Effect of factors influencing AI (Artificial Intelligence) capabilities in the Dutch municipality.

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2 August 2024

Master thesis Public Administration

Master Public Administration (Urban Governance of Inclusive Sustainable Cities)

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11971 words (excl. references, abstract, and appendices)

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Abstract

Recently, Artificial Intelligence (AI) has played an increasingly significant role in organizations within both the public and private sectors. Municipalities and other public sector organizations face pressure to improve the quality of various AI technologies and enhance their efficiency. Therefore, studying the efficiency and quality of AI-systems has become increasingly important.

Research on the utilization of AI in public organizations remains limited, particularly concerning municipalities. Existing studies on AI often focus on the technical challenges of AI-systems and providing less insight into the organizational deployment of AI within public organizations, specifically municipalities in the Netherlands. To address this research gap, this thesis explains the factors crucial for the Municipality of Amsterdam to develop AI capabilities within their organizations.

To answer the primary research question, this thesis employs the Technology-Organization-Environment (TOE) framework. Through surveys, technology managers from the Municipality of Amsterdam were asked about the factors influencing the development of AI capabilities. The TOE framework examines three distinct contexts: the technological context, organizational context, and environmental context. In the technological context, the study considers perceived benefits. In the organizational context, it examines perceived financial costs and organizational innovativeness. In the environmental context, the study includes perceived government pressure, perceived citizen pressure, government incentives, and regulatory support.

The research findings indicate a strong effect of regulatory support on AI capabilities. Additionally, there is a weaker yet significant effect of perceived benefits and perceived financial cost. However, no significant influence was found for organizational innovativeness, perceived government pressure, perceived citizen pressure, and government incentives.

1. Introduction

§ 1.1. Background information

'Generative AI should serve to enhance human well-being, prosperity, sustainability, justice, and safety.'

Vision document on Generative AI, Ministry of the Interior and Kingdom Relations (January 18, 2024)

In January 2024, the Ministry of the Interior and Kingdom Relations of the Netherlands sent a vision document on the use of Artificial Intelligence (AI) to the Speaker of the House of Representatives (The State Secretary of the Interior and Kingdom Relations, 2024). Based on this government-wide vision, the cabinet emphasizes the importance of acting considering the possibilities and challenges of AI. The government considers it crucial that AI-systems align with public values. Public value ensures that everyone can participate in the digital era, is familiar with the digital world, and has control over their daily digital life.

The digital transformation and AI play a significant role today and have been discussed in literature and articles (Mikalef & Gupta, 2021; Mikalef et al., 2022). AI-systems replicate cognitive functions and perform tasks like human intelligence, aiding complex decision-making in private and public sectors (Yu & Qi, 2024). While the private sector adopted AI earlier, public organizations are increasingly recognizing the potential of using AI-systems in their services (Mikalef et al., 2022).

The fact that AI-systems are effective and can generalize a lot of data, public sectors see potentials by using AI-systems, for instance in hospitals or in other governmental organizations (Dhasaranthy, Jain & Khan, 2020). Moreover, policymakers in municipalities use AI to automate processes, such as mapping transport routes, detecting welfare fraud, and generating financial reports (Van den Brand, 2024; Chiancone, 2023; Dhasaranthy, Jain & Khan, 2020). Overall, AI implementation is argued to improve effectiveness, productivity, and decision-making (Mikalef et al., 2022).

Despite the benefits of AI-systems, their implementation in the public sector raises concerns. The complexity of AI-systems often leaves systems unchecked (Hadwick & Lan, 2021). Additionally, the data fed into AI-systems may contain human biases and errors, which can lead to biased decisions (Valentine, 2019). A notable example is the 'Toeslagenaffaire', when numerous families were unjustly accused of welfare fraud, leading to much financial problems (Hadwick & Lan, 2021). In response, the European Union introduced the European Union Artificial Intelligence Act to address ethical issues in public sector AI use (EU AI Act, 2021). However, there are concerns that stricter regulations might influence AI implementation in municipalities and delay digital innovation in the public sector (Ahn & Chen, 2022).

§ 1.2. Problem statement

Recent discussions emphasize AI's potential in public administration (Mikalef et al., 2022). However, public organizations face challenges that must be addressed before integrating AI-systems into their operations. Effective organizational planning is needed to accommodate AI's impact, recognizing and adapting to environmental factors. Various studies discussed the concept of AI capabilities, which refers to an organization's ability to harness AI technologies effectively to achieve strategic goals. According to this concept, public organizations need to develop a complementary AI-based resources to maximize the value derived from their investments (Duan et al., 2019). However, there is limited literature on how internal dynamics and external pressure within public organizations shape their ability to develop AI-systems in municipalities (Mikalef & Gupta, 2021).

Mikalef et al. (2022) used the Technology-Organization-Environment (TOE) framework to understand the factors influencing the outcomes of AI applications. Their study examined the aspects affecting the implementation and utilization of AI-systems in municipalities. Mikalef et al. surveyed senior IT managers in municipalities across Norway, Finland, and Germany. The focus on municipalities is due to their importance as public entities that provide many services to citizens, private businesses and other relevant stakeholders. However, their study did not include Dutch municipalities. Therefore, this thesis will concentrate on Dutch municipalities, specifically the Municipality of Amsterdam. By applying the TOE framework, this thesis

explains the the impact of technological, environmental, and governmental contexts on the AI capabilities of Dutch municipalities.

§ 1.3. Research question

The main research question of this thesis is as follows: ***What are the effects of the technological, organizational, and environmental contexts on the Artificial Intelligence (AI) capabilities in governance and organization of the Municipality of Amsterdam?*** To answer the main question, three sub-questions will be addressed: *(1) How does the technological context, including perceived benefits, effect municipalities in developing AI capabilities?, (2) How does the organizational context, including perceived financial costs and organizational innovativeness, effect municipalities in developing AI capabilities?,* and *(3) How does the environmental context, including perceived government pressure, perceived citizen pressure, government incentives and regulatory support, effect municipalities in developing AI capabilities?*

§ 1.4. Scientific relevance

Based on current literature, there is limited theory-driven understanding of how public organizations, such as municipalities, develop the capabilities to leverage AI (Schaefler et al., 2021; Mikalef et al., 2022). Moreover, more research is needed on how internal and external factors influence AI capabilities (Mikalef et al., 2022). Therefore, this thesis focuses on Dutch municipalities and examines the internal and external factors influencing AI capabilities by looking at different departments within the governance and organization of the Municipality of Amsterdam.

§ 1.5. Social relevance

This thesis aims to explain the factors influencing the AI capabilities of different departments of the Municipality of Amsterdam. The findings are important for municipalities, as they are actively exploring various AI technologies to enhance their services, especially under constrained timeframes. Additionally, municipalities face increasing pressure to improve efficiency and service quality through innovative digital solutions, including AI-systems (Akter

et al., 2020). Public organizations, such as municipalities, are eager to enhance their capacity for deploying AI technologies. However, achieving this goal requires a better understanding of the primary drivers behind deployment, which will help different technology managers in municipalities to support these processes more effectively.

§ 1.6. Structure paper

In the following chapter, the current literature related to the main and sub-questions will be discussed. This will be followed by a detailed description of the methods, including data, sample, and operationalization of variables. The results of the analysis will then be presented and discussed. Finally, the conclusion and discussion of the research will be addressed, followed by suggestions for future research.

2. Literature review

The purpose of this literature review is to define of Artificial Intelligence (AI) and AI capabilities (**§ 2.1.**), and to provide background on the use of AI-systems in municipalities (**§ 2.2.**). Additionally, the theoretical framework for the adoption of AI-systems by municipal workers will be discussed (**§ 2.3.**). This thesis will use the Technology-Organization-Environment (TOE) framework.

§ 2.1. Artificial Intelligence (AI) and AI capabilities

Artificial Intelligence (AI), defined as a system's ability to interpret data and perform tasks, has evolved from early systems like General Problem Solver and ELIZA in the 1950s and 60s to significant advancements like AlphaGo in 2015 and ChatGPT, released by OpenAI in November 2022 (Fui-Hoon Nah et al., 2023). The release of ChatGPT garnered global attention. ChatGPT, based on the Generative Pre-trained Transformer (GPT) architecture, belongs to a category known as Large Language Models (LLMs). LLMs use deep learning techniques and are trained on vast amounts of data to generate responses that mimic human communication.

In recent years, the concept of AI capabilities has evolved due to the increased use and adoption of AI-systems in different governmental organizations (Mikalef & Gupta, 2021). This

concept is an extension of early research which focuses on the capacity of organizations to adapt to new technologies. The concept AI capabilities examine internal and external factors influencing AI adoption. AI capabilities build on the concept of IT capabilities, which means that public organizations must utilize technological and other relevant resources to implement new technologies (Bharadwaj, 2000). These conceptualizations enhance the understanding of how organizations can utilize new technologies, such as AI-systems, by providing a more precise indication of potential value. They account for the intangible factors that facilitate the implementation of new technological systems (Mikalef et al., 2022).

Many studies define AI capabilities as the ability of an organization to select, coordinate, and effectively use specific AI resources within the organizational context. According to Mikalef and Gupta (2021), this definition indicates that AI capabilities involve more than merely adopting AI-systems. AI capabilities also encompass the ability to successfully complete AI-related projects. Based on the resource-oriented approach of organizations, AI capabilities are developed through an organization's skill in fostering various resources (Mikalef et al., 2022). Previous studies categorize AI capabilities into three aspects: tangible, human, and intangible. This thesis adopts Mikalef and Gupta's (2021) framework, which posits that AI capabilities are not a collection of individual resources but a combination of AI-related tangible, human, and intangible resources. These three aspects together form the foundation of an organization's AI capabilities.

Tangible resources for AI capabilities include the data needed to run AI algorithms. Tangible resources also involve the technological infrastructure for data storage and transfer. Additionally, tangible resources include the processing power for advanced AI methods and essential supports (Desouza et al., 2020; Duan et al., 2019).

Regarding human resources, organizations must balance technical and managerial skills. Technical skills are crucial for data management and AI implementation, while managerial skills are necessary to identify the required domain knowledge for AI applications and to envision key application areas (Mikalef et al., 2022).

Intangible resources for AI capabilities include effective interdepartmental coordination, the ability to drive and manage organizational change, and the willingness to solve complex and high-risk projects or tasks (Mikalef et al., 2022). The combination of these resources is a strong indicator of an organization's AI capabilities.

§ 2.2. AI in municipalities

Municipalities and their use of AI-systems are in an early phase (Mikalef et al., 2022). The use of AI-systems in municipal settings is influenced by various factors (Dwivedi et al., 2021). This implementation is often obstructed by legal, policy-related, or political challenges. Consequently, there is a renewed emphasis on digitalizing public administration. Moreover, there is a growing need for more empirical studies to explore the factors that either facilitate or stagnate the adoption of AI-systems in municipalities (Janssen et al., 2020).

Previous research has predominantly focused on the technical aspects of AI adoption. Less attention has been given to the social aspects of the organizational changes required for AI implementation (Mikalef et al., 2022). Consequently, there remains a limited understanding of the internal and external factors that drive municipalities to develop AI capabilities. Although some studies have examined critical elements of AI adoption, these studies tend to emphasize the technological investments needed for AI-systems (Schaefer et al., 2021). While the adoption of AI-systems is an important first step, it does not fully capture a municipality's ability to effectively manage and utilize AI-systems and related resources (Van Noordt & Misuraca, 2020).

AI adoption is the initial step before developing AI capabilities. Municipalities need to cultivate and mature these capabilities over time. This thesis examines the factors that facilitate the development of AI capabilities. One study suggests that to effectively use AI-systems, municipalities must implement key ethical values into their design (Smit, Zoet, & van Meerten, 2020). These ethical values include accountability, equality, and understandability. The study identified design principles for each value to enhance the development and implementation of AI-systems. While the study by Smit, Zoet, and van Meerten (2020) provides valuable

guidelines for creating ethical principles for AI applications, the study does not address how public organizations structure themselves around AI initiatives to further build AI capabilities.

The processes of deciding to adopt a new system and spreading the new system across a population are referred to as technology adoption and diffusion (Hall & Khan, 2003). The diffusion phase often takes time, as it involves addressing cultural, organizational, and legal issues (Lin, Fofanah, & Liang, 2011). Over time, various models have been developed to explain technology adoption and diffusion, discussing different levels of analysis, from individuals to organizations. Some theories focus on individual technology use, such as the Technology Acceptance Model (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003). However, this thesis examines how municipalities develop AI capabilities, making these models unsuitable for the objectives of this research.

§ 2.3. Technology Organization Environment (TOE) framework

This thesis will use the Technology-Organization-Environment (TOE) as theoretical framework (Mikalef et al., 2022). The TOE model, illustrated in **Figure 1.**, has been utilized in previous research focusing on the technological, organizational, and environmental influences on the AI capabilities of municipalities. The TOE framework is used to understand the spread of AI-systems in municipalities. The TOE framework incorporates elements of both the internal and external that influence how organizations integrate new technologies, such as various AI-systems. The TOE framework allows the examination of technology diffusion from three perspectives: the characteristics of the AI-systems, organizational factors, and environmental aspects (Hameed, Counsell, & Swift, 2012). The TOE framework has become a key theoretical model in studying organizational technology adoption and diffusion because the framework can flexibly include contextual variables relevant to the specific organization (Wang & Lo, 2016).

To determine which factors within these three contexts effect the AI capabilities of municipalities, previous studies are reviewed. Mikalef, Fjørtoft & Torvatn (2019) highlighted major challenges faced by IT managers in integrating AI-systems. Wirtz et al. (2019) also provided an overview of the obstacles public organizations encounter when adopting AI-

systems into their services. A common theme across these studies is that managers' perceptions of the potential value of AI-systems influence their decision to implement AI-systems (Mikalef et al., 2022). In the organizational context, managers identify financial costs associated with AI-systems. Moreover, previous experiences in developing innovative digital solutions are essential for creating an effective organizational framework for AI-systems. Additionally, research indicates that pressure from citizens, as as government incentives and regulations, plays a significant role in shaping the AI capabilities of municipalities (Schafer et al., 2021).

§ 2.3.1. Technological context of TOE framework

Within the technological context of the TOE framework, there is the concept of perceived benefits. Perceived benefits are the advantages that people believe they will gain from technological systems, rather than the actual benefits delivered by technology (Kuan & Chau, 2001). Direct benefits refer to operational improvements that enhance the performance of an organization's daily internal processes. Indirect benefits, on the other hand, are perceived rather than provided by technological systems. Indirect benefits are strategic advantages that come from external interactions and relations.

Perceived benefits play an important role in motivating the adoption and use of AI-systems (Cruz-Jesus, Pinheiro & Oliveira, 2019). In municipalities, IT managers have a significant impact on the decision to implement AI-systems and develop AI capabilities (Schaefer et al., 2021). Their decisions are shaped by their personal views on the value AI investments can offer and their overall perspective on the potential organizational changes that AI-systems might introduce.

Based on this, **Hypothesis 1** can be formulated as follows: *A higher perceived benefit leads to a higher development of AI capabilities in municipalities.*

§ 2.3.2. Organizational context of TOE framework

The organizational context of the TOE framework considers two concepts: perceived financial costs and organizational innovativeness (Mikalef et al., 2022). The perceived financial costs of adopting different technologies have been a common focus within public organizations.

Moreover, viewing costs from the perspective of managers or employees reveals varying perceptions. For decision-makers, financial costs are often seen as barriers to adoption. The barriers are significant, particularly when it is challenging to determine the measurable value that innovative digital solutions might provide (Kuan & Chau, 2001).

Municipalities operate within constrained budgets, primarily funded through governmental allocations and taxation (Misuraca, van Noordt, & Boukli, 2020). These financial limitations often restrict their ability to freely plan and deploy new technologies. Introducing new technologies in municipalities typically involves costs associated with supporting services and operational processes for different stakeholders, such as managers, employees, and citizens. Beyond direct financial expenses, investments in development and implementation incur additional overhead and personnel costs. Consequently, many public organizations face challenges in adopting new technologies due to concerns about financial constraints.

Building upon this, **Hypothesis 2** can be formulated as follows: *The higher the perceived financial cost involved, the lower the development of AI capabilities in municipalities.*

Secondly, organizational innovativeness, as a concept within the organizational context, highlights the significance of openness as a critical factor in adoption decisions. Openness refers to how willing municipalities are to embrace innovation (Lai & Guynes, 1994). Openness is crucial for municipalities when adopting new technologies effectively. The concept of organizational innovativeness has been instrumental in understanding the predisposition and cultural norms of municipalities, shaping their willingness to adopt technological innovations (Aboelmaged, 2014). Municipalities that are innovative are more likely to adopt new technologies because these organizations encourage experimentation with new ideas and technologies, dedicating resources and time to trying out innovative solutions and tools (Mikalef et al., 2022)

Based on this, **Hypothesis 3** can be formulated as follows: *The higher the level of innovation within municipalities as organizations, the higher the development of AI capabilities in municipalities.*

§ 2.3.3. Environmental context of TOE framework

The environmental context of the TOE framework considers the following concepts: perceived government pressure, perceived citizen pressure, government incentives, and regulatory supports (Mikalef et al., 2022). Firstly, perceived citizen pressure is a significant environmental factor that drives the adoption of technology (Kuan & Chau, 2001). The perceived citizen pressure often emanates from top government bodies, such as ministries, which articulate strategic goals primarily centered around digitalization objectives. Consequently, IT managers operating at the municipal level find themselves influenced by perceived pressure. Essentially, municipal activities need to align with national strategies (Mikalef, Fjørtoft, et al., 2019). IT managers feel a strong urge to align their efforts with governmental objectives. Therefore, IT managers must meet specific targets outlined in these strategies, such as financial costs and timeframes, to achieve governmental objectives.

In the context of advancing AI capabilities, municipalities feel pressured to change current resources because IT managers must take governmental requirements into account (Andreasson & Stende, 2019). Governmental requirements in context of AI capabilities could include initiating small projects to test AI-systems and ensuring data is accessible and usable Additionally, governmental requirements may involve creating better organizational setups.

Based on this, **Hypothesis 4** can be formulated as follows: *if municipalities experience higher government pressure, it leads to higher development in AI capabilities.*

Secondly, in the adoption of digital technologies in municipal services, the social influence of citizens is an important factor in adoption decisions (Schaefer et al., 2021). This means that how citizens view at governmental organization effects the decisions municipalities make. The opinions of citizens are important to municipalities, and therefore municipalities often feel pressured to adopt innovative technologies to meet the expectations of citizens.

Municipalities are responsible for providing important services to citizens. When citizens express a desire for something, it often pushes IT managers to speed up the process of using and adapting new technologies (Bullock et al., 2020). Therefore, it is important for

municipalities to pay attention to citizens' needs. This means that citizens demand can influence how quickly municipalities adopt new technological systems.

Based on this, **Hypothesis 5** can be formulated as follows: *higher perceived citizen pressure leads to greater development of AI capabilities in municipalities.*

Thirdly, municipalities serve as catalysts for embracing AI solutions by providing essential resources for their development and implementation (Komninos, 2006). Municipalities rely heavily on government support to navigate new technological directions, and the extent of this support significantly influences their adoption of AI-systems in their services (Misuraca et al., 2020). In addition to resource allocation, governments often offer incentives to encourage ongoing pursuit of strategic objectives. These incentives commonly take the form of financial benefits, which facilitate the adoption of new technologies and the recruitment of skilled personnel for municipalities. In the implementation of new technologies, financial assistance and access to qualified managers and employees are crucial for municipalities during digital transformation processes (Schaefer et al., 2021).

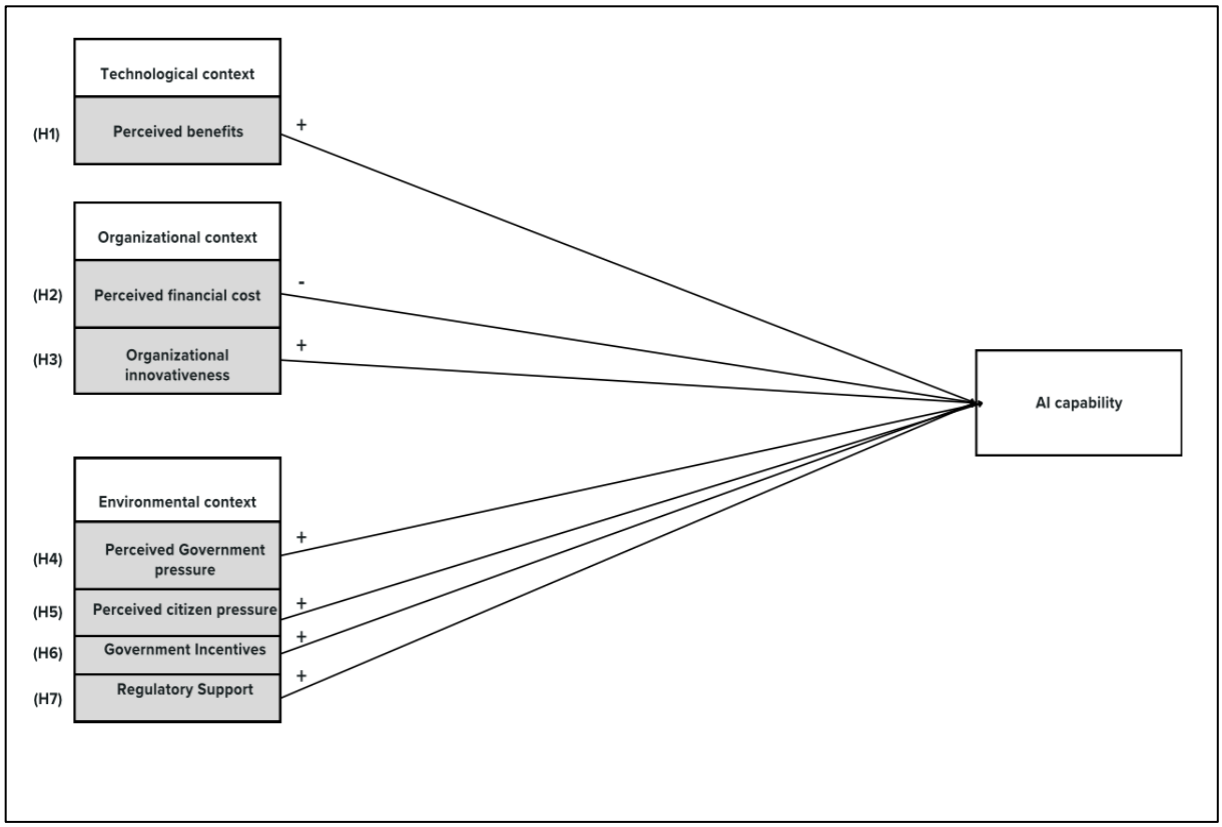
Based on this, **Hypothesis 6** can be formulated as follows: *higher governmental incentives lead to increased development of AI capabilities in municipalities.*

Lastly, regulatory support influences municipalities and their decisions to adopt and implement AI-systems for public services (Mikalef et al., 2022). Regulatory support is typically provided through regulations, strategies, and standards issued by high level public organizations. In the absence of clear regulations tailored to their needs, municipalities often strive to establish governance frameworks. However, regulatory support from higher municipal levels can offer crucial guidance for municipalities in navigating digital transformation (Niehaves, Roding & Oschinsky, 2019). Such regulatory supports include AI strategies designed to assist municipalities in formulating their own regulations and strategies while aligning with overarching goals (Misuraca et al., 2020).

Based on this, **Hypothesis 7** can be formulated as follows: *higher regulatory support leads to increased development of AI capabilities in municipalities.*

Below is a graphical representation (**Figure 1.**) illustrating the impact of technological, organizational, and environmental context on AI capabilities.

Figure 1. Theoretical model based on Technology Organization Environment (TOE) framework



3. Methodology

In this chapter, the methodology will be discussed. Section **§ 3.1.** discusses the population, sample, and limitations of the research. Next, in section **§ 3.2.**, the operationalization of dependent and independent variables will be discussed. Lastly, in section **§ 3.3.**, the analysis method will be described, including the sample descriptives and the data processing procedure.

For this quantitative explanatory research, a survey was used, involving a structured questionnaire administrated to selected respondents from the research population. The aim

of this questionnaire was to collect data on the key concepts central to this study, including *perceived benefits, perceived financial cost, organizational innovativeness, perceived government pressure, perceived citizen pressure, government incentives,* and *regulatory support*. The questionnaire was conducted online by distributing a link to the survey to respondents within the Municipality of Amsterdam. The survey method was chosen for the ability to reach many people, thereby enhancing representativeness.

§ 3.1. Research population and sample

§ 3.1.1. Research population

The research population comprises specialists from various departments within the Governance and Organization division of the Municipality of Amsterdam, including chief digital officers, IT or technology managers. This group was selected due to their role in decision-making regarding the implementation and adoption of AI-systems. Furthermore, this study does not focus on a single department within the municipality of Amsterdam. The departments within Governance and Organization include *Administrative and Management Advisory, Legal Affairs, Public Order and Safety, Integrity Office, Finance and Control,* and *Human Resources.* Since each department may have different objectives for using AI-systems, the implementation and adoption can vary. Therefore, this study focused on multiple departments within the municipality to gain insights into the differences and similarities in AI capabilities.

Since this study is focuses on the Municipality of Amsterdam, the results can be compared with similar research conducted at the municipal level in Europe, particularly in cities comparable to Amsterdam. These studies can be other European capitals or cities which are similar in size.

In 2018, the Municipality of Amsterdam employed 15,600 workers (Data Overheid, 2022). In the Netherlands, approximately 6% of employees hold managerial positions (CBS, 2024). Assuming a 6% managerial rate implies that 889 employees within the Municipality of Amsterdam occupy managerial roles. Furthermore, according to CBS, 29% of these managers are female and 71% are male.

§ 3.1.2. Sample

A sample was drawn from the research population using the researcher's connections. The researcher contacted IT specialists from the Municipality of Amsterdam via LinkedIn, sent the questionnaire to various IT managers online, and asked them to refer others relevant to the research. The municipality was also contacted by phone, and the questionnaire was emailed to be forwarded to the appropriate person. Some respondents completed the questionnaire by phone. Additionally, an email was sent to aldermen in different departments, and the online questionnaire was posted on LinkedIn.

A convenience sample was utilized for data collection in this research. This approach involves selecting participants based on their accessibility, willingness to participate, geographical proximity, or other factors that facilitate easy selection by the researcher (Bryman, 2012). This method is particularly useful when obtaining a representative sample is challenging, such as when certain groups are harder to reach or when under significant time constraints.

Based on the Krejcie and Morgan table, a sample size of 269 was required for a population of 889 (Krejcie & Morgan, 1970). However, only 173 responses were collected, of which 159 were valid due to some responses being incomplete.

§ 3.1.3. Limitations

This thesis may encounter several limitations. One limitation is the use of a convenience sample. A convenience sample, which is selected based on ease of access rather than randomization, can introduce bias and affect the representativeness of the sample (Bryman, 2012). As a result, the sample may not reflect the characteristics of the entire population. This limitation can influence the generalizability of the findings to a broader population.

Furthermore, the convenience sampling method may lead to a bias known as selection bias, where certain groups are overrepresented or underrepresented in the sample (Bryman, 2012). This bias can arise from factors such as limited availability of participants or the specific conditions under which the sample was collected.

§ 3.2. Operationalization

In this section, the operationalization of the dependent and independent variables is discussed. A table detailing the items of these variables can be found in **Appendix 1.**

§ 3.2.1. Dependent variable

In this research *AI capability* is measured based on the previous study by Mikalef and Gupta (2021). The concept AI capability is assessed using the following three elements: tangible, human skills, and intangible. These three elements together evaluate the extent to which municipalities can utilize resources which are related to AI in their work. AI capabilities were presented in the form of statements with a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree).

§ 3.2.2. Independent variable

Perceived benefits are based on the study of Kuan and Chai (2001) and assessed through statements about the advantages of adopting AI-systems for municipal functions and services. Responses were given on a 7-point Likert scale, with higher scores indicating greater perceived benefits.

Perceived financial costs is measured in this research by asking respondents for evaluating their beliefs regarding the costs involved in adopting AI-systems within their municipality. The items include statements related to the expenses of setting up, training and operating AI-systems in their work. Responses were on a 7-point Likert scale, with higher scores indicating higher perceived costs.

Organizational innovativeness assessed how strongly respondents felt their organization foster and actively pursues a culture of continuous innovation. Statements were rated on a 7-point Likert scale, with higher scores indicating higher organizational innovativeness.

Perceived government pressure is measured in this research as the extent to which respondents felt that higher government authorities were encouraging municipalities to implement AI-systems. Perceived government is measured based on the study Kuan and Chau

(2001). A 7-point Likert scale was used, with higher scores indicating greater perceived pressure.

Perceived citizen pressure examined the extent to which municipal organizations felt urged by their citizen to implement AI-systems in their services. The items are used from a previous study by Mikalef et al. (2022). The study assessed how strongly respondents believed that their citizens were demanding increased AI-systems in the services of municipalities. A 7-point Likert scale was used, with higher scores meaning greater perceived citizen pressure.

Government incentives assessed the extent to which respondents felt that sufficient measures and initiatives were introduced by higher government authorities to support the adoption and use of AI-systems in public services of municipalities. The items were adapted from a previous study conducted by Mikalef et al. (2022). Responses were on a 7-point Likert scale, with higher scores indicating stronger perceived incentives.

Regulatory support assessed how strongly respondents felt there were clear regulations and directives concerning various aspects of AI projects. The items are used by a previous study of Mikalef et al. (2022). Furthermore, responses were on a 7-point Likert scale, with higher scores indicating greater perceived regulatory support.

Gender was used as a control variable with options 'male', 'female', 'other', and 'prefer not to say'. During the data transformation process, the options ‘other’ and ‘prefer not to say’ were converted to missing values due to no response.

Age as control variable was requested using a ‘dropdown box’. Respondents were required to select their age, with options ranging from 20 to 70 years.

The control variable *function* was requested based on their current circumstance and was categorized as: ‘IT manager’, ‘technology manager’, ‘chief digital officer’, and an open option 'Other, namely'. 'Other' responses were reclassified into '(corporate) manager', '(general) manager', and 'innovation manager' during the data processing.

Department as a control variable was determined based on current employment and included 'Administrative and Management Consulting', 'Legal Affairs', 'Public Order and Safety', 'Integrity Bureau', 'Resources and Control', and 'Personnel and Organization'.

§ 3.3. Analysis method

This research examined the influence of various independent variables (*perceived benefits, perceived financial cost, organizational innovativeness, perceived government pressure, perceived citizen pressure, government incentives,* and *regulatory support*) on the dependent variable AI capabilities. Additionally, the control variables age, gender, department and function were considered in the analysis.

Table 1 shows that the average age of the respondents is 47 years. The smallest proportion of respondents (1%) are under 29 years old, while the largest proportion (19%) are between 50 and 54 years old. Additionally, 5% are between 30 and 34 years old, 16% are between 35 and 39 years old, 18% are between 40 and 44 years old, 18% are between 45 and 49 years old, 12% are between 55 and 59 years old, and 3% are 60 years or older. Furthermore, 44% of the respondents are female and 47% are male.

Regarding department distribution, 23% of respondents work in *'Administrative and Management Consulting'*, 11% in *'Legal Affairs'*, 20% in *'Public Order and Safety'*, 2% in the *'Integrity Bureau'*, 18% in *'Resources and Control'*, and 23% in *'Personnel and Organization'*. Additionally, 26% of respondents are IT managers, 20% are technology managers, 15% are Chief Digital Officers, 10% are corporate managers, 16% are general managers, and 9% are innovation managers.

§ 3.3.1. Descriptives

Table 1

Descriptive characteristics of the sample (N=159)

	N	*M*	*SD*	Min	Max
Age	159	46.53	7.65	29	62
Gender (% Female)	159	0.48	0.50	0	1

Department:	
Administrative and Management Consulting	40
Legal Affairs	19
Public Order and Safety	33
Integrity Bureau	3
Resources and Control	31
Personnel and Organization	39
Function:	
IT-manager	44
Technology manager	35
Chief Digital Officer	25
(Corporate) manager	17
(General) manager	28
Innovation manager	16

§ 3.3.2. Data processing process

To analyze the collected data, various transformations were applied to each independent and dependent variable. At first, a simple regression analysis was used to assess the effect of each independent variable on the dependent variable. Furthermore, a multiple regression analysis was conducted with the control variables *age*, *gender, department* and *function* to control the effects.

4. Empirical findings & analysis

This chapter presents the results of our analysis, which tested 7 hypotheses using bivariate and multivariate analysis. Bivariate analysis explores the linear relationship between independent and dependent variables, while multivariate analysis considers multiple independent variables. In this thesis, we used multivariate analysis, including control variables, to assess whether the effect of the independent variable on the dependent variable changes. The use of control variables enhances the robustness and validity of the results by providing clearer insights into how perceived benefits effect AI capabilities.

Results were evaluated for statistical significance using a p-value threshold of 0.05, with values below 0.05 indicating a significant effect. The analysis includes key metrics such as the B coefficient, which shows the expected change in the dependent variable per one change in the independent variable, and the BETA coefficient, which indicates the strength and direction of the relationship. A BETA closer to 1 or -1 suggests a stronger linear relationship.

§ 4.1. Technological context and AI capabilities

In the technological context, perceived benefits were the independent variable measured **(§ 4.1.1)**. A linear regression analysis was conducted to analyze the impact of perceived benefits on AI capabilities. This analysis highlighted the influence of perceived benefits on AI capabilities. Additionally, a multivariate analysis was performed, incorporating perceived benefits, AI capabilities, and control variables.

§ 4.1.1. Perceived benefits, control variables, and AI capabilities

Table 2, Model 1, presents the effect between perceived benefits and AI-capabilities. According to **Model 1**, the constant value (intercept) is 3.672, indicating that managers who do not utilize perceived benefits score 3.672 for AI capabilities.

Perceived benefits have a significant weak positive effect on AI capabilities (B = 0.169, p = 0.005), showing a small but meaningful difference between managers with low and high perceived benefits. This supports Hypothesis 1, which suggests that higher perceived benefits lead to greater AI capabilities. In **Model 1**, the BETA for perceived benefits is 0.223, indicating a moderate positive influence, where a one standard deviation increase in perceived benefits leads to a 0.223 standard deviation increase in AI capabilities.

As indicated in **Table 2 (Model 2)**, the intercept with the control variables increased slightly by 0.151 (B = 3.823 – 3.672 = 0.151). This small increase in the intercept suggests that the control variables have some influence on the dependent variable, even when the independent variables are set to zero. It may imply that a portion of the variation in the dependent variable is explained by the control variables.

With the inclusion of control variables, the effect of *perceived benefits decreased* to *B* = 0.141. Despite this reduction, the effect remains significant, confirming the Hypothesis 1 that higher perceived benefits lead to greater AI capabilities when control variables are accounted for in the analysis.

For *departmental* variables, the Personnel and Control department shows an effect of 3.823. The Public Order and Safety (*B* = -0.112, *p* = 0.147), Legal Affairs (*B* = -0.020, *p* = 0.832), Integrity Bureau (*B* = -0.103, *p* = 0.598), and Resources and Control (*B* = -0.003, *p* = 0.965) departments exhibit negative and non-significant effects. The Administrative and Management Consulting department has a weak positive but non-significant effect (*B* = 0.028, *p* = 0.707). Thus, departmental differences do not significantly effect the relationship between perceived benefits and AI capabilities.

For job *functions*, Innovation Managers score 3.823 with all other variables are zero. The roles of Chief Digital Officer (*B* = -0.081, *p* = 0.449) and Corporate Manager (*B* = -0.143, *p* = 0.239) have negative and non-significant effects on AI capabilities. IT Manager (*B* = 0.010, *p* = 0.915), Technology Manager (B = 0.060, p = 0.550), and General Manager (*B* = 0.005, *p* = 0.962) show weak positive but non-significant effects. Overall, functions do not significantly influence the effect of perceived benefits on AI capabilities.

The variable *gender* has a very weak and negative effect of -0.048. This effect indicates that female managers decrease the dependent variable AI capabilities by -0.048. However, the effect of age is not significant (*p* = 0.361). Therefore, the relationship between perceived benefits and AI capabilities with the control variable gender cannot be statistically concluded.

The variable *age* shows a very weak positive effect of 0.14. The p-value for age is 0.415, which is above the significance level of 0.05. Consequently, it cannot be concluded that older managers score higher on the effect of perceived benefits on AI capabilities, than younger managers.

Table 2 (Model 2) explains only 12.7% of the variance in the development of AI capabilities (R^2 = 0.127). This relatively low percentage suggests that there are other important factors not included in the model that may have a considerable impact on the development of AI capabilities in municipalities.

Table 2.

Bivariate and multivariate analysis perceived benefits, control variables and AI capabilities.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.672	.358		10.269	<.001
	Perceived benefits	.169	.059	.223	2.856	.005
	N	159				
	R^2	.050				
2	(Constant)	3.823	.398		9.618	<.001
	Perceived benefits	.141	.064	.186	2.200	.029
	Department A&MC*	.028	.073	.037	.377	.707
	Department LA**	-.020	.093	-.019	-.212	.832
	Department PO&S***	-.112	.077	-.144	-1.460	.147
	Department IB****	-.103	.195	-.044	-.528	.598
	Department R&C*****	-.003	.076	-.004	-.044	.965
	Function IT-manager	.010	.096	.015	.107	.915
	Function Tech manager	.060	.100	.078	.599	.550
	Function Chief Digital Officer	-.081	.107	-.094	-.759	.449
	Function (Corporate) manager	-.143	.121	-.120	-1.182	.239
	Function (General) manager	.005	.103	.006	.048	.962
	Gender (% Female)	-.048	.052	-.075	-.916	.361

Age	.014	.017	.070	.817	.415
N	159				
R^2	.127				

*Administrative and Management Consulting **Legal Affairs ***Public order and Safety ****Integrity Bureau *****Resources and Control

§ 4.2. Organizational context and AI capabilities

In addition to the technological context, we analyzed the variable perceived financial cost, which is within the organizational context **(§ 4.2.1).** Additionally, organizational innovativeness was analyzed in relation to AI capabilities **(§ 4.2.2).**

§ 4.2.1. Perceived financial cost, control variables, and AI capabilities

Table 3 (Model 1) presents the results of the effect of perceived financial cost on AI capabilities. The intercept is 3.916 which indicates that managers score a 3.916 when perceived financial cost is zero.

In **Table 3 (Model 1),** the effect of *perceived financial cos*t on AI capabilities is positive and significant (B = 0.150, p < 0.001), indicating a statistically significant positive relationship. However, Hypothesis 2, which posited that higher perceived financial cost is associated with lower AI capabilities development in municipalities, is not supported. The BETA for perceived financial cost is 0.293, reflecting a moderate positive effect.

In **Model 2**, the intercept decreases by 2% (B = 3.916 - 3.829 = 0.087) when the control variables department, function, gender, and age are included in the analysis. The slight reduction in the effect of perceived financial cost upon adding the control variables suggests that part of the initial effect attributed to perceived financial cost was due to the control variables.

For the variable *perceived financial cost*, **Model 2** shows a significant positive effect (B = 0.174, p < 0.001). Similarly, in **Model 1**, the effect of perceived financial cost contrasts with

Hypothesis 2, which stated that higher perceived financial costs lead to lower AI capabilities development in municipalities.

For the Personnel and Control *department*, the AI capability effect is 3.829, indicating this department has 3.829 more AI capabilities when other variables are zero. In **Model 2**, the Legal Affairs (*B* = -0.102, *p* = 0.261), Integrity Bureau (*B* = -0.125, *p* = 0.498), and Resources and Control (*B* = -0.017, *p* = 0.811) departments show weak, non-significant negative effects, while Public Order and Safety shows a significant weak negative effect (*B* = -0.158, *p* = 0.036). The Administrative and Management Consulting department shows a very weak, non-significant positive effect (*B* = 0.012, *p* = 0.860). Overall, differences in AI capabilities across departments are minimal and statistically insignificant, except for the Public Order and Safety department.

For the *function* of Innovation Manager, the effect on AI capabilities is 3.829, suggesting this role is associated with 3.829 more AI capabilities when other variables are zero. Among other functions, the Chief Digital Officer (*B* = -0.131), IT Manager (*B* = -0.007), and General Manager (*B* = -0.052) show weak negative but non-significant effects (*p* = 0.206, *p* = 0.936, and *p* = 0.606). The Corporate Manager has a slightly significant negative effect (*B* = -0.224, *p* = 0.056), while the Technology Manager shows a very weak positive effect (*B* = 0.002, *p* = 0.980). In summary, only the Corporate Manager shows a weakly significant negative effect; the other functions are not significant.

For the control variable *gender*, there is a negative effect. Female managers score -0.054 lower on AI capabilities than male managers, regardless of their perceived financial cost. However, the effect is not significant (*p* = 0.282), meaning no conclusions can be drawn that male managers score higher on AI capabilities than female managers.

The results for the control variable *age* show no significant relationship with AI capabilities (*p* = 0.312). The effect is positive, indicating that each additional year of age increases the score on AI capabilities by 0.017. This implies that if the effect were statistically significant, managers closer to the age of 62 would have a stronger positive effect on AI capabilities compared to managers around the age of 29.

Model 2 in Table 3 shows an R^2 of 19.9%, indicating that the variables perceived financial cost, department, function, gender, and age explain 19.9% of the variance in AI capabilities.

Table 3.

Bivariate and multivariate analysis perceived financial cost, control variables, and AI capabilities.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.916	.204		19.191	<.001
	Perceived financial cost	.150	.039	.293	3.822	<.001
	N	159				
	R^2	.086				
2	(Constant)	3.829	.223		17.132	<.001
	Perceived financial cost	.174	.041	.340	4.257	<.001
	Department A&MC*	.012	.070	.017	.177	.860
	Department LA**	-.102	.090	-.100	-1.127	.261
	Department PO&S***	-.158	.075	-.203	-2.121	.036
	Department IB****	-.125	.184	-.054	-.679	.498
	Department R&C*****	-.017	.073	-.022	-.240	.811
	Function IT-manager	-.007	.092	-.011	-.081	.936
	Function Tech manager	.002	.097	.003	.025	.980
	Function Chief Digital Officer	-.131	.103	-.151	-1.270	.206
	Function (Corporate) manager	-.224	.116	-.188	-1.930	.056
	Function (General) manager	-.052	.100	-.061	-.516	.606
	Gender (% Female)	-.054	.050	-.085	-1.081	.282
	Age	.017	.017	.083	1.014	.312
	N	159				
	R^2	.199				

*Administrative and Management Consulting **Legal Affairs ***Public order and Safety ****Integrity Bureau *****Resources and Control

§ 4.2.2. Organizational innovativeness, control variables, and AI capabilities

Table 4 (Model 1) presents the bivariate analysis of the effect of organizational innovativeness on AI capabilities. In **Model 1**, the intercept is 4.829 and represents the score of AI capabilities when organizational innovativeness is zero.

For the variable *organizational innovativeness*, **Model 1** shows a very weak negative effect (*B* = -0.040) that is not statistically significant (*p* = 0.158). Therefore, Hypothesis 3 cannot be confirmed, as there is no statistical evidence that higher organizational innovativeness leads to greater development of AI capabilities. The BETA for organizational innovativeness is -0.113, indicating a negative relationship. The small BETA value suggests a weak linear relationship between the independent and dependent variables, potentially indicating the presence of other underlying factors.

Model 2 (Table 4) presents the multivariate analysis of the relationship between organizational innovativeness, control variables, and AI capabilities. The intercept (constant) is 4.794, indicating a positive baseline for AI capabilities even when organizational innovativeness and control variables are zero. Compared to the intercept for perceived financial cost (*B* = 3.829) in **Table 3 (Model 2)**, organizational innovativeness has a stronger effect (*B* = 4.794).

Furthermore, the weak negative effect of *organizational innovativeness* on AI capabilities (*B* = -0.034) suggests a relationship, but the effect is not significant (*p* = 0.276). Nonetheless, the results support Hypothesis 3.

For *department*, the Personnel and Control department scores 4.794 when other variables are zero. The departments of Public Order and Safety (*B* = -0.158), Integrity Bureau (*B* = -0.125), Legal Affairs (*B* = -0.102), and Resources and Control (*B* = -0.017) exhibit negative and non-significant effects on AI capabilities. In contrast, the Administrative and Management Consulting (*B* = 0.012) department shows a weak positive effect, but this effect is also not

statistically significant. Consequently, no significant conclusions can be drawn, suggesting that these departments do not have notably different AI capabilities compared to others.

For *function*, the Innovation Manager role has an effect of 4.794 when organizational innovativeness and all control variables are set to zero. The Corporate Manager (*B* = -0.149, *p* = 0226) and Chief Digital Officer (*B* = -0.053, *p* = 0.626) roles have negative effects that are not significant. The Technology Manager (*B* = 0.070, *p* = 0.498), IT Manager (*B* = 0.028, *p* = 0.775), and General Manager (*B* = 0.007, *p* = 0.945) roles has very weak positive effects on AI capabilities, but these effects are also not significant. Therefore, no statistically significant conclusions can be drawn regarding the impact of these roles on AI capabilities when organizational innovativeness is considered.

The control variable *gender* shows a negative and non-significant effect on AI capabilities (*B* = -0.053, *p* = 0.315), indicating no statistical difference between female and male managers.

The control variable *age* presents a very weak positive effect (*B* = 0.014), suggesting that each additional year of age slightly increases AI capabilities. However, this effect is not significant (*p* = 0.433). Thus, age does not significantly the effect of organizational innovativeness on AI capabilities.

The R^2 value in **Table 4 (Model 2)**, representing the variance explained by the independent variable organizational innovativeness and control variables (department, function, gender, and age). The R^2 value is 10.5%, which is a small variance for these factors.

Table 4.

Bivariate and multivariate analysis organizational innovativeness, control variables, and AI capabilities.

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.

1	(Constant)	4.829	.101		47.700	<.001
	Organizational innovativeness	-.040	.028	-.113	-1.419	.158
	N	159				
	R^2	.013				
2	(Constant)	4.794	.166		28.881	<.001
	Organizational innovativeness	-.034	.031	-.097	-1.094	.276
	Department A&MC*	.027	.075	.036	.366	.715
	Department LA**	-.052	.095	-.051	-.551	.582
	Department PO&S***	-.124	.079	-.159	-1.562	.120
	Department IB****	-.189	.195	-.082	-.969	.334
	Department R&C*****	-.003	.077	-.004	-.045	.964
	Function IT-manager	.028	.097	.039	.286	.775
	Function Tech manager	.070	.103	.091	.679	.498
	Function Chief Digital Officer	-.053	.108	-.061	-.488	.626
	Function (Corporate) manager	-.149	.123	-.125	-1.216	.226
	Function (General) manager	.007	.104	.009	.069	.945
	Gender (% Female)	-.053	.053	-.084	-1.009	.315
	Age	.014	.017	.068	.786	.433
	N	159				
	R^2	.105				

*Administrative and Management Consulting **Legal Affairs ***Public order and Safety ****Integrity Bureau *****Resources and Control

§ 4.3. Environmental context and AI capabilities

In the environmental context, four variables were analyzed within the organizational framework. First, the effect of perceived government pressure on AI capabilities was examined **(§ 4.3.1)**. Second, the impact of perceived citizen pressure on AI capabilities was analyzed **(§ 4.3.2)**. Third, the relationship between government incentives and AI capabilities was analyzed **(§ 4.3.3)**. Finally, the effect of regulatory support on AI capabilities was analyzed **(§ 4.3.4)**.

§ 4.3.1. Perceived Government Pressure, Control Variables, and AI Capabilities

In **Table 5, Model 1** presents the results of the bivariate analysis examining the relationship between perceived government pressure and AI capabilities. The intercept is positive (*B* = 4.475), indicating that when perceived government pressure is zero, the predicted score for AI capabilities is 4.475.

Perceived government pressure has a very weak positive and insignificant effect on AI capabilities (*B* = 0.043, *p* = 0.442). Thus, Hypothesis 4 is not supported, indicating that government pressure does not significantly develop AI capabilities. The BETA coefficient of 0.062 indicates a negligible relationship, suggesting that other factors may be more influential.

Table 5 (Model 2) examines the effect of perceived government pressure variables on AI capabilities, including the control variables. The intercept in **Model 2** is 4.330.

When managers indicate the presence of *perceived government pressure*, the score of 4.330 increases by 0.071. However, the effect is not significant (*p* = 0.239), so Hypothesis 4 is not supported.

For the Personnel and Control *department*, the effect on AI capabilities is 4.225. The Public Order and Safety, Integrity Bureau, and Legal Affairs departments have negative effects on AI capabilities (*B* = -0.113, -0.138, and -0.063), but these effects are not statistically significant (*p* = 0.150, 0.482, and 0.513). The Administrative and Management Consulting and Resources and Control departments show very weak positive effects (*B* = 0.031 and 0.001), which are also not significant (*p* = 0.676 and 0.986). Therefore, no significant conclusions can be drawn about these departments' influence on AI capabilities with government pressure included in the analysis.

For the *function* of Innovation Manager, the effect is positive effect (*B* = 4.330). The Corporate Manager (*B* = -0.195) and Chief Digital Officer (*B* = -0.043) have negative effects, but these are not significant (*p* = 0.118 and *p* = 0.684). The General Manager (*B* = 0.009), IT Manager (*B*

= 0.018), and Technology Manager (*B* = 0.092) also show positive but not significant effects (*p* = 0.933, 0.857, and 0.359). Therefore, it cannot be concluded that the differences in these roles have a significant impact on the development of AI capabilities, considering the perceived government pressure.

The control variable *gender* has a negative and non-significant effect (*B* = -0.056, *p* = 0.293). Thus, no statistical conclusion can be made that female managers score 0.056 less on AI capabilities than male managers.

For the control variable *age*, the effect on AI capabilities is a very weak positive effect of 0.010. However, the effect of age on AI capabilities is not significant (*p* = 0.576). Therefore, the effect cannot be statistical concluded that managers around 62 years of age score higher on AI capabilities than those around 29 years.

Table 5 (Model 2) shows that the R^2 for the independent variable perceived government pressure and the control variables is 0.107, indicating that 10.7% of the variance in the dependent variable AI capabilities is explained by perceived government pressure and the control variables.

Table 5.

Bivariate and multivariate analysis perceived government pressure, control variables, and AI capabilities.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.475	.280		15.957	<.001
	Perceived government pressure	.043	.055	.062	.771	.442
	N	159				
	R^2	.004				
2	(Constant)	4.330	.303		14.303	<.001
	Perceived government pressure	.071	.060	.103	1.183	.239

Department A&MC*	.031	.074	.041	.419	.676
Department LA**	-.063	.097	-.062	-.656	.513
Department PO&S***	-.113	.078	-.145	-1.446	.150
Department IB****	-.138	.197	-.060	-.704	.482
Department R&C*****	.001	.077	.002	.017	.986
Function IT-manager	.018	.097	.025	.181	.857
Function Tech manager	.092	.100	.120	.920	.359
Function Chief Digital Officer	-.043	.106	-.050	-.408	.684
Function (Corporate) manager	-.195	.124	-.164	-1.573	.118
Function (General) manager	.009	.104	.011	.085	.933
Gender (% Female)	-.056	.053	-.088	-1.056	.293
Age	.010	.018	.049	.560	.576
N	159				
R^2	.107				

*Administrative and Management Consulting **Legal Affairs ***Public order and Safety

****Integrity Bureau *****Resources and Control

§ 4.3.2. Perceived citizen pressure, control variables, and AI capabilities.

In addition to perceived government pressure, the second variable analyzed within the environmental context is perceived citizen pressure. **Table 6 (Model 1)** presents a constant value of 4.214. Managers score a 4.214 when there is no perceived citizen pressure.

Model 1 shows a weak and positive effect for the variable perceived citizen pressure (*B* = 0.080). However, this effect of 0.080 is not statistically significant (*p* = 0.292), as the value is well above the significance threshold of 0.05. Therefore, Hypothesis 5 cannot be statistically concluded that increased perceived citizen pressure leads to greater development in AI capabilities.

Table 6 (Model 2) shows the multivariate analyses of the effect perceived citizen pressure and AI capabilities with the control variables. **Model 2** shows an intercept of 4.225. The score of

4.225 increase by 0.074 when managers indicate the presence of perceived citizen pressure. However, the effect of perceived citizen pressure is not statistically significant (p = 0.334) because the p-value is highly above the significance threshold of 0.05. Therefore, Hypothesis 5 cannot be confirmed. Higher perceived citizen pressure in municipalities does not lead to a higher score in the development of AI capabilities.

The department Personnel and Control has a positive effect of 4.225 on AI capabilities if perceived citizen pressure and control variables are zero. The Legal Affairs (B = -0.031), Public Order and Safety (B = -0.103), Integrity Bureau (B = -0.176), and Resources and Control (B = -0.001) departments have negative effects, with Resources and Control showing a very weak negative effect. However, these negative effects are not significant (p = 0.743, 0.190, 0.366, and 0.989). The Administrative and Management Consulting department shows a small positive effect (B = 0.041) that is also not significant (p = 0.334). Therefore, it can be concluded that the differences between departments do not have a significant effect on the development of AI capabilities when perceived citizen pressure is considered.

The *function* of Innovation Manager presents an effect size of 4.225 when all other variables in the analysis are held constant at zero. Conversely, the positions of Chief Digital Officer (B = -0.027, p = 0.799) and Corporate Manager (B = -0.163, p = 0.184) demonstrate a negative and statistically non-significant effect. The functions of IT Manager (B = 0.030, p = 0.757), Technology Manager (B = 0.095, p = 0.345), and General Manager (B = 0.018, p = 0.865) show a positive but also non-significant effect. Based on the findings from **Model 2**, we cannot statistically conclude that these roles have a significant impact on perceived citizen pressure on AI capabilities.

The control variable *gender* shows a negative effect (B = -0.057, p = 0.284) on AI capabilities when perceived citizen pressure is included in the analysis. However, no statistical conclusions can be made that female managers score lower on AI capabilities.

The control variable *age* has a slight positive effect on AI capabilities (B = 0.012), but the effect of age is not significant (p = 0.484). Therefore, no conclusions can be drawn about managers scoring higher on AI capabilities as their age approaches 62 years.

Table 6 (Model 2) shows that perceived citizen pressure and control variables explain 10.4% of the variance in AI capabilities. This is slightly less than the explanatory power of perceived government pressure reported in **Table 5.**

Table 6.

Bivariate and multivariate analysis perceived citizen pressure, control variables, and AI capabilities.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.214	.452		9.325	<.001
	Perceived citizen pressure	.080	.076	.084	1.057	.292
	N	159				
	R^2	.007				
2	(Constant)	4.225	.465		9.080	<.001
	Perceived citizen pressure	.074	.076	.077	.969	.334
	Department A&MC*	.041	.074	.055	.553	.581
	Department LA**	-.031	.095	-.030	-.328	.743
	Department PO&S***	-.103	.078	-.132	-1.317	.190
	Department IB****	-.176	.195	-.076	-.906	.366
	Department R&C*****	-.001	.077	-.001	-.014	.989
	Function IT-manager	.030	.097	.043	.310	.757
	Function Tech manager	.095	.100	.123	.948	.345
	Function Chief Digital Officer	-.027	.106	-.031	-.255	.799
	Function (Corporate) manager	-.163	.122	-.136	-1.336	.184
	Function (General) manager	.018	.104	.021	.170	.865
	Gender (% Female)	-.057	.053	-.090	-1.075	.284

Age	.012	.017	.061	.702	.484
N	159				
R^2	.104				

*Administrative and Management Consulting **Legal Affairs ***Public order and Safety ****Integrity Bureau *****Resources and Control

§ 4.3.3. Government incentives, control variables, and AI capabilities

In **Table 7, Model 1**, presents third variable within the environmental context, namely government incentives. The intercept of 4.724 indicates that with zero government incentives, AI capabilities score 4.724.

In **Model 1**, the effect of *government incentives* on AI capabilities is very weak negative, with a coefficient of -0.007. However, the effect of government incentives is not significant, as the p-value is well above the significance threshold of 0.05 (p = 0.886). As a result, we cannot confirm Hypothesis 6, which suggests that greater government incentives would lead to the development of more advanced AI capabilities.

Model 2 (Table 7) shows a multivariate analysis of government incentives on AI capabilities, with the control variables. The intercept in **Model 2** is 4.624, which is higher than the score of 4.225 in **Table 6 (Model 2)** for perceived citizen pressure.

The score of 4.313 increases by 0.008 with government incentives, but the effect is not significant (p = 0.886). Thus, Hypothesis 6 is not supported, meaning government incentives do not lead to higher AI capabilities in municipalities.

For the variable *department*, **Model 2** shows that the Personnel and Control department has a positive effect of 4.624 when all variables in the analysis are zero. In contrast, Legal Affairs (B = -0.041), Public Order and Safety (B = -0.106), Integrity Bureau (B = -0.175), and Resources and Control (B = -0.003) show lower, negative effects, but these are not significant (p-values range from 0.181 to 0.966). The Administrative and Management Consulting department has a weak positive effect (B = 0.038) and is also non-significant (p = 0.611). Fundamentally, it

cannot be concluded that the different departments score differently on AI capabilities when government incentives are considered in the analysis.

For the variable *function*, the effect for the function of Innovation Manager is 4.624, when the scores for government incentives and all control variables are zero. The Chief Digital Officer (*B* = -0.025, *p* = 0.824) and Corporate Manager (*B* = -0.166, *p* = 0.177) all show a negative and non-significant effect on AI capabilities. On the other hand, the functions of IT Manager (*B* = 0.035), Technology Manager (*B* = 0.098), and General Manager (*B* = 0.019) have a positive effect, but these effects are also not significant (*p*-values from 0.0334 to 0.859). For this reason, there cannot be concluded that a difference in functions significantly affects AI capabilities when government incentives are considered.

The control variable *gender* shows a slight negative effect on AI capabilities, which is not significant (*B* = -0.054, *p* = 0.307). Therefore, no statistical conclusions can be made regarding differences in AI capabilities based on gender.

The control variable *age* has a slight positive effect on AI capabilities (*B* = 0.012), but this effect is not significant (*p* = 0.490). Thus, older managers do not statistically score higher on AI capabilities than younger managers.

In **Table 7 (Model 2)**, the R^2 of 9.8% indicates that government incentives and the control variables explain a small portion of the variation in AI capabilities.

Table 7.

Bivariate and multivariate analysis government incentives, control variables, and AI capabilities.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.724	.238		19.809	<.001

	Government incentives	-.007	.052	-.012	-.144	.886
	N	159				
	R^2	.000				
2	(Constant)	4.624	.290		15.936	<.001
	Government incentives	.008	.057	.013	.143	.886
	Department A&MC*	.038	.074	.050	.509	.611
	Department LA**	-.041	.096	-.040	-.420	.675
	Department PO&S***	-.106	.079	-.136	-1.344	.181
	Department IB****	-.175	.195	-.075	-.894	.373
	Department R&C*****	-.003	.077	-.004	-.043	.966
	Function IT-manager	.035	.097	.050	.359	.720
	Function Tech manager	.098	.104	.128	.947	.345
	Function Chief Digital Officer	-.025	.110	-.028	-.223	.824
	Function (Corporate) manager	-.166	.122	-.139	-1.358	.177
	Function (General) manager	.019	.105	.022	.178	.859
	Gender (% Female)	-.054	.053	-.086	-1.025	.307
	Age	.012	.018	.061	.692	.490
	N	159				
	R^2	.098				

*Administrative and Management Consulting **Legal Affairs ***Public order and Safety ****Integrity Bureau *****Resources and Control

§ 4.3.4. Regulatory support, control variables, and AI capabilities

In **Table 8** the variable regulatory support is analyzed, which is the last variable analyzed within the environmental context. The intercept in **Model 1** is 4.624.

The score of 4.624 decreases by 0.007 in the presence of regulatory support. The effect of regulatory support is highly significant ($p < 0.001$). Consequently, Hypothesis 7 can be

statistically concluded, which states that increased regulatory support leads to enhanced AI capabilities.

Model 2 (Table 8) presents a multivariate analysis about the effect of regulatory support on AI capabilities, with control variables. The intercept in **Model 2** is 3.372.

The effect of 3.372 increases by 0.273 when there is regulatory support. The impact of regulatory support on AI capabilities is high significant ($p < 0.001$), thereby confirming Hypothesis 7. In this context, greater regulatory support leads to enhanced AI capabilities within the municipality.

The *department* of Personnel and Control has a score of 3.372. This effect decreases for the departments Integrity Bureau ($B = -0.251$), Public order and Safety ($B = -0.166$) and Legal Affairs ($B = -0.107$), as these effects are weakly negative. Only Public Order and Safety has a significant negative effect ($p = 0.028$), while Integrity Bureau ($p = 0.176$) and Legal Affairs ($p = 0.239$) are not significant. Administrative and Management Consulting ($B = 0.006$) and Resources and Control ($B = 0.004$) have very weak positive effects, both insignificant ($p = 0.933$ and $p = 0.957$). Based on **Model 2**, only Public Order and Safety significantly effects the effect of regulatory support on AI capabilities.

Regarding the *function* variable, **Table 8** shows a score of 3.372 for Innovation Managers when regulatory support is considered. This score is substantially lower than the innovation manager's score in **Table 7**, showing a difference of 1.252 ($B = 4.624 – 3.372 = 1.252$). This suggests that Innovation Managers have higher scores on AI capabilities when government incentives are included, compared to when regulatory support is considered. The Corporate Manager ($B = -0.133$) and Chief Digital Officer ($B = -0.006$) have negative but insignificant effects ($p = 0.250$ and $p = 0.950$). IT Manager ($B = 0.024$), Technology Manager ($B = 0.069$), and General Manager ($B = 0.054$) have positive but also non-significant effects (p-values from 0.468 to 0.795). Based on these results, no conclusions can be made regarding whether differences in functions significantly effect the effect of regulatory support on AI capabilities.

For the control variable *gender,* the small negative effect of -0.068, suggesting women score slightly lower than men. However, this effect is not significant (p = 0.175), so no conclusions can be drawn about gender differences in AI capabilities regarding regulatory support.

For the control variable *age*, the effect on AI capabilities is very small and negative, with a value of -0.009. This indicates that managers older than 29 years score 0.009 less for each additional year of age. However, this effect is not significant (*p* = 0.616), and no conclusions can be drawn that older managers score lower on AI capabilities when regulatory support is considered in the analysis.

The R^2 in **Table 8** is 20.1%, which is higher than the 9.8% R^2 in **Table 7** for government incentives and control variables. This indicates that regulatory support and control variables explain 10.3% more of the variation in AI capabilities than government incentives with control variables.

Table 8.

Bivariate and multivariate analysis regulatory support, control variables, and AI capabilities.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.431	.304		11.298	<.001
	Regulatory support	.242	.058	.316	4.159	<.001
	N	159				
	R^2	.100				
2	(Constant)	3.372	.318		10.621	<.001
	Regulatory support	.273	.063	.357	4.318	<.001
	Department A&MC*	.006	.070	.008	.085	.933
	Department LA**	-.107	.090	-.105	-1.182	.239
	Department PO&S***	-.166	.075	-.214	-2.224	.028
	Department IB****	-.251	.185	-.109	-1.361	.176

Department R&C*****	.004	.073	.005	.054	.957
Function IT-manager	.024	.091	.034	.261	.795
Function Tech manager	.069	.095	.090	.728	.468
Function Chief Digital Officer	-.006	.100	-.007	-.063	.950
Function (Corporate) manager	-.133	.115	-.112	-1.155	.250
Function (General) manager	.054	.099	.065	.552	.582
Gender (% Female)	-.068	.050	-.108	-1.363	.175
Age	-.009	.017	-.043	-.502	.616
N	159				
R^2	.201				

*Administrative and Management Consulting **Legal Affairs ***Public order and Safety

****Integrity Bureau *****Resources and Control

5. Conclusions

This thesis seeks to answer the following main research question: *What are the effects of the technological, organizational, and environmental contexts on the Artificial Intelligence (AI) capabilities in governance and organization of the Municipality of Amsterdam?* This main research question is addressed by analyzing the results in relation to the sub-questions, hypotheses, and the theoretical framework of this research study.

The first Hypothesis within the technological context focused on perceived benefits and stated: *A higher perceived benefit leads to a higher development of AI capabilities in municipalities.* This study's findings support this hypothesis, indicating a positive correlation between perceived benefits and AI capabilities, consistent with Mikalef et al. (2022). Managers play a crucial role in AI adoption decisions, influenced by their perception of potential benefits (Schaefer et al., 2021). An additional focus for further research is to examine data maturity more closely (van den Berg et al., 2024). Data maturity refers to the extent to which organizations systematically leverage data insights and make data-driven decisions. In the context of data maturity, it is important to consider factors such as data quality, data

culture, and IT architecture, as these may influence the acceleration and development of AI capabilities.

The impact of perceived benefits on AI capabilities is intensified when control variables are accounted for. Specifically, the Public Order and Safety department shows a notable effect on AI capabilities, which may be attributed to its disproportionate representation in the sample. This observation implies that the influence of perceived benefits on AI capabilities may vary across departments. For example, the Public Order and Safety department might see AI as more beneficial due to its lower risk profile concerning public order issues. Additionally, some departments may advance more rapidly in AI development due to better recognition of AI's potential and a greater focus on its application, leading to increased investment in exploring AI's possibilities.

Secondly, Hypothesis 2 analyzed the effect of perceived financial cost on AI development and stated: *The higher the perceived financial cost involved, the lower the development of AI capabilities in municipalities*. Contrary to this, results show that higher perceived financial costs are associated with greater AI development. This finding contradicts existing literature, which suggests financial constraints hinder AI development (Misuraca, van Noordt, & Boukli, 2020). These constraints make it difficult to measure and justify the value of innovative digital solutions. The Municipality of Amsterdam may still be in an early stage of AI adoption, where costs are less likely to be perceived as barriers and are instead viewed as necessary investments for future growth. This suggests that the benefits of AI are sufficiently recognized to justify the allocation of additional resources, despite the associated costs.

Thirdly, Hypothesis 3 examined the effect of organizational innovativeness on AI development and proposed that: *higher organizational innovation levels lead to greater AI capabilities*. However, the analysis shows a weak, non-significant negative effect of organizational innovativeness on AI capabilities. This contrasts with previous studies suggesting that innovation drives technology adoption (Aboelmaged, 2014; Mikalef et al., 2022). The lack of significance in the results may point to other underlying factors that influence the relationship between organizational innovativeness and AI capabilities. For example, even if a municipality

is innovative, a lack of technical expertise, financial resources, or political support may limit the implementation of AI-systems (van Noordt & Tangi, 2023).

Fourthly, Hypothesis 4 proposed that *higher perceived government pressure would lead to greater AI development in municipalities*. Results from the analyses indicate a weak positive and non-significant effect of perceived government pressure on AI capabilities. However, no significant effects were found with the control variables department, function, gender, and age. These results contradict previous research highlighting the importance of government pressure in enhancing AI capabilities (Andreasson & Stende, 2019). The results of this thesis suggest that perceived government pressure might not be a significant driver for developing AI capabilities in municipalities. It is possible that the impact of government pressure on AI capabilities may become more pronounced over time, as AI technologies are still relatively new in the public sector. As these technologies become more widely used and better understood, the role of government pressure may evolve and could potentially become a more significant driver of AI development in the future.

Fifth, Hypothesis 5 for the independent variable perceived citizen pressure was formulated as follows: *higher perceived citizen pressure leads to greater development of AI capabilities in municipalities*. However, the results show that perceived citizen pressure does not significantly effect AI capabilities. This contrasts with earlier studies (Bullock et al., 2020) and suggests that citizen pressure may not be a key factor in AI development. The lack of impact could be due to low public awareness of AI's benefits and risks (Duberry, 2022). If citizens lack information on AI's benefits and risks, their pressure might be minimal. This highlights the need for increased public awareness and education to influence municipal policies on emerging technologies.

Sixth, Hypothesis 6 for the independent variable government incentives stated that *higher government incentives lead to increased development of AI capabilities in municipalities*. The results of the analysis show that government incentives have a weak influence on AI capabilities and the effect is not significant. Thus, the results do not align with the studies by Misuraca et al. (2020) and Schaefer et al. (2021), which argue that financial assistance and access to qualified personnel are essential for municipalities in advancing AI capabilities and

integrating AI-systems into their services. In the case of the Municipality of Amsterdam, the lack of a significant effect may be due to the early stage of AI implementation. Government incentives might be available but have minimal impact while the municipality is still in the planning or initial phases.

Seventhly, Hypothesis 7 for the independent variable regulatory support was stated as follows: *higher regulatory support leads to increased development of AI capabilities in municipalities.* The results of the bivariate and multivariate analyses indicate that regulatory support has a significantly positive effect on AI capabilities. This suggests that regulatory support provides essential guidance for municipalities in managing digital transformation and developing AI capabilities within municipalities (Misuraca et al., 2020). Additionally, the Public Order and Safety department exhibits a weak significant effect on AI capabilities. This may be attributed to the overrepresentation of respondents from this department within the sample. The results imply that regulatory support might have a more pronounced impact on AI capabilities specifically within the Public Order and Safety department. In contrast, the Personnel and Organization department exhibits no significant effect, despite expectations based on its role in overseeing regulations and managing employees. This may indicate that the influence of regulatory support on AI capabilities is less pronounced or manifests differently in this department.

Finally, the main research question regarding the potential influences on Artificial Intelligence (AI) capabilities within municipalities is addressed. The results reveal key factors influencing AI capabilities in municipalities. In the technological context, perceived benefits like efficiency and cost savings drive AI adoption. In the organizational context, higher perceived financial costs correlate with greater AI capabilities, suggesting that municipalities such as Amsterdam view AI as a major investment and allocate more resources accordingly. Organizational innovativeness alone does not significantly boost AI adoption; instead, leadership priorities and specific strategic goals are more influential. Environmentally, regulatory support is crucial for advancing AI capabilities, while government and citizen pressures and incentives are less impactful, indicating a preference for internal evaluations and supportive regulations.

6. Discussion & recommendations

The analyses in this thesis have enhanced the understanding of factors influencing AI capabilities within the Municipality of Amsterdam. This research has provided more information on internal and external factors which is important for developing AI capabilities, aiding Dutch municipalities in comprehending the determinants of AI adoption.

From a societal perspective, the thesis reveals how managers impact AI development in organizations and underscores the need for public organizations to adopt AI solutions. The findings offer valuable insights for researchers seeking to understand how public organizations can leverage innovative technologies and provide policymakers and practitioners with guidance on future AI implementation and adoption in the public sector.

AI research in public organizations is still developing, with emerging studies examining AI applications in public administration and related technologies (Wirtz et al., 2019). Scientifically, this thesis builds on the work of Mikalef et al. (2022), which focuses on major European cities beyond the Netherlands. Utilizing the TOE framework, this thesis highlights how organizational innovativeness and government incentives shape AI capabilities in Dutch municipalities.

This thesis has notable strengths but also limitations. One limitation is the use of convenience sampling, which introduces bias as the sample was mostly from the Personnel and Organization department, with few from the Integrity Bureau. This sampling method limits the representativeness of the findings to a broader population. Additionally, the focus on a single municipality and the variation in AI use across departments complicates comparisons.

Future research could include longitudinal studies to analyze departmental evolution over time and comparisons across more Dutch cities for broader representativeness. Further studies could focus on municipalities in the Randstad region of the Netherlands. Qualitative or mixed-methods research could also provide deeper insights, such as a detailed examination of specific departments like Personnel and Organization to understand their AI progress and influencing factors.

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Appendices

Appendix 1. Survey instruments

Concept/variable	Sub-variable	Items
AI Capabilities	Tangible	T1. We are able to prepare and cleanse AI data efficiently and assess data for errors
		T2. We are able to obtain data at the right level of granularity to produce meaningful insights
		T3. We have explored or adopted cloud-based services for processing data and performing AI and machine learning
		T4. We have the necessary processing power to support AI applications (e.g. CPUs, GPUs)
		T5. The AI initiatives are adequately funded
		T6. The AI project has enough team members to get the work done
		T8. The AI project is given enough time for completion
	Human Skills	HS1. Our organization has access to internal talent with the right technical skills to support AI work
		HS2. Our organization has access to external talent with the right technical skills to support AI work
		HS3. Our data scientists are very capable of using AI technologies (e.g. machine learning, natural language processing, deep learning)
		HS4. Our data scientists have the right skills to accomplish their jobs successfully
		HS5. Our data scientists are provided with the required training to deal with AI applications
		HS6. We hire data scientists that have the AI skills we are looking for
		HS7. Our managers are able to understand business problems and to direct AI initiatives to solve them
		HS8. Our managers have a good sense of where to apply AI
		HS9. We have strong leadership to support AI initiatives.
		HS10. Our managers demonstrate ownership of and commitment to AI projects.
	Intangible	I1. Our organization is able to anticipate and plan for the organizational resistance to change.
		I2. Our organization follows appropriate regulations when reengineering processes.
		I3. Our organization acknowledges the need for managing change.
		I4. Our organization is capable of communicating the reasons for change to the members of our organization.

		I5. Our organization is able to make the necessary changes in human resource policies for process re-engineering. I6. Our management commits to new values in our organization. I7. In our organization we have a strong proclivity for high risk projects (with chances of very high returns) I8. In our organization we take bold and wide-ranging acts to achieve firm objectives
Perceived Benefits	Perceived Direct Benefits	PB1. We expect that the use of AI will help us to improve data accuracy PB2. We expect that the use of AI will help us to improve security of data PB3. We expect that the use of AI will help us to improve operation efficiency PB4. We expect that the use of AI will help us to speed up processing applications PB5. We expect that the use of AI will help to reduce clerical errors (e.g. duplicate data sets).
Perceived Financial Costs		PFC1. The use of AI requires high set-up costs PFC2. The use of AI requires high running costs PFC3. The use of AI requires high training costs
Organizational Innovativeness		OI1. My organization readily accepts innovations based on research results OI2. Management in my organization actively seeks innovative ideas OI3. Innovation is readily accepted in this organization
Perceived Government Pressure		PGP1. Progressive mandatory measures are introduced by the government (e.g. indexes to measure the number of digital services) PGP2. Regulations regarding online services for citizens are established
Perceived Citizen Pressure		PCP1. Our citizens want us to provide our services digital PCP2. Our citizens ask for digital services on a regular basis PCP3. Our citizens prefer municipalities who provide digital services.
Government Incentives		GI1. There are enough motives available from top government and policy makers to ensure that AI initiatives can be implemented GI2. There are enough financial resources available from top government and policy makers to ensure that AI initiatives can be implemented GI3. There are enough governmental initiatives available to ensure that AI initiatives can be implemented.

Regulatory Support	RS1. Government provides us an official ethical framework for the use of AI in municipalities RS2. Government provides us official policies on the use of AI in municipalities RS3. Government provides us official AI-policies on data security and protection in municipalities RS4. Government provides us clarification of legal issues for the widespread and long-term use of AI in municipalities.

Appendix 2. Survey questions (Dutch version)

Onderzoek AI en Gemeente Amsterdam

INTRODUCTIE

Beste deelnemer,

Ik nodig je uit om deel te nemen aan een onderzoek voor mijn masterthesis, in samenwerking met de Afdeling Bestuurskunde van de Erasmus Universiteit Rotterdam. Het onderzoek heeft als doel om factoren te verkennen die de mogelijkheden van Kunstmatige Intelligentie (AI) beïnvloeden binnen de gemeente Amsterdam.

Jouw input is waardevol om het begrip van en de ondersteuning voor de inzet van AI in publieke organisaties te verbeteren. De vragenlijst bestaat voornamelijk uit meerkeuzevragen en duurt ongeveer 10-15 minuten om in te vullen. Jouw anonimiteit is gegarandeerd en je kunt op elk moment stoppen.

Voor vragen of opmerkingen, stuur een e-mail naar: c.b.dogan@student.eur.nl

Bedankt voor je deelname!

INTRODUCERENDE VRAGEN

Eerst zouden we graag willen weten wat je huidige functie is.

Q1. Wat is je huidige functie bij de gemeente Amsterdam?

- IT-manager
- Technologiemanager
- Chief Digital Officer
- Anders, namelijk: [open]

Q2. Bij welke afdeling binnen de afdeling bestuur en organisatie van de gemeente Amsterdam werk je?

- Bestuurs- en Managementadvisering
- Juridische Zaken
- Openbare Orde en Veiligheid
- Bureau Integriteit
- Middelen en Control
- Personeel en Organisatie

BLOK 1.1. AI-MOGELIJKHEDEN: TASTBAAR

De volgende vragen gaan over AI-mogelijkheden. Geef alstublieft aan hoe waar de uitspraken voor u zijn.

Q3. We zijn in staat om AI-gegevens efficiënt voor te bereiden en te verschonen en gegevens te beoordelen op fouten.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q4. We zijn in staat om gegevens op het juiste niveau te verkrijgen om zinvolle inzichten te produceren.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q5. We hebben cloudgebaseerde diensten verkend of aangenomen voor het verwerken van gegevens en het uitvoeren van AI en machine learning.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q6. We hebben de benodigde verwerkingskracht om AI-toepassingen te ondersteunen (bijv. CPU's, GPU's).

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q7. Projecten die gebruik maken van AI hebben genoeg teamleden om het werk gedaan te krijgen.

- Sterk mee oneens (1)

- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q8. Projecten die gebruik maken van AI krijgen voldoende tijd voor voltooiing.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

BLOK 1.2. AI-MOGELIJKHEDEN: MENSELIJKE VAARDIGHEDEN

Q9. Onze organisatie heeft toegang tot intern talent met de juiste technische vaardigheden om AI-werk te ondersteunen.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q10. Onze organisatie heeft toegang tot extern talent met de juiste technische vaardigheden om AI-werk te ondersteunen.

- Sterk mee oneens (1)

- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q11. Onze datawetenschappers zijn zeer bekwaam in het gebruik van AI-technologieën (bijv. machine learning, natuurlijke taalverwerking, deep learning).

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q12. Onze datawetenschappers hebben de juiste vaardigheden om hun taken succesvol uit te voeren.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q13. Onze datawetenschappers krijgen de benodigde training om met AI-toepassingen om te gaan.

- Sterk mee oneens (1)
- Mee oneens (2)

- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q14. We huren datawetenschappers in die de AI-vaardigheden hebben waar we naar op zoek zijn.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q15. Onze managers zijn in staat om zakelijke problemen te begrijpen en AI-initiatieven te sturen om ze op te lossen.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q16. Onze managers hebben een goed gevoel voor waar AI toegepast kan worden.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)

- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q17. We hebben sterke leiderschap om AI-initiatieven te ondersteunen.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q18. Onze managers tonen eigendom en toewijding aan AI-projecten.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

BLOK 1.3. AI-MOGELIJKHEDEN: ONTASTBAAR

Q19. Onze organisatie is in staat om de organisatorische weerstand tegen verandering te anticiperen en te plannen.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)

- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q20. Onze organisatie volgt passende regelgeving bij het herontwerpen van processen.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q21. Onze organisatie erkent de noodzaak om verandering te managen.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q22. Onze organisatie is in staat om de redenen voor verandering te communiceren aan de leden van onze organisatie.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)

- Sterk mee eens (7)

Q23. Onze organisatie is in staat om de nodige wijzigingen in het personeelsbeleid door te voeren voor procesherontwerp.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q24. Ons management verbindt zich aan nieuwe waarden binnen onze organisatie.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q25. In onze organisatie hebben we een sterke voorkeur voor hoogrisicoprojecten (met kans op zeer hoge opbrengsten).

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q26. In onze organisatie ondernemen we gedurfde en breed opgezette acties om onze doelstellingen te bereiken.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

BLOK 2. WAARGENOMEN VOORDELEN

De volgende vragen gaan over Waargenomen Voordelen. Geef alstublieft aan hoe waar de uitspraken voor jou zijn.

Q27. We verwachten dat het gebruik van AI ons zal helpen om de nauwkeurigheid van gegevens te verbeteren.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q28. We verwachten dat het gebruik van AI ons zal helpen om de beveiliging van gegevens te verbeteren.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)

- Mee eens (6)
- Sterk mee eens (7)

Q29. We verwachten dat het gebruik van AI ons zal helpen om de operationele efficiëntie te verbeteren.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q30. We verwachten dat het gebruik van AI ons zal helpen om de verwerking van aanvragen te versnellen.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q31. We verwachten dat het gebruik van AI zal helpen om administratieve fouten te verminderen (bijv. dubbele gegevenssets).

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)

- Sterk mee eens (7)

BLOK 3. WAARGENOMEN FINANCIËLE KOSTEN

Vul alstublieft de volgende vragen in over Waargenomen Financiële Kosten door aan te geven hoe waar elke uitspraak voor u is.

Q32. Het gebruik van AI vereist hoge opstartkosten.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q33. Het gebruik van AI vereist hoge operationele kosten.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q34. Het gebruik van AI vereist hoge trainingskosten.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)

- Sterk mee eens (7)

BLOK 4. ORGANISATORISCHE INNOVATIE

De volgende uitspraken gaan over Organisatorische Innovativiteit.

Q35. Mijn organisatie accepteert gemakkelijk innovaties op basis van onderzoeksresultaten.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q36. Het management in mijn organisatie zoekt actief naar innovatieve ideeën.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

BLOK 5. WAARGENOMEN OVERHEIDSDRUK

De volgende uitspraken hebben betrekking op Waargenomen Overheidsdruk. Geef aan in welke mate elke uitspraak op u van toepassing is.

Q37. Progressieve verplichte maatregelen worden ingevoerd door de overheid (bijv. indexen om het aantal digitale diensten te meten).

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)

- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q38. Er worden regels opgesteld met betrekking tot online diensten voor burgers.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

BLOK 6. WAARGENOMEN BURGERDRUK

De volgende vragen gaan over Waargenomen Burgerdruk. Geef aan in hoeverre elke uitspraak voor u van toepassing is.

Q39. Onze burgers willen dat wij onze diensten digitaal aanbieden.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q40. Onze burgers vragen regelmatig om digitale diensten.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)

- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q41. Onze burgers geven de voorkeur aan gemeenten die digitale diensten aanbieden.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

BLOK 7. OVERHEIDSSTIMULANSEN

De volgende vragen gaan over Overheidsincentives. Geef aan in hoeverre elke stelling op u van toepassing is.

Q42. Er zijn voldoende motieven beschikbaar vanuit de hoogste overheidsinstanties en beleidsmakers om ervoor te zorgen dat AI-initiatieven kunnen worden geïmplementeerd.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q43. Er zijn voldoende financiële middelen beschikbaar vanuit de hoogste overheidsinstanties en beleidsmakers om ervoor te zorgen dat AI-initiatieven kunnen worden geïmplementeerd.

- Sterk mee oneens (1)

- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q44. Er zijn voldoende overheidsinitiatieven beschikbaar om ervoor te zorgen dat AI-initiatieven kunnen worden geïmplementeerd.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

BLOK 8. REGELGEVINGSONDERSTEUNING

Het volgende gedeelte gaat over Regelgevingsondersteuning.

Q45. De overheid biedt ons een officieel ethisch kader voor het gebruik van AI in gemeenten.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q46. De overheid voorziet ons van officiële beleidsmaatregelen met betrekking tot het gebruik van AI in gemeenten.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q47. De overheid voorziet ons van officiële AI-beleidsmaatregelen met betrekking tot gegevensbeveiliging en -bescherming in gemeenten.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

Q48. De overheid geeft ons duidelijkheid over juridische kwesties voor het wijdverbreide en langdurige gebruik van AI in gemeenten.

- Sterk mee oneens (1)
- Mee oneens (2)
- Iets oneens (3)
- Noch mee eens, noch mee oneens (4)
- Iets mee eens (5)
- Mee eens (6)
- Sterk mee eens (7)

BLOK 9. ACHTERGROND INFORMATIE

In dit laatste gedeelte willen we graag enkele achtergrondkenmerken van u verzamelen.

Q49. Wat is uw geslacht?

- Man (1)
- Vrouw (2)
- Anders, ik identificeer me als.. [open] (3)
- Wil ik niet zeggen (4)

Q50. Wat is uw leeftijd?

- Selecteer uw leeftijd [dropdown box]

AFSLUITING

Tot slot, dit is het einde van de vragenlijst. Hartelijk dank voor uw waardevolle deelname!

Q51. Heeft u vragen of opmerkingen over deze vragenlijst of studie? Zo ja, schrijf ze dan hieronder op. Als u geen vragen of opmerkingen heeft, kunt u deze sectie overslaan.

- Open vraag

--------EINDE--------

Appendix 3. Syntax

GET FILE='/Users/ceydadogan/Desktop/MASTER/MSC Thesis/Vragenlijst+-+AI+en+gemeente+Amsterdam_June+26%2C+2024_16.27.sav'.

****--------DATA EDITING--------**

****--------CONTROL VARIABLES: AGE, GENDER, FUNCTION AND DEPARTMENT--------**

**AGE:

freq Q50_1.

*freq age

```
FREQUENCIES VARIABLES=Q50_1
  /STATISTICS=STDDEV MINIMUM MAXIMUM SEMEAN MEAN MEDIAN MODE SUM
 /ORDER=ANALYSIS.

RECODE Q50_1 (Lowest thru 29=1) (30 thru 34=2) (35 thru 39=3) (40 thru 44=4) (45 thru 49=5)
(50
   thru 54=6) (55 thru 59=7) (60 thru Highest=8) INTO AGErange.
EXECUTE.
*Range age in groups

freq AGErange.
*freq range age

**GENDER:

freq Q49.
*freq gender unprocessed

RECODE Q49 (1=0) (2=1) (3=SYSMIS) (4=SYSMIS)INTO Dummygender.
EXECUTE.
*Q29 making dummy gender
   *Missing gender option 3 'other' and 4 'don't want to say'

FREQUENCIES VARIABLES=Dummygender
 /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
 /ORDER=ANALYSIS.
*freq of dummygender

**FUNCTION:

freq Q1 Q1_4_TEXT.
*freq of function
```

```
IF (Q1_4_TEXT='adviseur') Q1 = 4.
EXECUTE.
*Open option value 4 for category '(corporate) advisor'

IF (Q1_4_TEXT='Adviseur veiligheid en orde') Q1 = 4.
EXECUTE.
*Open option value 4 for category '(corporate) advisor'

IF (Q1_4_TEXT='IT recruiter') Q1 = 4.
EXECUTE.
*Open option value 4 for category '(corporate) advisor'

IF (Q1_4_TEXT='Bestuursadviseur') Q1 = 4.
EXECUTE.
*Open option value 4 for category '(corporate) advisor'

IF (Q1_4_TEXT='Juridisch adviseur') Q1 = 4.
EXECUTE.
*Open option value 4 for category '(corporate) advisor'

IF (Q1_4_TEXT='Corporate IT & Data Recruiter') Q1 = 4.
EXECUTE.
*Open option value 4 for category '(corporate) advisor'

IF (Q1_4_TEXT='Algemeen directeur') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Directeur') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'
```

```
IF (Q1_4_TEXT='Directeur stadswerken, openbare ruimte') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Directie juridische zaken') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Manager directie') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Manager Directiesecretariaat') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='stedelijk directeur') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Stedelijk directeur') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Projectleider') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Ketenmanager processen') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'
```

```
IF (Q1_4_TEXT='Manager assistente') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Functioneel beheerder') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Teammanager') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Beheerder object management systeem') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Strategisch manager') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Senior teammanager') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Projectmanager') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Programma manager') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'
```

```
IF (Q1_4_TEXT='Programmamanager digitale voorzieningen') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Teammanager Juridische Zaken') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Projectleider en strategisch beleidsadviseur') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Manager Smart Mobility') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Manager smart mobility') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Product manager mobiliteit') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='HR manager') Q1 = 5.
EXECUTE.
*Open option value 5 for category '(general) manager'

IF (Q1_4_TEXT='Teammanager Bestuursrecht Algemeen AI') Q1 = 2.
EXECUTE.
*Open option value 2 for category 'technologie manager'
```

```
IF (Q1_4_TEXT='Teammanager a.i.') Q1 = 2.
EXECUTE.
*Open option value 2 for category 'technologie manager'

IF (Q1_4_TEXT='Teamleider financieel advies a.i.') Q1 = 2.
EXECUTE.
*Open option value 2 for category 'technologie manager'

IF (Q1_4_TEXT='Kwartier PO AI') Q1 = 2.
EXECUTE.
*Open option value 2 for category 'technologie manager'

IF (Q1_4_TEXT='Woordvoerder wethouder a.i. en digitalisering') Q1 = 2.
EXECUTE.
*Open option value 2 for category 'technologie manager'

IF (Q1_4_TEXT='Stedelijk directeur a.i.') Q1 = 2.
EXECUTE.
*Open option value 2 for category 'technologie manager'

IF (Q1_4_TEXT='Stedelijk directeur A.I.') Q1 = 2.
EXECUTE.
*Open option value 2 for category 'technologie manager'

IF (Q1_4_TEXT='Directeur Digitale Strategie & informatie ai') Q1 = 2.
EXECUTE.
*Open option value 2 for category 'technologie manager'

IF (Q1_4_TEXT='Directeur personeel en organisatie a.i.') Q1 = 2.
EXECUTE.
*Open option value 2 for category 'technologie manager'
```

```
IF (Q1_4_TEXT='Manager a.i. en bedrijfsvoering') Q1 = 2.
EXECUTE.
*Open option value 2 for category 'technologie manager'

IF (Q1_4_TEXT='Innovatie lead AI') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Innovatie Lead AI') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Innovatie Ontwikkelaar Public Tech') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Innovatiemanager') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Innovatiemanager digitalisering') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Innovatiemanager en teamleider stedelijk') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='innovatie en duurzaamheid') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'
```

```
IF (Q1_4_TEXT='Innovation officer') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Innovation officier') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Junior project leider innovatie') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Projectleider stedelijk innovatieteam') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Projectleider innovatie') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Manager en coördinator digitalisering , innovatie en informatie') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Product owner innovatie') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Programmamanager innovatieteam') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'
```

```
IF (Q1_4_TEXT='Product manager innovatie') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Manager staf en innovatie') Q1 = 6.
EXECUTE.
*Open option value 6 for category 'innovation manager'

IF (Q1_4_TEXT='Chapter lead data science') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Data informatie manager') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='data manager') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Directeur Digitale Strategie en Informatie') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Directeur Digitale Voorzieningen') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Directeur ICT') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'
```

```
IF (Q1_4_TEXT='ICT security manager') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Informatiemanager') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Informatievoorziening coördinator') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='IT project- en programmamanager') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='IT service manager') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Kwaliteitsmanager digitale voorzieningen') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Manager data') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Manager data en control') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'
```

```
IF (Q1_4_TEXT='Manager data en informatie') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Manager informatie analyse data') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Manager informatievoorziening') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Manager ondersteuning, data en advies') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Privacy data officer') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Product manager data') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Programmamanager Stedelijke Programmering') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Projectleider data en informatie') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'
```

```
IF (Q1_4_TEXT='Manager data en informatie') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Team manager data direction and data analysis') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Teamleider data') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Product Owner AI-balie') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='AI Specialist') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager'

IF (Q1_4_TEXT='Digital rights &ethics officer') Q1 = 1.
EXECUTE.
*Open option value 1 for category 'IT-manager

RECODE Q1 (missing=sysmis) (1=1) (2=2) (3=3) (4=4) (5=5) (6=6) into function.
VALUE LABELS function 1 'IT' 2 'Tech' 3 'CDO' 4 'corad' 5 'genmang' 6 'inmang'.
*Dummy variable department

freq function.
*freq function
```

```
comp it= (function= 1).
comp tech= (function= 2).
comp cdo= (function= 3).
comp corad= (function= 4).
comp genmang= (function= 5).
comp inmang= (function= 6).
freq it tech cdo corad genmang inmang.
*Dummy for each different department (later for regression analyses)

**DEPARTMENT:

freq Q2.
*freq department unprocessed

RECODE Q2 (missing=sysmis) (1=1) (2=2) (3=3) (4=4) (5=5) (6=6) into department.
VALUE LABELS department 1 'B&M' 2 'JZ' 3 'OO&V' 4 'BI' 5 'M&C' 6 'P&O'.
*Dummy variable department

freq department.
*freq department

comp bm= (department= 1).
comp jz= (department= 2).
comp oov= (department= 3).
comp bi= (department= 4).
comp mc= (department= 5).
comp po= (department= 6).
freq bm jz oov bi mc po.
*Dummy for each different department (later for regression analyses)
```

****--------DEPENDENT VARIABLE: AI-CAPABILITIES--------**

**TANGIBLE:

```
FREQUENCIES VARIABLES=Q3___Q8_1 Q3___Q8_2 Q3___Q8_3 Q3___Q8_4 Q3___Q8_5
Q3___Q8_6
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /ORDER=ANALYSIS.
*freq tangible

COMPUTE AITANGIBLE_MEAN = (Q3___Q8_1 + Q3___Q8_2 + Q3___Q8_3 + Q3___Q8_4 +
Q3___Q8_5 + Q3___Q8_6) / 6.
EXECUTE.
*average scale tangible

freq AITANGIBLE_MEAN.
*freq mean variables tangible
```

**HUMAN SKILLS:

```
FREQUENCIES VARIABLES=Q9___Q18_1 Q9___Q18_2 Q9___Q18_3 Q9___Q18_4
Q9___Q18_5 Q9___Q18_6 Q9___Q18_7
    Q9___Q18_8 Q9___Q18_9 Q9___Q18_10
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /ORDER=ANALYSIS.
*freq human skills

FACTOR
  /VARIABLES Q9___Q18_1 Q9___Q18_2 Q9___Q18_3 Q9___Q18_4 Q9___Q18_5
Q9___Q18_6 Q9___Q18_7
    Q9___Q18_8 Q9___Q18_9 Q9___Q18_10
  /MISSING LISTWISE
  /ANALYSIS Q9___Q18_1 Q9___Q18_2 Q9___Q18_3 Q9___Q18_4 Q9___Q18_5
Q9___Q18_6 Q9___Q18_7 Q9___Q18_8
```

```
  Q9___Q18_9 Q9___Q18_10
 /PRINT UNIVARIATE EXTRACTION ROTATION
 /FORMAT SORT
 /PLOT EIGEN
 /CRITERIA MINEIGEN(1) ITERATE(25)
 /EXTRACTION PC
 /CRITERIA KAISER  ITERATE(25)
 /ROTATION VARIMAX
 /METHOD=CORRELATION.
*Factor analysis to check if they are more dimensions for human skills

RELIABILITY
 /VARIABLES=Q9___Q18_1  Q9___Q18_2  Q9___Q18_3  Q9___Q18_4  Q9___Q18_5
Q9___Q18_6 Q9___Q18_7
  Q9___Q18_8 Q9___Q18_9 Q9___Q18_10
 /SCALE('ALL VARIABLES') ALL
 /MODEL=ALPHA
 /STATISTICS=DESCRIPTIVE SCALE
 /SUMMARY=TOTAL.
*Reliability check how internal effects are of the scales and if I can delete a item
  *there's no item >.858, so no items are deleted

COMPUTE AIHUMANS_MEAN = (Q9___Q18_1 + Q9___Q18_2 + Q9___Q18_3 + Q9___Q18_4
+ Q9___Q18_5 + Q9___Q18_6 + Q9___Q18_7 +
  Q9___Q18_8 + Q9___Q18_9 + Q9___Q18_10) / 10.
EXECUTE.
*average scale human skills

freq AIHUMANS_MEAN.
*freq mean human skills

**INTANGIBLE:
```

```
FREQUENCIES VARIABLES=Q19___Q26_1 Q19___Q26_2 Q19___Q26_3 Q19___Q26_4
Q19___Q26_5 Q19___Q26_6 Q19___Q26_7 Q19___Q26_8
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /ORDER=ANALYSIS.
*freq intangible

FACTOR
  /VARIABLES Q19___Q26_1 Q19___Q26_2 Q19___Q26_3 Q19___Q26_4 Q19___Q26_5
Q19___Q26_6 Q19___Q26_7 Q19___Q26_8
  /MISSING LISTWISE
  /ANALYSIS Q19___Q26_1 Q19___Q26_2 Q19___Q26_3 Q19___Q26_4 Q19___Q26_5
Q19___Q26_6 Q19___Q26_7 Q19___Q26_8
  /PRINT UNIVARIATE EXTRACTION ROTATION
  /FORMAT SORT
  /PLOT EIGEN
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA KAISER  ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION.
*Factor analysis to check if they are more dimensions for intangible
    * 2 dimensions: high risk management & HR management

RELIABILITY
  /VARIABLES=Q19___Q26_1 Q19___Q26_2 Q19___Q26_3 Q19___Q26_4 Q19___Q26_5
Q19___Q26_6 Q19___Q26_7 Q19___Q26_8
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
*Reliability check how internal effects are of the scales and if I can delete a item
```

*there's no item >.858, so no items are deleted

COMPUTE AIHIGHRISK_MEAN = (Q19___Q26_2 + Q19___Q26_3 + Q19___Q26_5 + Q19___Q26_6) / 4.
EXECUTE.
*average scale Intangible: high risk management

freq AIHIGHRISK_MEAN.
*freq mean Intangible: high risk management

COMPUTE AIHRMANEG_MEAN = (Q19___Q26_1 + Q19___Q26_4 + Q19___Q26_8 +Q19___Q26_7) / 4.
EXECUTE.
*average scale Intangible: HR management

freq AIHRMANEG_MEAN.
*freq mean Intangible: HR management

COMPUTE AICAPABILITIES_MEAN = (Q19___Q26_2 + Q19___Q26_3 + Q19___Q26_5 + Q19___Q26_6 + Q19___Q26_1 + Q19___Q26_4 + Q19___Q26_8 +Q19___Q26_7 + Q9___Q18_1 + Q9___Q18_2 + Q9___Q18_3 + Q9___Q18_4 + Q9___Q18_5 + Q9___Q18_6 + Q9___Q18_7 +
Q9___Q18_8 + Q9___Q18_9 + Q9___Q18_10 + Q3___Q8_1 + Q3___Q8_2 + Q3___Q8_3 + Q3___Q8_4 + Q3___Q8_5 + Q3___Q8_6) / 24.
EXECUTE.
*average scale of AI-capabilities including tangible, human and Intangible (for regression analysis)

**--------INDEPENDENT VARIABLES--------

**TECHNOLOGICAL CONTEXT:
* PERCEIVED BENEFITS

```
FREQUENCIES VARIABLES=Q27___Q31_1 Q27___Q31_2 Q27___Q31_3 Q27___Q31_4
Q27___Q31_5
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /ORDER=ANALYSIS.
*freq perceived benefits

COMPUTE PERCBENEFITS_MEAN = (Q27___Q31_1 + Q27___Q31_2 + Q27___Q31_3 +
Q27___Q31_4 + Q27___Q31_5) / 5.
EXECUTE.
*average scale perceived benefits

freq PERCBENEFITS_MEAN.
*freq mean perceived benefits

**ORGANIZATIONAL CONTEXT
*PERCEIVED FINANCIAL COST

FREQUENCIES VARIABLES=Q32___Q34_1 Q32___Q34_2 Q32___Q34_3
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /ORDER=ANALYSIS.
*freq perceived financial cost

COMPUTE PERCFINANCCOST_MEAN = (Q32___Q34_1 + Q32___Q34_2 + Q32___Q34_3) / 3.
EXECUTE.
*average scale perceived financial cost

freq PERCFINANCCOST_MEAN.
*freq mean perceived financial cost

*ORGANIZATIONAL INNOVATIVENESS
```

```
FREQUENCIES VARIABLES=Q35___Q36_1 Q35___Q36_2
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /ORDER=ANALYSIS.
*freq organizational innovativeness

COMPUTE ORGAINNO_MEAN = (Q35___Q36_1 + Q35___Q36_2) / 2.
EXECUTE.
*average scale organizational innovativeness

freq ORGAINNO_MEAN.
*freq mean organizational innovativeness

**ENVIRONMENTAL CONTEXT
*PERCEIVED GOVERNMENT PRESSURE

FREQUENCIES VARIABLES=Q37___Q38_1 Q37___Q38_2
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /ORDER=ANALYSIS.
*freq perceived government pressure

COMPUTE PERCGOVERNPRESS_MEAN = (Q37___Q38_1 + Q37___Q38_2) / 2.
EXECUTE.
*average scale perceived government pressure

freq PERCGOVERNPRESS_MEAN.
*freq mean perceived government pressure

*PERCEIVED CITIZEN PRESSURE

FREQUENCIES VARIABLES=Q39___Q41_1 Q39___Q41_2 Q39___Q41_3
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /ORDER=ANALYSIS.
```

```
*freq perceived citizen pressure

COMPUTE PERCCITZPRESS_MEAN = (Q39___Q41_1 + Q39___Q41_2 + Q39___Q41_3) / 3.
EXECUTE.
*average scale perceived citizen pressure

freq PERCCITZPRESS_MEAN.
*freq mean perceived citizen pressure

*GOVERNMENT INCENTIVES

FREQUENCIES VARIABLES=Q42___Q44_1 Q42___Q44_2 Q42___Q44_3
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /ORDER=ANALYSIS.
*freq government incentives

COMPUTE GOVERNINCEN_MEAN = (Q42___Q44_1 + Q42___Q44_2 + Q42___Q44_3) / 3.
EXECUTE.
*average scale government incentives

freq GOVERNINCEN_MEAN.
*freq mean government incentives

*REGULATORY SUPPORT

FREQUENCIES VARIABLES=Q45___Q48__1 Q45___Q48__2 Q45___Q48__3 Q45___Q48__4
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /ORDER=ANALYSIS.
*freq regulatory support

COMPUTE  REGUSUPPRT_MEAN  =  (Q45___Q48__1  +  Q45___Q48__2  +  Q45___Q48__3  +
Q45___Q48__4) / 4.
```

EXECUTE.

*average scale regulatory support

freq REGUSUPPRT_MEAN.

*freq mean regulatory support

****--------REGRESSIONANALYSIS--------**

**4.1.: Technological context and AI-capabilities

freq PERCBENEFITS_MEAN.

*freq mean perceived benefits

regres /dep=AICAPABILITIES_MEAN /enter=PERCBENEFITS_MEAN.

mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & perceived benefits: positive, significant

*Regression equation:

AIcap = 3.74 + 0.159 *pb

*Effect size: difference in estimated score minimum vs. maximum value of X (what a unit PB difference makes in AICAP)

AIcap = 3.74 + 0.159 *4 = 4.376

AIcap = 3.74 + 0.159 *6.80 = 4.821

So, the effect of perceived benefits is slightly large.

*BETA: what a one standard deviation difference in age makes for a one standard deviation difference in AICAP

0.210: a somewhat large effect

regres /dep=AICAPABILITIES_MEAN /enter=PERCBENEFITS_MEAN /enter=bm /enter=jz /enter=oov /enter=bi /enter=mc /enter=po /enter=it /enter=tech /enter=cdo /enter=corad /enter=genmang /enter=inmang /enter=Dummygender /enter=AGErange.

mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & perceived benefits and control variables: positive, niet significant

**4.2.: Organizational context and AI-capabilities

*4.2.1.: perceived financial cost

freq PERCFINANCCOST_MEAN.

*freq perceived financial cost

regres /dep=AICAPABILITIES_MEAN /enter=PERCFINANCCOST_MEAN.

mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & perceived financial cost: positive, significant

*Regression equation:

AIcap = 3.870 + 0.160*pfc

*Effect size:

AIcap = 3.870 + 0.160* 3.67 = 4.457

AIcap = 3.870 + 0.160* 6.33 = 4.883

*BETA: 0.160 > minimal

regres /dep=AICAPABILITIES_MEAN /enter=PERCFINANCCOST_MEAN /enter=bm /enter=jz /enter=oov /enter=bi /enter=mc /enter=po /enter=it /enter=tech /enter=cdo /enter=corad /enter=genmang /enter=inmang /enter=Dummygender /enter=AGErange.

mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & perceived financial cost, and control variables: positive, significant

*4.2.2.: organizational innovativeness

regres /dep=AICAPABILITIES_MEAN /enter=ORGAINNO_MEAN.

mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & organizational innovativeness: negative, not significant

regres /dep=AICAPABILITIES_MEAN /enter=ORGAINNO_MEAN /enter=bm /enter=jz /enter=oov /enter=bi /enter=mc /enter=po /enter=it /enter=tech /enter=cdo /enter=corad /enter=genmang /enter=inmang /enter=Dummygender /enter=AGErange.
mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & organizational innovativeness, and control variables: negative, not significant

**4.3.: Environmental context and AI-capabilities

*4.3.1.: Perceived Government Pressure

regres /dep=AICAPABILITIES_MEAN /enter=PERCGOVERNPRESS_MEAN.
mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & Perceived Government Pressure: positive, not significant

regres /dep=AICAPABILITIES_MEAN /enter=PERCGOVERNPRESS_MEAN /enter=bm /enter=jz /enter=oov /enter=bi /enter=mc /enter=po /enter=it /enter=tech /enter=cdo /enter=corad /enter=genmang /enter=inmang /enter=Dummygender /enter=AGErange.
mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & Perceived Government Pressure, control variables: positive, significant

*4.3.2.: Perceived Citizen Pressure

regres /dep=AICAPABILITIES_MEAN /enter=PERCCITZPRESS_MEAN.
mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & Perceived citizen pressure: positive, not significant

regres /dep=AICAPABILITIES_MEAN /enter=PERCCITZPRESS_MEAN /enter=bm /enter=jz /enter=oov /enter=bi /enter=mc /enter=po /enter=it /enter=tech /enter=cdo /enter=corad /enter=genmang /enter=inmang /enter=Dummygender /enter=AGErange.
mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & Perceived citizen presssure, control variables: positive, not significant

*4.3.3.: Government Incentives

regres /dep=AICAPABILITIES_MEAN /enter=GOVERNINCEN_MEAN.
mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & Government incentives: negative, not significant

regres /dep=AICAPABILITIES_MEAN /enter=GOVERNINCEN_MEAN /enter=bm /enter=jz /enter=oov /enter=bi /enter=mc /enter=po /enter=it /enter=tech /enter=cdo /enter=corad /enter=genmang /enter=inmang /enter=Dummygender /enter=AGErange.
mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & Government incentives, control variables: positive, not significant

*4.3.4.: Regulatory Support

regres /dep=AICAPABILITIES_MEAN /enter=REGUSUPPRT_MEAN.
mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & Regulatory support: positive, significant

regres /dep=AICAPABILITIES_MEAN /enter=REGUSUPPRT_MEAN /enter=bm /enter=jz /enter=oov /enter=bi /enter=mc /enter=po /enter=it /enter=tech /enter=cdo /enter=corad /enter=genmang /enter=inmang /enter=Dummygender /enter=AGErange.
mean AICAPABILITIES_MEAN.

*Effect AI-capabilities & Regulatory support, control variables: positive, significant