

Adopting Information Technologies for Open Government in Dutch Municipalities

A TOMIE Framework Analysis of Organisational-Level IT
Adoption Under the Dutch Open Government Act (Woo)

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Abstract

The 2022 Dutch Open Government Act (Woo) seeks to promote transparency and proactive public information disclosure by Dutch government bodies. However, despite its intent to modernise public information access, the Act's rollout has challenged municipalities, many of which have yet to determine effective compliance strategies. In this regard, given information technology's (IT) emergence as a catalyst for open government, organisational-level IT adoption offers municipalities a promising avenue to support Woo implementation and alleviate associated burdens. Yet, to date, research has lacked systematic investigation into influential factors of IT adoption in local (i.e., municipal) government contexts, particularly for the purpose of open government. Therefore, to investigate factors influencing IT adoption for open government by Dutch municipal organisations operating under the legislative framework of the Woo, this study applied the Technological-Organisational-Managerial-Individual-Environmental (TOMIE) framework – a theoretical framework for studying organisational technology adoption. Employing an exploratory, cross-sectional qualitative research design, it drew on fifteen semi-structured interviews with sixteen professionals. Thematic analysis revealed that municipal Woo-related IT adoption appears to be influenced by an interplay of 55 factors – exerting varying degrees of influence – distributed across all five dimensions of TOMIE. This suggests that advancing open government through organisational-level IT adoption is not a purely technical endeavour, but rather a multidimensional institutional process. By empirically validating TOMIE's theoretical applicability within the Dutch municipal open government (i.e., Woo) context, this study advances theoretical understanding of organisational-level IT adoption in local government contexts and provides practical insights for strengthening municipal Woo compliance through such IT adoption.

Keywords: open government, the Dutch Open Government Act (Wet open overheid [Woo]), IT adoption, municipalities, Technological-Organisational-Managerial-Individual-Environmental (TOMIE) framework

1. Introduction

The Netherlands has a long-standing reputation as a frontrunner in transparency and access to government information (De Graaf et al., 2018, p. 163; Ruijter & Meijer, 2016, p. 895). The 1980 Dutch Public Access Act (Wob) was among the world's first laws regulating access to government information (Wolswinkel, 2023, p. 189); reinforced in 1983 by Article 110 of the Dutch Constitution, requiring government bodies to ensure public access to information (DeNederlandseGrondwet.nl, n.d.; Rijksoverheid, 2023). In the decades since, however, as freedom of information (FOI) legislation became integral to democracies worldwide (Hazell & Worthy, 2010, p. 352) and ideas about transparency evolved, concerns arose about the Wob's ability to meet the demands of open government in an increasingly data- and technology-driven era. Debate ensued over whether the Act needed fundamental revision, culminating in its replacement with the Dutch Open Government Act (Woo), effective as of May 1st, 2022 (Wolswinkel, 2023, pp. 189–192). Elaborating on Article 110 of the Dutch Constitution (Rijksoverheid, n.d.), the Woo seeks to promote a more transparent and proactively disclosing government (VNG, 2022, p. 5; Wolswinkel, 2023, pp. 195–196).

The success of legislation on open government relies not only on its drafting, however, but also on its implementation and use by administrative authorities (Kempeneer et al., 2023, p. 10). At present, though, implementing the Woo has proven challenging, particularly at the local (i.e., municipal) government level. A considerable number of Dutch municipalities have yet to determine the most effective method of meeting the obligations set out in the Woo, given the demands that the Act places on, for instance, their resources and officials (Bouwmeester, 2024). Compliance targets are often missed (VNG, 2024b), raising concerns about the feasibility of timely implementation (Bouwmeester, 2024). These challenges are not merely administrative; they have profound societal implications as municipalities' inability to meet the Woo's obligations undermines the Act's purpose of serving the public interest of public information disclosure, regarded as foundational to democratic society (Rijksoverheid, 2024). Therefore, addressing these challenges is crucial to ensure its goals are not only upheld in theory but also achieved in practice, both efficiently and sustainably.

To address these challenges and promote compliance, the Association of Netherlands Municipalities (VNG) has indicated that Dutch governments may need to invest in information technology (IT) (De Graaf et al., 2018, p. 199), which is unsurprising, as significant investment in technology and network infrastructure may indeed be required to properly harness open government's potential (Lee & Kwak, 2012, p. 493). Technological solutions, such as modern

process-tracking systems and software for mapping, searching, redaction and anonymisation of information, could partially automate and expedite Woo-related procedures (Rijksoverheid, 2022b, p. 14). Moreover, innovations like artificial intelligence (AI) and algorithms might alleviate associated burdens (Harrison & Luna-Reyes, 2020). When well-designed and integrated as part of a comprehensive approach combining IT support with organisational adjustments, including, for instance, changes in processes and culture/mindset (Rijksoverheid, 2022b, p. 3; Tinati et al., 2012, p. 2), these technologies might enable municipalities to overcome factors hindering their ability to meet legislative obligations.

While previous studies (e.g., Adnan et al., 2019; Adnan et al., 2021; Çaldağ et al., 2019; Gangwar et al., 2014; Haini et al., 2019; Oliveria & Martins, 2011; Wang & Lo, 2016) have examined IT adoption at the organisational level, with some recognising IT's potential to advance open government, to date, a scarcity of research has systematically investigated factors influencing IT adoption in local government contexts (Haneem et al., 2019, p. 233), particularly for the purpose of open government. Moreover, given that prior studies have yielded disparate results, depending on the context or studies under investigation, it is reasonable to expect that distinct factors might uniquely influence organisational-level IT adoption within the not yet studied Dutch municipal open government (i.e., Woo) context. Therefore, in view of these variations and the absence of studies on the Dutch municipal context, the present study aims to investigate factors influencing IT adoption for the purpose of open government by Dutch municipal organisations. To this end, the central research question guiding this study is:

Which factors influence the adoption of information technologies for open government by Dutch municipal organisations operating under the legislative framework of the Dutch Open Government Act (Woo)?

To investigate this question, this study applies an extended version of Tornatzky et al.'s (1990) Technology-Organisation-Environment (TOE) framework, as proposed by Adnan et al. (2019). Known as the Technological-Organisational-Managerial-Individual-Environmental (TOMIE) framework, it promises a broader analytical perspective on organisational-level IT adoption.

It is anticipated that through the present study an array of factors within each dimension of the TOMIE framework will be identified, capturing their roles as facilitators, hindrances, or more context-dependent influences on IT adoption for open government by Dutch municipal organisations. Additionally, it is expected that this study will contribute to academic literature

by empirically validating and potentially refining TOMIE in the context of [Dutch] local governance.

This study's objective extends beyond theoretical contributions, aiming to provide societal and policy insights, given this study's significant societal and policy relevance at both local and national levels. Findings could inform targeted interventions and resource allocations to boost municipal compliance with the Woo through organisational-level IT adoption and shape national strategies to ensure the achievement of the Act's overarching goals throughout the Dutch municipal government landscape. Moreover, increased IT adoption might not only aid municipalities in fulfilling their obligations under the Woo, but also contribute to the creation of public value by serving democratic principles of public information disclosure.

This paper proceeds as follows. First, the theoretical framework underpinning this study is outlined, identifying key dimensions driving IT adoption in organisations, thereby enabling the development of a theory-driven conceptual model based on TOMIE. Next, the research methodology is detailed, describing the approach to data collection and analysis. Then, findings are presented, highlighting the influences identified in this study's data. Following this, the discussion synthesises this study's findings and their mutual relationships, provides theoretical contributions, practical implications, acknowledges several limitations, and suggests directions for future research. Finally, this paper concludes with the key takeaways of this study.

2. Theoretical Framework

The concept of open government, defined holistically by Wirtz and Birkmeyer (2015) as 'a multilateral, political, and social process, which includes in particular transparent, collaborative, and participatory action by government and administration' (pp. 2–4), has been used as an umbrella term for a wide range of ideas and concepts (Geiger & von Lucke, 2012, p. 266). Rooted in mid-twentieth-century freedom of information (FOI) debates about democratic accountability (Parks, 1957; see also Clarke & Francoli, 2014, p. 250; Yu & Robinson, 2012, pp. 184–187), open government long reflected a relatively traditional conception of liberal democracy, given its clear links to notions that democratic governments should operate openly, government information should be public, and decision-making should be transparent if there is to be accountability (Kopec & Sheldrick, 2020, p. 71). Consequently, it primarily referred to previously undisclosed government information's initial release or the effort thereto (Yu & Robinson, 2012, p. 191).

At the millennium's turn, however, the approach to open government broadened as governments began leveraging technological innovations, moving beyond the conventional FOI approach to citizens' right-to-know (Moon, 2019, p. 3; Wolswinkel, 2023, p. 190). Innovations such as web technologies enabled governments to disseminate information to unidentified audiences simultaneously, transcending time and space (Moon, 2019, p. 4). This shift towards utilising information technologies (ITs) to enhance public data access, alongside the rise of open data movements, transformed the essence of open government initiatives (Evans & Campos, 2013, p. 173; Moon, 2019, p. 4). As a result, the meaning of 'open government' blurred, evolving into a label encompassing both political accountability and technological innovation (Yu & Robinson, 2012, pp. 193–202). In consideration of this, a conceptual distinction has emerged between traditional, FOI-based 'old' open government and contemporary, IT-driven 'new' open government (Moon, 2019, p. 3–4).

Reflecting this transformation, Wolswinkel (2023) argues that the Dutch Open Government Act (Woo) exemplifies the ongoing shift from 'old' towards 'new' open government, as the Act imposes several interconnected obligations on government organisations – including proactive disclosure of certain categories of information on their own accord; structural and sustainable organisation of this disclosure; proper management of government information, including a general duty of care to maintain documents in good, orderly, and accessible condition; and measures ensuring the permanent accessibility of digital documents (VNG, 2022, p. 5) – reflecting principles of new open government, while retaining elements of the former Dutch Public Access Act (Wob), such as individuals' right to request access to government documents, associated with old open government. According to him, the Woo can be seen as 'a legislative effort to combine the best of both worlds' (Wolswinkel, 2023, p. 196).

However, the success of legislation on open government depends not merely on its drafting, but also on its implementation and use by administrative authorities (Kempeneer et al., 2023, p. 10). Given municipalities' difficulties in fulfilling their obligations under the Woo, amid decreasing national financial support despite growing duties (VNG, 2024a, p. 11), organisational-level IT adoption offers them a promising avenue to alleviate associated burdens and support implementation, as IT has emerged as a catalyst for open government in recent years (Gil-Garcia et al., 2020, pp. 483–484). Both new and old technologies have become essential enablers of open government by allowing governments to collect, store, and release information at scale – an importance underscored by the Open Government Partnership (OGP),

an international collaboration of more than seventy countries committed to the improvement of open government policies, encouraging governments worldwide to use technologies to ‘transform the culture of government and to serve the public better’ (Grimmelikhuijsen & Feeney, 2016, p. 2). Municipalities may harness technological solutions, such as modern process-tracking systems and supportive software that facilitates the mapping, searching, redaction, and anonymisation of information, thereby streamlining Woo-related procedures (Rijksoverheid, 2022b, p. 14). Moreover, emerging ITs like artificial intelligence (AI) and algorithms offer potential for data analysis, bolstering decision-making efficiency and thereby creating public value (Harrison & Luna-Reyes, 2020). In this regard, consistent with Wirtz and Birkmeyer (2015, pp. 9–10), it appears reasonable for governments to be open to adopting ITs when aspiring to implement transparency.

Nevertheless, although ITs are widely considered to facilitate easier and less costly information dissemination, thereby enabling transparency (Gil-Garcia et al., 2020, p. 488), their successful adoption may require significant upfront investment and a mindset shift among public officials to adapt to new processes, which would challenge existing policies, workflows, and legacy systems (Lee & Kwak, 2012, p. 493; Tinati et al., 2012, p. 2). In this regard, while a growing body of literature investigates innovation-decision processes – defined by Rogers (1995) as ‘the process[es] through which an individual (or other decision-making unit) passes from first knowledge of an innovation, to forming an attitude towards the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision’ (p. 161) – across various IT adoption contexts (Haneem & Kama, 2018, p. 5510), systematic research on IT adoption in local government contexts remains scarce (Haneem et al., 2019, p. 233). Moreover, open government studies often fail to consider ITs as important components of open government and, therefore, potential enablers of administrative reform and governance transformation (Gil-Garcia et al., 2020, p. 483).

Recent review studies, as outlined by Haneem et al. (2019), have led researchers to identify five fundamental theoretical approaches for studying IT adoption: (1) *the Diffusion of Innovations (DOI) theory*; (2) *the Technology Acceptance Model (TAM)*; (3) *the Technology-Organisation-Environment (TOE) framework*; (4) *the Theory of Planned Behaviour (TPB)*; and (5) *the Unified Theory of Acceptance and Use of Technology (UTAUT)*. While TAM, TPB, and UTAUT typically investigate individual-level adoption, DOI and TOE are more relevant for organisational contexts (Haneem et al., 2019, p. 233; Çaldağ et al., 2019, p. 51). Nevertheless, despite DOI’s extensive use at the firm level, its application to more complex organisational

contexts has been critiqued for oversimplifying technology diffusion processes and lacking explanatory power when applied in isolation (Wang & Lo, 2016, p. 3; Brancheau & Wetherbe, 1990, p. 138). To address these limitations, researchers recommend refining theoretical models to account for contextual nuances (Wang & Lo, 2016, p. 3). Instead, Tornatzky et al.'s (1990) TOE framework appears to offer a more comprehensive approach as it is a theory of technology diffusion only suggesting different sources of influence without specifying variables for each, making it highly adaptable and widely applicable (Wang & Lo, 2016, p. 3; Zhu & Kraemer, 2005, p. 63). Unlike DOI, which primarily regards technological factors as pivotal in organisational-level technology adoption processes, TOE more clearly accommodates organisational and environmental factors as 'constraints and opportunities for technological innovation' (Tornatzky et al., 1990, p. 154).

The TOE framework delineates three distinct yet interrelated dimensions influencing organisations' technology adoption processes: (1) the *technological*, reflecting the characteristics of technologies relevant to an organisation; (2) the *organisational*, reflecting the characteristics and resources of an organisation itself; and (3) the *environmental*, reflecting the arena in which an organisation operates (Baker, 2011, pp. 232–235; Wang & Lo 2016, p. 3). However, Adnan et al. (2019) argue recent developments on TOE necessitate incorporating additional dimensions. They propose two – the managerial and individual – to broaden the framework. This broadening proves beneficial since 'classified personnel behaviour' and 'the managerial attitude' towards IT adoption decisions were previously subsumed under the organisational dimension. By separating them, they argue that the organisational dimension can more precisely target internal processes and systems within an organisation (p. 369). The authors do, however, acknowledge that further research is required to validate their proposed model. They call upon researchers to investigate empirical evidence and factors across various governmental institutions to corroborate their findings (pp. 373–374).

While previous studies (e.g., Adnan et al., 2019; Adnan et al., 2021; Çaldağ et al., 2019; Haini et al., 2019; Haneem & Kama, 2018; Haneem et al., 2019; Wang & Lo, 2016) have examined factors influencing IT adoption in various government contexts, including local ones, the results were often disparate. Factors deemed significant in one setting often do not carry the same weight in another due to variations in, for instance, research context or scope. While factors such as 'financial support' and 'technological cost' may be highlighted as determinants of organisational-level IT adoption for open government in one government setting, they may vary elsewhere. Such variations in the results of previous studies not only highlight the

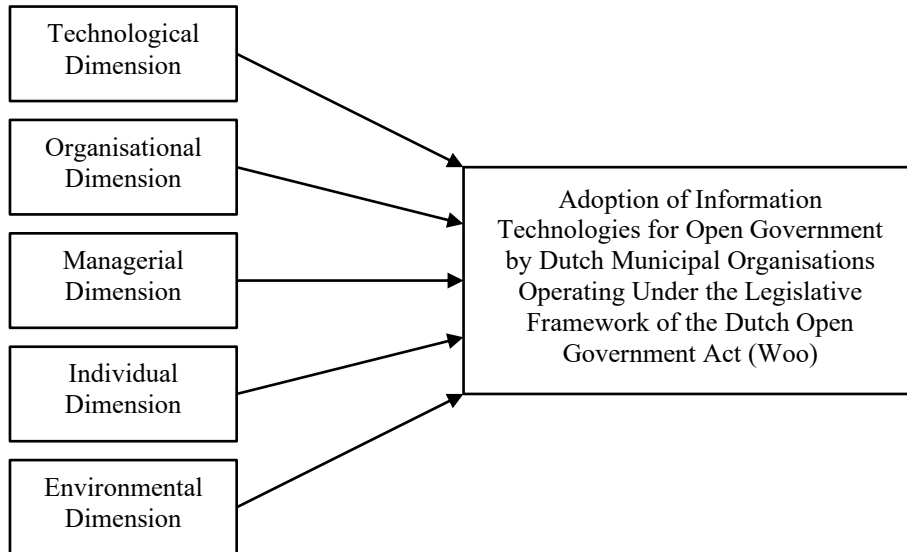
complexity of IT adoption processes, but also emphasise the need for context-specific research to investigate factors influencing IT adoption within specific government settings.

In view of the developments in literature and the distinctive, context-specific challenges Dutch municipalities face under the Woo, the present study applies Adnan et al.'s (2019) Technological-Organisational-Managerial-Individual-Environmental (TOMIE) framework to investigate the factors influencing organisational-level IT adoption for open government in the Dutch municipal government context. Hereby, it addresses the paucity of investigation into factors influencing IT adoption in local government contexts. Although Adnan et al. (2019) are not the first to modify the TOE framework – prior scholars have advocated adding managerial (e.g., Thong and Yap, 1995) and individual (e.g., Baker, 2011, p. 242) characteristics to better understand organisational-level technology adoption processes – their novel framework notably reinforces the rationales behind these additions, broadening the analytical perspective on organisational-level IT adoption. However, since TOMIE originates from a conference paper – a format typically brief and non-peer-reviewed – this study critically engages with the framework, recognising its theoretical promise, yet underscoring the need for empirical validation.

Through investigation of the *technological, organisational, managerial, individual, and environmental* (TOMIE) factors influencing IT adoption for open government by Dutch municipal organisations operating under the legislative framework of the Woo, this study aims not only to help municipalities in addressing the Woo's legislative demands, but also to contribute to broader understanding of organisational-level IT adoption in comparable government contexts. Moreover, by focusing on empirical evidence within the not yet studied Dutch municipal open government (i.e., Woo) context, this study provides an opportunity to validate, refine, or refute the TOMIE framework's theoretical applicability, suggested for future research. Ultimately, insights gained may inform strategies to advance open government objectives and thereby contribute to the creation of public value. Figure 1 depicts the initial, theory-driven conceptual model based on TOMIE, which forms the foundation for investigating the as yet unidentified factors influencing municipal Woo-related IT adoption.

Figure 1

Conceptual Model of TOMIE Dimensions of IT Adoption for Open Government by Dutch Municipal Organisations Operating Under the Legislative Framework of the Woo



3. Methodology

This study adopted an exploratory qualitative approach, employing a cross-sectional research design, with semi-structured interviews as the primary data collection method, to investigate factors influencing the adoption of information technologies (ITs) for open government by Dutch municipal organisations operating under the legislative framework of the Dutch Open Government Act (Woo). Whilst existing literature on organisational-level IT adoption appears to be predominantly quantitative and deductive, such methods often overlook context-specific nuances critical to understanding adoption processes. Therefore, in the present study's context, a qualitative approach was deemed well-suited for capturing the contextual factors influencing Woo-related IT adoption by Dutch municipal organisations. Meanwhile, a cross-sectional research design was employed to enable the collection of diverse insights at a single point in time, offering a snapshot of prevailing influences.

The target population of this study comprised professionals with direct experience, expertise, or involvement in implementing the Woo within the Dutch municipal government context. This included municipal officials, but also other stakeholders, such as non-municipal experts with specialised knowledge of municipal Woo implementation processes. With such an inclusive approach, this study aimed to ensure a broad representation of the diverse Dutch municipal government landscape. Participant selection considered variations in municipalities'

characteristics, such as, but not limited to, internal structure, size, and financial capacity. A purposive sampling strategy guided selection. Participant recruitment occurred through professional networks – an endeavour partially supported by professional connections at Daadkracht B.V., who proactively reached out at an early stage in the recruitment process, indicating their willingness to leverage their network in support of this study – as well as through referrals (i.e., snowball sampling) and direct outreach, the latter supported by a VNG Programme Manager who assisted with such outreach through their extensive professional network. Data saturation – the juncture at which further data collection ceases to yield novel insights (Creswell & Creswell, 2022) – guided the determination of the sample size for this study. In this regard, even though municipal organisations exhibit varying characteristics, their shared obligations under the Woo create a baseline of homogeneity, even as municipalities’ contexts and capacities differ. Accordingly, fifteen interviews were considered sufficient to attain the requisite breadth and depth of insight into common perceptions and experiences. For an overview of interviews and participants, please refer to Appendix C.

Data was collected through semi-structured interviews with open-ended questions to balance guidance and flexibility, prompting participants to share their unique insights on organisational-level IT adoption in the context of municipal Woo implementation. The Technological-Organisational-Managerial-Individual-Environmental (TOMIE) framework, underpinning this study, informed the interview guide (see Appendix D), targeting key themes across its five dimensions while remaining open to unexpected insights through inductive reasoning. Following consultation with and agreement from the participant concerned, interviews – typically lasting an hour – were predominantly conducted virtually, with a number of interviews taking place in-person. With participants’ consent, interviews were also audio-recorded, with the objective of facilitating transcription and analysis.

To operationalise the TOMIE framework, its five dimensions are defined and illustrated with indicators in Table 1.

Table 1*Operationalisation of the TOMIE Framework*

Dimension	Definition	Indicators
Technological	Reflects the characteristics of technologies relevant to an organisation, including those technologies already in use as well as those available in the marketplace but not (yet) adopted. Organisations' existing technologies shape technology adoption processes, as they limit the pace and scope of technological change that an organisation can undertake. Unused yet market-available innovations influence adoption by demarcating the boundaries of possible technological change, while demonstrating organisations ways in which technology can enable them to evolve and adapt (Baker, 2011, p. 232; Wang & Lo, 2016, p. 3).	Examples might include mentions of perceived usefulness of technology, perceived risk of technology, and system compatibility.
Organisational	Reflects the characteristics and resources of an organisation itself, focusing on the structures and processes of an organisation that facilitate or constrain technology adoption (Baker, 2011, p. 233; Wang & Lo, 2016, p. 3).	Examples might include mentions of organisational size, culture and readiness.
Managerial	Reflects the characteristics of managers/higher-level authorities within an organisation that influence technology adoption, focusing on their attitudes, perceptions, and experiences (Hasani et al., 2016).	Examples might include mentions of management support and management innovation drive.
Individual	Reflects the individual characteristics of personnel within an organisation that influence technology adoption, focusing on their individual adaptability, attitudes, and engagement (Haneem & Kama, 2018, p. 5517).	Examples might include mentions of personnel knowledge of IT adoption processes and personnel experience with technology.
Environmental	Reflects the arena in which an organisation operates, including external factors such as regulatory environment, peer influence, and technology service providers' presence or absence (Baker, 2011, p. 235; Wang & Lo, 2016, p. 3).	Examples might include mentions of external pressures, government regulations, and citizen demands.

Note. The indicators listed above represent potential organisational-level IT adoption influences inspired by extant, related literature (Adnan et al., 2019; Adnan et al., 2021; Çaldağ et al., 2019; Haini et al., 2019; Haneem & Kama, 2018; Haneem et al., 2019; Wang & Lo, 2016). Their presence in the present study's findings were not guaranteed and depended upon the data collected.

Interview data were analysed using Braun and Clarke's (2006) six-phase process, perhaps the most influential approach to thematic analysis (Maguire & Delahunt, 2017, p. 3353). Their process involves: (1) *data familiarisation* (i.e., transcribing data, repeated reading, and initial note-taking); (2) *initial code generation* (i.e., systematically identifying and collating meaningful data segments); (3) *theme development* (i.e., grouping codes into broader thematic patterns); (4) *theme review* (i.e., verifying theme alignment with coded extracts and the full dataset); (5) *defining and naming themes* (i.e., refining theme details and generating clear names); and (6) *producing the report*. The analysis adopted an abductive approach, iteratively synthesising the theory-driven conceptual model of TOMIE with inductively coded data to uncover emergent patterns, potential tensions, or deviations from the conceptual model.

Atlas.ti, a Computer Assisted Qualitative Data Analysis (CAQDAS) tool, facilitated the analysis process.

Importantly, this study adhered to ethical protocols for social science research. All participants received an information sheet and an informed consent form before their interviews, detailing the study's objectives, their rights, and confidentiality measures. Participation was voluntary, with withdrawal permitted at any stage without consequence. Collected data were anonymised to protect participants' identities, with interview audio-recordings and transcripts securely stored, only accessible to the researcher. For further details, please refer to Appendix A and Appendix B.

4. Findings

This section presents this study's empirical findings on factors influencing the adoption of information technologies (ITs) for open government by Dutch municipal organisations operating under the legislative framework of the Dutch Open Government Act (Woo). Drawing upon the preceding methodology, findings were derived from a thematic analysis of fifteen semi-structured interviews, conducted with sixteen professionals (interviewee 1 [P1] up to and including interviewee 16 [P16]) between the 11th of March and the 9th of April 2025.

Interviewees represented a wide range of municipal organisations throughout the Netherlands – for analytical clarity, this study henceforth distinguishes four municipal size bands: small ($\leq 30,000$ inhabitants), medium-sized (30,001–79,999), large (80,000–149,999), and very large ($\geq 150,000$) – as well as relevant external, intermediary, and collaborative bodies, such as regional partnerships and a national programme. All interviewees occupied positions closely related to the Woo's implementation at the municipal government level, including, but not limited to, Woo project leaders, information managers, and consultants. For further details, please refer to Appendix C.

The following subsections (4.1–4.5) present the findings, structured along the TOMIE framework's five dimensions: *Technological*, *Organisational*, *Managerial*, *Individual*, and *Environmental*. Drawing on interviewees' insights, each dimension illuminates distinct factors facilitating, hindering, or more contextually shaping municipal organisations' adoption of ITs under the Woo. Overall, at the time of the interviews, municipal Woo-related IT adoption appeared to be in its early stages. While most municipalities seemed to have taken steps – varying in scope – to comply with the Woo through organisational-level IT adoption, many

continued to face persistent challenges. Taken together, findings suggest that municipal Woo-related IT adoption is influenced by an interplay of 55 factors – exerting varying degrees of influence – distributed across all five dimensions of TOMIE.

4.1. Technological Dimension

In this study, the technological dimension includes the characteristics of technologies relevant to municipal organisations – both those technologies in use and those available in the marketplace but not (yet) adopted. Existing technologies are important in organisational-level IT adoption, as they limit the scope and pace of technological change that can be undertaken. Unused yet market-available innovations influence adoption by demarcating the boundaries of possible technological change, while demonstrating municipalities ways in which technology can enable them to evolve and adapt (Baker, 2011, p. 232; Wang & Lo, 2016, p. 3). This subsection presents the 19 technological influences (*italicised* in the text) identified in the data. One factor, *Transparency*, is discussed first and individually due to its prominence throughout this dimension – not only as a core normative goal of the Woo but also as a cross-cutting technological consideration, meriting individual emphasis. Remaining factors are grouped into five overarching categories: (1) *Automation and Streamlining*; (2) *Technological Fit and Feasibility*; (3) *Data Governance*; (4) *Information Accessibility*; and (5) *System Usability*. Each category represents distinct technological factors that influence how municipalities assess, pursue or refrain from organisational-level IT adoption for the purpose of open government under the legislative framework of the Woo.

Transparency. As mentioned earlier in this paper, one of the Woo’s core aims is to promote greater government *transparency*. Interviews suggest that transparency is not merely viewed as a policy goal, however, but also as an essential technological criterion in municipal considerations on Woo-related IT adoption. P16 – Woo project leader for both a medium-sized and a large municipality – emphasised this dual perspective: ‘We are (...) obliged to comply with the Woo, but actually the Woo should not be necessary at all.’ They argued that ‘every organisation should just comply with a (...) transparent way of working’, thereby making sure ‘that [it] can easily retrieve all [of its] documents from all the systems and that [it] can put them on all kinds of nice websites (...), [so] that [it] can just show [its] entire policy’, highlighting potential for technology to enable transparency. Similarly, P4 – ‘informal’ Woo project leader and information manager at a very large municipality – stressed that municipalities should not adopt just any IT solution, as an IT solution, for instance, ‘does need to have a well-defined

algorithm that you can explain, which is transparent’, reflecting a broader consensus among interviewees that transparency should be a built-in principle of technology itself.

Automation and Streamlining. Interviews revealed that the current municipal information landscape is characterised by fragmentation, with information scattered across a multitude of platforms, including, but not limited to, applications, document management systems (DMS) and/or network drives. To achieve proper municipal Woo compliance, numerous interviewees stressed the need to dismantle these fragmented and/or ‘siloes’ information structures. In this regard, ITs with *automation* capabilities (e.g., bulk processing, metadata recognition) were seen as essential in enhancing information retrieval and reducing manual burdens associated with handling the vast scale of *public information disclosure* mandated by the Woo (e.g., via automatic, rule-based publication workflows), adding up to tens of thousands of documents in some municipalities, as P1 – architect of the combined Open Government programme of a small and a very large municipality – illustrated. Interviewees closely tied this automation imperative to municipal organisations’ needs for *efficiency and productivity*, which were also found to act as central technological characteristics in municipal Woo-related IT adoption decision-making. As P14 – Woo contractor for two medium-sized municipalities – remarked: ‘[With ITs] you try to make [work] as efficient and easy as possible for colleagues. And at a logical moment (...) that you can then indicate with a system: “Which pieces should be published?”, and that it will then happen quite automatically’, reflecting municipalities’ push for ITs enabling more streamlined workflows in information retrieval and publication. Finally, while some interviewees perceived *artificial intelligence* (AI) as a high-potential enabler for purposes such as natural language search, document summarisation, and anonymisation, concerns over its maturity, reliability, and regulation seem to temper its deployment.

Technological Fit and Feasibility. The extent to which ITs can be *embedded* within municipalities’ existing technological ecosystems and user routines emerged as a key factor in their Woo-related IT adoption considerations. Numerous interviewees highlighted how municipalities appear to approach adoption strategically, favouring ITs *compatible* with their existing technological platforms. Insufficient compatibility, particularly with legacy systems, was argued to result in bottlenecks, given that numerous Woo processes – such as proactive disclosure – depend on interoperability between ITs such as document creation platforms, anonymisation tools, and publication systems. Consequently, *robust and reliable* systems – capable of handling high document volumes while supporting scalability – were considered

foundational in municipal Woo-related IT adoption decision-making, as they hold the ability to potentially reduce, for instance, operational risk and administrative burden. Finally, in this category's context, the *costs* of IT solutions were argued to either promote or hinder adoption, contingent upon timing and framing. For instance, interviews suggest that high up-front costs or procurement limitations (e.g., Dutch Public Procurement Act [Aanbestedingswet 2012]) may delay or even prevent adoption, whereas projected long-term savings often seem to justify investment.

Data Governance. Various factors related to data governance emerged as important to municipalities when considering the adoption of Woo-related ITs, with interviewees predominantly citing *anonymisation*. Manual anonymisation was seen as complex, time-consuming, and resource-intensive, prompting municipalities to seek technologies able to ease tasks surrounding anonymisation – often leading them to marketplace IT solutions enabling more automated workflows. As P4 explained: ‘(...) you’re not allowed to just publish everything. So (...) you need to redact things’, continuing that ‘before, people would manually go through and redact all those documents one by one. Now we do that with (...) automated tools available on the market for the municipality. That already results in (...) something like 30% time saved in handling a Woo request, for example.’ Closely associated to anonymisation were *privacy* and *information security*, factors which often seem to hinder municipal Woo-related IT adoption, primarily due to fears of legal conflicts, such as with the Dutch General Data Protection Regulation (AVG). As P9 – strategic advisor and leader of an information advisory team at a regional partnership – noted, municipalities must ‘take into account technical constraints [and] the AVG’, illustrating how overlapping legislations can complicate decisions. Similarly, P3 – Woo project leader and senior project manager at a large municipality – called out their organisation for having a ‘reluctant attitude’ towards the adoption of new technologies, ‘more focused on information security and personal data protection’ rather than embracing innovation quickly. Meanwhile, P9 observed that ‘disclosure, and especially being able to search all kinds of data sources, is a bit at odds with the obligations [municipalities] have from other legislation.’ And even if one could search through all kinds of data sources using IT, an organisation would have to remain mindful, assigning appropriate *permissions* to the right people, since ‘a search engine should only search the documents for which the official in question has permission, and not others’ mailboxes’, as P1 emphasised. Lastly, in this category's context, interviews suggest the *location of data storage* influences municipal Woo-

related IT adoption: apprehension about cloud-based data handling, digital sovereignty, and associated compliance with national or EU regulations may delay adoption.

Information Accessibility. The *findability of information* can be regarded as another key factor in municipal considerations on adopting Woo-related ITs. Interviewees emphasised that the mere availability of documents means little if both municipal personnel and the public cannot efficiently locate and access relevant public information. It has been posited that effective *search technologies*, which, for instance, support a ‘hybrid system’ (P1) of keyword-based and vector-based search, determine the actual utility of digital disclosure. Additionally, several interviewees highlighted the importance of proper *metadata tagging* to enhance the accessibility of information, with P7 – advisor on active disclosure and future-proof information management at a national programme – noting that currently ‘(...) the archives are a mess. (...) some things (...) are just not “metadated”, so you can’t find them.’

System Usability. Finally, addressing this dimension’s last category, interviewees considered the *user-friendliness* of a technology as important in municipal considerations on Woo-related IT adoption, due to its influence on end-user acceptance of IT solutions. When, for instance, an anonymisation tool serves great functionality but proves challenging to use, discomfort may arise among municipal personnel, necessitating personnel skill development through organisational training – factors which will be detailed in the following subsections. Moreover, the perceived *complexity* of an IT solution – whether related to, for instance, steep learning curves, internal design, or required process transformation – may impede municipal Woo-related IT adoption by causing organisational resistance. To mitigate such internal resistance, municipalities seem to gravitate towards adopting relatively intuitive and uncomplicated ITs instead.

4.2. Organisational Dimension

In this study, the organisational dimension refers to the characteristics and resources of municipal organisations themselves, focusing on the structures and processes that facilitate or constrain technology adoption within them (Baker, 2011, p. 233; Wang & Lo, 2016, p. 3). This subsection presents the 14 organisational influences (*italicised* in the text) identified in the data. One factor, *Organisational Information Management*, is discussed first and individually due to its antecedent status in this dimension. Remaining factors are grouped into four overarching categories: (1) *Organisational Readiness and Capacity*; (2) *Organisational Structure and*

Culture; (3) *Organisational Resources and Size*; and (4) *Organisational Autonomy and Strategic Alignment*. Each category represents distinct organisational factors that influence how municipalities assess, pursue or refrain from organisational-level IT adoption for the purpose of open government under the legislative framework of the Woo.

Organisational Information Management. When addressing the organisational dimension, it is sensible to commence with *organisational information management*, given that it emerged as an antecedent factor exerting substantial influence on municipal considerations regarding Woo-related IT adoption. As interviews revealed, current inadequate information management practices are widespread and form a prevalent issue for municipal organisations as, for instance, poor metadata, disorganised storage, and fragmented archives hinder both passive and proactive public information disclosure. Put plainly, their information is not easily *accessible*. In this regard, interviewees repeatedly described the Woo as both a trigger and a justification for initiating long-overdue reforms in information management. As P3 noted: ‘The fact that [information management] is not in order and (...) needs to be brought into order; that awareness isn’t new. It’s just that the Woo acts as a flywheel, as a crowbar, to initiate other changes within the organisation.’ In this sense, the Woo thus appears to operate not merely as a legislative requirement but also as a catalyst for broader organisational reform, fostering internal consensus on the necessity for innovation through IT adoption. Moreover, in this context, *standardisation* of information management practices (e.g., open metadata standards) was a recurring topic, with several interviewees describing how their municipality had explicitly aligned itself with initiatives, such as Common Ground¹ – detailed in this dimension’s last category – to support future-proof technology integration. Yet, a lack of national architectural direction (e.g., the failed implementation of PLOOI²) remained a point of frustration. P4 voiced this frustration, wishing that ‘we would just put one framework in place for this [Open Government] Act.’

Organisational Readiness and Capacity. In this study, *organisational readiness* denotes municipal organisations’ preparedness (or lack thereof) to adopt Woo-related ITs. Encompassing various elements such as leadership commitment, strategic direction, and an

¹ The Common Ground programme is a sector-wide initiative led by the Association of Netherlands Municipalities (VNG) to restructure municipal IT infrastructures by separating data from applications using open standards and shared, open source components.

² PLOOI (Platform Open Overheidsinformatie), tendered in 2018 (Hofmans, 2022), was a national initiative that sought to establish a centralised digital platform on which governments could independently disclose data. In early 2023, the development of PLOOI was discontinued due to the requirements of the new Woo, as the platform would have to be overhauled to such an extent that it was not considered realistic to further develop it (Hofmans, 2023).

innovation-oriented culture – the latter of which may be fostered through *training* – interviews suggest that high readiness primarily facilitates such IT adoption. However, not only current readiness but also previous *organisational experience* with ITs appears to influence current approaches, as numerous interviewees highlighted how their municipality seeks to apply formerly learned lessons to avoid pitfalls, anticipate barriers, and make pragmatic decisions about adopting IT solutions and organisational strategies thereto. Experience thus seems to shape adoption expectations, tactics, and adaptability. In this context, having a clear overview of existing *organisational processes* – such as workflows tied to particular Woo categories – appears to allow for more targeted IT adoption, as most interviewees noted that such an overview can enhance municipal organisations’ ability to deploy ITs internally where they support core Woo-related tasks such as anonymisation or public disclosure. However, as P5 – adviser and project manager services at a medium-sized municipality – noted: ‘The biggest challenge [for the municipality] is to understand who is involved in [the Woo], what processes are in place, and then who owns those processes’, highlighting how a lack of process clarity, by contrast, can complicate adoption. And then, even when an organisation has a clear picture of its processes, most interviewees suggested that successful IT adoption remains uncertain. For instance, as P6 – project leader information and services at a medium-sized municipality – illustrated, some municipalities aim to innovate but ‘just don’t have the capacity’, highlighting how *time and capacity* constraints can hinder or even block adoption despite strategic intent.

Organisational Structure and Culture. Drawing on the interviews, the *structure* of a municipal organisation appears to substantially influence their adoption of ITs to comply with the Woo. Interviewees revealed how some municipalities have established large, centrally coordinated programmes that enable consistent and agile adoption, whilst others rely on smaller teams or personnel with dual roles (e.g., combining Woo-duties with other obligations), facing greater adoption challenges. In this regard, interviews suggest that municipalities lacking formal coordination roles (e.g., Woo-coordinators) often face oversight and timing gaps in IT adoption, with decentralised responsibilities causing more varied organisational-level adoption performance. As a result, centralised leadership and standardised processes were widely seen as essential. Similarly, *organisational culture* appears to play a major contextual role, with municipalities having cultures valuing openness, shared learning, and experimentation seemingly more receptive to IT adoption than those with more bureaucratic, reactive, or risk-averse mindsets. This contrast can be exemplified by looking at the interviews with P1 and P2. Whereas P2 – chief data officer at a regional partnership – observed that the willingness to

experiment and innovate varied across the municipalities they are familiar with, elaborating: ‘In the context of the Woo, I don’t see that reflected so much, because (...) there is urgency behind it. So we’re not going to experiment too much, we’re just going to put it down’, indicating a more reactive, purely compliance-driven culture. In contrast, P1 described their municipality’s conscious decision to embrace experimentation. Through a living lab approach, it tried to ensure that ‘when people start having questions and have to look for documents, they spend as little time as possible finding the right one’, reflecting a more experimentative, innovation-oriented culture.

Organisational Resources and Size. *Organisational resources* – comprising financial, human, and technological assets – shape the extent to which municipalities consider to and can adopt Woo-related ITs. Interviews suggest municipalities with sufficient resources are more capable to investing in tailored or advanced IT solutions, securing external expertise, and confidentially dedicating personnel to support adoption processes, functioning as a facilitator to their innovativeness. On the contrary, resource-scarce municipalities more often seem to rely on proven, low-risk ITs, forcing them into reactive rather than proactive positions, functioning as a barrier. Moreover, interviewees emphasised that *municipal size* – typically measured in population, staffing, and budget – affects adoption capacity as, as discussed in this dimension’s preceding category, larger municipalities tend to have broader capabilities and more formalised structures, while smaller municipalities operate with leaner teams and greater cross-functionality. However, nuance is important here as, for instance, P3 noted that ‘there are small municipalities that are really frontrunners’, similar to P11 – information-management consultant and records manager at a very large municipality – who mentioned that the scale of their municipality ‘has worked against rather than with it’, as ‘the downside of such a large organisation is that there are a lot of opinions.’ Additionally, there are plenty of examples of relatively smaller municipalities joining forces by entering into formal collaborative bodies – expanded upon in the discussion of the environmental dimension. Organisational size thus does not appear to deterministically predict IT adoption; rather, it seems to act as a contextual influence.

Organisational Autonomy and Strategic Alignment. Finally, in this dimension’s context, both *organisations’ autonomy needs* and strategic alignment with the *Common Ground programme* appear to influence municipal considerations on adopting Woo-related ITs, albeit seemingly less pronounced than other organisational factors. On the one hand, some municipalities’ pursuit of technological and procedural autonomy reflects open government

ideals. They seem to value the ability to select IT solutions suited to their specific needs, while preferably avoiding vendor lock-in situations. On the other hand, higher degrees of organisational autonomy may fragment IT landscapes, complicating, for instance, comparison with other municipal organisations due to ITs being less standardised. Still, interviewees, such as P5, stressed a desire for ‘as little dependence on the [IT] supplier as possible’ – a need the Common Ground programme addresses. Being a sector-wide initiative led by the Association of Netherlands Municipalities (VNG) to restructure municipal IT infrastructures by separating data from applications using open standards and shared, open source components, aligning with Common Ground was frequently described as offering municipalities potential efficiencies, modularity, and vendor independence, influencing their IT adoption processes by shaping the structural and strategic landscape in which they operate.

4.3. Managerial Dimension

Drawing on Hasani et al. (2016), this study defines the managerial dimension as encompassing the characteristics of higher-level authorities within municipal organisations (e.g., Woo project leaders, the municipal council, municipal information managers, or externally contracted domain experts – henceforth ‘municipal leaders’) whose attitudes, perceptions, and experiences shape how such organisations adopt ITs for Woo compliance. This subsection presents the 5 managerial influences (*italicised* in the text) identified in the data. Four factors are grouped into two overarching categories: (1) *Management Innovation Drive, Attention and Support*; and (2) *Management Awareness and Competence*. Both categories represent distinct managerial factors that influence how municipalities assess, pursue or refrain from organisational-level IT adoption for the purpose of open government under the legislative framework of the Woo. The remaining factor *Personnel Awareness, Competence and Skill Building by Management* is discussed last, due to its association with the individual dimension, serving as a conduit facilitating the transition into this following dimension.

Management Innovation Drive, Attention and Support. In this study, *management innovation drive* refers to municipal leaders’ proactive efforts (or lack thereof) in initiating and embedding Woo-related ITs within their municipal organisation with the aim of boosting internal efficiency and public value under the Woo. Interviewees – mostly municipal leaders themselves – stressed that assertive, tech-savvy leaders who champion and pilot novel IT solutions, even amid challenges such as financial uncertainty, tend to steer their organisation in such a manner that it ultimately exhibits greater willingness to adopt IT solutions to comply

with Woo's obligations. Conversely, leaders facing constraints, such as ethical dilemmas or organisational inertia, seem less inclined to act. Beyond their internal drive, the extent to which municipal leaders provide *structural attention and support* for municipal Woo-related IT adoption – for instance, through prioritisation, resource allocation, and facilitation of interdepartmental coordination – emerged as essential. Interviewees argued that when leaders integrate Woo compliance into the high-level governance structures of their organisation (e.g., via steering groups), they strengthen the attention and conditions for sustainable IT adoption. As interviews suggest, structural support mainly involves ensuring that technical transitions are user-centric, reducing friction for frontline personnel (i.e., personnel for whom ITs are an integral part of their daily operations). A user-first mindset seems to largely guide efforts to align IT solutions with existing workflows.

Management Awareness and Competence. Interviews revealed *management awareness* and *competence* as tightly intertwined factors determining municipal leaders' readiness and capacity to embrace IT adoption in municipal pursuit of Woo compliance. Leaders who grasp the significance of the Woo's objectives and perceive IT solutions as essential legal compliance enablers seem more inclined to champion adoption by, for instance, providing vision, support, and resources. In this regard, P4 described how certain leaders within their organisation, upon recognising efficiencies afforded by ITs, began proactively requesting IT solutions: 'Not all managers have realised it yet, but quite a large group have. They are like: "By using IT, things can become a lot more bearable", and that is quite nice to see, that they have asked for it themselves.' Conversely, leaders lacking such awareness may hinder rather than foster sustainable IT adoption efforts. As P6 noted: '(...) from a managerial point of view, I still think sometimes that people think too lightly of: "(...) let's just buy an application, then we're saved for a while"', detailing that they believe 'the adoption aspect is still seriously underestimated.' In this regard, P3 stressed that 'for decision-makers (...) it should be repeated more often: "(...) be intentional about this"', emphasising that effective leadership in IT adoption requires 'an understanding of what the [Open Government] Act means.' As this implies, effective municipal leaders must thus possess not merely awareness, but also the knowledge and skills to critically assess IT solutions, manage associated procurement confidently, and seamlessly integrate innovations into organisational workflows. As P1 noted, 'technologically, everything is available'; yet, within their organisation, 'there is still insufficient knowledge to actually deploy it properly' – underscoring how even despite awareness, a deficit in competence can still stall adoption.

Personnel Awareness, Competence and Skill Building by Management. Concluding the managerial dimension, interviews suggest that the adoption of Woo-related ITs is largely dependent upon *municipal leaders' efforts to build awareness, competence, and skills among personnel* within their organisation. Their initiatives – such as establishing supportive structures, conducting awareness campaigns, and implementing targeted training programmes – emerged as enablers shaping frontline personnel's willingness and ability to engage with Woo-related IT solutions. Interviewees emphasised the value of such proactive leadership engagement – including, for instance, early inclusion of end-users and live demonstration – in fostering enthusiasm among municipal personnel for adopting Woo-related ITs. 'Just show a demo. Let such an employee get excited with [a technology] before it is actually chosen. Let people see its added value', as P8 – non-municipal Woo specialist – remarked, describing that while a manager may want a particular IT solutions, without personnel buy-in, adoption falters. In this regard, clear leadership communication regarding the purpose and benefits of Woo-related ITs seems crucial, as P7 articulated the value of a shared vision rather than mere technical implementation to ensure personnel recognises the value of such adoption. Furthermore, P4 detailed skill-building efforts, describing their municipality as being 'very active in training personnel and facilitating [them]', continuing that during a recent – non-Woo related – digital transition, personnel had been on a multi-day training, followed by department-specific sessions to address remaining knowledge gaps. Collectively, interviewees highlighted how well-thought-out initiatives of municipal leadership can significantly reduce the resistance of personnel towards Woo-related IT adoption. This underscores the pivotal role of leadership, not merely in technical aspects of adoption, but as influencers whose awareness, competence, and proactive skill-building strategies can determine individuals' acceptance of and capacity to embrace such ITs.

4.4. Individual Dimension

In this study, the individual dimension reflects the individual characteristics of municipal personnel influencing technology adoption, focusing on their individual adaptability, attitudes, and engagement (Haneem & Kama, 2018, p. 5517). This subsection presents the 6 individual influences (*italicised* in the text) identified in the data. Four factors are grouped into two overarching categories: (1) *Personnel Experiences, Responsibilities and Comfort*; and (2) *Personnel Awareness and Competence*. Both categories represent distinct individual factors that influence how municipalities assess, pursue or refrain from organisational-level IT

adoption for the purpose of open government under the legislative framework of the Woo. In addition, two factors – (1) *Personnel Innovation Drive*; and (2) *Personnel Skill Development* – are discussed separately, as interviews suggest their influence to be more limited.

Personnel Experiences, Responsibilities and Comfort. In the context of the Woo, *municipal personnel's prior experiences and current responsibilities* appear to heavily influence their engagement with and acceptance of municipal IT adoption. Interviewees consistently highlighted how personnel's previous exposure to ITs, coupled with the nature of their present roles, either supported or hindered adoption. For instance, when IT solutions demonstrably alleviated workload and/or improved task efficiency, interviewees described personnel as being more receptive to working with them. As P5 illustrated, some employees were 'really happy and eager' to adopt automated redaction software, viewing it as an innovation that 'makes their work a bit more pleasant.' In such cases – where ITs were perceived as enablers; supporting personnel in fulfilling their duties, fostering enthusiasm and proactive engagement – this appeared to notably benefit adoption. Conversely, limited prior experience or poor alignment between IT solutions and existing responsibilities appears to frequently obstruct adoption. In this regard, *personnel comfort* seems critical. Several interviewees observed that typically only a small subset of personnel – so-called 'early adopters' – readily embrace solutions, whereas, as P3 remarked, 'the largest part of [the] organisation feels comfortable keeping the status quo.' Interviewees attributed this reluctance to the need for personnel to adapt to new technologies and acquire new skills, as well as adjust their collaborative practices. These demanding needs, combined with, for instance, repeated waves of technological change, were cited as sources of fatigue, contributing to discomfort, cautiousness, or outright resistance to adopting ITs. In this regard, in particular, (older) personnel struggling to keep pace were frequently identified by interviewees as requiring additional support and training to build comfort and confidence with IT solutions – an investment that, when made, was argued to improve adoption outcomes.

Personnel Awareness and Competence. *Awareness and competence* among municipal personnel – paralleling *management awareness and competence*, discussed previously in the managerial dimension – appear to constitute interconnected factors determining individuals' readiness and capacity to embrace IT adoption in municipal pursuit of Woo compliance. Personnel awareness, referring to the extent to which personnel grasp the significance of the Woo's objectives and the implications of adopting ITs to ensure compliance, appears to influence their willingness and motivation to actively engage with ITs, affecting the success of

IT adoption and integration into daily workflows. Interviews suggest a predominantly contextual influence, as awareness did not appear uniform across municipal organisations. In cases where awareness was relatively low among personnel, compliance efforts appeared to be minimal and resistance to IT adoption more pronounced – highlighting inadequate awareness as a barrier. Conversely, higher degrees of awareness were associated with more successful adoption. Personnel competence, meanwhile – denoting the skills and capabilities municipal personnel require to effectively utilise ITs adopted for Woo compliance into their daily operations – was mentioned less frequently in interviews, but more clearly seems to determine proficient individual interaction with IT solutions, influencing the overall effectiveness of adoption efforts. In this regard, competence gaps were commonly cited by interviewees as considerable barriers, especially in contexts where digital capabilities varied. Nonetheless, competence can also facilitate adoption, especially illustrated by cases where municipalities actively fostered such capabilities among their personnel. As will be elaborated upon in the discussion of this dimension's concluding factor, for instance, targeted upskilling initiatives were highlighted as means of facilitating adoption.

Personnel Innovation Drive. Although cited less frequently than the factors grouped within the previous two categories, *personnel innovation drive* emerged as an influential factor in municipal Woo-related IT adoption in almost every interview. This factor – paralleling *management innovation drive*, discussed previously in the managerial dimension – reflects municipal personnel's proactive efforts (or lack thereof) in such organisational-level IT adoption, for instance, through the initiation of and experimentation with ITs. Under the framework of the Woo, interviews suggest it often intersects with organisational characteristics, such as *culture* and *size*, and managerial aspects, such as *structural attention and support*. For instance, P9 described a bottom-up dynamic in their organisation, noting that 'there are not many innovation questions coming to us from the management', emphasising that 'it's very much the other way round.' They recalled a colleague, responsible for the Dutch Public Records Act (Archiefwet 1995), saying: 'Boy, something is going to happen', referring to the Woo. 'Shouldn't we do something with it?' Similarly, P4 noted that their municipality's abundant expertise makes personnel 'much more active to try things out and deploy innovations.' In other cases, however, such an innovation-oriented culture prevails mainly 'in forward-thinking information managers, but (...) too little organisation-wide', as P15 – consultant and Woo project leader at a small municipality – remarked about their organisation. Organisational characteristics can also hinder personnel innovation drive, as evidenced by P11, who explained

that responsibilities within their organisation lie ‘as deep as possible’, giving personnel significant discretion over which IT solutions they use. If personnel subsequently resist change, it ‘does make it difficult to reach a good solution that is supported’, highlighting how without personnel buy-in, even well-designed solutions may not be adopted organisation-wide. Thus, while personnel innovation drive seems to facilitate municipal Woo-related IT adoption when present, it can become a barrier when lacking.

Personnel Skill Development. Lastly, within the scope of this dimension, as alluded to earlier this subsection, the internal motivation of municipal personnel to engage in skill development – such as through targeted upskilling initiatives – emerged as an influential factor in the adoption of IT solutions supporting municipal Woo compliance. Interviews suggest that municipalities that invest in or facilitate the development of IT-related skills among their personnel foster greater individual adaptability, more positive attitudes, and increased engagement with adoption. However, importantly, such initiatives only appear effective when personnel are genuinely willing to participate. To illustrate this, P15 recounted: ‘(...) I have genuinely experienced it once, when a new [IT] solution was being rolled out within the organisation, that someone said: “(...) I’m going to retire in six months, so I’m not going to do this anymore”’, continuing that such a situation can leave an organisation like theirs ‘with its back against the wall.’

4.5. Environmental Dimension

In this study, the environmental dimension pertains to the arena in which municipal organisations operate, encompassing external factors such as regulatory frameworks, peer dynamics, and technology service providers’ presence or absence (Baker, 2011, p. 235; Wang & Lo, 2016, p. 3). This subsection presents the 11 environmental influences (*italicised* in the text) identified in the data. One factor, *IT Vendor Ecosystem*, is discussed individually, with the remaining factors grouped into four overarching categories: (1) *Legal, Societal, and Political Environment*; (2) *Inter-Municipal Relations and Collaborations*; (3) *Non-Municipal Stakeholders*; and (4) *Financial Resources and Support*. Each category represents distinct environmental factors that influence how municipalities assess, pursue or refrain from organisational-level IT adoption for the purpose of open government under the legislative framework of the Woo.

Legal, Societal and Political Environment. In this study's context, it would be counterintuitive to initiate the environmental dimension's discussion with any other factor than the most salient driver of municipal Woo-related IT adoption: *national government legislation*. By converting ideals like transparency and proactive public information disclosure into legally binding duties, the Woo itself directly compels organisations to invest in ITs to ensure legal compliance. For instance, as noted earlier, the scale of required disclosure mandated by the Woo is so vast that manual processing seems impractical, if not impossible – necessitating IT support. Interviewees indicated, however, that urgency stems not only from the Act's mere existence but also from its structural design, mainly its phased rollout. As P2 explained, 'the first mandatory phase [of the Woo] is already in effect', adding, 'we have to introduce something within a very short time', referring to IT needs. This illustrates how the Woo's legal pressure acts as a catalyst, leaving organisations little alternative but to innovate. Nonetheless, compliance is far from straightforward. Municipalities must deftly navigate a complex and, at times, overlapping legislative landscape, as numerous interviewees emphasised that the Woo's broad obligations intersect with a constellation of legislative frameworks – such as the Dutch General Data Protection Regulation (discussed in the technological dimension's *Data Governance* category), the Dutch Public Procurement Act, and the Dutch Public Records Act. This highlights how Woo compliance cannot be approached in isolation but must be managed within a broader legislative ecosystem – an interplay that can slow municipal Woo-related IT adoption. Beyond legislation, *citizen demand* – referring to public expectations, needs, and pressures (or lack thereof) for government transparency – proved more ambivalent. Numerous interviewees observed relatively low direct demand from average citizens for government information; most do not request such information unless personally affected. As P7 put it, 'it remains a bit of an assumption that citizens are interested in government information', adding that while they may engage with journalism based on public government information, they rarely seek raw documents. This lack of grassroots pressure can stall IT adoption because, in the absence of visible public demand, municipal leaders – such as the *municipal council*, which has the clout to make-or-break IT adoption, as its support is often a prerequisite for robust adoption – may feel less urgency to prioritise it. Indeed, some interviewees noted the Woo often competes with initiatives tied to more tangible citizen concerns, such as public services or infrastructure. Still, despite most citizens not individually requesting government information, rising societal expectations of transparency and digital accessibility from government were noted. Today's citizens seem increasingly 'aware of what's possible in the field of technology', as P3 remarked, comparing government services to the seamless information access they get

from modern digital platforms. In this sense, citizen demand exerts normative pressure: municipalities risk public criticism and eroded trust if perceived as opaque or technologically outdated. They must, therefore, reconcile low explicit demand with high implicit expectations of citizens for modern, open governance. Lastly, though mentioned infrequently, an erratic *geopolitical climate* appeared to nudge various municipalities towards exploration of opportunities for digital sovereignty and reduced vendor reliance, especially on U.S. tech firms. While not dictating, according considerations appeared to shape the framing of municipal Woo-related IT adoption, with municipalities increasingly interested in European or open-source IT solutions.

IT Vendor Ecosystem. Interviewees emphasised that municipalities operate within an *IT vendor-driven ecosystem* that both facilitates and constrains their Woo-related IT adoption. On the one hand, this responsive market ecosystem is able to both quickly and efficiently satisfy municipalities' needs by offering them off-the-shelf IT solutions for Woo-related tasks, such as proactive disclosure and anonymisation. As P2 observed: 'there are several software vendors that have products specifically for the Woo. The big names (...) all have their own solutions', sparing municipalities the costs and complexities of developing Woo-specific IT systems in-house, from scratch. On the other hand, heavy reliance on vendors is often seen as problematic, as some interviewees pointed out that municipalities have historically been locked into long-term contracts with just a handful of dominant vendors, often resulting in inflexible IT adoption, and subsequent fragmented and/or 'siloed' applications. Limitations are compounded by procurement regulations, further exacerbating difficulties by hindering agile experimentation with ITs. In this regard, P1 bluntly described the Dutch Public Procurement Act as 'one of the most terrible laws in this area, for technology adoption.' They explained that any project above €200,000 must go through a lengthy European tender: 'You can't just say: "Let's form a team tomorrow and start developing"', highlighting how protracted procurement slows down IT adoption. Consequently, the vendor ecosystem emerged as an important contextual factor – intertwined with external factors such as legislation. While it provides essential IT solutions and innovations that support municipal Woo compliance, it also imposes dependencies and procedural hurdles. Municipal Woo-related IT adoption therefore seems heavily influenced by how effectively municipalities navigate the vendor ecosystem's offerings and limitations.

Inter-Municipal Relations and Collaborations. In the context of the Woo, interviews revealed that municipalities closely monitor the actions of *other municipalities* (i.e., their peers) regarding IT adoption. Positive peer-examples seem to help reduce uncertainty, offer practical

know-how, and exert a certain normative pressure to emulate frontrunners. As P5 noted, ‘really one of the first things we do when considering [the adoption of an IT] is look: which municipalities already have it?’, so that ‘then we can see how they have set it up, how they work with it, whether they are satisfied with it, [and] what issues they encounter’, remarking that ‘for us, that really does play into the decision whether to consider something or not.’ This reflects how peer awareness can profoundly shape municipal Woo-related IT adoption decision-making – sometimes even discouraging action. Especially among resource-scarce municipalities, interviews suggest that the dominant attitude is ‘wait and see’ until a clear success story emerges. When few peers take the lead or when appropriate guidance is lacking, a collective caution may take hold, delaying adoption across municipalities. Thus, peer influence seems to function as a double-edged sword: while successful precedents appear to catalyse uptake of IT solutions, shared hesitation appears to contribute to inertia. Moreover, in this context, interviewees noted how formal *collaborative bodies* – such as regional partnerships, shared-service centres, or joint open-source initiatives – enable municipalities to pool resources, align expertise, and distribute innovation-related workloads. Those interviewed whose organisation participated in such collaborations – or who themselves were directly involved in one – reported faster and more effective municipal Woo-related IT adoption. For instance, in one case, through collaboration, nine municipalities successfully co-developed an open-source Woo publication platform, a feat regarded as having been achieved with far greater efficiency than would have been possible through independent development. Collaborative bodies thus seem to act as powerful enablers of municipal Woo-related IT adoption. Conversely, a lack of collaboration appears to constitute barriers; in cases where no central coordinating body provided leadership, municipalities were seemingly left to navigate adoption alone – resulting in higher costs, fewer realistic vendor options, and overall slower progress.

Non-Municipal Stakeholders. As became evident throughout the course of interviews, municipalities frequently rely on *non-municipal externals*, such as consulting firms and associations, for support in adopting Woo-related IT solutions. In the case of the former, municipalities may hire Woo-specialists from outside of their organisation to access expertise and capabilities not available internally. In the case of the latter, associations, such as the VNG or Dimpact³, are often expected to facilitate more sector-wide coordination of IT adoption. Nevertheless, despite the valuable knowledge, skills, and resources such external actors can

³ Dimpact is a cooperative association of Dutch municipalities in which members develop and manage IT solutions to improve public services, thereby focusing on co-creation and knowledge exchange (Dimpact, 2024).

contribute, their involvement tends to be perceived as temporary support, however; interviewees generally regarded them as pragmatic enablers of adoption, believing that achieving sustainable IT adoption ultimately depends on cultivating and retaining internal expertise. Moreover, interviewees indicated *non-municipal government organisations*, including, but not limited to, national ministries and their subordinate agencies, set the contextual landscape for municipal Woo-related IT adoption by monitoring compliance and exerting indirect pressure, hastening adoption efforts.

Financial Resources and Support. In conclusion – both for this dimension and the overall findings section – while *financial resources and support* had limited prominence in the interviews, their influence on municipal Woo-related IT adoption should not be underestimated. As P4 illustrated, their municipality benefitted from a unique situation in which, in addition to national funding, it received substantial supplementary budget for the implementation of the Woo from its municipal council. This enabled the formation of a dedicated programme team and facilitated a proactive approach to Woo implementation – an approach P4 believed many other municipalities, lacking such support, could not match. In this regard, receiving (additional) financial backing clearly acted as a catalyst for IT adoption, whereas its absence appears to constitute barriers. Meanwhile, *the Dutch Municipal Fund* – the core funding mechanism for municipalities – was portrayed as a critical contextual factor influencing IT adoption capacity. Various interviewees expressed concern over impending cuts to this fund, warning that the looming so-called ‘ravine year’ can jeopardise the continuity of municipal Woo-related IT adoption processes. A restricted Municipal Fund, therefore, stands to become a substantial impediment to the sustainability of such adoption. Thus, while financial considerations were not prominently featured in the interviews, they can ultimately play a pivotal role in municipalities’ capacity to invest in and sustain Woo-related IT adoption.

5. Discussion

In this section, which is divided into four subsections (5.1–5.4), the findings of this study will be discussed. First, in subsection 5.1, this study’s empirical findings will be synthesised holistically to reveal connections and patterns across the Technological-Organisational-Managerial-Individual-Environmental (TOMIE) framework’s dimensions. Subsequently, the remaining subsections will be structured in accordance with Gopaldas’ (2016) ‘backend’ template. Therefore, subsection 5.2 will discuss this study’s theoretical contributions. Next,

subsection 5.3 will address its practical implications. Finally, in subsection 5.4, several of its key limitations will be acknowledged and opportunities for future research outlined.

5.1. Synthesis of Findings and Relationships

The main purpose of this study was to investigate which factors influence the adoption of information technologies (ITs) for open government by Dutch municipal organisations operating under the legislative framework of the Dutch Open Government Act (Woo). Structuring this inquiry around the TOMIE framework, this study's findings suggest that municipal Woo-related IT adoption is influenced by an interplay of 55 factors – exerting varying degrees of influence – distributed across all five dimensions of TOMIE. However, as the findings indicate that the identified factors seldom appear in isolation but rather seem frequently interrelated, it is imperative to consider not only their individual influences but also their mutual relationships. Accordingly, this subsection provides an integrated overview of the connections and patterns across TOMIE.

A particularly salient dynamic pertains to the interplay between external (i.e., environmental) pressures and internal (i.e., organisational) IT adoption capacities. Drawing on interviewees' insights, the regulatory environment, exemplified by the Woo's legally binding duties, and the societal environment, characterised by rising societal expectations of government transparency, function as important external drivers prompting municipalities to consider organisational-level IT adoption to ensure Woo compliance. This is primarily due to a widespread municipal belief that achieving full compliance through manual means is impractical, if not impossible. However, the extent to which a municipality can actually respond to these external pressures appears to depend largely on its internal context; if a municipality lacks key elements such as adequate information management practices, structured processes, or formal coordination roles (e.g., Woo-coordinators), even strong regulatory or societal pressures may not result in effective adoption. While external support may moderate this – as findings indicate that municipalities can benefit from, for instance, national funding or inter-municipal guidance, strengthening their adoption capacities – still, external support requires internal follow-through (e.g., thoughtful resource allocation by municipal leadership). While external drivers thus seem to initiate momentum, an organisation's internal context primarily appears to dictate actual municipal Woo-related IT adoption.

Beyond these external, top-down pressures, findings indicate the environmental context encompasses peer influences, collaborative bodies, IT vendors, non-municipal stakeholders, and financial resource support – all of which likewise appear to interact with internal IT adoption dynamics. Findings indicate that most municipalities do not adopt ITs in isolation, but actively monitor and aim to learn from each other, with municipalities engaging in formal collaborations having seemingly faster and more effective adoption. One municipality's adoption success may spark adoption elsewhere. Nevertheless, while external success can be inspiring, replicating it internally seems to depend on factors such as management innovation drive and personnel competence, underscoring that external best practices need internal champions to be acted upon. Furthermore, IT vendors and non-municipal stakeholders – who may supply municipalities with IT solutions and knowledge – were frequently described to guide Woo-compliant IT design, fill internal gaps, or exert indirect pressure by monitoring compliance, thereby predominantly hastening adoption efforts at the potential loss of a degree of organisational autonomy. Lastly, financial support from the environment (e.g., supplementary budget for the Woo) may alleviate organisational budget pressures; however, findings indicate this only occurs when internal actors identify, secure, and deploy those resources effectively.

Within municipalities, findings indicate that municipal leaders play a pivotal role in steering Woo-related IT adoption. According to interviewees – mostly municipal leaders themselves – proactive municipal leaders, who initiate and embed such ITs within their organisations with the aim of boosting internal efficiency and public value, seem to accelerate adoption by prioritising open government on municipal strategic agenda's. Their drive, attention and support for IT adoption were argued to signal urgency across the organisation, helping overcome inertia. Yet, proactive leadership alone appears to be insufficient; without an organisational structure facilitating or culture supporting, for instance, flexibility and experimentation, even the most motivated leaders may encounter resistance. In this regard, leaders seem most influential when they recognise and frame Woo-related ITs not as mere standalone solutions, but as means of advancing public services (e.g., improving citizens' trust in local government or streamlining internal workflows in information retrieval and publication). This approach to municipal Woo-related IT adoption entails a shift in perception from legal compliance to strategic organisational development, which appears to increase the likelihood of broader organisational buy-in.

On a more individual level, IT solutions ultimately have to be used on a day-to-day basis by municipal personnel. Consequently, interviewees deemed their engagement, attitudes, and skills in relation to municipal Woo-related IT adoption processes essential. Findings indicate that personnel who are well-informed about the Woo's goals and sufficiently digitally competent accelerate related IT adoption, as those who see value in the Woo or have prior experiences with comparable ITs were described as more adaptable and proactive. However, such individual readiness did not appear to be naturally innate; rather, it frequently seems to require cultivation through organisational and management efforts. In this regard, organisational readiness measures and management's investment in capacity-building (e.g., offering targeted training programmes) appear to directly strengthen individual capabilities and thereby acceptance of Woo-related IT adoption. Meanwhile, technological design also matters. Personnel seems more likely to be positive towards IT adoption if solutions introduced are intuitive and integrate seamlessly into daily workflows. Conversely, if ITs are too complex or disconnected from daily operations, even strong organisational or managerial support may not overcome personnel resistance. On an individual level, successful municipal Woo-related IT adoption thus mainly appears to hinge on investing in personnel – ensuring they have the awareness, skills, and motivation to carry adoption forward.

Regarding technological factors influencing municipal Woo-related IT adoption, transparency emerged as particularly salient. Findings indicate that municipalities predominantly aspire to adopt IT solutions purposefully designed to promote transparency, thereby responding to the external legislative pressure imposed on them by the Woo itself. In this context, as municipalities confront internal challenges posed by the Woo – such as disclosing vast quantities of documentation – they appear to be pursuing ITs that also facilitate more efficient, productive, and automated organisational workflows, thereby primarily aiming to alleviate manual burdens such as anonymisation on frontline personnel. In this regard, having a clear overview of existing organisational processes appears advantageous to deploy ITs internally where they support core Woo-related tasks. Yet, findings indicate that municipal Woo-related IT adoption is bounded by technological fit and feasibility. For instance, if ITs cannot connect with legacy systems or demand disruptive, costly workflow overhauls, their adoption may be delayed or fail to occur, despite the potential benefits to workflow they may offer. Here, looming cuts to the municipal fund appear to intensify scrutiny; high up-front IT adoption costs seem difficult to justify, whereas clear long-term savings may tip the balance in favour of adoption. Data governance considerations appear to deepen this calculus as, for

instance, fears of legal conflicts and privacy considerations seemed to create a certain secure-by-design threshold for IT adoption. Moreover, findings highlighted how formal openness means little if people – both within and outside of municipal organisations – cannot properly locate and access public information. Therefore, robust search technologies, possibly externally provided by IT vendors, and rigorous metadata enrichment, requiring adequate organisational information management practices, were deemed important in adoption considerations. Finally, interviews indicate municipalities view system usability as pivotal in municipal Woo-related IT adoption, favouring intuitive solutions to avoid organisational resistance, low personnel acceptance, and the need for extra training.

Ultimately, municipal Woo-related IT adoption appears to be an inherently multidimensional institutional process. No single dimension of TOMIE seems to function independently, nor does any particular (category of) influence(s) within them appear to necessarily dominate. Rather, adoption appears to be the result of the alignment and mutual reinforcement of the influential factors identified in this study. While environmental pressures (e.g., regulatory and societal) may prompt initial adoption efforts, organisational and managerial factors largely determine whether these efforts are sustained. Frontline personnel influence whether daily adoption momentum continues, while technological factors may facilitate or hinder progress. Municipal Woo-related IT adoption therefore emerges as a concerted balancing act, with the environment setting the tempo, municipal organisations and its leaders orchestrating the response, individuals providing the rhythm, and technological characteristics determining the final melody.

5.2. Theoretical Contributions

Put simply, theoretical contributions are additions to existing academic knowledge (Scott, 2025, p. 1). The present study makes several notable contributions of this kind, which will be discussed in this subsection.

Addressing a Gap in IT Adoption Research. While a growing body of literature investigates innovation-decision processes across various IT adoption contexts (Haneem & Kama, 2018, p. 5510), significant gaps remain in our understanding of these processes within specific government settings. Specifically, within the scope of this study, while previous studies have examined factors influencing IT adoption in various government contexts – primarily at the organisational level – with some recognising IT’s potential to advance open government

(e.g., Adnan et al., 2019; Çaldağ et al., 2019; Wang & Lo, 2016), to date, research systematically investigating factors influencing IT adoption in local government contexts remains scarce (Haneem et al., 2019, p. 233). This particular research gap is especially pronounced when investigating IT adoption for the specific purpose of open government. Several factors compound this gap. For instance, prior studies on IT adoption in government contexts have often yielded disparate results, depending on the context or studies under investigation. Also, open government studies frequently fail to consider ITs as important components of open government and, consequently, overlook their potential as enablers of administrative reform and governance transformation (Gil-Garcia et al., 2020, p. 483). In this regard, the present study stands among the first studies to systematically investigate factors influencing IT adoption in a local government context, highlighting 55 distinct factors uniquely influencing organisational-level IT adoption within the Dutch municipal open government (i.e., Woo) context – a novel, previously unstudied, local government context. By examining this underexplored area, it not only fills a critical gap in our understanding of innovation-decision processes within a specific governmental IT adoption context, thereby making a significant contribution to academic literature, but also contributes to broader understanding of organisational-level IT adoption in comparable government contexts.

Empirical Validation of TOMIE. Beyond addressing the identified gap in IT adoption research in local government contexts, despite the Technological-Organisational-Managerial-Individual-Environmental (TOMIE) framework, as proposed by Adnan et al. (2019), promising a broader analytical perspective on IT adoption at the organisational level in comparison to Tornatzky et al.'s (1990) Technology-Organisation-Environment (TOE) framework, to the best of knowledge, the applicability of the former had not yet been empirically explored and therefore validated in any specific IT adoption case until the present study. However, nuance matters here. While previous studies have examined organisational-level IT adoption in various government contexts, in doing so, they have typically sought to extend TOE solely for their own specific research purposes. This has resulted in modified version of TOE that closely resemble TOMIE – such as T-O-I-E (e.g., Haneem et al., 2019) and T-O-M-E (e.g., Adnan et al., 2021) – identifying influential factors across all five dimensions of TOMIE. However, none of these studies have deliberately drawn on the TOMIE framework as the basis for their investigation of a certain IT adoption case, nor acknowledged the framework at all. Rather, the identification of factors aligning with TOMIE's dimensions in these studies was a by-product of their alternative operationalisations. Nevertheless, when viewed through the analytical lens

of the present study, these findings can be retrospectively aligned with TOMIE, even though they were not originally framed as such. Still, given this nuance and the present study's results, this study thus remains standing as the first deliberate empirical validation of the TOMIE framework, directly heeding Adnan et al.'s (2019, pp. 373–374) call upon researchers to validate their proposed model through empirical means. By doing so, it not only fills the identified gap in TOMIE's empirical application but also demonstrates its theoretical applicability; indeed, TOMIE appears to offer a broader, more comprehensive framework for studying organisational-level IT adoption in open government contexts than TOE.

Open Government IT Adoption as a Multidimensional Institutional Process. The present study moves beyond simply validating the TOMIE framework to offer empirical depth by identifying 55 distinct factors, distributed across all of TOMIE's dimensions, uniquely influencing how Dutch municipal organisations adopt ITs for the purpose of open government. In doing so, it demonstrates that municipal Woo-related IT adoption is not a purely technical endeavour; rather, it appears to constitute an inherently multidimensional institutional process. In this regard, this study contributes to a broader conceptual reframing of how we understand organisational-level IT adoption in open government contexts, given that it reveals intricate interplays and tensions between factors across TOMIE's dimensions – nuances that quantitative methods often miss due to their limited capacity to capture context-specific nuances critical to understanding adoption processes – illuminating dynamic relationships within the framework. This holistic, socio-technical perspective challenges more techno-deterministic models like Rogers' (1995) Diffusion of Innovations (DOI) theory, which primarily emphasise technological factors in organisational-level technology adoption processes. Instead, this study suggests that [Dutch municipal] open government IT adoption should preferably be navigated on multiple fronts, given that its thematic analysis revealed no single dimension of TOMIE seems to function independently, nor does any particular (category of) influence(s) within them appear to necessarily dominate. Rather, adoption appears to be the result of the alignment and mutual reinforcement of influential factors. As such, siloed approaches prove inadequate, and TOMIE's theoretical applicability is implicitly refined towards a more integrated perspective.

5.3. Practical Implications

Beyond theoretical contributions, this study's objective was to provide societal and policy insights. In this regard, its findings suggest several actionable recommendations for various key

stakeholder groups relevant to the Dutch municipal open government (i.e., Woo) context, thereby highlighting the practical significance of this study.

Municipal Organisations, Leaders, and Personnel. In the Dutch municipal government context, the primary responsibility for ensuring compliance with the Woo rests with municipalities themselves. To effectively contribute to this through IT adoption, it is recommended that they establish dedicated, Woo-related governance structures within their organisations, preferably with central coordination. Such structures can inform the development of robust, standardised municipal Woo-related IT governance policies, which, when applied consistently across an organisation, could help to nurture an innovation-oriented culture and streamline related IT adoption decision-making. Simultaneously, municipal organisations should improve their information management practices, as poor metadata, disorganised storage, and fragmented archives can still undermine compliance efforts despite related IT adoption. Moreover, within municipalities, municipal leaders should cultivate and raise awareness of the internal efficiencies that IT solutions can offer their organisation in achieving compliance, as well as of the Woo's fundamental purpose: serving the public interest of public information disclosure, regarded as foundational to democratic society (Rijksoverheid, 2024). They should champion Woo-related IT adoption by mapping out IT standards before procurement, proactively engaging with IT vendors about their organisation's needs, and tracking IT developments. Furthermore, leaders are recommended to reframe ITs as strategic assets that strengthen organisational effectiveness in public service provision, rather than presenting them as mere compliance enablers. A reframing of this nature could boost organisational support for Woo-related IT adoption and elevate compliance on municipal agendas. Stronger organisational commitment, then, would enable leaders to design user-centric change management strategies that address municipal personnel's awareness, comfort, and competence gaps in Woo-related IT adoption. In this regard, like leaders, personnel should cultivate awareness of both ITs' compliance value and the Woo's fundamental purpose, recognising their impact on related IT adoption. It is recommended that they adopt a proactive learning mindset, actively participate in targeted training programmes and/or skill development initiatives, and engage constructively in early-stage adoption efforts (e.g., during live demonstrations). In doing so, they themselves would help overcome certain individual-level hurdles to municipal Woo-related IT adoption.

National Government. While municipalities themselves bear primary responsibility for ensuring Woo compliance in the Dutch municipal government context, findings indicate

that their ability to organisationally adopt ITs for this purpose is partially dependent upon a supportive and conducive environment. In this context, while the Woo itself provides legal incentives for municipal IT adoption, an intricate challenge of adoption lies in its intersection with other legislative frameworks. To address this, the national government should offer municipalities clearer guidance on navigating and resolving tensions between overlapping legislation. This could include streamlining municipal procedures for adopting Woo-related ITs by establishing more well-defined legal thresholds for adoption. Beyond guidance, a more decisive approach would be to reassess legislations that restrict agile municipal IT experimentation and adoption for Woo compliance. This could involve creating legal exceptions – such as in procurement legislation – tailored to the Woo, enabling related organisational-level IT adoption. Moreover, it is recommended that the national government addresses municipalities’ ‘ravine year’ concerns by ensuring sufficient financial support. While this could be achieved by ‘just’ mitigating Municipal Fund cuts or even increasing funding altogether, a more pragmatic and advisable approach would be establishing a specific grant (SPUK)⁴. A dedicated SPUK, specifically designed to support municipal Woo implementation, would provide municipalities with financial certainty, enabling them to structurally allocate part of this subsidy budget towards related IT adoption.

IT Vendors. Findings indicate that as municipalities adopt Woo-related ITs, some seek to achieve both technological and procedural autonomy within their respective organisations. While such organisational autonomy may complicate inter-municipal Woo-related IT comparison by creating a more fragmented municipal IT landscape, municipalities appear to value the ability to select solutions that meet their specific needs – ideally while minimising or avoiding vendor lock-in situations. Nevertheless, although municipalities generally strive to move beyond traditional vendor-client relationships towards inter-municipal collaborative development approaches – seeking to pool resources, align expertise, and distribute innovation-related workloads – they seemingly continue to favour adopting relatively intuitive and straightforward Woo-related ITs. Therefore, to maintain effectiveness, IT vendors must acknowledge municipalities’ specific needs and their preference for minimal vendor dependence, moving beyond offering fragmented applications towards more modular, interoperable, and user-friendly solutions that incorporate transparency-by-design principles

⁴ A specific grant (specifieke uitkering [SPUK]) is a dedicated subsidy budget, often bookable over several years, explicitly earmarked for carrying out predetermined policy established by the national government. Municipal governments are responsible for the appropriate use of specific grants and must account for their expenditure (Raad voor het Openbaar Bestuur, 2019; Rijksoverheid, 2022a).

from the outset. Furthermore, by investing in long-term municipal relationships rather than pursuing short-term contract maximisation – providing municipalities with comprehensive structural IT support, contributing to open standards development, and recognising the importance plentiful municipalities place on inter-municipal collaboration by possibly offering them shared-cost models which would enable joint procurement – vendors can not only help preserve their own market relevance in municipal Woo-related IT adoption but also benefit the entire Dutch municipal government sector by contributing to public value creation.

Inter- and Non-Municipal Actors. Finally, in the context of this subsection, inter- and non-municipal actors (e.g., municipal peers, collaborative bodies, associations) should seek to reinforce their primarily facilitative roles in municipal Woo-related IT adoption. Since findings demonstrate that peer awareness can influence municipal IT adoption decision-making in the context of the Woo, with positive peer-examples catalysing adoption, municipalities should aim to systematically document and communicate their adoption processes to others, recognising that their organisational experiences can influence sector-wide patterns of adoption. Furthermore, as municipalities that engage in formal collaborations appear to adopt ITs more quickly and effectively, collaborative bodies should strengthen their coordination roles not only by continuing to coordinate inter-municipal initiatives, such as co-development, but also by inviting non-participating municipalities to join collaboration. In this regard, for instance, mentorship programmes pairing municipalities with strong adoption capabilities with those that are less capable could contribute to sector-wide Woo-related IT adoption. Additionally, associations should reinforce their facilitative roles by continuing to advocate the feasibility of policy at the national government level, leveraging their sectoral expertise to inform national policymakers about the challenges of implementing the Woo at the municipal government level, as well as the subsequent challenges of adopting ITs to ensure compliance.

5.4. Limitations and Future Research Opportunities

Concluding this discussion, it is imperative to acknowledge several of this study's key limitations and propose specific directions for future research.

Firstly, this study's use of a purposive sampling strategy, while appropriate for exploratory qualitative research (Creswell & Creswell, 2022), introduces potential sampling bias that warrants acknowledgment. Participants were selected based on their direct experience, expertise, or involvement in implementing the Woo within the Dutch municipal government

context. Although, in doing so, this study aimed to ensure a broad representation of the diverse Dutch municipal government landscape, it should be recognised that participant recruitment occurred through professional networks (e.g., Daadkracht B.V.), referrals (i.e., snowball sampling), and direct outreach. This recruitment strategy may have inadvertently resulted in a sample containing more engaged or reform-minded municipalities. Consequently, the perspectives of municipalities facing significant challenges with, or remaining largely disengaged from, Woo-related IT adoption could be slightly underrepresented in this study's findings. Secondly, the potential for response bias, particularly social desirability bias, should be acknowledged. As most interviewees held some form of municipal leadership position, the nature of their roles may have inclined them to present their municipality's or their own efforts in Woo-related IT adoption more positively than objective reality would support. While this bias was accounted for during the analysis and reporting of data, more insights from individuals in different roles, such as frontline personnel or those representing IT vendors, would have been beneficial to gain a more balanced understanding of municipal Woo-related IT adoption, potentially revealing gaps between leadership perceptions and other stakeholder perspectives. Thirdly, the generalisability of this study's findings appears to be limited. Since this study's empirical insights derive from a singular government setting – Dutch municipal organisations adopting ITs for open government under the legislative framework of the Woo – the influences identified, along with their respective salience, are context-bound and therefore unlikely to transfer wholesale to other open government contexts, such as different government institution types or countries. Moreover, due to the in-depth nature of engagement in qualitative studies making it difficult to ensure a representative cross-section (Dworkin, 2012, p. 1319), although this study's findings cultivated a nuanced understanding of prevailing influences, it cannot be assumed that they necessarily generalise to the broader Dutch municipal government context.

By acknowledging several key limitations of this study, some promising paths for future research emerge, offering opportunities for refinement, extension, or deepening of its findings. Firstly, a natural next step for future research could be larger-scale studies within the Dutch municipal open government (i.e., Woo) context, possibly quantitative (e.g., a survey of hundreds of professionals), to compliment this study's findings. Such studies could corroborate the prevalence and assess the strength of this study's identified factors across a broader sample of Dutch municipalities (please refer to Wang and Lo (2016) for a roughly similar approach). Furthermore, a longitudinal research design is also recommended, as studies with such a research design could prove especially valuable in observing how municipal Woo-related IT

adoption evolves over time, and whether the factors identified in this study – representing an ‘early’ snapshot, as the Woo is a relatively new legislation and associated municipal IT adoption appears to be in its early stages – predict sustained adoption success. For instance, such studies might reveal whether initially reluctant municipal leaders become more enthusiastic about municipal Woo-related IT adoption as such prior adopted IT solutions’ benefits materialise within their organisations. Future research could also examine the post-adoption phase (e.g., the phase where ITs are maintained, updated, and institute long-term organisational change), to examine how initial municipal Woo-related IT adoption influences continue to matter and/or how new factors emerge throughout the phased rollout of the Woo. Moreover, field experiments (e.g., targeted training in a subset of municipalities) could test whether manipulating key factors, such as management and personnel awareness, measurably accelerates municipal Woo-related IT adoption or improves its quality. Lastly, extending this study’s methodological approach to other government contexts subjected to the Woo, such as provinces and national ministries, would assess the transferability of its findings to differing government contexts and could identify Woo-related IT adoption factors that are context-invariant.

6. Conclusion

The present study aimed to investigate which factors influence the adoption of information technologies (ITs) for open government by Dutch municipal organisations operating under the legislative framework of the Dutch Open Government Act (Woo). Based on a thematic analysis – a method of qualitative research – of interview data of fifteen semi-structured interviews, conducted with sixteen professionals having direct experience, expertise, or involvement in implementing the Woo within the Dutch municipal government context, as anticipated, an array of factors within each dimension of the TOMIE framework were identified, revealing that municipal Woo-related IT adoption appears to be influenced by an interplay of 55 factors – exerting varying degrees of influence – distributed across all five dimensions of the Technological-Organisational-Managerial-Individual-Environmental (TOMIE) framework.

More specifically, as operationalised upfront, it turns out that municipal Woo-related IT adoption is influenced by a combination of (a) the characteristics of technologies relevant to municipal organisations – with 19 factors identified, relating to *transparency, automation and streamlining, technological fit and feasibility, data governance, information accessibility, and system usability*; (b) municipal organisations’ characteristics and resources – with 14 factors identified, related to *organisational information management, organisational readiness and*

capacity, organisational structure and culture, organisational resources and size, and organisational autonomy and strategic alignment; (c) municipal leaders' characteristics – with 5 factors identified, related to *management innovation drive, attention and support, management awareness and competence, and personnel awareness, competence and skill building by management;* (d) municipal personnel's individual characteristics – with 6 factors identified, related to *personnel experiences, responsibilities and comfort, personnel awareness and competence, personnel innovation drive, and personnel skill development;* and (e) the broader institutional arena in which municipal organisations operate – with 11 factors identified, related to the *legal, societal and political environment, IT vendor ecosystem, inter-municipal relations and collaborations, non-municipal stakeholders, and financial resources and support.* It is incumbent upon municipalities to address the interplay of these dimensions in order to understand facilitators, hindrances, and more context-dependent influences on organisational-level IT adoption for open government.

Theoretically, this study contributes to existing academic knowledge by addressing a significant gap in research on IT adoption – in particular, within local government contexts. By doing so within the Dutch municipal open government (i.e., Woo) context, it also provides the first empirical validation of the TOMIE framework. Moreover, by demonstrating that IT adoption in this domain appears to be an inherently multidimensional institutional process, this study contributes to a broader conceptual reframing of how we understand IT adoption in comparable (open government) contexts.

As hoped for, this study also demonstrated its significant societal and policy relevance at both local and national levels, informing a wide range of stakeholders with actionable recommendations – such as targeted interventions and resource allocations – to bolster municipal Woo-related IT adoption decision-making efficiency, thereby contributing to achieving municipal Woo compliance and shaping national strategies to ensure the achievement of the Woo's overarching goals throughout the Dutch municipal government landscape.

In closing, if navigated thoughtfully and preferably approached as a holistic, strategic endeavour, increased municipal Woo-related IT adoption can not only aid municipalities in fulfilling their legislative obligations under the Woo, but also contribute to the creation of public value by serving democratic principles of public information disclosure. Ultimately, by understanding and addressing the full spectrum of adoption influences identified in this study, stakeholders may help ensure that the goals of the Woo are not only upheld in theory but also achieved in practice, both efficiently and sustainably.

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Appendices

Appendix A: Information Sheet

A.1. Introduction

You are invited to participate in a research graduation project that is being carried out under the auspices of the Erasmus School of Social and Behavioural Sciences (ESSB), which is part of the Erasmus University Rotterdam, The Netherlands.

The title of the research project is ‘Adopting Information Technologies for Open Government in Dutch Municipalities’. In this project, I, Tristan Julien Vlok, am interested in investigating the factors influencing the adoption of information technologies for open government by Dutch municipal organisations operating under the legislative framework of the Dutch Open Government Act (Woo). Professionals with direct experience, expertise, or involvement in implementing the Woo within the Dutch municipal government context are asked to participate.

For more information about the research and the invitation to participate, you are welcome to contact me, the thesis student, at any time: 696250tv@eur.nl.

A.2. Data collection

The interview will be conducted at a location of your choosing and is expected to last approximately one hour. With your consent, the interview will be audio-recorded to facilitate transcription and subsequent analysis. Your personal details will be rendered anonymous and stored in a separate, secure file. It is thus not possible for any individual to be identified as the source of any reports resulting from my analysis.

A.3. Potential Inconvenience & Risks

There are no physical, legal, or economic risks associated with your participation in this study. It is not mandatory to answer all questions; you may choose to decline to answer any or all of them. Your participation in this study is entirely voluntary, and you may therefore withdraw from it at any time.

A.4. Reimbursement

This study does not include a reimbursement.

A.5. Data Sharing

The collected data will be used only by the researcher conducting this study.

A.6. Confidentiality & Data Protection

The collected data will be used for an aggregated analysis. No confidential information or personal data will be included in the publication(s) of the research, unless you give explicit permission to this in the consent form. The data is stored in a secure location at the Erasmus University Rotterdam and will be kept for seven years after the graduation date.

A.7. Voluntary Participation & Individual Rights

Your participation in this study is entirely voluntary, and you may therefore withdraw from it at any time. As a participant, you are entitled to request further details regarding the data collection, analysis, or withdrawal of consent and the erasure of data prior to the anonymisation of the dataset or the submission of the manuscript for publication. You can exercise your rights by submitting an [online request](#) on the Data subject rights request portal of Erasmus University Rotterdam.

This research is supervised by Erasmus University Rotterdam. If you have any complaints regarding the processing of personal data in this research, please contact the Data Protection Officer via fg@eur.nl. You also have the right to submit a complaint at the Dutch Data Protection Authority.

Appendix B:

Informed Consent Form

Upon signing of this consent form, I confirm that:

- I've been informed about the purpose of the research, data collection and storage as explained in the information sheet;
- I've read the information sheet, or it has been read to me;
- I've had an opportunity to ask questions about the study; the questions have been answered sufficiently;
- I voluntarily agree to participate in this research;
- I understand that the information will be treated confidentially;
- I understand that I can stop participation any time or refuse to answer any questions without any consequences;
- I understand that I can withdraw my consent before the dataset is anonymised or manuscript submitted for publishing.

Additionally, I give permission to:

	Yes	No
I give permission to audio record the interview.		
I give permission to use quotes from my interview.		
I give those concerned my permission to approach me in the future for a follow-up study.		

Name of research participant: ...

Signature: ...

Date: ...

I hereby confirm that I've informed the research participant of all the aspects of the study.

Name of researcher: T.J. (Tristan) Vlok

Signature: ...

Date: ...

Appendix C: Interview Details

Table 2

Overview of Interviews and Participants

No.	Date	Participant	Organisation(s)	Position(s)
1	2025-03-11	P1	Municipality A (Small) & Municipality B (Very Large)	i.a. Architect Programme Open Government
2	2025-03-11	P2	Regional Partnership A / Municipality C (Large)	Chief Data Officer
3	2025-03-12	P3	Municipality D (Large)	Woo Project Leader & Senior Project Manager
4	2025-03-14	P4	Municipality E (Very Large)	‘Informal’ Woo Project Leader & Information Manager
5	2025-03-14	P5	Municipality F (Medium-sized)	Adviser / Project Manager Services
6	2025-03-17	P6	Municipality G (Medium-sized)	Project Leader Information and Services
7	2025-03-18	P7	National Programme	Advisor Active Disclosure and Future-proof Information Management
8	2025-03-18	P8	Legal Consultancy	Senior Lawyer Administrative and Civil Law
9	2025-03-19	P9	Regional Partnership B	Strategic Advisor & Information Advisory Team Leader
		P10	Regional Partnership B	Information Advisor Digital Information Management and Administration
10	2025-03-20	P11	Municipality H (Very Large)	Information Management Consultant / Records Manager
11	2025-03-20	P12	Municipality I (Large)	Woo Project Leader
12	2025-03-24	P13	Municipality J (Medium-sized)	Woo Project Leader & Privacy Officer
13	2025-03-28	P14	Municipality K (Medium-sized)	Contractor Woo
14	2025-04-02	P15	Municipality L (Small)	i.a. Consultant and Project Leader & Woo Project Leader
15	2025-04-09	P16	Municipality M (Medium-sized) & Municipality N (Large)	Woo Project Leader

Note. The present study distinguishes four municipal size bands: small ($\leq 30,000$ inhabitants), medium-sized (30,001–79,999), large (80,000–149,999), and very large ($\geq 150,000$). These sizes are partly based on both the K80 and M50 network of Dutch municipalities.

Appendix D: Interview Guide

Table 3

Interview Guide of Semi-Structured Interviews

Section	Duration	Open-Ended and Probing Questions (Original Dutch Version)
Introduction	~3 min.	Verwelkom de deelnemer en bedank hem/haar voor zijn/haar aanwezigheid en deelname aan mijn onderzoek. Geef de deelnemer een korte persoonlijke introductie over mijzelf (in mijn hoedanigheid als student aan de Erasmus Universiteit Rotterdam) en een uitleg over het onderwerp, het doel en de opzet van mijn onderzoek. Vermeld de duur van het interview (d.w.z. ongeveer één uur) en leg uit wat de deelnemer kan verwachten tijdens het interview (d.w.z. de procedure): <i>“Zoals u weet staat er voor dit interview ongeveer één uur gepland. Ik zal u een aantal open vragen stellen over uw ervaringen en inzichten met betrekking tot de adoptie [het al dan niet in gebruik nemen van] van informatietechnologieën binnen (uw) gemeentelijke organisatie(s) ter ondersteuning van de implementatie en/of uitvoering van de Woo. Het interview is opgebouwd rondom vijf dimensies: de technologische, organisatorische, leidinggevende, individuele en omgevingsdimensie. We zullen deze dimensies stapsgewijs doorlopen, waarbij we per dimensie ongeveer tien minuten stilstaan. Dit helpt om een zo compleet mogelijk beeld te krijgen van de verschillende factoren die een rol zouden kunnen spelen bij IT-adoptie. Er zijn geen goede of foute antwoorden; ik ben vooral geïnteresseerd in uw perspectieven. Voelt u zich vrij om toelichting te geven of relevante voorbeelden te delen. Mocht iets onduidelijk zijn, aarzel dan niet om vragen te stellen.”</i> Herinner de deelnemer eraan dat zijn/haar deelname vrijwillig is en dat hij/zij zich daarom op elk moment gedurende dit onderzoek zonder gevolgen kan terugtrekken: <i>“Ik wil u eraan herinneren dat uw deelname volledig vrijwillig is. Mocht er een vraag zijn waar u geen antwoord op kunt of wilt geven, dan kunt u deze gerust overslaan. Daarnaast staat het u vrij om op elk moment te besluiten uw deelname aan dit onderzoek te beëindigen.”</i> Verzeker de deelnemer van het feit dat alle inzichten die voortkomen uit dit interview en de daaropvolgende geaggregeerde analyse strikt vertrouwelijk zullen worden behandeld. Geef aan dat dit betekent dat alle verzamelde gegevens zullen worden geanonimiseerd om de identiteit van de deelnemer te beschermen: <i>“Alle inzichten die voortkomen uit dit interview en de daaropvolgende geaggregeerde analyse zullen strikt vertrouwelijk worden behandeld. Uw gegevens worden volledig geanonimiseerd, zodat uw identiteit niet te herleiden is in de resultaten. Daarnaast worden alle verzamelde gegevens uitsluitend door mij als onderzoeker gebruikt en enkel voor dit onderzoek.”</i> Vraag nogmaals, als bekrachtiging van de ‘informed consent form’, of de deelnemer ermee akkoord gaat dat er een geluidsopname van het interview wordt gemaakt om zodoende latere transcriptie van het interview te faciliteren. Geef hierbij aan dat deze opname veilig wordt opgeslagen en alleen toegankelijk is voor mij als onderzoeker: <i>“Voor een latere, nauwkeurige analyse van het interview maak ik een geluidsopname. Deze opname wordt veilig opgeslagen en is uitsluitend toegankelijk voor mij als onderzoeker. Gaat u hiermee akkoord?”</i>

Section	Duration	Open-Ended and Probing Questions (Original Dutch Version)
Warming-up	~7 min.	Vraag de deelnemer of hij/zij de verstrekte informatie voorafgaand aan het interview volledig heeft begrepen en of hij/zij voldoende informatie heeft om het interview te beginnen: <i>“Tot slot, voordat we beginnen: zijn deze gegeven uitleg en gedeelde informatie voorafgaand aan het interview voldoende duidelijk en begrijpelijk voor u – en heeft u het gevoel dat we met het interview kunnen beginnen?”</i>
		Indien nodig: <i>“Kunt u aangeven wat nadere uitleg behoeft?”</i>
		<i>“Allereerst wil ik u vragen of u iets kunt vertellen over uw rol en betrokkenheid bij de implementatie van de Wet open overheid (Woo)?”</i>
		<i>“Wat zijn de belangrijkste beleidsontwikkelingen van de afgelopen circa vijf jaar met betrekking tot de openbaarheid van overheidsinformatie?”</i>
Technological Dimension	~9 min.	<i>“Wat zijn de primaire kansen en uitdagingen die u ziet in het kader van de implementatie en uitvoering van de Woo binnen (uw) gemeente(n)?”</i>
		<i>“Wat voor rol spelen informatietechnologieën volgens u – of zouden informatietechnologieën volgens u kunnen spelen – in het bevorderen van ieders recht op overheidsinformatie, zoals bepaald in de Woo?”</i>
		- Als grote rol: <i>“Waarom – en op welke manier – ziet u deze grotere rol voor informatietechnologieën weggelegd?”</i> - Als kleine rol: <i>“Waarom – en op welke manier – ziet u deze kleinere rol voor informatietechnologieën weggelegd?”</i>
		<i>“Van welke informatietechnologieën bent u op de hoogte, die momenteel binnen (uw) gemeentelijke organisatie(s) worden ingezet ter ondersteuning van de implementatie en uitvoering van de Woo?”</i>
		Eventuele voorbeelden voor als de vraag onduidelijk blijkt te zijn: <i>“U kunt hierbij denken aan bijvoorbeeld, maar niet exclusief: moderne zaaksystemen voor onder andere het volgen van processen; software voor het in kaart brengen, zoeken, redigeren en anonimiseren van informatie; hulpmiddelen zoals kunstmatige intelligentie (AI) en/of algoritmen; etc.”</i>
		<i>“Hoe beïnvloeden volgens u zowel de aanwezigheid als afwezigheid van specifieke informatietechnologieën binnen (uw) gemeentelijke organisatie(s) informatiebeheer en openbaarmaking?”</i>
		<i>“Is er een verschil tussen de rol van deze technologieën in het afhandelen van Woo-verzoeken [passieve openbaarmaking] en meer proactieve vormen van openbaarmaking?”</i>
Organisational Dimension	~9 min.	<i>“Kunt u voorbeelden noemen van aspecten met betrekking tot technologie die volgens u een rol spelen bij de besluitvorming binnen (uw) gemeentelijke organisatie(s) over het wel of niet in gebruik nemen [de adoptie] van informatietechnologieën in het kader van de implementatie en uitvoering van de Woo?”</i>
		Eventuele voorbeelden voor als de vraag onduidelijk blijkt te zijn: <i>“U kunt hierbij denken aan bijvoorbeeld, maar niet exclusief: (gebrek aan) gebruikersvriendelijkheid en toegankelijkheid; (gebrek aan) compatibiliteit met bestaande systemen; (gebrek aan) ingeschat nut van een bepaalde technologie; privacy; etc.”</i>
		<i>“Hoe is (meestal) de verantwoordelijkheid voor de implementatie en uitvoering van de Woo georganiseerd binnen (uw) gemeentelijke organisatie(s)?”</i>
		<i>“Beïnvloeden volgens u de organisatorische structuren en processen binnen (uw) gemeente(n) de adoptie van informatietechnologieën in het kader van de implementatie en uitvoering van de Woo?” (bijv. zijn er structuren, interne processen, werkwijzen, richtlijnen, beleid, etc. die dit soort IT-adoptie bevorderen of juist vertragen?)</i>
		- Zo ja: <i>“Waarom wel – en op welke manier?”</i> - Zo niet: <i>“Waarom niet?”</i>
		<i>“Hoe ervaart u binnen (uw) gemeentelijke organisatie(s) de cultuur en bereidheid om te experimenteren met nieuwe, innovatieve technologieën en deze eventueel te omarmen?”</i>

Section	Duration	Open-Ended and Probing Questions (Original Dutch Version)
Managerial Dimension	~9 min.	<i>“Op welke manier beïnvloeden meer algemene organisatorische kenmerken – zoals bijvoorbeeld de omvang van uw gemeente, financiële draagkracht en personeelsomvang – de adoptie van informatietechnologieën in het kader van de implementatie en uitvoering van de Woo?”</i> <i>“Welke rol spelen gemeentelijke leidinggevendenden (zoals bijvoorbeeld uzelf) volgens u bij de adoptie van informatietechnologieën in (uw) gemeentelijke organisatie(s) in het kader van de implementatie en uitvoering van de Woo?”</i> <i>“Wordt er volgens u door gemeentelijke leidinggevendenden voldoende actief gestuurd op IT-innovatie binnen (uw) gemeentelijke organisatie(s)?”</i> (bijv. is er een duidelijke richtlijn of beleid van het management om te investeren in of prioriteit te geven aan IT-initiatieven?) • Zo ja: <i>“Waarom wel – en op welke manier?”</i> • Zo niet: <i>“Waarom niet – en wat vindt u hiervan?”</i>
		<i>“Kunt u één of meerdere specifieke voorbeelden noemen waarin (een) gemeentelijke leidinggevende(n) (zoals uzelf) een sleutelrol speelde(n) bij IT-adoptie in het kader van de implementatie en uitvoering van de Woo?”</i> • Zo ja: <i>“Kunt u (een van) deze situatie(s) beschrijven?”</i> • Zo niet: <i>“Hoe komt dit volgens u?”</i>
		<i>“Hoe comfortabel zijn medewerkers (zoals bijvoorbeeld uzelf) binnen (uw) gemeentelijke organisatie(s) (bijv. degenen die Woo-verzoeken afhandelen) volgens u met het adopteren en gebruiken van nieuwe technologieën?”</i> • Als erg comfortabel: <i>“Waar komt dit comfort vandaan denkt u?”</i> • Als weinig comfortabel: <i>“Waar komt dit discomfort vandaan denkt u?”</i>
Individual Dimension	~9 min.	<i>“In hoeverre beschikken medewerkers (zoals bijvoorbeeld uzelf) binnen (uw) gemeentelijke organisatie(s) volgens u over de benodigde vaardigheden om met nieuwe technologieën te werken?”</i> <i>“Zijn er volgens u factoren gerelateerd aan individuele houdingen of mentaliteit (bijv. openheid voor verandering, risicomijding, etc.) die een rol spelen bij de adoptie van informatietechnologieën binnen (uw) gemeentelijke organisatie(s)?”</i>
		<i>“Welke omgevingsfactoren spelen volgens u een rol bij de adoptie van informatietechnologieën in het kader van de implementatie en uitvoering van de Woo binnen (uw) gemeentelijke organisatie(s)?”</i> • Eventuele voorbeelden voor als de vraag onduidelijk blijkt te zijn: <i>“U kunt hierbij denken aan bijvoorbeeld maar niet exclusief: (landelijke) wet- en regelgeving; andere gemeenten, externe partners of leveranciers (bijv. beschikbaarheid van geschikte technologieën ‘in de markt’); trends in de adoptie van informatietechnologieën binnen de publieke sector; verwachtingen vanuit de samenleving; etc.”</i>
Environmental Dimension	~9 min.	
Reflection and closing	~5 min.	<i>“Denkt u dat er nog factoren of gebieden zijn die we niet hebben besproken, maar die volgens u weldegelijk van invloed zouden kunnen zijn op de adoptie van informatietechnologieën in het kader van gemeentelijke Woo-implementatie en uitvoering?”</i> <i>“Als u één gebied zou moeten prioriteren – technologie, organisatie, management, individueel, omgeving, of wellicht een door uzelf genoemd gebied – welk gebied zou dat zijn en waarom?”</i> <i>“Heeft u, op basis van uw ervaringen, nog aanbevelingen voor bijvoorbeeld uw eigen gemeente, andere gemeenten of deskundigen die betrokken zijn bij IT-adoptie in het kader van gemeentelijke Woo-implementatie?”</i> <i>“Tot slot, zijn er nog algemene opmerkingen of inzichten die u wilt delen voordat we dit gesprek afronden?”</i>
		Leg kort (nogmaals) de procedure uit voor de verwerking van het interview en bedank de deelnemer voor zijn/haar aanwezigheid.

Appendix E: Coding Tree

Table 4

Description of Themes and Codes

Themes (Dimensions)	<i>n</i>	Second-Order Codes (Categories)	<i>n</i>	First-Order Codes	Sample Quotes (Translated from Dutch into English)
Technological	N/A	N/A	(37)	<i>Transparency</i>	P1: ‘The [Open Government] Act aims to increase transparency and understanding, and hence trust in government.’
	(133)	<i>Automation and Streamlining</i>	(70)	<i>(Need for) Automation: Public Information Disclosure</i>	P5: ‘(...) ultimately, the next step will of course be to see whether we can automate that as well. So that you no longer have to manually run something through, because we’ll have a process where we can say: “It all happens automatically.”’
			(55)	<i>(Need for) Efficiency and Productivity</i>	
			(50)	<i>(Need for) Automation</i>	
			(29)	<i>(Need for) Automation: Artificial Intelligence</i>	
	(129)	<i>Technological Fit and Feasibility</i>	(70)	<i>Technological Embedding</i>	P11: ‘Furthermore, embedding the [IT] solution within the [existing] architecture is important. So the entire landscape – it has to fit within that. There are all kinds of other standards and norms, including technical applications, that it all needs to align with. So that: interoperability, architecture.’
			(52)	<i>System Compatibility</i>	
			(38)	<i>IT Robustness and Reliability</i>	
			(20)	<i>IT Costs</i>	
	(99)	<i>Data Governance</i>	(60)	<i>Anonymisation</i>	P14: ‘(...) anonymisation, those kinds of [IT] solutions. We also make use of that. That you can use a tool to efficiently (...) screen files for privacy-sensitive information. That, as an employee, you can then check it and that it has indeed been redacted. That’s something we deploy in [the context of] the Woo.’
			(31)	<i>Location of Data Storage</i>	
			(20)	<i>Privacy</i>	
			(16)	<i>Information Security</i>	
			(6)	<i>Permissions</i>	P11: ‘Any [IT] solution that you put in place now – including a solution for [pro]active disclosure – has to take into account that part of the information is [stuck] in silos (...) that’s a huge challenge, which we haven’t solved properly yet either (...) the citizen doesn’t want to have to search five or ten different websites to find relevant information. They want to be able to find it all in one place.’
	(65)	<i>Information Accessibility</i>	(51)	<i>Findability of Information</i>	
			(34)	<i>Search Technology</i>	
			(10)	<i>Metadata Tagging</i>	
	(62)	<i>System Usability</i>	(43)	<i>User-friendliness</i>	

Themes (Dimensions)	n	Second-Order Codes (Categories)	n	First-Order Codes	Sample Quotes (Translated from Dutch into English)
			(26)	<i>Complexity</i>	P14: ‘(...) the basic attitude [when working with technologies] is simply: “It really has to help the colleagues, and it should not be too complex.” If you can manage that with an [IT] solution – that it’s intuitive and pleasant to use, and does what it says it does, so to speak, yes – that really helps a lot in getting the message across.’
Organisational	(204)	<i>Organisational Readiness and Capacity</i>	(119)	<i>Organisational Readiness</i>	P6: ‘(...) the whole implementation of the Woo, it obviously hinges on [IT] adoption. Everyone has to know what it’s about. But for the organisation itself, it’s also a matter of: “How much can you handle as an organisation at the same time”, right? (...) what I mean to say, without going too much into detail, is: we’re pouring quite a lot over the organisation with all these new developments.’
			(52)	<i>Organisational Experience</i>	
			(51)	<i>Organisational Process Inventory</i>	
			(49)	<i>IT Adoption Time and Capacity</i>	
			(28)	<i>Training</i>	
	(165)	<i>Organisational Structure and Culture</i>	(108)	<i>Organisational Structure</i>	P3: ‘It’s a project, so there is central coordination. But (...) the [Dutch] Open Government Act belongs to all of us. It’s not something that is owned centrally within the organisation and that you don’t need to worry about at the decentralised level.’
			(90)	<i>Organisational Culture</i>	
	(81)	<i>Organisational Information Management</i>	(43)	<i>Information Management</i>	P9: ‘(...) the other side of the Woo, which may be even more important than publication, is that the information management must be in order. (...) there’s still a lot that needs to be done there as well.’
			(38)	<i>Accessibility</i>	
			(21)	<i>Standardisation</i>	P2: ‘Yes, size can play a role, but there are also small municipalities that are actually very inventive, very innovative. So size itself (...) often just means having more resources (...) to say: “Hey, you two will spend one day a week on this next month...” (...) so size can help, but (...) it’s not necessarily that “bigger” is better when it comes to innovation.’
	(72)	<i>Organisational Resources and Size</i>	(62)	<i>Organisational Resources</i>	
			(18)	<i>Size of the Municipal Organisation</i>	
Managerial	(39)	<i>Organisational Autonomy and Strategic Alignment</i>	(24)	<i>Common Ground Programme</i>	P10: ‘I think that a bit of Common Ground is definitely involved. You want to make sure that what you have in place follows a certain standard, which would then also make it easier to switch technologies if a new procurement is needed (...)’
			(15)	<i>Need for Autonomy</i>	
	(158)	<i>Management Innovation Drive, Attention and Support</i>	(118)	<i>Management Innovation Drive</i>	P4: ‘(...) my principal is [a] department head (...). Who is responsible for IT. They are an important advocate for the implementation of smart technologies. And they essentially shows and notices to his fellow department heads that they can facilitate them in dealing with the challenges they’re facing. So there are quite a few departments that receive a large number of Woo requests, which have knocked on their door asking: “Can you use technology to help make the workload (...) a bit more manageable?” That’s how
			(92)	<i>Management Structural Attention and Support</i>	

Themes (Dimensions)	<i>n</i>	Second-Order Codes (Categories)	<i>n</i>	First-Order Codes	Sample Quotes (Translated from Dutch into English)
Individual	(78)	<i>Management Awareness and Competence</i>	(67)	<i>Management Awareness</i>	it has taken shape, so to speak. And the other initiatives that are happening are actually taking place at the level of cluster managers.'
			(15)	<i>Management Competence</i>	P8: 'I prefer [managers] to take the lead [when it comes to the decision to work with information technologies in the context of the Woo]. I've never been employed in such a role, by the way. I've always dealt with a manager. And most managers do approach it that way. I've rarely encountered ones who find the Woo just a nuisance and are like: "Well, you just handle the Woo so I don't have to deal with it." Those do exist sometimes, but yeah – a good manager embraces it.'
	N/A	N/A	(91)	<i>Personnel Awareness, Competence and Skill Building by Management</i>	P15: '(...) what I, for example, do myself in my assignment is a bit of awareness training on the one hand around what the legislation entails. Those who start working with the software, actually taking them along in that development as well.'
	(114)	<i>Personnel Experiences, Responsibilities and Comfort</i>	(77)	<i>Personnel Experiences and Responsibilities</i>	P5: 'In the context of the Woo, I think the group that is going to work on it is reasonably digitally literate. Because that's one of the things: when digital literacy is low, then the fear of embracing these kinds of new technologies is also much greater.'
			(69)	<i>Personnel Comfort</i>	
	(99)	<i>Personnel Awareness and Competence</i>	(74)	<i>Personnel Awareness</i>	P9: '(...) adopting new technology is and remains "fucking" difficult, indeed. And that also has to do with the digital capabilities people have. I have mentioned this example this morning as well: "Everyone can manage their banking, file their taxes, plan their trips – do everything using the internet, smartphones, and their laptop at home. But the moment the door to the town hall opens, we suddenly find it all terribly complicated." And that applies to every new application.'
			(36)	<i>Personnel Competence</i>	
	N/A	N/A	(32)	<i>Personnel Innovation Drive</i>	P7: '(...) I just see that for many colleagues, it's not self-evident at all to always think in terms of the newest, fastest, or easiest technology. It's more like: "Oh, we have something." And then there are always a few people who are looking for what is faster and better. But yeah, often there are also plenty of people who say: "Well, I had finally gotten used to what was better last time. Please, just leave me alone now."'
	N/A	N/A	(30)	<i>Personnel Skill Development</i>	P16: 'On the one hand, there are some people who enjoy working with new tools. On the other hand, there are a lot of people who say: "Goddammit, another new tool. Do I have take another course? It's a hassle. (...) I already have so many things to do."'

Themes (Dimensions)	<i>n</i>	Second-Order Codes (Categories)	<i>n</i>	First-Order Codes	Sample Quotes (Translated from Dutch into English)
Environmental	(156)	<i>Legal, Societal, and Political Environment</i>	(109) (67) (16) (7)	<i>Government Legislation</i> <i>Citizen Demand</i> <i>Municipal Council</i> <i>Geopolitical Situation</i>	P8: ‘(...) [pro]active disclosure; that is being rolled out in phases (...) in tranches. (...) that doesn’t mean a municipality can’t already make all categories of information public, if it wants to. The legislator is merely saying: “(...) By this phase, you must have made this information public, actively.” A lot of municipalities, they only act when the legislator actually implements it, those tranches. (...) So it’s all fairly passive. “We’ll only do something with it when we have to, not when we’re allowed to.”’
	N/A	N/A	(92)	<i>IT Vendor Ecosystem</i>	P3: ‘(...) the active publication side. We’re seeing that the market is really developing in this area right now. The vendors (...) are all working on (...) building some kind of publication module into their own systems, which can then also pull data from other sources. (...) These are (...) new products that are emerging because of the [Dutch] Open Government Act. And of course, for the vendors (...) it’s a great business opportunity. This is a new product that all government organisations will need and will adopt over the coming years.’
	(87)	<i>Inter-Municipal Relations and Collaborations</i>	(51) (51)	<i>Other Municipalities</i> <i>Inter-Municipal Collaboration</i>	P15: ‘Look, the fortunate thing is that even though I’m currently working within a small organisation, it is part of a collaboration with eleven municipalities that make these kinds of decisions together. And if each municipality joins in, you can invest in a larger innovation and then share the costs.’
	(73)	<i>Non-Municipal Stakeholders</i>	(56) (29)	<i>Non-Municipal Externals</i> <i>Non-Municipal Government Organisations</i>	P12: ‘I regularly get updates through [consulting firm] (...) they have a large knowledge base. And they also assist us with [pro]active disclosure. And through the VNG, I occasionally take part when it comes to at least keeping up with developments around the Woo.’
	(17)	<i>Financial Resources and Support</i>	(12) (9)	<i>Financial Support</i> <i>The Municipal Fund</i>	P6: ‘There is a culture to innovate, but we just don’t have the capacity. (...) you may scale up official capacity, but then you need pennies for that too.’

Note. In brackets, the *n* of transcript excerpts assigned per first- and second-order code is shown.