-driven decision-making is highly linked to the political leadership of local councils. This finding is supported by Wan (2015) and Banner (2002), who reported that policy decision-making in the UK local government is increasingly driven by the interest of the public since the legislation has been encouraging constituents’ participation in decision-making. Moreover, Kelly et al. (2017), Cairney et al. (2016) and Greener & Greve (2013) confirmed that political leadership of the

UK local government tends to base their decisions more on personal emotions, beliefs, and political ideology.

Considering the decision-making logics in the UK local government, interest-driven decision-making coincides with the Presidential & Advocacy logic, where actors are the political leadership members or councilors, and the decisions' focus of attention is almost merely political. Consequently, it is possible to conclude that interest-driven decision-making can be an instantiation of the Presidential & Advocacy logic's decisions within the UK local government authorities.

Moving to the second and most objective type of decision-making identified in the data, data-driven decision-making is often employed by managerial leadership and administration officers at operational level decision-making. Literature supports the assertion that operational decisions are frequently data-driven in UK local authorities. Popovič et al. (2012) concluded that operational decisions are found to be directly dependent on data, regardless of the kind of organization. Additionally, Ward & Peppard (2002) and (De Vries, 2018) discussed and confirmed that technical and operational decisions are data-driven- utilizing the DIKAR knowledge management approach. The use of data-driven decisions in UK local authorities on an operational level is, however, only briefly mentioned in a few articles ((Moya et al., 2021; Bessant, 2022; Deng & Larkham, 2020; Papathanasiou & Kenward, 2014).

The data-driven decision findings are consistent with those of the Service Management & Administration logic, where the officers of the managerial leadership hierarchy serve as the actors and operational efficiency is the decision's primary concern. Therefore, it is possible to conclude that decisions made using data-driven decision-making are an instantiation of those made using the Service Management & Administration logic by UK local government bodies.

Moving to the third type of decision-making found in local councils, data-evidenced decision-making is found to be more likely connected to political leadership. Some politicians are found to start using data only to support their highly subjective interest-driven decisions. This finding confirms what Greener & Greve (2013) reported on politicians' tendency to select evidence that supports their interest-based decisions. It also confirms Kelly et al. (2017) and Cairney et al. (2016) finding about politicians' tendency to resist using evidence in their decision-making, unless required by scrutiny committees. If so, they tend to select what

verifies their ideological, personal, and emotional-based decisions (ibid).

Considering the decision-making logics in the UK local government, data-evidenced decision-making is found to coincides with the presidential & advocacy logic as well since the focus of attention in this type of decision-making is still on the political interests. An important point to mention is that although data is used as an element of objectivity here, it does not make data-evidenced decisions objective, as political interest is what primarily motivates these decisions.

> *It is true in politics that quite often the evidence is chosen to support a policy. Because that's what somebody wants to do, and then they just cherry pick some numbers that support them. [RC15]*

As a result, it is possible to infer that data-evidenced decision-making is an instantiation of the Presidential & Advocacy logic's decisions within the UK local government authorities.

The fourth type of decision-making is the data-informed, where some high-level political leaders are found to apply in addition to high-level executive officers. Sippitt & Moy (2020) support the fact that some politicians use data to inform their decisions as a result of scrutiny committees holding politicians accountable to spreading false information. Moreover, Cairney et al. (2016) support the same finding as young professional politicians are found to adopt data to inform their policy decisions. As for local authorities' managerial leadership, their profession and expertise result in their high tendency to make data-informed decisions, a notion supported by Greener & Greve (2013) and Kelly et al. (2017).

Comparing these results to decisions under the decision-making logics constructed in chapter 4, data-informed decisions coincide with decisions of the Consultancy logic, where decisions are strategic and focuses on the attainment of the best possible scenario through full consideration of professional objective and public subjective sources of information. Consequently, it is possible to conclude that data-informed decision-making is an instantiation of the consultancy logic's decisions.

Table 5.1 summarizes the data-adopting decision-making types and link them to decision-making logics found in the UK local government authorities. Moreover, it orders data-adopting decision-making types based on their level of reliance of data/interest.

Table 5-1: Decision-Making Logics vs Data-Adoption in Decision-Making

Interest ↑ Data ↓

| Decision-Making Logic | Data Adoption Decision-Making Type | Decision-Level/purpose | Subjectivity- Level |
|---|---|---|---|
| Presidential & Advocacy | Non-Data / Interest-driven | High– Political | Highly subjective |
| | Data-evidenced | High – Political | Highly / Moderately Subjective |
| Consultancy | Data-informed | High/Med – Political & Strategic | Moderately Subjective / Objective (Balanced) |
| Service Mgmt. & Admin | Data-driven | Med/Low - Operational | Highly Objective |

Table 5.1 demonstrates the connection between the decision-making logics found in the UK local government in chapter 4 and the data-adopting decision-making types ordered ascendingly by the level of reliance on data and descendently by the level of reliance on interest. Starting with the presidential & advocacy logic, it is noticed that non-data adopting/interest-driven and data-evidenced decision-making are significantly related to this logic as most of these decisions are found to be highly political and subjective. Data-informed decision-making is found to relate to the consultancy logic, where data and facts are fed as vital factors into the process of decision-making. These decisions are found to be high/medium-level political and strategic decisions that substantially accounts for data, however not solely. The service management and administration logic is highly collaborated with daily medium to low level operational decisions made with high reliance on data to increase operational efficiency.

It is important to note that the data-adopting decision-making types are linked to the UK local government decision-making logics via decision-making level/purpose, and not to the leadership type or decision-makers' roles as there is an area of roles overlapping between the political and managerial leadership that is behaviourally ambiguous. For instance, an executive councillor may provide a data-driven solution to a political high-level matter or impose political power on the making of everyday operational decisions. However, this is unlikely based on the data, albeit occasionally possible. Therefore, an area of ambiguity exists on decisions following the consultancy logic or influenced by it.

This sub-section linked the decision-making types identified in the data to the decision-making logics defined in chapter 4 through comparing empirical findings. However, findings need to be grounded in theory, which is crucial to distinguishing logics contributing to data adoption. Therefore, the next sub-section grounds the empirical findings in the institutional logics perspective theory and conceptually explains each decision-making logics' contribution to data-adoption in decision-making.

### 5.3.3 Data Adoption and Institutional Orders: A Theoretical Explanation

Worth mentioning theoretical observation is the relationship between the instantiated institutional orders in the decision-making logics and the level of data adoption in decision-making. It is noticed that the higher the instantiation of the profession institutional order in the decision-making process through the manifestation of the decision-making logics, the higher the adoption of data in the decision-making process. On the other hand, the higher the instantiation of the state institutional order, the less the adoption of data in the decision-making process.

For example, making a pure political decision follows the Presidential & Advocacy logic, which is majorly an instantiation of the state order. The use of data is nearly absent in purely political decisions as they satisfy and are driven by political and constitutional demands, resulting in interest-driven decision-making. If data is present in the process, it is usually selected to only support the decision, resulting in data-evidenced decision-making: the higher political influence on the decision through the state logic, the less the adoption of data in the decision-making process.

On the other hand, making a pure operational decision follows the Service Management & Administration logic, which is majorly an instantiation of the profession institutional order framed by the bureaucracy of the corporate order. Operational management decisions are extensively based on data, resulting in making data-driven decisions as they aim for optimal efficacy: The higher the influence of management as a profession, the higher the adoption of data in the decision-making process.

However, decisions required to be made by the top executive members and officers are usually complex. When a Chief Executive of a local authority or a director makes a delegated strategic decision, the focus is merely on creating the solution that best satisfies the demands of residents, delivers the manifesto goals of the political party in charge, and efficiently utilizes the council resources under management. The same applies when an executive member makes a decision, a hybrid of professional managerial and political expertise comes into interplay to create the most possible applaudable scenario for all the stakeholders. In a complex decision-making process as such, data is considered as an important objective element along with other elements in the process, leading to a decision-making process that is continuously informed by data following the Consultancy logic, where a hybrid of professions are instantiated: again, the higher the influence of the profession logic, the higher the data adoption in decision-making.

Consequent to the explanation above, it is possible to conclude that in a UK local authority, the Service Management & Administration and the Consultancy logics contribute to the adoption of data-supported decision-making as they both instantiate the profession institutional order, where the Presidential & Advocacy logic hinders data adoption in the process of decision-making.

Institutional logics literature considers the relationship of different logics to the adoption of technology and analytics. However, it does not specify the institutional orders instantiated in the logics that contribute to the adoption of data in decision-making. For example, Selwyn (2021) discusses the role of the profession and bureaucratic state logics in the adoption of data in the educational sector but does not specify which of the logics contribute to the adoption of the phenomenon. Furthermore, Oborn et al. (2021) studies the role of a multi-institutional logics context in innovation adoption during COVID-19 period and explains how every logic supported the adoption through actors' focus of attention. Yet, it only focuses on plausible solutions in one situation only, which is the situation of COVID-19, and doesn't discuss how these different logics contribute to innovation adoption in other situations. This adds to the contribution of this research to scientific and social literature as it mobilizes the institutional logics perspective to investigate the details of data adoption in decision-making in the unique context of the UK local government. Here, the conceptual decision-making logics framework constructed conceptualized in chapter 4 is utilized to theoretically explain data adoption in decision-making by decomposing the relationships between decision-making types and logics.

## 5.4 Conclusion

This chapter presented and discussed the adoption of data in decision-making in the UK local government. It identified the four decision-making types found in the UK local government and their relation to data-adoption. It additionally made conclusions about the decision-making logics contributing to the adoption of data in the process of decision making through empirical and theoretical discussion and explanation of the relationship between the found data-adopting decision-making types and decision-making logics conceptualised in chapter 4. The major finding and contribution of this chapter is that the higher the instantiation of the profession institutional order in the decision-making logic, the higher the adoption of data in the decision-making process, which makes the Consultancy and Service Management & Administration logics the decision-making logics contributing to the adoption of data in decision-making in the UK local government. another contribution of this chapter is the clarification of terminologies definitions pertaining to the types of data-adopting decision-making, which adds to the adoption of data in decision-making literature. A micro-level (individual local authorities) cross-case analysis is presented in the next chapter, where the different leadership schemes manifesting in local authorities are identified and examined in relation to data adoption in decision-making.

# 6 Chapter Six: The Dual Leadership Schemes, Impacting Factors, and the Adoption of Data-Supported Decision-Making (DSDM)

## 6.1 Introduction

This chapter continues the analysis of the adoption of data-supported decision-making within the UK local government and the influence of its dual leadership and other factors on this adoption, however on a micro-level basis, or in other words, on the level of individual local authorities. To recap, chapter 4 and 5 analysed the UK local government decision-making logics and their relationship to data-adoption in decision-making on a field-level (meso-level), capturing the differences of this sector as a whole through the application of the institutional logics perspective theory (Thornton et al., 2012), this chapter captures the differences in decision-making logics manifestations based on the dynamics of dual leadership within individual local authorities on a micro-level basis. Nevertheless, these influence of these manifestations on the adoption of data-supported decision-making is studied as well.

The novelty and main contribution of this research is presented in this chapter, where the innovation adoption in organizations theory by Rogers (2003) is extended to include organizations with multiple leadership hierarchies and the influence of this multiplicity on the adoption of innovation, which is explained through the institutional logics perspective theory by Thornton et al. (2012).

The chapter starts with reporting findings about the dual leadership schemes found in individual local authorities in the UK, which are representation instances of decision-making logics' manifestation resulting from different logics' interaction. Three dual leadership schemes are found to manifest in the UK local government authorities: the member led, the officer led, and the balanced leadership local authority schemes. These three dual leadership schemes differ in terms of the decision-making logic dominancy, which consequently affects the level of DSDM adoption within local councils. The chapter continues through the

identification of the factors and sub-factors influencing the manifestation of the dual leadership schemes, and their relationship to the level of DSDM adoption.

An empirical and theoretical discussion of reported findings follows, highlighting the contribution of this study through extending the leadership dimension in the diffusion of innovation in organisations theory by Rogers (2003) to include the dual leadership relationship dynamics factor represented by the manifesting dual leadership schemes, in addition to the factors and sub-factors influencing this manifestation: the direction of dual leadership relationship, and the level of authority delegation from the political leadership to the managerial leadership, which is influenced by the three sub-factors: the level of political experience of the political leadership, the political stability and the political arrangement of local councils.
The chapter ends by incapsulating the discussed results in a conceptual diagram that summarizes the major findings and contributions of the research, which are used in the next chapter for practical implications on the improvement of the LGA Data Maturity Model analysed in chapter 2.

## 6.2 The Dual Leadership Schemes of Local Councils: Logics Manifestation

This section presents findings about the different empirical manifestations of the decision-making logics resulting from the local authorities' dual leadership, in addition to their effect on the level of data-supported decision-making adoption. A local council's leadership scheme can be described as the overall decision-making setting manifesting as a result of the decision-making logics' interaction. Three leadership schemes are found to be manifesting in the UK local councils: the member led, the officer led and the balanced leadership scheme.

It is important to note that the overall manifesting leadership scheme in a local council does not mean the absence of the rest of the schemes within the same local council. In other words, it is possible for teams or departments in a local council to have distinctive leadership schemes of their own other than the overall leadership scheme of the local authority. For example, authority "A" can be a member-led authority overall and has an officer-led

department at the same time. Therefore, these leadership schemes are analytically scalable, whether on the level of departments, or the local council as a whole one unit. In this research, the scale of the organizational analysis is on a local council level.

In the next sub-sections, each of the leadership schemes is defined, reported and discussed in relation to its effect on the adoption of DSDM within local councils.

### 6.2.1 The Member Led Local Council

In this sub-section, findings about local councils categorised as member led are reported. A member led local council is one that's overall dominating decision-making logic is the presidency and advocacy logic. Member-led local authorities are characterized with bureaucracy, political concentration of power, old, and traditional. These descriptions convey the domination of the state institutional order over the other institutional logics orders.

> *The frustration previously for me and others is that you know we want to make a difference to the people. We need to use our professionalism because we think we know what's right for those individuals, and sometimes we're hindered because of bureaucracy within the authority… It feels like we're quite a very old, traditional way of doing things in [Authority 6] that needs to definitely shift and change. [RO17]*

> *I think the members in [Authority 1] have not been overbearing, you know. But they in certain areas want to get very involved [RO1]*

> *I think part of that is probably to do with a strong leader model because you're sort of concentrating power within the leader and essentially his cabinet or her cabinet. [RC11]*

According to the presented quotes, participants described the leadership scheme within their local councils as *"bureaucracy", "members very involved"*, and *"concentrating power"*., indicating the dominancy of the presidential & advocacy logic over the other coexisting ones. In extreme member led local authority cases, politicians did not only take over officials' decisions, but *"hinder[ed]"* officers from using their professional expertise in making decisions by *"get[ting] very involved"* and intruding the process of making operational and

routine decisions under officers' responsibility.

> *There's sometimes quite a tension between whether some of those things because elected members quite like to get involved in those operational decisions, but actually it needs to be delegated to officers to take most of those decisions on a day to day basis [RO21]*

> *Members were in the office quite a lot. They would, particularly the former portfolio holder, was in the office, would come in and, and I mean in some ways that broke some barriers down and was quite good, but in other ways some officers were uncomfortable with that [RO23]*

The above quotes demonstrate the effect of the political leadership intrusion in officials' area of responsibility. From the words *"tension"* and *"uncomfortable"*, it is found that the political-managerial leaderships relationship and decision-making mechanism balance was disturbed due to the over-control and power exertion by the political leadership over the managerial one. This resulted in the presidency and advocacy logic's domination over the other decision-making logics as it is the logic that is more likely to be practiced by politicians (as found in chapter 4), leading decisions to be more politicised regardless of its type, whether political, strategic, or operational. Thus, decreasing the level of data adoption in decision-making as decisions following the presidency and advocacy logic tend to be non-data/interest-driven or - at most- data evidenced as concluded in chapter 5.

Because of the presidency & advocacy logics over domination, it is interesting to notice that the supplementary logics in this situation are not cooperative anymore (refer to table 4.1) as tension and discomfort are mentioned, indicating conflict in the political-managerial leadership relationships.

### 6.2.2 The Officer Led Local Council

This sub-section reports findings concerning local councils categorised as officer led local authorities. An officer led local authority is one that its decision-making process is dominated by the service management and administration logic. Local authorities characterized with high delegations of responsibilities to the managerial leadership resulting from insufficient professional capability and skills, passiveness or over reliance on officers. Around quarter of interviewed participants described their local councils as officer led.

> *I think there's quite significant decision making delegated to the officers. [RO22]*

> *I think he's [means the political member in charge] just a bit, you know, unsure. So I think he just is leaving it to me as the expert to get on and deliver things... I think it's quite a new role for the authority and I think there's still not clear enough understanding of transformation and what its role is in the authority, which is perhaps why the portfolio holder [meaning the political member responsible] delegates a lot of it [be]cause I think he's just a bit you know unsure. [RO26]*

> *I definitely think [Authority 4] is too managerial… when there's no political steer …. You can't blame an officer for leading. [RC12]*

The quotes above confirm that some local authorities are officer led, where officers dominate the decision-making process. In some investigated local councils, the managerial leadership is found to be over delegated with responsibilities by the political leadership, leading officers to be the primary decision-makers instead of members, as indicated in the first quote. Although delegation is formally permitted as per local councils' constitutions (explained in chapter 4), it is empirically found that over delegation take place informally as a result of the political leadership's inexperience, as in the second quote, or absence of political steer as in the third quote.

Nevertheless, officers' professional skills, expertise and know-how are found to be the major driver of over-delegation. High proficiency is found to lead to high level of delegation as it creates political leadership trust. Moreover, the notion of officers' permanent employment

against political members' periodic leadership supports officers' know-how, which increases their decision-making power over members.

> *I don't think that councillors really have the full grasp that you know that they would opt to be able to see it was a member like Council. [RC21]*

> *[Members] recognize that officers are there to provide the specialist knowledge and up-to-date intelligence, and as a result they trust the officers to use their professional judgment to update and review any appropriate ... I think there's also an issue of capacity both in terms of skills to actually draft the policy and time to invest in its research. [RO14]*

> *[Councillors] come to us to understand the background, the evidence, the need, and you know, kind of the whole context around whatever it is that we're trying to do. [RO29]*

> *This is what happened under [a] previous director of services… We had a case where a child died in a hospital. … the person responsible is the officer [meaning the director, not the political member] … if a school gets closed down, it is the director…[he] responds to education. It's them [meaning officers], not the member, it's them… So, we had the elections… and the person [meaning the political member elected] who came into post really started calling the shots about this, that and the other. Now if you've been a director for 10 years and you think that's not safe or you think that's not correct, I think you are well within your rights to say with respect councilor, you've only been doing this for two weeks! [indicating the difference in time span of experience]. [RO7]*

The previous quotes emphasize the importance of professional competency as the major factor leading to local authorities becoming officer led. The first quote is a clear statement made by one of the participants about officers' higher knowledge and understanding of the council matters than members, and accordingly their better ability to decision-making. Moreover, officers' professional expertise leads to high levels of political leadership trust and dependency in making decisions, which is reflected in the second and third quotes. In

addition, officers' accumulated expertise resulting from their permanent employment in local councils increases their decision-making power over political leadership, especially in the case of new unexperienced elected members, as demonstrated in the last quotes by RO7.

As officers control the decision-making process in an officer led local council, the service management and administration logic dominate the decision-making process as it is the logic majorly found to be practiced by local councils' managerial leadership (as explained in chapter 4). Consequently, the balance of decision-making logics becomes biased towards technical operationalization regardless the type of decision. As concluded in chapter 5, the efficiency factor highly corroborated in the service management and administration logic leads to high adoption of data in decisions, as "*evidence*" and "*up-to-date intelligence*" are brought to the decision-making mechanism, resulting in the adoption of data-driven decision-making.

It is worth mentioning point is that officer led local authorities' leadership scheme contradicts with the formal decision-making system in local government as explained in chapter 4. To explain, it is understandable for a local council to be described as member led – not officer led- since the political leadership is the legitimate decision-making body as per legislation. Therefore, it is interesting to notice that the deviation from the formal description of the dual leadership balance as in local government authorities' constitutions and according to table 4.1 results in change in dominating logics or over-domination, leading to logics' conflict. In the case of officer led local councils, the profession institutional order included in the service management and administration and the consultancy logics dominates over the other logics, resulting in a shift of dominancy from the presidential and advocacy logic to the service management and administrative, and consequently confliction among the coexisting institutional logics.

### 6.2.3 The Balanced Leadership Local Council

This sub-section reports findings about local councils with a balanced dual leadership scheme. What is distinctive about a balanced leadership local authority is the positive effective interaction between its dual leadership that extends beyond the achievement of designated responsibilities. This interaction creates a middle area of synergized communication and

relationship that is trusting and interdependent. A very limited number of participants described their local authorities to have balanced decision-making processes by cooperating dual leadership.

> *I think we have a pretty healthy balance at the moment ... the key decisions on policy matters elected members absolutely rightfully take those decisions and, I think officers have a key role in advising elected members and preparing those kind of policies for elected members to approve them…so I think it's quite a healthy balance at the moment. [RO21]*

> *In day-to-day practice there would be a fairly close liaison between the council chief executive and the leader of the council and similarly, a close liaison between the directors of the various departments and those who have been appointed as the political leads for those departments. [RC9]*

> *We've got a very strong chief exec which is well respected, and I think that may well influence the balance a little bit, but he also knows the importance and short button where questions of words in his mouth. But he knows the importance of the chain of command being ex-military himself. And I suppose he makes sure that it's a fair balance… I think it's probably well balanced. [RO18]*

The quotes provided demonstrate the key characteristics of a balanced leadership local authority. According to the participants, a balanced leadership local council is one where each leadership effectively and efficiently carries out its responsibilities. This is evident in the first quote, where the use of words like "absolutely" and "rightfully" implies the importance of fulfilling these responsibilities. Additionally, in a balanced leadership local council, there is a strong interdependent relationship between the political and managerial leadership. This fosters a healthy working environment, where political and managerial professionalism is exchanged, and decisions are made cooperatively, as stated in the second quote. This interdependence encourages each leadership to consider the decision-making perspective of the other, leading to a more informed decision-making process as it follows the consultancy logic resulting from the decision-making logics' merge. This merge of logics is implied in the third quote, as the participant describes an officer-leader as a person who well-performs his job and clearly understands the perspective of the political leadership at the same time.

As the consultancy decision-making logic is adopted, it is found that both of the political and managerial leadership become keen on gathering evidence and using available resources to help inform the decision-making process, which corroborates chapter 6 findings about the tendency of decisions following the consultancy logic to be data informed.

> *The data and the business case and the officer and the officer advice [meaning resources used in a decision-making process] …I would say that it is evidence based [referring to the decision-making]. [RO30]*

> *I would say in the main they're very good at providing us with the data that we need and very good when we're coming towards a decision. Or we're discussing an issue with coming forward with a lot of data, which helps us to inform the decision [RC25]*

The provided quotations offer valuable insights from the leader of the council and the chief executive of the same local authority regarding their approach to the decision-making process. Both participants, who occupy the highest positions within their respective leadership hierarchies, affirm the utilization of diverse resources to inform the decision-making process. It is noteworthy that the leader of the council, identified as RC25, expresses appreciation for the performance of the council's managerial leadership. This observation signifies positive communication and a harmonious relationship between the political and managerial leadership. Furthermore, the confirmation by the chief executive, referred to as RO30, regarding the political leadership's comprehensive consideration of available evidence serves to validate the council's adoption of a consultancy decision-making logic and the implementation of data-informed decisions.

## 6.3 Factors Impacting Leadership Schemes' Manifestation

This section intends to report factors found to impact the manifestation of the leadership schemes in the UK local government authorities. These factors are the direction of the relationship between the dual leadership, and the level of delegation from the political leadership to the managerial one within the local council. Moreover, the level of delegation

within a local council is found to be influenced by three sub-factors, which are the political experience level of the local council's political leadership, the political arrangement, and the political stability of the local council. The political stability of a local council is determined by the election frequency of the political leadership and the political administration. Findings about each of the sub-factors are stated next.

### 6.3.1 Direction of Dual Leadership Relationship

The direction of the dual leadership relationship within a local council plays a crucial role in determining the leadership scheme adopted. This relationship can be categorized as positive, negative, or passive, depending on the level of cooperation, tension or conflict between members and officers. A positive relationship entails cooperation between the dual leaderships, while a negative relationship indicates competition or conflict, often due to the pressure exerted by politicians over officers. In contrast, a passive relationship signifies a lack of significant communication between the dual leaderships.

Evidence from the previous sub-sections (6.1.1, 6.1.2, and 6.1.3) reveals that different leadership schemes manifesting in UK local authorities have different leadership relationship directions. It is found that a balanced leadership local council demonstrates a positively cooperative relationship between the dual leaderships. *"a fairly close liaison" [RC9]*. On the other hand, a member-led local authority tends to have a negative relationship, as politicians often seek involvement and exert pressure on officers. *"There's sometimes quite a tension because elected members quite like to get involved "[RO21].*

Officer-led local councils can exhibit either a negative relationship, as officers bear additional responsibility on behalf of members *"It certainly drives officers crazy" [RC6]," there is an extra job that officers do … which is trying to get a decision to be done" [RO7],* or a passive relationship, with limited communication between the dual leaderships. *"Distant [describing the relationship with political leadership] ... I don't have an effective relationship with councillors" [RO27].* A passive relationship between the political and managerial leadership means unclear political steer, leading officers to act on behalf of politicians *"there's no political steer coming …[councillors] do nothing. You can't blame an officer for leading" [RC12]*

It is important to note that the dual leadership relationship direction does not determine the manifesting leadership scheme in isolation from the other factors. In other words, what indicates a local authority's manifesting leadership scheme is the direction of the relationship in association to the level of delegation to the managerial leadership, which is explained next.

### 6.3.2 Level of Delegation

The level of delegation plays a significant role in the manifestation of the leadership schemes within UK local government authorities. Delegation refers to the transfer of responsibilities and decision-making from the political leadership to the managerial leadership of a local authority. The extent of delegation varies across the different leadership schemes.

While every UK local authority has a formal scheme of delegation outlined in its constitution, the level of delegation can be indicated through expressed verbal opinions, or the financial amounts delegated to the managerial leadership hierarchy. The monetary threshold at which the CEO of a local council can make decisions without seeking consent from political leaders serves as an indicator of the delegation level. In officer-led local councils, it is found that the level of delegation is high, as expressed by directors and councillors, allowing significant decision-making authority to officers.

> *"All the other local planning authorities across Scotland and most of them have schemes of delegation that allow quite high decision making to the be delegated to the officers or the managers rather than going to committee". [RO9]*

> *"Quite alot (referring to officers delegated powers) they I think they can spend up to £500,000 for a start without it going to councillors they are responsible for day-to-day" [RC7]*

The quotes above demonstrate examples of officer led local authorities delegating high levels of decision-making responsibilities. In the context of local planning authorities in Scotland, it is observed that schemes of delegation allow significant decision-making authority to be delegated to officers, rather than going through committee processes [Auth3-RO9]. Moreover, Officers in officer-led local councils are granted substantial delegated powers, enabling them to spend financial amounts without requiring approval from councillors [RC7]. However,

burdening officers with a high level of delegated responsibilities is an apparent offset that negatively affect the managerial leadership *"The levels of different forms of involvement over and above the business of the Council… the requirements then on officers become much higher" [RO7].*

In contrast, member-led local councils are found to exhibit lower levels of delegation compared to officer-led local councils. Officers in member-led local councils have limited decision-making authority, as indicated by the statement of one executive political leader who tries to closely monitor decisions.

> *"I try to keep a close finger on the pulse, but officers are allowed to spend up to I think it's up to 30,000 pounds." [RC13].*

Moreover, the intrusion of political leadership in almost all decisions further highlights the restricted delegation of decision-making authority in member-led local councils.

> *"I would say there's a strong interest from politicians in decisions that are taken up almost all the decisions that are taken." [RO24]*

As for local authorities adopting the balanced leadership scheme, it is found that political leaders approach delegation from a strategic achievement perspective, resulting in a balanced level of delegation.

> *"We have a broadly appropriate range to delegate" [RC10].*

> *"There are often decisions like the operational implications, will be delegated to a director or senior manager …there are often ,through the Cabinet decision making process additional proposals which [are] delegated to X&Y, Which seems entirely appropriate, because the whole idea of the Cabinet system was to move decision-making through more quickly and more effectively in a more timely way, and so you don't want decisions constantly having to come back to the whole cabinet" [RC20]*

> *"[Councilors] delegate and empower. I think they probably could take a little bit more control and direction than they do but yeah, delegation and empowering at a high level as well." [RO26]*

These quotes demonstrate examples of delegation in balanced leadership local authorities. The first quote reflects a leading councillor's balanced view of the level of delegation applied in his local authority *"Broadly appropriate"*, whereas the second and third quotes illustrate the strategic perspective followed in the delegation of responsibilities; the strategic achievement of timely and effective decision-making, in addition to managerial empowerment – unlike the high level of delegations in officer led local councils that burdens officers with loads of responsibilities.

These findings highlight the significant influence of the level of delegation as a factor on the manifestation of the leadership schemes in the UK local authorities. With the different levels of delegation between the dual leadership, different decision-making logics are activated and accordingly influencing the balance of logics, leading to the manifestation of the different leadership schemes discussed earlier. However, level of delegation in local government is found to be impacted by three sub-factors, which are: the political experience of political leadership, political arrangement and political stability within the local authority. Explanation of each of the sub-factors is next.

#### 6.3.2.1 Political Experience of Political Leadership

This sub-section intends to report findings about the impact of the political experience of a local council's political leadership on the level of delegation to the managerial leadership. The political experience of a political member forms as a result of the number of years spent working in local government politics, specifically as a councillor. It has been found that political experience has a negative relationship with the level of delegation in a local authority. Politicians with low or no previous political experience intend to delegate more authority - actively or passively- to a local authority's managerial leadership and vice versa.

> *"What we have found is that there's a lot of clearly new elected members from the authority administration. and I note coming to the end of the first term, …So the fact that if you like experience of the first if you like to call it the act managing of the city side ... [members] have struggled initially, and that's because purely down to lack of experience". [RO10]*

> *"[Officers] can have no influence whatsoever… You've got voices on the cabinet that are quite experienced that have been counselors for a long, long time" [RC23]*

These two quotes demonstrate two opposite examples of the relationship between political leadership's level of political experience and the level of delegation in a local authority. Due to the lack of political experience of some of the newly elected politicians in local authority 3, officers were not only delegated higher responsibilities, but had to "act" as councilors, who's managing the city is their responsibility, indicating the highest possible level of delegation, acting as a councillor. On the other hand, in local authority 11, where its political leadership has high political experience, it is found that these politicians do not only cease the political decision-making authority with no delegation to officers, but sometimes are not even influenced by the managerial leadership recommendations. Such scenarios are found to happen in the making of purely political decisions.

Although political experience of the political leadership is a factor that impacts the level of delegation within local authorities, it is not the one. The following sub-section addresses the second factor affecting the level of delegation within local government, which is local authority's political arrangement.

#### 6.3.2.2 Local Authority's Political Arrangement

The second factor influencing the level of delegation from the political leadership to the managerial one is the political arrangement of the local authority. A local authority's political arrangement is the decision-making system followed in making policies and sorting political issues by politicians. Two major decision-making systems included in this research, which are the Leader-Cabinet, and the Committee Systems. The major difference between these two systems is that in the Leader-Cabinet system, cabinet members are allowed to make decisions outside committees, which gives them more power to exercise than the rest of the elected

councillors, where no councillors – even senior political leaders- is allowed to make any decision outside a committee. All decisions are made through voting in committees.

> *"a cabinet system [is] where the cabinet is like a minister, for example, where they make all the decisions. A committee system means that every single person on the committee has a vote. So, it's more consensual than a Cabinet style governance system where effectively one person makes all" [RC5]*

The above quote is empirical evidence on the difference between the two political arrangements. However, it is important to note that there is a discrepancy between the political systems in theory and practice. Here, theoretical politics is out of the scope of this research, as its impact is the only point considered.

The political arrangement, the decision-making system in other words, is found to influence the level of delegation within local authorities. As the officer led local authorities, a local council adopting a committee system tends to have higher level of delegations to officers than the cabinet system, as it requires additional responsibilities to be held by officer.

> *"[Councillors] cannot take a decision outside of committee. But I would obviously be taking it… Maybe [they] don't have as much control… So, they're powerful, but they haven't got the direct control that officers might have.". [RO5]*

> *"All the other local planning authorities across Scotland and most of them have schemes of delegation that allow quite high decision making to the be delegated to the officers or the managers rather than going to committee". [RO9]*

> *"Basically, what the [administration party] group says is what happens" [RC23]*

These quotes provide evidence that local authorities adopting committee system delegate more decision-making authority and control to managerial leadership than ones adopting cabinet system as clearly stated by RO5 and RO9. Whereas political leadership operating a cabinet system retains their concentrated power of decision-making as implied by RC23 and RC5.

The last factor found to impact the level of delegation within local government is political stability, which is explained next.

#### 6.3.2.3 Political Stability of the Local Authority

This sub-section aims to report findings on political stability influence on the level of delegation to the managerial leadership in local authorities. Political stability in the context of this research implies the time where the political administration party or the political leadership of a local authority is unchanged. The more frequent a councillor or a political party is elected, the higher the political stability of the local government authority.

It is found that political stability has a negative relationship with the level of delegation: the lower the political stability of a local council, the higher the tendency of the level of delegation to increase.

> *"When the [political administration party] started running, the council a year ago. You could argue that they didn't necessarily know what they're doing, and officers ran the show". [RC5]*

> *"It's the nature of authority 2 being at changing policy almost every election… so that generally has meant that officers have got more power". [RC7]*

> *"[the leader of the local authority] is the longest serving leader in the whole [the area]. It's a really stable political influence, which from my point of view is fantastic and I've worked in other organizations where they've had leadership challenges. The leaders changed, it's changed, it's changed politically. I've had relationships where there's been no overall control, so there's no leader… which is very, very hard to work with in". [RO30]*

These quotations offer evidence of the impact of political stability, whether in terms of political leadership or political administration, on the extent of delegation within local authorities. The quotes are sourced from prominent leaders within their respective local councils. Local authority 2 operates within a local council characterized by frequent changes in political administration, whereas local authority 13 enjoys a high degree of stability in both

political administration and leadership. A comparison between these two cases reveals that in the context of constantly changing political administration, elected political leaders often experience confusion and instability, resulting in passive delegation of responsibilities to officers who consequently gain more power through increased decision-making authority. Conversely, the political stability observed in local authority 13 leads to the retention of responsibilities by the original governing bodies, resulting in fewer delegations to managerial officers and improved working conditions, as described by RO30 as "fantastic."

To sum up, this section presented the three leadership schemes (member led, officer led, and balanced leadership local councils) found to empirically manifest in the UK local government authorities as a result of the interplaying decision-making institutional logics. It is found that the level of adoption of data-supported decision-making is different in each of these leadership schemes, where the highest level of DSDM adoption is found in balanced leadership scheme and the lowest in the member led one.

In addition, the manifestation of the leadership scheme is impacted by two factors, which are the direction of the dual leadership relationship and the level of delegation to the managerial leadership. The level of delegation within a local authority is influenced by three sub-factors, which are the level of the political experience of the local authority's political leadership, the political arrangement, and the political stability of the local authority. Figure 6.1 illustrates the factors and sub-factors found to affect the manifestation of local government authorities' dual leadership schemes, which consequently determines the level of adoption of data-supported decision-making. These findings are discussed in the next section.

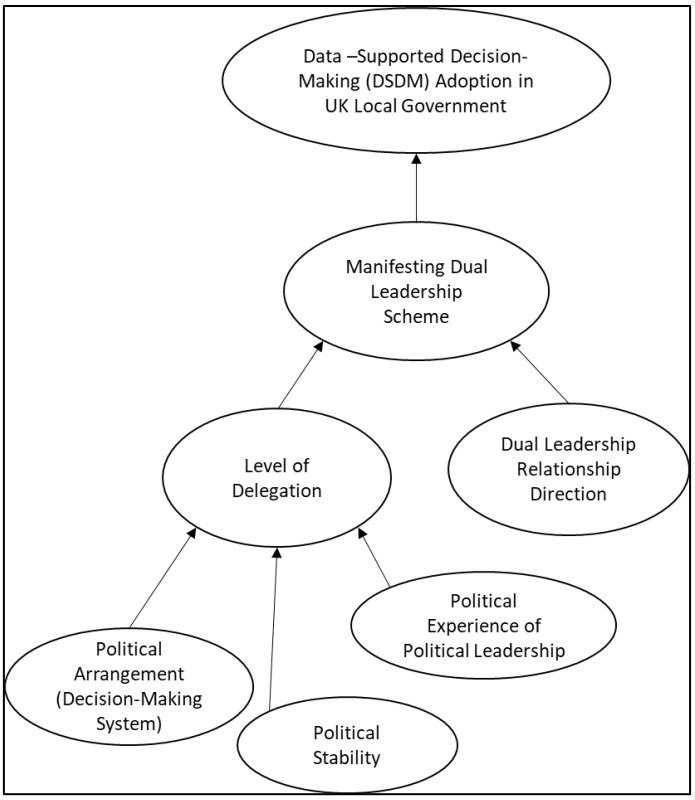


Figure 6.1:Dual Leadership and Related Factors Influencing DSDM Adoption in the UK Local Government

## 6.4 Dual Leadership Schemes, Impacting Factors, and DSDM Adoption: Empirical & Theoretical Contribution

This section discusses the manifestation of the decision-making logics as dual leadership schemes and factors impacting the schemes' manifestation. Moreover, it discusses the effect of dual leadership schemes and its impacting factors on the adoption of data-supported decision-making (DSDM) in the UK local government.

Findings indicate that local authorities in the UK adopt three different types of dual leadership schemes: the member led, officer led and balanced leadership. Each of these leadership schemes is manifested as a result of the interaction dynamics among the decision-making logics via the actors (decision-makers). It is found that the direction of the relationship between the dual leaderships, whether cooperative (positive) or conflicting (negative) – and the level of delegation from the political to managerial leadership are determining factors of the manifesting dual leadership scheme. It is also found that the political stability, political

arrangement and the level of political experience of political leaders of a local council influence the level of delegation to local councils' officers.

In a member-led local authority, officers are usually treated as subordinates to members, who are found to retain most of the decision-making authority, which increases the possibility of tensions to occur between the two leaderships due to power dynamics (over-domination). Most of politicians in member led local councils are found to have substantial political experience as they are frequently elected as councillors, and accordingly are found to be highly immersed in politics. Most of member led local authorities are found to have a leader-cabinet political structure, where the decision-making power is centralized with the cabinet leaders, validating the retention of decision-making as a result of the low level of delegation to officers. The decision-making process tend to be ideology-driven (interest-driven/ non-data), where data -if used – is found to be supportive to political will (data-evidenced).

In an officer-led local authority, on the other hand, the managerial leadership dominates decision-making as a result of the explicit or passive high level of delegation to officers. Accordingly, powers are transferred from members to directors, which can cause confliction either in the form of power struggle between members and officers, or high responsibility burden on officers. Local authorities adopting committee system or ones with constantly changing politics are found to be officer led. In these local councils, decisions are found to be mostly based on evidence (data-driven) due to the professional expertise of the management leaders.

Despite the two contradicting schemes above, the balanced leadership local authority is found to have cooperative, harmonious and almost tension-free dual leadership relationship. In ideal situations, this dual relationship is characterized by interdependence, effective communication, trust, and professionalism, resulting in a synergistic relationship, where officers are politicized, and politicians are managerialized. Political leaders are found to moderately delegate authorities to management leaders for strategic objectives achievement and empowerment purposes. Because of the effective dual relationship, politicians are found to make efficient use of managerial expertise in strategic decision-making, leading to high consideration of data as an element of political decision-making (data-informed). Operational decisions are found to be data-driven and advancing in the utilization of technology and analytics.

### 6.4.1 Dual Leadership Schemes & DSDM Adoption

Comparing these findings to the existing literature on dual leadership schemes, less than a handful number of studies are found to categorize the dual relationship between political and managerial leadership within the context of the UK local government (Alba & Navarro, 2006; Baddeley, 2008; Goldsmith & Tonge, 1998). These studies have developed distinct typologies for different dual leadership relationships considering similar dimensions to the developed dual leadership schemes in this research, such as isolation vs synergy, superiority vs distinction, and confliction vs cooperation. However, these studies do not explore of connect these typologies to the adoption of innovation, albeit the adoption of DSDM.

Furthermore, few studies are found to investigate innovation adoption in the context of the UK local government. These studies confirm the finding stating that hybrid political-managerial relationship, where the dual relationship is at its highest cooperation level, is positively significant for the adoption process (Grant & Dollery, 2008; Hambleton & Howard, 2013; Roy, 2013; Worthy, 2015). This aligns with the finding stating that the relationship between dual leaderships manifesting in balanced leadership local authorities provides the best incubation conditions for DSDM adoption, which confirms that the positive direction of the dual leadership relationship contributes to the adoption of DSDM. However, none of these references tackle the adoption of data in decision-making or analyse the different dual political-managerial relationships and its effect on innovation adoption.

### 6.4.2 Impacting Factors of Leadership Schemes, and DSDM Adoption

Moving to the discussion of the level of delegation as an influencing factor to the leadership schemes' manifestation, and accordingly DSDM adoption, Hambleton & Howard (2013) found that local authorities' delegations to local government managerial leadership is substantial to the success of innovation adoption, which is inline with the findings in this research. However, no literature is found to discuss the relationship between the level of this delegation and the level of innovation adoption success.

As for factors impacting the level of delegation to officers, literature is found to be dearth in this point. Although Christensen (1991) mentions political capacity as a factor increasing

delegations to civil servants, which can link to political experience of politicians, the context of the study is the Norwegian ministries and not the UK local government.

It is evident that there is a lack of research examining the various forms of dual leadership relationships within the local government of the United Kingdom, as well as the impact of these relationships along with factors impacting the dual relationships on the extent to which data-supported decision-making is adopted. A possible plausible explanation for this gap may be the scarcity of contexts in which the realms of politics and technology are jointly investigated. Consequently, the multidisciplinary nature and the intricate details and granularity of this research enhances its empirical novelty and consequently its significant contribution to the existing body of knowledge.

Consequently, contextualizing Rogers' Organizational Innovativeness model to DSDM adoption in UK local government, Figure 6.2 demonstrates the empirical contribution of this thesis through showing the original figure 2.3 extended to include both leadership types' attitude towards the adoption, and the additional constructs resulting from this investigation and illustrated in figure 6.1. Shaded constructs represent the extensions to the original model contextualized to the topic of the research.

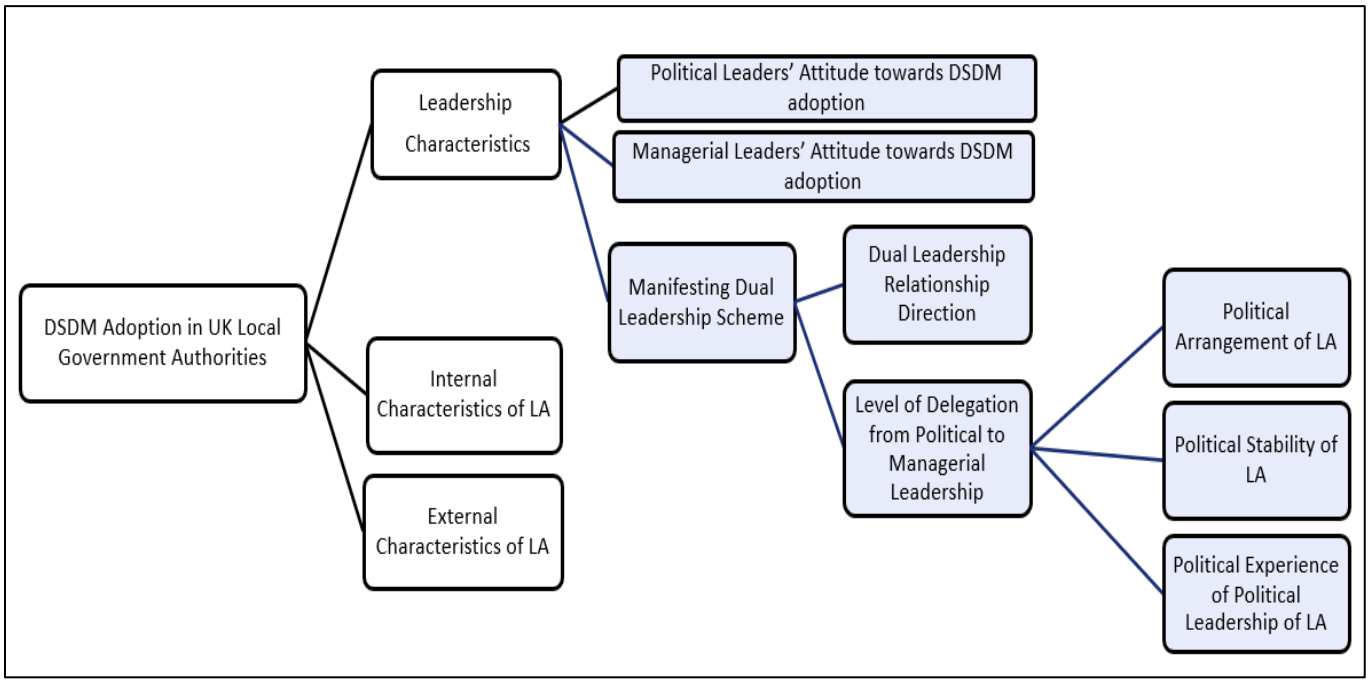


Figure 6.2: DSDM adoption in UK Local Government

### 6.4.3 Theoretical Discussion

Due to the limited empirical literature in the topic of leadership, UK local government and data-supported decision-making adoption, this sub-section discusses and theorizes the findings of this chapter from a theoretical lens, applying the diffusion of innovation and Institutional Logics Perspective theories.

According to the diffusion of innovation in organisations theory by (Rogers, 2003), leadership is the first dimension, or independent variable, of innovation adoption within organizations (p.411). In specific, it is the attitude of the individual leader towards the adoption of the innovation that determines leadership as a contributing factor towards the adoption of the innovation. Consequently, In the context of this research, it is possible to infer that the attitude of leadership towards the adoption of DSDM, both the political and managerial, are determinant factors of DSDM adoption.

However, it is important to note that the diffusion of innovation in organisations theory does not tackle the special case of organizations with dual leadership hierarchies, which is the primary reason for conducting this research. Due to the multiplicity of leadership in this context, the dual leadership roles, legitimacy, and accordingly distribution of power and decision-making dynamics are qualitatively investigated in relation to DSDM adoption. The institutional logics perspective theory is applied for findings explanation as it is extensively used in studies examining the effect of conflicting and cooperating institutional logics on adoptions of different innovations within various contexts' organisations (Asangansi, 2016; Baroody & Hansen, 2012; Hein et al., 2019; Oborn et al., 2021; Selwyn, 2021).

According to the theoretical literature of institutional logics and institutional complexity, the interaction between institutional logics is a crucial determinant of innovation adoption opportunities within organizations. Thornton & Ocasio (1999) argue that changes or shifts in institutional logics can give rise to tensions and conflicts within organizations. These tensions and conflicts can either impede or facilitate the adoption of innovation. Battilana & Dorado (2010), Doherty et al. (2014), Pache & Santos (2013), and Reay & Hinings (2005) discuss the challenges and conflicts that arise when organizations deal with multiple institutional logics, which can hinder the adoption of innovation, and at the same time highlight the role of collaboration, selective coupling, and reconciling institutional logics in facilitating innovation

adoption. Thus, confirming the direction of relationship among the interacting institutional logics as a determinant of innovation adoption.

Consequent to the empirical and theoretical literature used to support and explain the findings of this research, it is possible to conclude the following:

In the context of the UK local government, it is not only the leaderships' attitude towards the adoption of data-supported decision-making that determines the leadership dimension of the adoption of data-supported decision-making. Through the application of institutional logics perspective as an explanatory theoretical framework of the DSDM adoption phenomenon, the diffusion of innovation in organisation is extended to incorporate the dual leadership relationship dynamics - manifesting as one of the dual leadership schemes- as an additional determinant of DSDM adoption in the context of the UK local government.

The manifestation of the leadership scheme is determined by two factors, which are the dual leadership relationship direction -describing whether the dual relationship develops conflicts or creates areas of cooperation – and the level of authority delegation from the political leadership to the managerial one. Three sub-factors are found to influence the level of delegation factor: the level of political experience of the political leadership of the local authority, which has an opposite relationship of level of delegation, political stability of the local authority, which also has an opposite relationship with the level of delegation, and the political arrangement of the local authority, where the committee structure tend to relate positively , and the leader-cabinet structure negatively with the level of delegation. These factors and subfactors can be viewed as an expansion of the current theoretical literature by providing more detailed and specific insights. This addition of granularity contributes to a deeper understanding of the phenomenon. The following is a conceptual diagram demonstrating the leadership dimension of DSDM adoption. The original factors under the leadership dimension are concluded as part of the innovation adoption in organisations theory that is explained by the diffusion of innovation theory, whereas the additional factors extending the dimension are explained by the institutional logics perspective theory. These theoretical conclusions and extension of theory is demonstrated in figure 6.2.

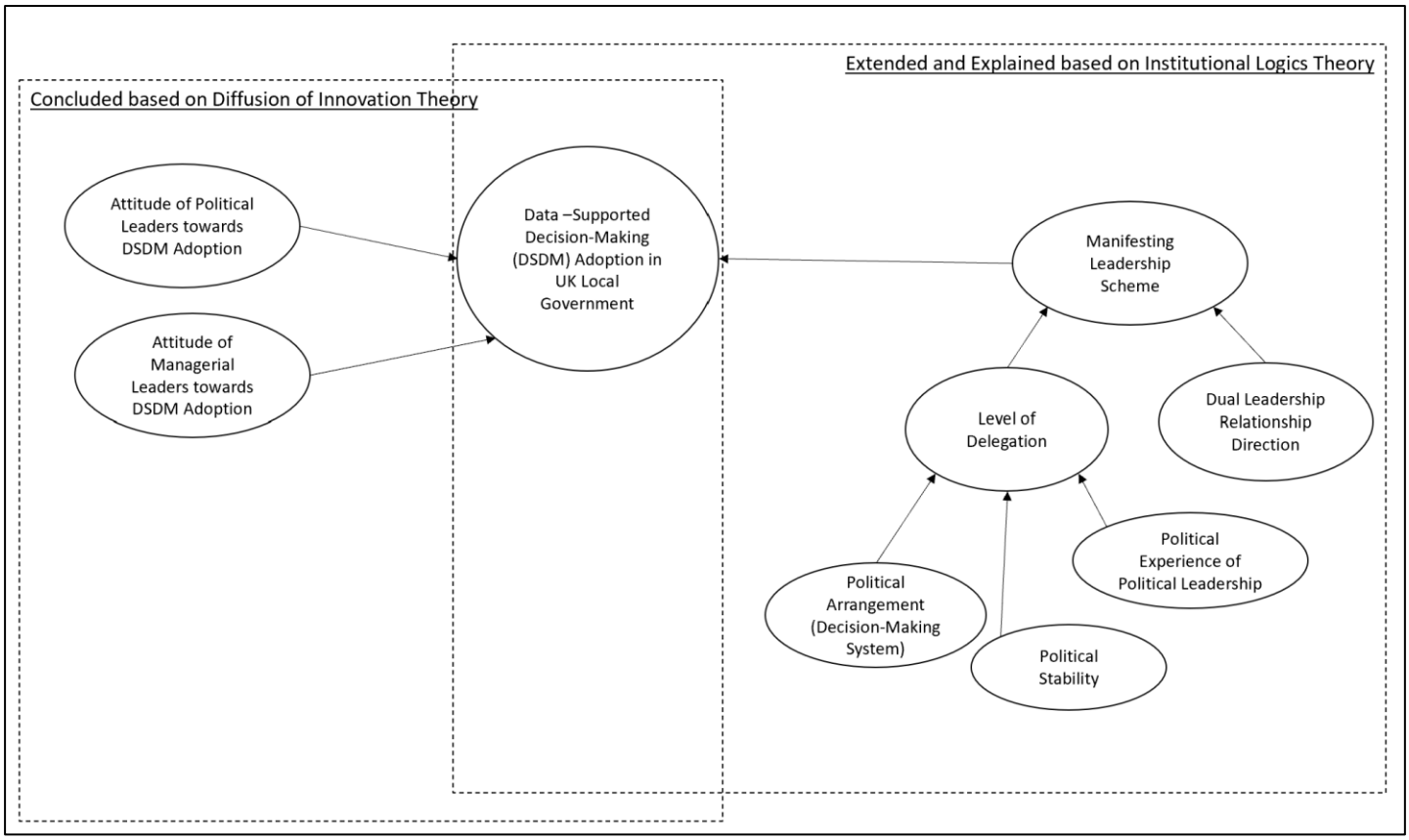


Figure 6.3: Leadership Dimension Factors of DSDM Adoption

Taking a step further towards contributing to knowledge through theoretical model extension on the abstract level, figure 6.4 illustrates the new extended Organizational Innovativeness model' leadership dimension by Rogers (2003), accommodating organizations with multiple structure in addition to the normally structured organizations to the explanatory power of the model.

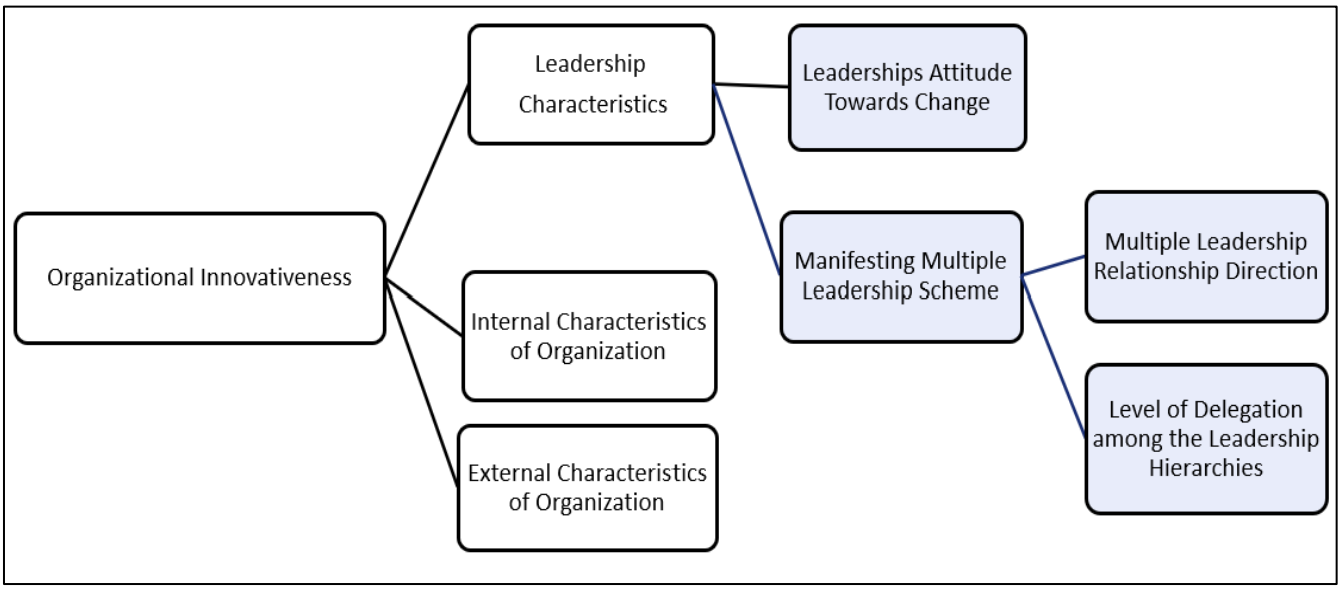


Figure 6.4: Organizational Innovativeness - Abstract Level Extension

Note that figure 6.4 excludes the impacting factors of the UK local government leadership schemes as these factors are context specific. Here, the figure is an effort towards extending Rogers model to explain the role of multiple leadership in the adoption of innovation within organizations regardless the context.

## 6.5 Conclusion

This chapter reported and discussed the manifestation of the decision-making institutional logics in the dual leadership schemes and their contribution to the adoption of data-supported decision-making within the context of the UK local government. The chapter started with reporting findings concerning the manifestation of the interacting decision-making logics in the form of dual leadership schemes. Each dual leadership scheme was thoroughly described and linked to the adoption of DSDM types.

The chapter continued with reporting findings about the factors and sub-factors impacting the manifestation of the dual leadership schemes. These findings were explained and linked to the phenomenon adoption. Next, findings were empirically discussed with literature that is confirmed to be limited, which motivated the discussion of the results theoretically in light of diffusion of innovation and institutional logics perspective theories. This theoretical discussion shed the light on the major contributions of the research, which explains

innovation adoption within the unique context of multiple leadership hierarchies, extending the leadership dimension as a determinant of the innovation adoption in organisations theory through the addition of the dual leadership relationship dynamics manifesting in dual leadership schemes, and the affecting factors and sub-factors found in the context of the UK local government, which adds to the granularity to the theoretical explanation of the concept.

This study continues by putting the conceptualized theoretical findings concluded in this chapter into practice through suggesting an enhanced version of the LGA Data Maturity Framework, which is presented in the next chapter.

# 7 Chapter Seven: LGA Data Maturity Model: Proposed Enhancement

## 7.1 Introduction

After incapsulating the findings of the research in chapter 6, this chapter closes the loop by revisiting the LGA data maturity model (LGA-DMM hereafter) by putting back the theoretical findings into practice. In other words, it proposes improvements to the shortages found in the LGA-DMM based on the findings, creating an empirical implication of the research that adds to its contribution, and resulting in a higher evaluation accuracy that contributes to higher adoption of data in decision-making.

The chapter starts with recalling information about the LGA-DMM, and introduces a new version of the model, triggering the necessity to validate the initiative of the model enhancement. Therefore, the chapter continues by comparing the two LGA-DMM versions to each other, highlighting the major differences and similarities in between, and reassess them in terms of their inclusion of leadership as a determinant of data adoption and their ability to incorporate details about the adoption of the different types of data-supported decision-making within the UK local government authorities. The analysis parameters are developed based on the findings of the research.

As the initiative to improve the LGA-DMM is validated, the chapter continues by suggesting an enhancement to the model that contributes to the evaluation and adoption of local authorities' utilization of data. The new enhanced version of the model is proposed to include leadership as an evaluation dimension, which is a skeletal element as per the maturity models' structural components in chapter 2 (Table 2.4). The leadership dimension is suggested to include the attitude of political and managerial leadership, and the dual leadership relationship as sub-dimensions. In addition, an alteration to the maturity levels of the model, and the addition of the overall DSDM adoption maturity evaluation results in the form of segmentation that reflects the effect of the leadership constructs on DSDM adoption are proposed to be included in the enhanced version of the model. Each of the additional

enhancement elements is explained in details in a separate sub-section, followed by the chapter conclusion.

## 7.2 LGA Data Maturity Model

This section reviews and re-analyses the Data Maturity Model created by the Local Government Association of England and Wales (LGA). It starts by recalling information about the model in a general overview. It continues by comparing between the two launched versions of the model and ends with re-analysis of both of the model versions based on the research findings.

### 7.2.1 Model Overview

As presented in chapter 2, the LGA Data Maturity Model (LGA-DMM) has been developed and launched in 2018 to support local government authorities evaluate their data capability and encourage internal developmental discussions about its applications. The model is operationalized via a self-assessment tool that is deployed on top of the model. The model allocates assessed local authorities at different maturity levels based on the level of their assessed data capabilities, and accordingly best practices and operational action plan are recommended.

Reference to the maturity models' elements analysis conducted in chapter 2, it is found that LGA-DMM disregards leadership as an evaluation dimension although it is theoretically and empirically a fundamental determinant of data adoption and an evaluation dimension mostly present in data analytics and business intelligence maturity models (Comuzzi & Patel, 2016b; Rogers, 2003). Moreover, the current LGA Data Maturity Model does not emphasize the application of data in making decisions. While this research was progressing, an updated version of the LGA-DMM model was launched. Therefore, a comparison of the two model versions is required in order to identify and assess if the leadership representation shortage has been considered in the new version or not, as well as the inclusion of variables evaluating the current adoption and application of DSDM within evaluated local councils.

### 7.2.2 Model Versions Comparison: 2018 vs. 2023

There are two versions of the LGA data maturity model. The first version was launched in 2018, and the second in 2023. The second version of the model is reported to be updated based on the users' feedback on the first version (Local Government Data Maturity Model, 2023). Because the updated version of the model was launched before the submission of this thesis, validating the initiative of improving the model based on the results of the research is required. Therefore, the two versions of the model are compared with concentration on differences related to the leadership construct.

Similarities and differences were found between the two versions of the model as a result of the comparison. Starting with contrasts, four major differences were found between the two versions of the model. The first difference is the consideration of leadership as an evaluation dimension. The first version of the model does not include leadership as a segregated evaluation dimension, whereas the second version of the model does (Theme 2: Leadership & Strategy) despite the insufficient representation. The second difference is the development of a separate stand-alone self-assessment tool. The first version of the model has a separate assessment tool from the maturity model, whereas the second version of the model develops only one item that serves as both the maturity model and the assessment.

The inclusion of political leadership – or councilors- in the assessment is the third major difference between the two versions of the LGA data maturity model. Despite the similarity between the models in the limited representation and evaluation of the role of councilors in the adoption of data-supported decision-making in local authorities, the updated version better include councilors as it has three statements, where one evaluates their attitude towards data adoption in decision-making, the second evaluates their inclusion in the local councils' data training programs, and the third evaluates their inclusion in the provision of data insight tools. Whereas the first model includes them only in one statement assessing their attitude towards data adoption. The fourth variation between the two models is the development of an overall description of local authorities' adoption of data in every maturity level as a result of the assessment. This description exists in the updated version – regardless its briefness- and does not in the first model.

There are other differences between the two versions of the model in addition to the stated variations above, such as the number of evaluation statements, the re-organization of evaluation dimensions and sub-dimensions. For instance, Data Management and Data Use dimensions in the first version are reorganized as sub-dimensions under the Data Lifecycle dimension in the updated model version. Moreover, new dimensions are added in the second version, such as Leadership and Strategy, and the Systems and Tools.

Several similarities were also found between the two maturity model's versions. For instance, the number of maturity levels remained the same, the assessment tools' structure is unchanged; evaluating statements using 7-points Likert scale, and a number of evaluation statements that remained the same. However, because the 2023 model version is found to include leadership, it is important to validate the need for improving the model based on the findings of this research. To achieve this, a re-assessment of the models in terms of the types of data-supported decision-making adoption and its relation to the dual leadership-related factors is applied in the next sub-section.

### 7.2.3 Dual Leadership as a Data-Supported Decision-Making Adoption Determinant: Findings-Based Analysis

Informed by the research findings, identifying the role of dual leadership in adopting data-supported decision-making in a local government authority entails identifying the attitude of the political and managerial leaderships towards data adoption in decision-making, the relationship between the dual leadership types, and the proportionality of each leaderships' decision-making with respect to the type of decision, which can be reflected through identifying the level of decision-making delegation to the managerial leadership. In addition, it is important to assess a local authority's current adoption level of data in decision-making through detailed evaluation statements capturing the difference among the decision-making types. Consequent to the above information, the results of the Data Maturity Models re-assessment are summarized in the table 7.1.

Based on the reassessment, it is found that both versions of the model do not include or evaluate any aspect related to the relationship between the dual leaderships, neither the direction of the relationship, nor the level of delegation or the proportionality of decision-

making within the local authority. Moreover, both versions hardly evaluate the attitude of the political and managerial leadership towards data adoption. To elaborate, both models only include one statement evaluating councillors' attitude towards data adoption, and another evaluating officers.

Table 7.1: LGA-DMM versions reassessment of leadership inclusion

| Dimension/Sub-Dimension | | 2018 | 2023 |
|---|---|---|---|
| **Attitude Towards Data Decision-Making Adoption** | Political Leadership | One evaluation statement only | One evaluation statement only. |
| | Managerial Leadership | Part of one statement | One statement |
| **Dual Leadership Relationship (Cooperation/Tension)** | | N/A | N/A |
| **Decision-Making Proportionality / Level of Delegation** | | N/A | N/A |
| **DSDM Adoption** | Political Leadership | No explicit evaluating statement, only an indication of data use in strategic documentation | One statement |
| | Managerial Leadership | No explicit evaluating statement, only an indication of data use in operational decisions | One statement |
| | Overall data adoption regardless type of decision or decision-maker | One statement evaluating decisions against DEDM, and another against DIDM | One statement referring to use of evidence |
| **Political Leadership Inclusion** | | One statement – attitude | 3 statements: decision making & attitude, training, data tools enabling to councillors |

As for capturing local councils' current adoption of data-supported decision-making, both models hardly demonstrate the inclusion of the different types of decision-making adoption by any of the dual leaderships. In fact, the updated version can be considered better in assessing the current data adoption of each of the political and managerial leadership as it includes one statement assessing each leadership's current use of data in decision-making. Whereas the first model does not include any statement or dimension explicitly evaluating each leadership type in terms of current data adoption. However, the first model can be considered better than the updated one in assessing the types of data-supported decision-making, as it has two statements specifying the adoption of data-evidenced decision-making (DEDM), and data-informed decision-making (DIDM) with no specification of decision-makers. Whereas the second version does not demonstrate any differentiation in the types of data-supported decision-making adoption.

In summary, the two versions of the LGA-DMM neither properly cater for the various types of data adoption in decision-making or segregate the adoption by the type of leadership, nor adequately demonstrates the leaderships' attitude towards data adoption, the direction of the political -managerial leadership relationship or the overall decision-making proportionality between the dual leaderships. This validates the initiative to improve the model's capability to evaluate local authorities' adoption DSDM, which is discussed next.

## 7.3 An Enhanced LGA Data Maturity Model

According to the analysis above, an addition to the LGA-DMM is suggested to cater for the shortage in the dual leadership role in the adoption of data-supported decision-making. Relying of the collected data from the several investigated local councils, table 7.2 demonstrates the suggested additional elements to the model for improvement.

Table 7.2 is developed based on the findings pertaining to the role of the dual leadership in the adoption of data-supported decision-making in the UK local government authorities. According to the table of maturity models structural components in chapter 2 (table 2.4), the suggested enhancement incorporates the following:

- Skeletal elements: an addition of a three-level evaluation dimension with its element-to-level description, and an update to the maturity levels.
- Evaluation elements: an addition to an overall maturity evaluation result describing the levels of data-supported decision-making adoption in the form of local authorities' segmentation.

The explanation of the suggested enhancement is provided in the following subsections.

### 7.3.1 Leadership: The Evaluation Dimension & Sub-Dimensions

The first element of the suggested enhancement for the model to better evaluate local councils' adoption of data is the addition of leadership as an evaluation dimension. It is a three-level dimension that evaluates the role of local authorities' dual leadership in the adoption of data in decision-making. It has two sub-dimensions, which are the attitude of leadership towards the adoption of data in decision-making and the political-managerial leaderships' relationship.

#### 7.3.1.1 Leadership attitude towards data-adoption in decision-making

The first sub-dimension of leadership is the attitude of leaders towards the adoption of data in decision-making. As the name implies, leadership attitude is a variable that identifies whether the leaders of the local council are supportive, passive, or unsupportive to the adoption of data in decision-making. It is divided further into two sub-dimensions, political and managerial leadership, to identify each's attitude towards the adoption of data in decision-making.

#### 7.3.1.2 Political-Managerial Leadership Relationship

The second sub-dimension of leadership is the dual leaderships' relationship. It identifies the type of relationship between the political and managerial leadership of the local authority. A relationship between the dual leadership types can be positive, signifying cooperation and hybridity, negative, reflecting tension and confliction, or passive, indicating distant political-managerial relationship. This value of this relationship is given to the first sub-dimension under this construct, which is the direction of the dual leadership relationship.

In addition to the direction of dual leadership relationship, the second sub-dimension under dual leadership relationship is the level of delegation. Level of delegation is a variable that identifies the level of decision-making authority delegated from the political leadership to the managerial one. The level of delegation is a variable that is used as a proxy to provide an indication about the proportionality of decision-making, or the division of effective leadership between the dual leadership within the local council. Its value is ordinal, ranging from low to high.

### 7.3.1 The Maturity Levels

Based on the collected and analyzed local authority cases, four maturity levels are suggested. This does not entail reducing the current maturity levels from five to four but suggests the basic maturity levels found in the data. Levels can be increased to five or seven if spreading the in-level variation is desirable. In this case, sticking to the four maturity levels found in the data is preferred.

Table : Proposed Enhancement

| Dimension | 1st Level Sub-Dimensions | 2nd Level Sub-Dimensions | Level 1 | Level 2 | Level 3 | Level 4 |
|---|---|---|---|---|---|---|
| Leadership | Attitude towards data-adoption in Decision-Making | Political Leadership | Unsupportive | Unsupportive / Passive | Passive/Conditionally supportive | Supportive |
| | | Managerial Leadership | Passive / Unsupportive | Supportive | Supportive | Supportive |
| | Political-Managerial Leadership Relationship | Direction of Relationship (tension, isolation, cooperation) | Distant with high pressure on managerial leadership, or conflicting with high level of subordination | Isolated, or conflicting | Tension, but semi-cooperative | Cooperative |
| | | Level of delegation (as a proxy to decision-making proportionality) | Either low or high | Low | Low or high | Medium (Balanced) |
| **Data-Supported Decision-Making Adoption** | | Local authority by level of data adoption | Non-Data Adopting (ND-ID /ND-ID) | Managerially Adopting (ID/DD) | Partially Adopting (DE/DD) | Fully Adopting (DI/DD) |
| | | *Political Leadership (policy & strategic decisions)* | Decisions are based on interest/ideology. No interest is shown in data adoption unless required by legislation. | Decisions are based on interest/ideology. No interest is shown in data adoption unless required by legislation. | Data is adopted in decisions only when it is supportive. In other words, decisions are made primarily based on interest and data is requested to support the specific point of view, indicating a conditional or partial data adoption. | Full adoption of data in policy and strategic decision-making. Data insights are always requested before any decision is made. Decisions are data-driven whenever possible, but mostly data-informed. Thorough discussions and communication with other councilors and senior directors and heads of services as political stance and professional expertise matter in making the best possible decisions. |
| | | *Managerial Leadership (strategic & operational decisions)* | Decisions are mostly based on personal expertise due to the high pressure and poor data capability. Data can be used occasionally but in siloed manner. | Data-driven decision-making is adopted most of the time. However, data capabilities are not advanced due to lack of political support. | Partial to full adoption of data-driven decision-making. In the case of officer led (high delegation) local councils, data capabilities can be fully developed. In member-led local councils (low delegation), development of data capabilities is often affected due to the partial political support. | Full adoption of data-driven decision-making, with optimization and full automation in best case scenarios (e.g., waste management) |
| | | *Local Authority Example* | 12,5 | 4,1,10 | 2,11,6,9 | 7,8,3,13 |

### 7.3.2 Leadership: The Element-to-Maturity Level Description

Each of the sub-dimensions are described with respect to the corresponding maturity level based on the analyzed thirteen local authorities. The following explain the descriptions of the sub-dimensions presented in the suggested enhanced maturity model part:

1. Maturity Level 1: political leaders of local authorities in this level are found to be unsupportive to the adoption of data in decision-making. Managerial leaders are mostly found passive or unsupportive of the adoption of data in decision-making. Managerial leadership is either highly pressurized with most of the decision-making tasks and running of the local authority's matters due to high level of delegation, or the extreme opposite, where delegation level is low as political leadership intervenes in managerial decision-making. The relationship between the dual leadership is distant with most of the load delegated to the managerial leadership or conflicting with high subordination level between the two types of leadership.

2. Maturity Level 2: in this level, political leaders remain unsupportive to the adoption of data. However, officers practice their professionalism by being supportive to the adoption of data as they manage tasks normally within their capacity. Political leadership in this level seems to be possessive of their authority with sometimes over-involving in managerial responsibilities, causing tension and conflict in their relationship with official leaders. The best-case scenario in this level is a passive political leadership to data adoption, leaving managerial leadership to freely adopt data-supported decision-making in isolation from councilors.

3. Maturity Level 3: here, political leaders start showing support to data adoption, or at least stay passive to the idea. As for managerial leaders, they are fully supportive to data adoption as it is highly practiced in their daily job. Sometimes officers are advocates to data adoption and encourage councilors to adopt data in their decision-making. Tension is still present in the relationship between the dual leaderships, specially in low level of delegating local authorities, but decreases with increased political support.

4. Maturity Level 4: political leaders join managerial leaders in supporting the adoption of data. Relationship between the dual leadership becomes effective and hybrid with better discussions and interactions. Political leaders become aware of workloads on officers with the enhanced communication, which leads to balanced level of delegation.

### 7.3.3 Evaluation Result: Local Authority's Maturity in DSDM Adoption

Based on the values of the leadership evaluation dimension and its sub-dimensions, a local authority's maturity of its adoption of data-supported decision-making is assessed and assigned. According to the maturity models structural elements table in chapter 2 (table 2.4), the suggested result of the evaluation is in the form of segmentation, where the assessed local authorities are categorized into four groups: the non-adopting, the managerially adopting, the partially adopting and the fully adopting local government authorities. From the analysis of the collected 13 local councils' data, it is noticed that there is a prioritized importance of the leadership dimensions due to their effect on the resulting evaluation. To elaborate, the dual leadership attitude evaluation variable has a higher importance and a priority in the evaluation of local councils' adoption of DSDM, which is incorporated in the description of each of the resulting evaluation segments as follows.

#### 7.3.3.1 The Non-Adopting Local Authorities

The first segment of local authorities are the non-adopting local authorities. As their name implies, these are local authorities that are hardly adopting data in decision-making. The political leadership of these local authorities make non-data decisions (ND), or interest-driven decisions (ID), which are based on personal interests, intuition, or political ideology. As for the managerial leadership, decision-making seems to be based on personal expertise rather than data. This could be due to the low level of delegation presented in the high subordinating relationship between the dual leadership as political leadership make all decisions and intervene in managerial decision-making. It also could be due to the high pressure resulting from the high level of delegation, which could prevent them from adopting data-driven decisions because of time constraint. In best scenarios, managerial leaders are found to adopt data in decision-making, however in a siloed and inconsistent manner. Examples of local

authorities falling in this category from the data are the local Authorities 12 and 5. The non-adopting local authorities represent the first and lowest level of data-support decision-making adoption, which is the lowest level of adoption maturity.

Because of the negative attitude of dual leadership towards the adoption of DSDM, it is noticed that the dual leadership relationship variables do not influence the resulting evaluation. In other words, local councils will continue to be non-adopting regardless of the type of relationship between the political and managerial leadership, emphasizing the priority of the attitude over the relationship as it has the higher influence.

#### 7.3.3.2 The Managerially Adopting Local Authorities

The second segment of local authorities are the managerially adopting local authorities. The managerial leadership in these local authorities consistently adopt data-driven decision making for operational and strategic matters falling within the boundaries of their responsibility. However, the political leadership of these local authorities continue to make non-data or interest-driven decisions as they remain unsupportive or passive to the adoption of data. This unsupportive attitude leads to poor or limited data capabilities, which sometimes prevents managerial leaders from making data-driven decisions, specially in matters that requires advanced data capabilities. Examples of local authorities in this segment group are the local councils 4, 1, and 10. The managerially adopting segment resembles the second maturity level with respect to the adopting of data-supported decision-making.

Here, because the attitude of leadership towards the adoption of DSDM is not identical, dual leadership relationships' variables have an effect on the final evaluation of the councils' adoption.

#### 7.3.3.3 The Partially Adopting Local Authorities

The third segment of local authorities with respect to data-supported decision-making adoption are the partially adopting local authorities. In such local councils, the managerial leadership starts winning the support of the political leadership as a result of political leaders' adoption of data-evidenced decision-making. As the managerial leaders continue to adopt data-driven decisions in making operational decisions, the political leadership starts adopting

data only when it supports their interest-driven decisions. In officer-led local councils where the level of delegation is high, managerial leaders tend to have the higher proportion of decision-making, and accordingly adopt data-driven decisions in making most decisions. On the other hand, member-led local councils, where the level of delegation is low and the intrusion of councilors in operational decisions occurs, the higher proportion of decision-making resides with councilors, who adopt data-evidenced decision-making and accordingly begin supporting data adoption. Examples of local authorities in this segment group are local authorities 2,11,6 and 9. The partially adopting local authorities form the third data-supported decision-making adoption maturity level.

Again, because of the unidentical dual leadership attitude towards the adoption of DSDM, variables related to the dual leadership relationship have an effect on the final adoption result.

#### 7.3.3.4 The Fully Adopting Local Authorities

The highest maturity segment in terms of data-supported decision-making adoption is the fully adopting local authorities group. As the name suggests, both the political and managerial leadership adopt data-supported decision-making. The political leadership support of data adoption results in the development of better data capabilities, such as data analytics and the recruitment of data scientists, leading to better data insights and higher adoption of data. Political leaders do not only make data-driven policies and strategies, but data-informed decisions in situations where elements other than data have to be considered. Examples of fully adopting local authorities are local authority 7, 8, 3 and 13. The highest adopting local councils at the positive end of the spectrum are found to optimize data utilization through full automation or operational decisions, such as waste collection routes. It is important to notice that due to the identical supportive attitude of the dual leadership towards the adoption of DSDM, variables related to the relationship in between do not have much effect on the local councils' overall adoption of DSDM.

## 7.4 Conclusion

This chapter critically reassessed and proposed enhancements for the Local Government Association Data Maturity Model (LGA-DMM), addressing gaps in its evaluation of leadership dimensions within local government authorities. Although the comparison between the 2018 and 2023 versions revealed improvement in the updated version in the inclusion of leadership as an evaluation factor of data adoption in local councils, deficiencies still exist in terms of evaluating leadership attitudes, relationships, and decision-making proportionality. Consequently, the chapter introduced an enhancement to the model, adding leadership as an evaluation dimension with its sub-dimensions attitude of the dual leaderships and the dual leadership relationship, in addition to developing a maturity evaluation result segmenting local councils into four profiles in terms of DSDM types' adoption.

In conclusion, this chapter converted theoretical results into a practical implication, adding to the contribution of the research to the body of knowledge. The next chapter concludes this thesis and provides the final remarks concerning limitations and future research.

# 8 Chapter Eight: Conclusion

## 8.1 Introduction

This chapter concludes the thesis by summarizing key components presented in the thesis. It starts with summarizing the topic importance followed by the study aim. It continues by summarizing the research gap, main results and contributions, the organization of the thesis, practical implications, and limitations of the research.

## 8.2 Summary of Research

The local government in the United Kingdom has been encountering escalating challenges, including the austerity period, increasing population density, limited resources, and financial aid constraints, all of which have had a significant impact on the extent and quality of public service provision (Etherington et al., 2023; Gray & Barford, 2018). To address these challenges, various initiatives have been introduced to assist the UK local government in identifying practical, effective, and efficient solutions. One such initiative is promoting the adoption of data in decision-making processes (Chotvijit et al., 2018; Elliman et al., 2007; Mervyn et al., 2014).

Therefore, motivated by the LGA Data Maturity Model initiative (an initiative promoting the adoption of data in decision-making), this thesis is an effort towards supporting the UK local government seize the opportunity and reap the benefits associated with data-supported decision-making adoption, as it investigates the role of dual leadership in the phenomenon adoption in the UK local government.

There is a scarcity of literature examining the role of political and managerial leadership within local government authorities on the adoption of data in decision-making processes, particularly focusing on the dynamic interplay between these leadership roles and their influence on the adoption of data. This research gap has highlighted a theoretical deficiency,

specifically concerning the concept of leadership multiplicity within organizations and its effect on the adoption of data-supported decision-making. Consequently, this study seeks to explore and explain the causal mechanisms related to the dual leadership that drive the adoption of data-supported decision-making within the local government in the United Kingdom.

The results of this study show that the dual leadership of the UK local government authorities have a significant influence on the adoption of data in decision-making. In addition to the political and managerial leadership attitude towards the adoption of data-supported decision-making identified by Rogers (2003), the political-managerial leadership relationship dynamics, manifesting in three types of dual leadership schemes -member led, officer led, and balanced leadership- is found to be a determinant of the phenomenon adoption within the UK local government.

Nevertheless, several factors are found to determine the manifestation of the decision-making logics into the dual leadership schemes and consequently influence the adoption of data-supported decision-making in the UK local government. These factors are the dual leadership relationship direction, whether positive, negative or distant, level of decision-making delegation from the political to the managerial leadership, local authorities' political arrangement and political stability, and the level of political experience of local authorities' councillors. Grounding the investigation in the institutional logics perspective theory (Thornton et al., 2012), it is found that the higher the instantiation of the profession institutional order in a decision-making logic, the higher the adoption data-supported decision-making within local authorities.

## 8.3 Research Contributions

There are two major categories of contributions of this research, which are empirical contributions, on the topical and contextual level, and theoretical contributions, on the theoretical abstract level. Each is summarized in the following subsections.

### 8.3.1 Empirical Contributions

This research offers several empirical contributions. Topically, this thesis expands the literature on data adoption in decision-making by identifying and clarifying distinct decision-making typologies related to data utilization. These typologies encompass non-data adopting decisions, data-evidenced decisions, data-informed decisions, and data-driven decisions. Furthermore, the research operationalizes this typology by identifying two key criteria: the stage of the decision-making process at which data is employed and the extent to which the decision relies on data. These definitions constitute a novel contribution to the field's knowledge base. They establish a framework for classifying organizational decision-making based on data adoption and can serve as a foundation for future research endeavours. The framework's potential lies in defining new categories of data-supported decisions and potentially incorporating additional criteria for further nuance.

Contextually, this thesis expands the literature on data-supported decision-making adoption in the context of the UK local government, a context which is found to be under-researched. The complexity of the context adds to the contribution of the research to the field through the clarification of nuances existing in decision-making processes, variations of decision-making power distribution among local councils, and accordingly the identification of local councils' properties that contributes or hinders the adoption of data, such as political arrangement, political stability and political experience a local council ha, which are all context-specific factors that do not apply to different context, although these factors' impact on data adoption can be investigated and validated in similar context, such are European, American, Australian, and Canadian local government, as well as the context of central government of these area including the UK.

In addition to these contributions, this research offers a valuable addition to the literature on innovation adoption and diffusion within the UK local government context. By demystifying the specific role of leadership in data adoption within this context, the study reveals potentially generalizable insights applicable to other innovation adoption processes. Furthermore, it contributes to the field by identifying additional leadership-related causal mechanisms that influence innovation adoption in this specific setting, such are the dual leadership manifesting schemes, dual leadership relationship direction, and the level of delegation between the political and managerial leadership hierarchies.

### 8.3.2 Theoretical Contributions

This study offers significant theoretical contributions. Firstly, it validates the leadership dimension construct within Rogers' Organizational Innovativeness model. This construct posits leaders' attitudes towards change as a determinant of organizational innovation adoption. Furthermore, the study expands upon the limited existing literature that utilizes this specific model of Rogers' diffusion of innovation in organizations theory, particularly in the case of UK local government.

However, the most substantial theoretical contribution lies in the extension of Rogers' model at an abstract level. This research broadens the explanatory power of Rogers' diffusion theory for organizations in any context. This is achieved by expanding the leadership dimension of the Organizational Innovativeness model. Specifically, the study introduces the constructs of multiple leadership manifesting schemes, multiple leadership relationships directions, and the level of delegation among multiple leadership hierarchies. Integrating these constructs into the theoretical framework allows the model to better encompass organizations with complex or multiple leadership structures. Consequently, the model's applicability is enhanced across research investigating the adoption of various innovations in diverse contexts.

Beyond the contributions to the diffusion of innovation theory, the study also advances the institutional logics perspective. By employing the ideal types of institutional logics and creating context-specific ideal types related to dual leadership hierarchies and their impact on decision-making processes, this research offers a simultaneous contextualized theoretical contribution. The newly developed ideal type decision-making logics for UK local government can be applied in future studies exploring the role of dual leadership on any organizational phenomenon. Additionally, the study's adaptation of the institutional logics perspective provides a novel application of the theory. It demonstrates the theory's flexibility by explaining both meso-level (organizational field) and micro-level (individual local council) phenomena within the context of UK local government. This highlights the similarities and differences among the local authorities, respectively. As a result, the study significantly enriches the existing literature on the institutional logics perspective.

## 8.4 Practical Implications

The findings of this study hold practical implications for various stakeholders, such as the Local Government Association (LGA) in England and Wales, UK local authorities' associates, and central and local government policymakers. Starting with the LGA, beyond directly applying the research outcomes to enhance the data maturity model as discussed in chapter 7, another potential practical implication can be in offering training programs to local authorities' members and officers. The study results provide a robust foundation for designing training initiatives that target dual leadership to facilitate the adoption of technological innovations, moving away from speculative audience targeting. Furthermore, given the LGA's role in supporting local authorities through consulting services, analysis and solution provision can be customized to address leadership-related factors identified in this research, thereby exploring challenges related to technology and innovation adoption by understanding the dual leadership dynamics across diverse local authorities.

The second group of stakeholders this research can have practical implications to are local authorities' associates; councillors and officers. Comprehending the distribution of the decision-making power, the political stability and arrangements, and the political experience of political leadership can support political and managerial leaders identify and approach problems related to the unbalanced dual leadership relationship, as well as impediments to internal technological and developmental projects aiming at adopting new innovations and practices.

The third group of stakeholders that could benefit from the practical implications of this research is UK central government policymakers. In the dissemination of policies and strategies such as the government transformation strategy (*Government Transformation Strategy*, n.d.) and the UK national digital strategy (*UK Digital Strategy - GOV.UK*, n.d.), the comprehensive understanding of the roles played by local government's political and managerial leadership is imperative for policy design, as these policies are geared towards the adoption of novel concepts and practices. By grasping the diverse dual leadership profiles across local authorities, policymakers can tailor policies to address distinct leadership roles, thereby facilitating broader and accelerated policy adoption.

## 8.5 Limitations & Future Research

Despite the advantageous practical implications outlined, it is imperative to recognize the limitations that constrained this research. One of the primary limitations of this study pertains to the lack of diversity in the study sample cases, resulting in an unbalanced representation of local authorities across the United Kingdom. The study is limited to only English and two Scottish local authorities, with no inclusion of local councils from Wales and Northern Ireland.

Another limitation encountered during the execution of this study is the restricted access to key political and managerial figures, particularly those occupying upper positions of the dual hierarchies, such as Chief Executives and Leaders of Councils. The absence of chief executives and council leaders hindered an important part of understanding the dual leadership dynamics and their cascading effects throughout the organizational hierarchy. This limitation presents an avenue for future research that could significantly contribute to leadership studies within the context of innovation adoption in local government.

In terms of future research, the inductive mode of inquiry conducted in this research pose an opportunity for potential investigation to validate the empirical findings within similar local government settings, such as local government of the European and Scandinavians countries. This opportunity is anticipated to enhance the reproducibility of the study outcomes. Additionally, the prospect of conducting quantitative research to further advance the theoretical underpinnings of the diffusion of innovation theory in organizations by measuring the impact of the identified expanding constructs on innovation adoption within the same setting offers a promising direction for future inquiry.

Moreover, the theoretical extension of the diffusion of innovation in organizations theory poses another avenue for future research. The conceptualization and addition of multiple leadership schemes as a construct within the leadership dimension in the diffusion of innovation in organizations theory requires further validation research in multiple leadership contexts beyond local governments, such as ministries and educational institutions, which poses an additional potential path for future research.

## 8.6 Conclusion

This chapter presented a summary of the thesis main components. It commenced by addressing the research importance and aims, followed by summarizing the research gap, results, contributions, organization of the thesis chapters, research practical implications, and ended with the study limitations and future research.

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# Appendix A

## The Role of Dual Leadership in Data-Driven Decision-Making Adoption in the UK Local Government: Case Study Protocol

### Introduction:

This is a case study protocol that aims to provide detailed information about collecting evidence for the Ph.D. research thesis "The Role of Dual Leadership in Data-Driven Decision-Making Adoption in the UK Local Government". It starts with a background overview of the case study research topic, followed by a the data collection procedures, protocol questions and finally a tentative outline for the case study report (Yin, 2018)

### Section A: Case Study Overview

Data-driven decision-making is the process of making data-informed decisions using data analytics and intelligence technologies (Åkerman et al., 2018; Ryan et al., 2014). It integrates data insights acquired from descriptive, predictive or prescriptive data analytics applications in the decision-making process so decisions become data-evident (Dedić & Stanier, 2017; Sun et al., 2016). Data-driven decision-making has been proven by research to positively influence organizations' performance, products and services quality, as well as costs reduction (Bititci et al., 2014; Gao et al., 2010; Harter & Slaughter, 2003; Sanger, 2008). Consequently, institutions from different sectors have progressed towards adopting data-driven decision-making to cease opportunities it provides and above all to gain competitive advantage (Chen et al., 2012).

Stemming from confronted deficiencies in economic conditions and service delivery performance, the government of the United Kingdom has realized the importance of becoming data-driven and accordingly has setup a data strategy on the national level (Dowden, 2020). Moreover, the Local Government Association in England and Wales has been encouraging local authorities to adopt data for decision-making through different programs and projects, of which was the project of the Wise Council (Symons, 2016). Executed by NESTA, the Wise Council was the first project to promote the use of data in decision-making within local authorities through exemplary showcasing and data self-evaluation tool creation. For the showcasing, the project presented seven case studies of local authorities that succeeded in adopting data-driven decision-making and accordingly excelled in public service delivery. Consequent to the showcasing was the Data Maturity Framework, which was a self-assessment tool that local authorities' employees were encouraged to use in order to assess their authorities' level in terms of data capability and usage in decision-making.

Launched in 2018, the data maturity self-assessment tool had been used by employees of 52 local authorities dispersed all around the kingdom, but mostly from England, in a one-year time. With the support of the Local Government Association, the data of the self-assessment tool was

acquired, cleansed, and analyzed in terms of data-driven decision-making adoption. The results show that exactly half of the councils claim to be adopting data-driven decision-making and the other half does not. Splitting the adopting and non-adopting councils on leadership support (political leadership as it is the only type of leadership included in the data), it is found that almost all of the adopting councils have their political leaders support. However, although almost half of the non-adopting councils have their political leadership support, they are still not adopting data-driven decision-making. This result leads to propose that in the context of local government, having the political leadership support is necessary for councils to adopt data-driven decision-making, but it is not sufficient for the adoption due to reasons related to the managerial leadership support within the same councils. Figure 1 illustrates councils' segmentation by data-driven decision-making adoption and political leadership support, where Category 1 is represented as the upper-right box pertaining to councils adopting DDDM and having their political leadership support, Category 2 as the upper-left box pertaining to councils not adopting DDDM but having their political leadership support, Category 3 as the lower-right box pertaining to councils adopting DDDM but not receiving support from their political leadership, and Category 4 as the lower-left box pertaining to councils neither adopting DDDM ,nor receiving the support of their political leadership.

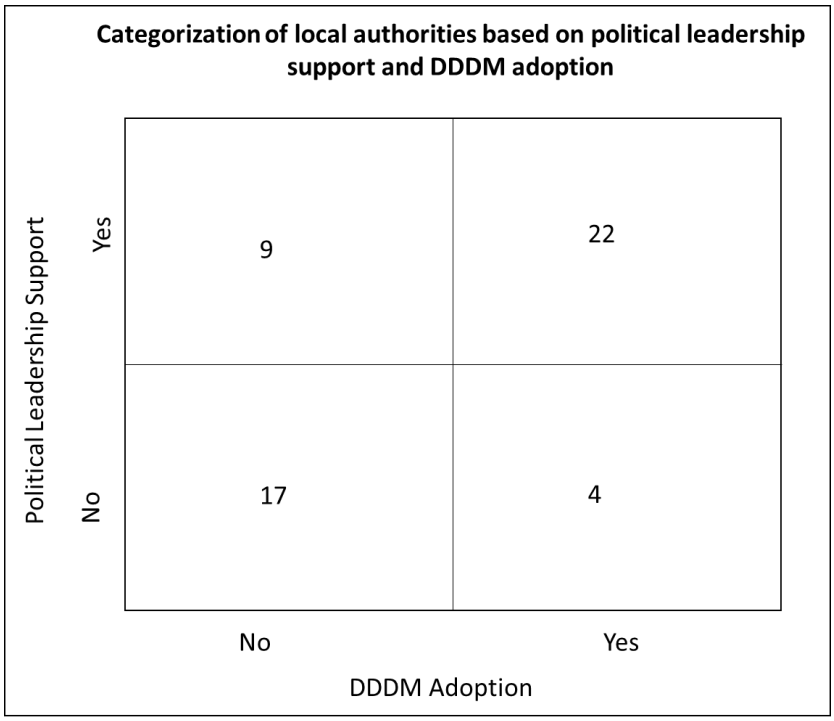


Figure 1: Local Authorities Segmentation by DDDM Adoption and Political Leadership Support

Theoretically, adopting data-driven decision-making is reliant on leadership and its attitude towards the adopted technology (Rogers, 2003). This has been empirically proven in the context of the UK local authorities as the project report explicitly states the adoption's dependency on

local authorities' leadership (Symons, 2016). However, analyzing local authorities' data acquired from using the project assessment tool reveals that councils are cut in half in terms of adopting data-driven decision-making. This raises an inquiry about the role of each of the leaderships in the successful adoption of data-driven decision-making within local councils, a piece of information that is not mentioned in the project report. Moreover, extending the review of this specific point to the literature did not result in a satisfying answer as research on the duality of leadership within the context of the UK local government is found to be rare. Therefore, this case study research aims to explore, describe, and explain the role of the political and managerial leadership in adopting data-driven decision-making within the UK local authorities, first in taking the adoption decision of data-driven decision-making, then in the ongoing process of decision-making afterwards.

Since this research aims to investigate a phenomenon, which is data-driven decision-making adoption, within its context, which is the UK local authorities in this case, choosing case study as a research strategy best fits the goal of this thesis. In addition, as the role of dual leadership is intended to be investigated within both the adopting and not adopting councils, embedded multiple-case study design would better the purpose of this research as literal and theoretical replications are needed to answer and justify the validity and reliability of findings (Yin, 2018).

The revelation of the dual leadership role in data-driven decision-making adoption within the UK local government is planned to be attained through investigating the relationship of the political and managerial leaderships to DDDDM adoption decision, decision-making process, and the relationship between the two leadership types and its effect on DDDM adoption within councils. Since this Ph.D. thesis is time constrained, the analyzed self-assessment tool project data (secondary data) is utilized in selecting the cases for the study, where each case is represented by a local council selected from each of the four categories or segments. For validity and reliability, two cases are selected from each category. Figure 2 illustrates the design of this case study research.

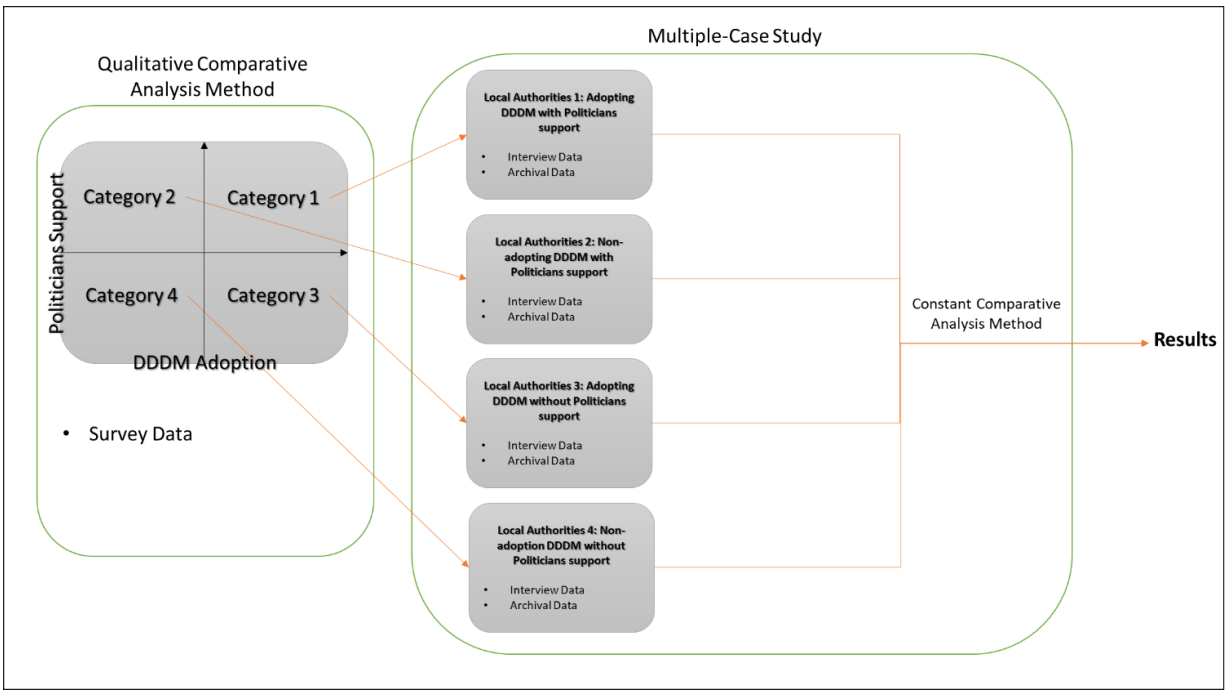


Figure 2: Case Study Research Design

Utilizing the self-assessment project data for case selection is expected to save time identifying whether selected cases are DDDM adopters or non-adopters and accordingly support a balanced selection in terms of DDDM adoption from the beginning. However, a representation issue of the UK local government might be encountered as most of the local authorities in the project data sample are English, limiting findings generalization to English local councils only.

## Section B: Data Collection Procedures

This section of the protocol intends to provide information about the data collection of this case study research. It describes the cases in terms of boundaries and content, the type of data planned to be collected, data collection tools, data accessibility, data storage, and procedures to follow when collecting data as well as issues expected to encounter and how to deal or go around them.

In this research, one local authority represents one case regardless of the collected type and size of data. As mentioned in the previous section, cases are planned to be selected from the LGA (Local Government Association) self-assessment project data, which has been analyzed and categorized depending on DDDM adoption status and the reception of political leadership support for the adoption (Figure 1). For theoretical replication, at least one case is planned to be selected from each category to test and compare the different theoretical conditions (Yin, 2018). For literal replication, two cases at least are planned to be selected from each category to insure consistency and reliability of findings (Yin, 2018). This makes the total minimum number of selected cases to be equal to 8 cases.

Since this research aims to explore and explain the role of political and managerial leaders in the adoption of data-driven decision-making in local authorities, qualitative research technique is chosen as it allows gaining deep insights, discoveries and explanations to be derived from the data sources. As this research is interested in leaders' roles and contribution to the existence of the data-driven decision-making phenomena, the first and the major qualitative data collection tool is interviews, where political and managerial leaders from each selected local authority and from different seniority levels are planned to be selected as the study participants. Moreover, historical data - mainly the local authority's decision archive – and the decision-making policy document (part of the council's constitution document) are planned to be included and analyzed in the study for triangulation purposes.

## Interviews

This research intends to investigate the role of political and managerial leaders in DDDM adoption in the stages of making the adoption decision and the after-adoption decision-making. This implies the focus on decision-makers from both leaders types the political and managerial. Therefore, politicians and managerial level officers (excluding staff) are selected as the participants of each case. Since all politicians in the local authority take part in the decision-making process, at least one representative from each level is planned to be selected and interviewed. As for the management team of the local authority, representatives from managerial levels, not staff, are planned to be selected as they take part in the decision-making process as well, at lease one of every level.

However, an unprecedented issue that happen to exist in the time of the study's data collection is the global pandemic of COVID-19. This pandemic has hit everyone in this world, resulting in a creation of a threat and an opportunity for this research data collection simultaneously; the participants of this study are all government employees, who this time are extremely engaged in commitments related to the pandemic , creating the threat of delayed or no responses. In the same time, the pandemic precautions of social distancing has entitled everyone to working from home and using communication technology applications such as Zoom and Microsoft Teams, eliminating the time wasted in physical commuting and lowering the barrier against communication generally as everyone now is accustomed to using these technology means, which enhances accessibility to participants of the research.

To avoid the created threat, semi-structured interviews are chosen to be conducted with local authorities' leader representatives. Semi-structured interviews are flexible as a form of inquiry that walks the nature and characteristics of participants and the environment they operate within, as well as its ability to provide an open platform for gaining information and insights, maintaining focus to the specified topic and adhering to a structure all at once, resulting in time saving. Moreover, to take advantage of the opportunity created, interviews are planned to be conducted virtually for no more than an hour each through Microsoft Teams, which is a credible application that is available for everyone to use with excellent recording and transcription features that are expected to save tremendous amount of the researcher's data analysis time.

The data collection stage is expected to start beginning of year 2021 immediately after the Christmas vacation and extends to five months at most – end of May 2021 – availing the full fourth year of the Ph.D. to data analysis and thesis writing. Invitation to participation emails are planned to be sent to participants followed by follow-up emails after 10 days of sending the first invitation. Friendly invitational short phone calls are planned to be conducted at the same time to increase the possibility of receiving responses and speed-up the process of interviews scheduling. Total number of interviewed participants is planned to be eight in average for each case, and sixty to sixty-four (60-64) in total, which means an average of 12 to 15 interviews per month, with a maximum of two interviews a day. Distributing interviews accordingly gives the researcher plenty of time to analyze collected data while managing the interviews.

Interviews data is planned to be collected, stored, and managed electronically. Interviews are to be held virtually and video recorded. Text transcription is planned to be automatically generated through the application during the interview and checked immediately after the interview. Log information about every interview are planned to be entered in a data management sheet created by the researcher. Figure 3 illustrates a draft of the interview data management excel sheet, organized by case number and category, and participants leadership type and level.

| Case No. | Category | Participant No. | Participant Code | Title | Leadership Type | Leadership Level | Planned - Interview Duration | Actual - Interview Duration | Date | Video Recorded? | Text Transcripted? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 111 | Leader | Political | 1 | 1 hour | | | | |
| | | 2 | 112 | Cabinet Memner | Political | 2 | 1 hour | | | | |
| | | 3 | 113 | Councillor | Political | 3 | 1 hour | | | | |
| | | 4 | 114 | CEO | Managerial | 1 | 1 hour | | | | |
| | | 5 | 115 | Director | Managerial | 2 | 1 hour | | | | |
| | | 6 | 116 | Director | Managerial | 2 | 1 hour | | | | |
| | | 7 | 117 | Service Manager | Managerial | 3 | 1 hour | | | | |
| | | 8 | 118 | Service Manager | Managerial | 3 | 1 hour | | | | |
| 2 | 1 | 9 | 119 | Leader | Political | 1 | 1 hour | | | | |
| | | 10 | 120 | Cabinet Memner | Political | 2 | 1 hour | | | | |
| | | 11 | 121 | Councillor | Political | 3 | 1 hour | | | | |
| | | 12 | 122 | CEO | Managerial | 1 | 1 hour | | | | |
| | | 13 | 123 | Director | Managerial | 2 | 1 hour | | | | |
| | | 14 | 124 | Director | Managerial | 2 | 1 hour | | | | |
| | | 15 | 125 | Service Manager | Managerial | 3 | 1 hour | | | | |
| | | 16 | 126 | Service Manager | Managerial | 3 | 1 hour | | | | |
| 3 | 2 | 17 | 127 | Leader | Political | 1 | 1 hour | | | | |
| | | 18 | 128 | Cabinet Memner | Political | 2 | 1 hour | | | | |
| | | 19 | 129 | Councillor | Political | 3 | 1 hour | | | | |
| | | 20 | 130 | CEO | Managerial | 1 | 1 hour | | | | |
| | | 21 | 131 | Director | Managerial | 2 | 1 hour | | | | |
| | | 22 | 132 | Director | Managerial | 2 | 1 hour | | | | |
| | | 23 | 133 | Service Manager | Managerial | 3 | 1 hour | | | | |
| | | 24 | 134 | Service Manager | Managerial | 3 | 1 hour | | | | |
| 4 | 2 | 25 | 135 | Leader | Political | 1 | 1 hour | | | | |
| | | 26 | 136 | Cabinet Memner | Political | 2 | 1 hour | | | | |
| | | 27 | 137 | Councillor | Political | 3 | 1 hour | | | | |
| | | 28 | 138 | CEO | Managerial | 1 | 1 hour | | | | |
| | | 29 | 139 | Director | Managerial | 2 | 1 hour | | | | |

Figure 3: Cases Interviews Data Management Sheet

## Historical Data – Archival

Not only interviewing is the data collection technique applied in this research but historical archive data as well. All local authorities are required by law to publish all their decisions and make them accessible to the public, especially the ones concerning financial budgeting and spending, resource allocation and service delivery. Consequently, every local council, regardless its size and type, publishes its decisions including information about the decision-makers, rationale for making the decisions, decision background, reports, managers' recommendations and more. Theoretically, political leaders are the only decisionmakers in local authorities (Alba

& Navarro, 2006). However, in practice, some political leaders empower their managerial leaders through decision-making delegations, which strengthen the relationship between politicians and managers (Goldsmith & Tonge, 1998), a point that is already a part of this research investigation inquiry in relation to data-driven decision-making adoption. Therefore, decision archival data of the selected councils are planned to be extracted primarily to investigate the relationship between the two types of leadership through decision-making delegations, compare it with data collected about the same relationship from interview participants for research triangulation, then analyze it in relevance to the local authority's DDDM adoption.

Extracted archival data is planned to be operationalized and studied in relation to the collected qualitative data through interviews following the steps:

- A dataset of at least two-years decisions is planned to be extracted for every case in a separate excel file
- In an archival data management sheet, the number of decisions taken by politicians, and management officers is reported separately
- Each type of decisions is planned to be weighed against the total number of decisions as a ratio
- An indicator variable (delegation level) is planned to be constructed labeling the level of decisions delegation in every local authority case. levels and cut-off points are to be determined after data collection
- The indicator variable is planned to be analyzed in relation to the other collected data of the case in terms of its relevance to DDDM adoption.

Figure 4 illustrates a draft of the cases archival data management sheet.

| Case No. | Category | Total Decisions | Politicians Decisions | Politicians Decisions % | Management Decisions | Management Decisions % | Delegation Level |
|---|---|---|---|---|---|---|---|
| 1 | 1 | | | | | | NA |
| 2 | 1 | | | | | | Low |
| 3 | 2 | | | | | | Moderate |
| 4 | 2 | | | | | | High |
| 5 | 3 | | | | | | |
| 6 | 3 | | | | | | |
| 7 | 4 | | | | | | |
| 8 | 4 | | | | | | |

Figure 4: Cases Archival Data Management Sheet

## Decision-Making Policy Document

Every local authority in the UK has a constitution document that describes how the local council operates internally and the policies employees follow and abide to. Constitutions of local authorities are published to the public in the authorities' websites. Structure wise, local authorities' constitutions have identical framework but different policy details. There is a specific section in every council constitution that explains how decisions are generally made within the council and delegation policies followed in case of delegating decisions to the management team. This part is planned to be extracted from the constitution document of every selected case and analyzed against other collected data for research triangulation purposes. Decision-making policies of all the cases are planned to be extracted and gathered in a word file.

Then, a policy data management excel sheet is planned to be prepared to analyze each policy and compare the findings against other data collected for the same case.

In summary, considering both data collection tools planned for this study, a selected local authority case is expected to fulfill the following criteria:

- A local authority that is included in the LGA self-assessment data and the categorization matrix
- A local authority with accessible decision archival data through the council's website
- A local authority with at least two years of decisions archived data
- A local authority with a published management structure
- A local authority with accessible management officers and political members through published contacts

As for computer programs and applications used, Microsoft Teams is planned to be used to conduct the interviews and create the text transcripts, which are be checked against the recordings manually by the researcher. Analysis of the interview's transcripts are to be held through NVIVO program. Analysis of the archival data and policy document data is to be done in Microsoft Excel sheets or NVIVO if necessary. Data management files of interview, archival and policy data are to be held in Excel as well. All files are intended to be stored in the university cloud drive and backed up in the researcher personal cloud drive.

Considering issues and obstacles that might face the data collection stage, such as last-minute interview cancellation or technical computer problems, interviews can be rescheduled at participants convenience. In case of persistence technical problems, interview questions can be shared and sent through email to the participants and accordingly the interview can take the form of written answers to the questions. In case any of the answers is not clear, the participant can be contacted to explanation or elaboration through the same communication media, which is email.

As for research ethics and data protection procedures, the research ethics code of the University of Reading is followed (see Appendix). Human participants are protected against identity and personal information disclosure. Moreover, interviews are held and collected data through them are used upon personal consent by participants. Any participant can withdraw from the study at any time upon request. In addition, names of local authorities and its different departments are anonymized for privacy and confidentiality. If necessary, a consent form signed by the leader of the council approving the participation of any of its employees is planned to be prepared in addition to the personal participation consent.

**Section C: Protocol Questions**

This part of the protocol lists the case study questions that are to be answered through the data collection from the different sources: interviews, archival and policy document data. The following table illustrates the case study's line of inquiry questions and expected source of data holding the answer.

Appendix A

Table 1: Protocol Questions and Line of Inquiry

| No. | Research Question | Line of Inquiry | Prompts | Data Source |
|---|---|---|---|---|
| 1 | What are the decision-making logics prevalent in the UK local authorities and how are they related? | What are the types of decisions made in the council? | Internal: administrative, strategic, and operational<br>External: service delivery process, budgets setting, partnerships with businesses and other government agencies | All |
| | | How is each type of decisions made? Does the process differ? | Is data requested before a decision is made or after?<br>Are decisions usually based on data analysis insights?<br>How are reports for decision-making prepared? | Interviews & Policy |
| | | Who is responsible for making each of the decision's types? | How do politicians make decisions?<br>How do managers make decisions? | Interviews & Policy |
| | | Who has the ultimate authority over decision making? | | Interviews & Policy |
| | | Do politicians and managers make key decisions together? | | Interviews |
| | | How often are managers delegated decision-making responsibilities by politicians? | | All |
| | | Do managers provide recommendations through report to politicians? | | Interviews & Archival |
| | | If so, how often do politicians agree and adhere to managers recommendations? | | Interviews & Archival |
| | | In practice, who often make decisions? | | Interviews & Archival |
| | | How can the relationship between political and managerial leaders be described? | Are they conflicting? Do the council leader and CEO work together cooperatively? Are they considered as head to head? Of the one of them can be described as a subordinate to the other? | Interviews |
| 2 | How do different decision-making logics relationships influence the adoption of DDDM in local authorities? | Who is responsible for decisions concerning technology and innovation adoption? and how are they made? | | All |
| | | In case the council is successfully adopting DDDM, how was the adoption decision made? | Adoption decision-making process | Interviews |
| | | Can the CEO or any of the directors' advance in the use of data analytics for making decisions without the support of the council leaders? | | Interviews |
| | | who do you think is the key leader in DDDM? Politicians or managers? | | Interviews |
| | | Does the council apply a data-driven strategy? | | Interviews |
| 3 | Which leadership support is DDDM adoption dependent on? political leadership, managerial leadership, or both? | Does the leader and councilors / management leaders and staff believe in DDDM and support it? | | Interviews |
| | | Which of the leaders supports DDDM more? | | Interviews |
| | | Would the council be data-driven if:<br>Council leader supports, CEO does not support<br>Council leader does not support, CEO support | Which of the leaders have more influence over DDDM adoption? | Interviews |

Table 1 demonstrates the line of inquiry for each of the research questions linked to the data source where answers for each question are expected to be found. Some of the answers are expected to be found directly from one or more data source, and some needs in depth analysis and comparing. For example, information about the process of decision-making applied in a local council can be directly acquired from documentation and interviews, where answers

concerning the influence of leaders' relationship to each other on the adoption of data- driven decision-making require more analysis and comparison of the collected data.

## Section D: Tentative Outline for the Case Study Report

Since this case study research is part of a Ph.D. thesis, the audience of the report are the examination committee members. Since this research is a multiple- comparative case study focusing on specific aspects in the selected local authorities and do not analyze each case as a whole, reporting the findings of the cases will be cross-sectionally analyzed directly in the thesis.

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# Appendix B

**The Role of Dual Leadership in Data-Driven Decision-Making Adoption in the UK Local Government**

**Participant Information Sheet & Consent Form**

I would like to invite you to take part in a research study. This document describes the purpose of this study and what is involved in taking part. Please read the following information carefully before you provide consent to take part in this study. If you have any questions or concerns, please contact us. The research project has been reviewed by Henley Business School Research Ethics Committee and has been given a favourable ethical opinion for conduct.

## WHO I AM AND WHAT THIS STUDY IS ABOUT?

*I am a PhD researcher in Informatics and Systems Science programme at Henley Business School - University of Reading, studying the adoption of data-driven decision-making in the UK local government. This study aims to specifically investigate the role of the dual leadership structure – the political and the managerial – found in local councils in the successful adoption of data-driven decision-making through:*

1. *Exploring possible relationships between council leaders: political and managerial and*
2. *The influence of these relationships in the successful adoption of data-driven decision-making*

*The outcome of this research is expected to contribute to the understanding of data-driven decision-making adoption phenomena in the UK local councils through identifying the influence of dual leadership that lead to successful adoption of data-driven decision-making within the specified context.*

## WHAT WILL TAKING PART INVOLVE?

*You will be asked several questions about the following topics depending on your position in the council:*

- *Decision-making in the council and your involvement in it*
- *Your relationship with members or officers*
- *The use of data in decision-making*
- *Technology and projects implementation in your council*
- *Your opinion about the role of your leaders in adopting data-driven decision-making*

*The interviews are planned to be held virtually through Microsoft Teams. Each interview is expected to be no longer than 60 minutes. With your permission, interviews may be recorded for later transcription and analysis.*

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**WHY HAVE YOU BEEN INVITED TO TAKE PART?**

*You are selected to take part in this study because you are:*

1. *A UK local council associate*
2. *A decision-maker (or involved in decision-making)*
3. *Your council took part in the Local Government Association (LGA) – Data Maturity Framework project launched in 2016*

**DO YOU HAVE TO TAKE PART?**

*Your participation in this research project is entirely voluntary. If you do not wish to take part, you do not have to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage. If you do decide to take part, you will be given this Participant Information and Consent Form to sign and you will be given a copy to keep.*

**WHAT ARE THE POSSIBLE RISKS AND BENEFITS OF TAKING PART?**

*There is no clear benefit for you as a participant. However, taking part in this research will help me as a researcher find out the role of leader politicians and officers in the adoption of data-driven decision-making, which has been proven to positively reflect on local councils' performance. Your participation will support local councils – once results are published or communicated to the UK local government – progress towards data technology adoption and reap their benefits in terms of better resource allocation and public service provision.*

**WILL TAKING PART BE CONFIDENTIAL?**

*Yes. No personal information is required for this research project. What is required is information about the council decision-making dynamics, your role in it, and your views about the council leadership. Names of local council's for which participants work will not be disclosed and will be codes instead. Your views and opinions will stay anonymous and will be analysed along with opinions obtained from other local councils as you will be grouped in one of the segments labelled as (CEO, Council Leader, Cabinet Member, Councillor, Director, Service Manager, etc.).*

**HOW WILL INFORMATION YOU PROVIDE BE RECORDED, STORED AND PROTECTED?**

*With your permission, the Interview will be recorded and stored in the researcher's university's secure cloud account, based on which it will be transcribed and analysed using software for qualitative data analysis. The researcher only is the authorised person to access the stored data. Moreover, Data storage, security and retention will comply with Henley Business School and the University of Reading policies* [http://www.reading.ac.uk/internal/imps/policiesdocs/imps-policies.aspx](http://www.reading.ac.uk/internal/imps/policiesdocs/imps-policies.aspx)

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**WHAT WILL HAPPEN TO THE RESULTS OF THE STUDY?**

*The results of the study will be reported in the PhD thesis and is planned to be published in an academic paper. The research will be shared with participants and interested audience once published.*

**WHO SHOULD YOU CONTACT FOR FURTHER INFORMATION?**

*The Researcher* *Sumayya T. Jad*
*Doctoral Researcher*
*Business Informatics, Systems and Accounting (BISA)*
*Henley Business School*
*University of Reading*
*Whiteknights Campus*
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# Consent Form

1. I have read and had explained to me by

……..…

the accompanying Information Sheet relating to the project on:

……....

2. I have had explained to me the purposes of the project and what will be required of me, and any questions I had have been answered to my satisfaction. I agree to the arrangements described in the Information Sheet in so far as they relate to my participation.

3. I understand that participation is entirely voluntary and that I have the right to withdraw from the project at any time, and that this will be without detriment.

4. This application has been reviewed by the School of Management Research Ethics Committee and has been given a favourable ethical opinion for conduct.

5. I have received a copy of this Consent Form and of the accompanying Information Sheet.

Name: ……

Date of birth: ……

Signed: ……...……

Date: ……...……

# Appendix C

## The Role of Dual Leadership in Data-Driven Decision-Making Adoption in the UK Local Government

### Interview Questions Script

| No. | Topics | Questions | Purpose |
|---|---|---|---|
| **1** | Decision-making Process | 1. What type of decision-making are you involved with?<br>2. What is the process of making these decisions? | Identify the decision-making logics in UK local councils |
| **2** | Members/Officers Leaders Relationship | 3. How can you describe the relationship between members and officers in decision-making?<br>a. Do you delegate decision-making to managers? Or do you make decisions on behalf of your political leader?<br>b. How often do politicians follow officers' recommendations provided in requested reports? | Identify relationship types between the two leading structures in local councils - the political and the managerial |
| **3** | Use of Data in Decision-Making | 4. Do you require data analysis before you make a decision?<br>5. Are you using data technology in any service provision projects?<br>6. What are your views about using data-driven decision-making? (benefits, limitations) | Identify:<br>• the level of data-driven decision-making adoption in the local council<br>• Decision-makers perception of data-driven decision-making |
| **4** | Views on Leadership influence on data-driven decision-making adoption | 7. Do you think your council can make data-driven decisions if:<br>a. Politicians support it, but managers don't?<br>b. Politicians do not support it, but managers do? | Identify data-driven decision-making adoption dependency conditions on leadership types. |

**Extra Questions & Probing:**

- Who is the principal lead or champion? of DDDM initiative in the council? Members or officers?
- Do you think your council is officers led or councilors led?
- When you plan for budget, do u require any data capabilities or technologies? And how do you get approval on internal plans concerning management of the service and staff?
- What distinguishes a key decision from a strategic one? Do officers make key decisions? regardless the theory?
- How can you describe officers influence on members?
- How can you describe members control over officers? Do they interfere in officers work? Are they allowed?

# Appendix D

## Invitation to Participate – Email Text

Dear (Participant Name),

Your council has been chosen to conduct case study research about the role of leaders -political and managerial from all levels - on the adoption of data-driven decision-making.

Accordingly, you are invited to a short online interview using Teams at your convenience. The interview will not take more than 30 mins.

I am sure talking to you will enrich the content of the research, as well as refresh you with a light and positive talk during or after your busy day.

Please find more information about the research and the interview questions attached for you.

Your participation is of much value to the research. Therefore, I look forward to hearing from you.

Cheers

--Sumayya