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Kadaster Ethical Data Instrument (KEDI): An instrument for assessing external data requests

Master Thesis

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Abstract

Kadaster collects and registers administrative and spatial data on properties and the rights involved. Kadaster has the judicial obligation to share this data if it is legally allowed. However, sharing this data can cause issues of fairness, responsibility, and respect for human rights. To prevent these issues Kadaster aims for an ethical approach to external data sharing. The Kadaster Ethical Data Instrument (KEDI) supports this ethical approach examining external data sharing requests.

The design of the KEDI followed the design science research methodology. The KEDI has been designed within two iterative cycles. Within the first cycle, three stakeholders were interviewed. Based on the results from the stakeholder's interview a prototype instrument was designed. The prototype instrument was input for the second cycle. Within the second cycle, three experts were interviewed about instrument resulting in additional feedback. The KEDI has changed according to the feedback.

The interviews pointed out that the KEDI should provide a structured way that can recognize the nuances of specific cases. The structured way should guide the dialogue between the participants of the instrument. Dialogue is necessary for creating good argumentation to assess external data sharing requests according to respondents. The dialogue should be guided by KEDI and KEDI should focus on values. However, the respondents could not agree on which values the KEDI should focus on. This might be caused by the lack of consensus on the definition and scope of ethics within Kadaster.

From the KEDI main components can be abstracted for designing an ethical argumentation instrument. The first component of an ethical argumentation instrument is that of dialogue. Dialogue is necessary for creating good argumentation. The second component of an ethical argumentation instrument is that of values. The focus of an ethical argumentation instrument should be on values. However, to determine values for the instrument there should be consensus about the definition and scope of ethics within the organization, which is the third component of the design of an ethical argumentation instrument.

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1. Introduction

1.1 Situation and Complication

Government agencies in their pursuit of offering better public services could harm citizens that cause issues of fairness, responsibility, and respect for human rights. In an increasingly digital society, government agencies are aiming for better public services by becoming more data-driven (Van Donge et al., 2020). To become more data-driven government agencies have automated tasks and processes (Van Donge et al., 2020). This automation could come at a cost as Floridi and Taddeo (2016) warn that the gradual reduction of human involvement or even oversight over many automatic processes poses pressing issues of fairness, responsibility, and respect for human rights.

Kadaster wants to prevent causing issues of fairness, responsibility, and respect for human rights. The Netherlands' Cadastre, Land Registry and Mapping Agency, in short Kadaster, collects and registers administrative and spatial data on property and the rights involved. To prevent issues of fairness, responsibility, and respect for human rights Kadaster wants to implement an ethical approach. The use of ethics within a government agency demonstrates its trustworthiness to the public (Zulkarnain et al., 2021). An example of the use of ethics within Kadaster is that of Mr. Visser:

During the German occupation of the Netherlands in World War 2 (WW2) Kadaster fell under the control of the German occupier. In WW2 German men were called up for military service which led to those workers from occupied areas being forced to work in their place in manufacturing operations. To prevent his employees from doing forced labor in German manufacturing operations Mr. Visser falsified data. Mr. Visser was the boss of Extraordinary Surveying Work (Buitengewoon Landmeetkundig werk) at the Kadaster location in Eindhoven. When he received the request of the ministry (under the German occupier's command) of how many male employees below 25 years were working at his location, he reported 0. A while later when he received the request of the ministry of how many male employees above 25 years were working on his location, he again reported 0. Due to the administrative unclarity in the ministry during the occupation, the falsification remained undiscovered during the war. Mr. Visser's action led to none of his employees being forced to work in manufacturing operations.

In the case of Mr. Visser, the reason why he chose to falsify data is unknown, because the argumentation for his choice is missing. Jonassen and Cho (2011) define argumentation as means by which we rationally resolve questions, issues, and disputes and solve problems. In line with the definition of Jonassen and Cho (2011), Herschel and Mirori (2017) state that ethics enables individuals to make persuasive, logical, and reasoned arguments based on the principles stated by ethical theory. Ethics can thus enable individuals to resolve problems in persuasive, logical, and reasoned manner based on the principles stated by ethical theory. This specific characteristic of ethics is called ethical argumentation within this research. In the case of Mr. Visser, the ethical argumentation is missing. This makes it difficult to analyze and learn from the choice he made.

Saltz and Dewar (2019) warn that for cases where ethical judgment is needed explicit reflection on the bases and assumptions is required. The reflection on the bases and assumptions is especially needed with data projects (Franzke et al., 2021). Franzke et al. (2021) explain that the many issues related to data projects cannot be handled sufficiently by applying law and data management issues. Furthermore, Franzke et al. (2021) warn that only applying law and data management issues is not enough for these web services as the following case will show.

Within the Kadaster regulation, it is forbidden for third parties to use Kadaster data for direct marketing. The first definition of direct marketing in the regulation of Kadaster was defined as the usage of data to approach specific persons for commercial ends.

This definition of direct marketing was successful in preventing direct marketing by the definition of Kadaster. However, in 2019 Kadaster revised its definitions due to several complaints from citizens. The complaints claimed unlawful (mis)use of their data by third parties. Third parties, in this case, real estate agents used Kadaster data to approach house owners to buy their property. This led to the definition of direct marketing being revised because of insufficient argumentation that this use of data was in the best interest of the third parties and Kadaster's goal in comparison with the violation of the protection of personal data.

The external data sharing under the initial definition of direct marketing by Kadaster was harmful and thereby created an issue on the respect for human rights as stated by Floridi and Taddeo (2016).

Although Kadaster followed the law with the direct marketing case the findings of Franzke et al. (2021) seemed to apply in this case. As argumentation for the definition was missing, reflection on the bases and assumptions as described by Saltz and Dewar (2019) was impossible. Due to the missing ethical argumentation, the direct marketing case could not be further analyzed. This caused Kadaster to not be able to learn where the fault in the definition process was placed. In this research, we argue that ethical argumentation for external data sharing is needed to learn from such cases and to prevent cases such as direct marketing to happen.

This research's main objective is to design an instrument that creates ethical argumentation for external data sharing within Kadaster. Furthermore, this research hopes to contribute to the ethical knowledge within Kadaster. These objectives are guided by the following research question:

"What are the key components of an ethical argumentation instrument for external data sharing of Kadaster?"

Within this research question key components refers to the necessary building blocks for the design of the instrument. External data sharing of Kadaster refers to all outgoing data sharing from a Kadaster to a third party. This third party can include customers, other government agencies, civilians, or the ministry.

This research hopes to contribute to the scientific knowledge of ethical analyses in data analytics. According to Martin (2015), ethical analyses are missing in data analytics. This research hopes to include ethical analyses in data analysis. Furthermore, this research hopes to contribute to the discipline of data ethics. Franzke et al. (2021) found that the field of data needs a practical application. With this research, a practical application for data ethics is sought. This research also aims to find a practical example of the proposed future data strategies of Van Donge et al. (2020).

Furthermore, this research also aims to contribute on a practical level. Sharing data is an important task of the public services that government agencies must provide according to Van Donge et al. (2020). However, for the sharing of data it is important to not cause issues of fairness, responsibility, and respect for human rights as stated by Floridi and Taddeo (2016). The ethical argumentation instrument can help to prevent these issues.

1.2 Structure of the research

The structure of the research will be described here. In the following chapter, the theoretical foundations for the instrument will be explained. Relevant literature, scientific theories, and several models are used for the theoretical foundation. Afterward, the scientific approach will be explained in the Method Section. Chapter 4 will provide the result of the used scientific approach. The results will lead to an analysis of the requirements in chapter 5. In chapter 6 the design of the instrument will be presented. In chapter 7 the findings will be discussed and the contribution to literature and practice are presented.

2. Theoretical Framework

The current scientific knowledge about an ethical argumentation instrument is presented in this chapter. First, the concept of Big Data will be explained and evaluated. Second, several maturity models about big data will be evaluated. Third, the concept of data ethics will be highlighted. Fourth, several ethical frameworks will be explained and evaluated. Finally, based on the described and explored theory conclusion could be drawn that will function as input for the first iteration in the design science research method.

2.1 Big Data

In this section, the concept of Big Data will be evaluated. To evaluate Big Data first the concept must be introduced. Furthermore, since the introduction of Big Data in the scientific community other data-related concepts and/or disciplines have emerged. The differences between these concepts will be described to come to working definitions. Finally, on basis of the working definitions, the state of the field and its challenges and accomplishments will be discussed.

2.1.1 Introduction to Big Data

According to McAfee and Brynjolfsson (2012), big data allows managers to measure and thus know radically more about their business and translate that knowledge into improved decision-making. For McAfee and Brynjolfsson (2012) Big Data differs from analytics due to Volume, Velocity, and Variety. Since McAfee and Brynjolfsson (2012) many scholars followed with defining Big Data with the help of multiple V's. In Table 1 the description of V's is given with the corresponding author.

Concept	Definition	Authors
Volume	The Quantity of Data	McAfee & Brynjolfsson. 2012; Hylving & Lindberg. 2021; Nair. 2020; Günther et al. 2017; Martin. 2015; Zulkarnain et al. 2021; Gandomi & Haider. 2015;
Velocity	The speed at which data is available and analyzed in real-time	McAfee & Brynjolfsson. 2012; Hylving & Lindberg. 2021; Nair. 2020; Günther et al. 2017; Martin. 2015; Zulkarnain et al. 2021; Gandomi & Haider. 2015;
Variety	The heterogeneity of the data in structure and source	McAfee & Brynjolfsson. 2012; Hylving & Lindberg. 2021; Nair. 2020; Günther et al. 2017; Martin. 2015; Zulkarnain et al. 2021; Gandomi & Haider. 2015;
Veracity	How accurate the data is	Hylving & Lindberg. 2021; Zulkarnain et al. 2021;
Value	The end goal of using Big Data to create value for the organization	Hylving & Lindberg. 2021; Martin. 2015; Zulkarnain et al. 2021;
Variability	Big Data flows can be highly inconsistent with periodic peaks	Zulkarnain et al. 2021; Herschel & Miori. 2017;

Table 1. *Concepts of Big Data.*

As seen in Table 1 many authors support McAfee and Brynjolfsson (2012) description of Big Data with 3 V's while some added their own. Important to note in the description of Big Data using V's is that these dimensions are not independent of each other (Gandomi & Haider. 2015). As one-dimension changes, the likelihood increases that another dimension will also change as result (Gandomi & Haider. 2015). Furthermore, other outside factors also influence the meaning of V's in

the definition of Big Data. For instance, Gandomi and Haider (2015) found that volume varies by factors such as time and the type of data. This means that because data storage capabilities keep developing the meaning of volume that defines Big Data will also keep changing. For example, what could be considered Big Data ten years ago due to its size could now be considered regular data due to new data storage capabilities.

Volume has clear examples of changing definitions but is not the only concept subject to change because of technological development. For example, Martin (2015) describes the entry into Big Data when the data volume, acquisition, or velocity limit the use of traditional tools. Such definitions have a time constraint because techniques are developed to progress data volume, acquisitions, or velocity. Depending on the organization these techniques or tools are becoming more traditional. Nair (2020) seems to agree with this because he states that there is no common formal definition of big data due to different meanings, interpretations, and implications for different organizations.

As Nair (2020) stated it seems that a common formal definition of Big Data is missing for organizations. This lack of formal definition seems to extend to the scientific field, where components (V's) can differ significantly between scholars. Most scholars seem to agree that Volume, Velocity, and Variety are the main components of Big Data. However, besides these components scholars seem to agree that extracting value from Big Data is crucial as well. For some scholars, Hylving and Lindberg (2021); Martin (2015); Zulkarnain et al. (2021), extracting value is implied while for others it is a separate process, McAfee and Brynjolfsson (2012); La Fors et al. (2019). McAfee and Brynjolfsson (2012) note that like analytics before it, Big Data seeks to glean intelligence from data and translate that into business advantage. However, this statement from McAfee & Brynjolfsson (2012) captures the reason for the emergence of different concepts and/or disciplines. Scholars seem to agree that extracting and storing data is an essential part of Big Data. However, extracting value could be done by multiple concepts and/or disciplines. In the next section, these different analytics methods are introduced to come to a working definition.

2.1.2 Analytics Methods

Grossman (2018) noted that there is no standard terminology in the discipline of analytics. The goal of this section is to introduce concepts of the analytics discipline and work towards defining concepts for the scope of this research.

As Grossman (2018) stated there is no standard terminology in the discipline of analytics. This is underlined by the work of several scholars on different concepts in the discipline of analytics. Mikalef et al. (2020), Gandomi and Haider (2015), and Kwon et al. (2014) speak of big data analytics while Muller & Hart (2016) speak of business intelligence. In contrast, Chen et al. (2012) speak of business intelligence and analytics. For Lepistö et al. (2021) and Elgendy and Elragal (2014), the subject is data analytics while Saltz and Dewar (2019), Waller and Fawcett (2013), and Leonelli (2016) write about data science. In table 2 the definition and author are presented by concept.

Concept	Definition	Author(s)
Big Data Analytics	Big data analytics is defined as the application of multiple analytic methods that address the diversity of big data to provide actionable descriptive, predictive, and prescriptive results	Mikalef et al (2020)
Big Data Analytics	big data analytics can be viewed as a sub-process in the overall process of 'insight extraction' from big data.	Gandomi & Haider (2015)
Big Data Analytics	big data analytics as technologies and techniques that a company can employ to analyze large scale, complex data for various applications intended to augment firm performance in various dimensions.	Kwon et al (2014)
Business Intelligence	a decision-making method based on understanding the interrelationships of different types of information so as to be able to make informed decisions and thereby reach organizational objectives	Muller & Hart (2016)
Business Intelligence & Analytics	the techniques, technologies, systems, practices, methodologies, and applications that analyze critical business data to help an enterprise better understand its business and market and make timely business decisions.	Chen et al (2012)
Data Analytics	The term data analytics refers to utilization datasets that typically possess the following four attributes: volume, variety, velocity, and veracity	Lepistö et al (2021)
Data Analytics	Data analytics is the process of applying algorithms in order to analyze sets of data and extract useful and unknown patterns, relationships, and information	Elgendy & Elragal (2014)
Data Science	Data science is an emerging discipline involving the analysis of data to solve problems and develop insights.	Saltz & Dewar (2019)
Data Science	Generally, data science is the application of quantitative and qualitative methods to solve relevant problems and predict outcomes	Waller & Fawcett (2013)
Data Science	Contemporary research activities focusing on the processing, dissemination, and interpretation of large datasets, which are broadly referred to under the umbrella term 'data science'	Leonelli (2016)

Table 2. *Definitions in the analytics discipline.*

Table 2 shows that with exception of the definition of Lepistö et al. (2021) all definitions share the goal of improving the decision-making process. Within the definitions, some notable differences might benefit the scholars in their research. However, it also adds to the confusion in the analytics discipline as noted by Grossman (2018).

Lepistö et al. (2021) definition of data analytics is striking because it mentions concepts of Big Data (V's) but does not refer to the concept of Big Data. Due to the recentness of Lepistö et al. (2021) research, it might show that the terminology of the analytics field is converging because the used terminology in the definition is better suited for Big Data Analytics. However, it could also point out that the difference in the analytics discipline was negligible from the start.

Regarding Table 2 some scholars choose to specify the used techniques, Elgendy and Elragal (2014); Waller and Fawcett (2013), while others specify the source for analytics, Mikalef et al. (2020); Gandomi and Haider (2015); Chen et al. (2012). The specification of algorithms as used technique in the definition of data analytics by Elgendy and Elragal (2014) is remarkable as it sets the definition apart in the analytics discipline. However, the definition has overlap with the definition of Waller and Fawcett (2013) and Leonelli (2016) definition of data science. Furthermore, the definition of Chen et al (2012) refers to business data. It is important to note that the paper of Chen et al (2012) was issued in the same edition as the paper of McAfee and Brynjolfsson (2012). It seems that during that time the separation between business data and big data was clearer than in the present day. The present-day Big Data encompasses data from multiple sources including structured and unstructured data (Herschel & Miori. 2017). Herschel & Miori (2017) did not name business data by name, but this research argues that business data could be included in this definition.

Some authors tried to differentiate between the different disciplines. For instance, Phillips-Wren et al. (2021) make a distinction between analytical techniques and business intelligence. They argue that analytical techniques are grounded in statistical methods while business intelligence has its roots in the database management field (Phillips-Wren et al., 2021). Although the fields have a different origin as Table 2 shows it can be argued that the disciplines share the same goal.

As noted by Grossman (2018) and demonstrated in Table 2 within the academic field there is no standard terminology in the analytics discipline. This research will use the concept of data analytics to refer to the process of value extraction out of Big Data. With this definition, data analytics is aimed at gaining insights out of the data to improve decision-making. This aim corresponds of the aim of analytics of Mikalef et al. (2020), Elgendy and Elragel (2014), Lepistö et al. (2021), and Ghasemaghaei (2019). With a clear definition of analytics, the next paragraph will focus on the concept of Big Data.

2.1.3 Evaluate Big Data

Within this paragraph, the concept of Big Data in the scope of this research will be defined. Second, the use and benefits of Big Data will be studied. Lastly, future government strategies will be introduced.

As noted in paragraph 2.1.1 that many authors support the definition of Big Data with the 3 V's given by McAfee and Brynjolfsson (2012). Since the publication of McAfee and Brynjolfsson (2012) authors added components (V's) to better define Big Data. However, as table 2 shows the authors seem to agree that Big Data always encompasses the components of Volume, Velocity, and Variety. That is why in this research Big Data is defined as an information asset characterized by high volume, velocity, and variety. Although this definition is subject to the time constraints described in paragraph 2.1.1 it is sufficient for this research. Furthermore, the definition of Big Data is consistent with the definition of data analysis.

According to Waller and Fawcett (2013), Big Data is more than the typical faddish fuzz. Waller and Fawcett (2013) made this statement because Big Data carries with it the opportunity to change the business model design and day-to-day decision-making that accompany emerging data analysis. Interesting about the statement of Waller and Fawcett (2013) is that the value, in their case change of the business model design and day-to-day decision making, is extracted through separate data analysis which is in line with the definition of this research.

In contrast to the definition of Waller and Fawcett (2013) value creation is to Herschel and Miori (2017) implied by acting upon information. This is in line with the definition of Zulkarnain et al. (2021). Zulkarnain et al. (2021) describes that with the use of Big Data valuable insights can be extracted to stay competitive and surpass competitors.

These researchers make it clear that value from Big Data is gained through insights and acting upon them. McAfee and Brynjolfsson (2012) try to explain by stating that data-driven decisions are better decisions because they are based on evidence rather than intuition. La Fors et al. (2019) explain this process a bit further, by stating that the social and economic value of data is mainly reaped when data is transformed into information and then used for decision making. By looking at the argumentative pattern of these researchers it is apparent that Big Data serves as the source of insights that influence decision making, but that insights need to be extracted. This is underlined by the statement of Gandomi and Haider (2015) who state that the potential value of big data is unlocked only when leveraged to drive decision-making.

That gaining insight can advance decision making, value creation, and even new business models is substantiated by Lepistö et al. (2021). Lepistö et al. (2021) argue that data analytics is used to reveal hidden patterns and gain insights that can advance decision-making and value creation. With this use data analytics is linked to improved decision-making, performance enhancements, and emerging business models (Lepistö et al., 2021). Some scholars even state that data analytics can provide an organization with a competitive edge (Mikalef et al., 2017). However, an exaggerated view of the potential for using big data can obscure the possibilities for understanding the consequences that rely on big data (Hylving & Lindberg. 2021). Kwon et al. (2014) warn that for some scholars big data is a socio-technical phenomenon whose real benefits should be critically questioned and carefully examined.

The concept of creating a competitive edge is further explained by Grossman (2018). Grossman (2018) advise creating a competitive edge with data analytics and an analytics strategy is important. Analytic strategy is the long-term decisions an organization makes about how it uses its data to take actions that satisfy its organizational vision and mission (Grossman. 2018). Van Donge et al. (2020) looked at future government data strategies. However, before future government data strategies are examined it is important to explain the concepts of internal data and external data.

Ghasemaghaei (2019) notes that data analytics can be a source of knowledge sharing which allows firms to share knowledge obtained through analyzing data integrated from internal and external sources. External data is obtained from sources over which a firm has little or no control such as additional customer information, the market, competitors, macroeconomics, and the firm's natural environment (Kwon et al., 2014). Furthermore, Kwon et al. (2014) found that heightened quality of corporate data could be a positive force in shaping an organizational culture that encourages the usage of internal and external data for operational and strategic decision making. In the context of data analytics, capitalizing on such external information can turn out highly valuable for corporate decision-making (Kwon et al., 2014).

The usage of internal and external data is of importance in the defined data strategies of Van Donge et al. (2020). Van Donge et al. (2020) found that government agencies could pursue a strategy of data-driven government or a strategy of data stewardship. It is important to note that these two strategies are not mutually exclusive, and a public organization could pursue both.

A data-driven government strategy data is used within the organization to optimize processes and services or create new services (Van Donge et al., 2020). Van Donge et al. (2020) defined a data-driven government as a public agency that uses external and internal data for process optimization and public service delivery. In this definition, the value extraction of data to influence decision-making is implied by process optimization and public service delivery.

The second strategy of data stewardship is a strategy where an organization acknowledges that it only plays one part in the entire data ecosystem (Van Donge et al., 2020). The role of the data steward is to make sure the data is set to certain standards, is of high quality, is up to date, can be accessed by those with the rights to access, and shared when needed, to add value to the data chain and give others the possibility to exploit data to its fullest potential (Van Donge et al., 2020). Within this strategy, the government acts as a supplier of external data, while in the strategy of data-driven government the government agency also consumes external data.

Van Donge et al (2020) developed both strategies characteristics and challenges. These characteristics and challenges can be viewed as a maturity model and will be evaluated in the next chapter.

2.2 Maturity models

Maturity models are instruments that facilitate the assessment of the level of development of organizational capabilities, processes, or resources (Cosic et al., 2015). This chapter will introduce a data framework and a maturity model for data. After the introduction of the model the data framework or maturity model will be analyzed. However, first, a general introduction to maturity models and the goal of analysis will be given.

2.2.1 Introduction of Maturity Models

As Cosic et al. (2015) determined maturity models are instruments that facilitate the assessment of the level of development of organizational capabilities, processes, or resources. Muller and Hart (2016) describe maturity models as a sequence of maturity levels for a class of objects which represents an anticipated, desired, or typical evolution path of these objects shaped as discrete stages.

A data framework or maturity model can give information on the context for ethical argumentation of external data sharing. The level of development of organizational capabilities, processes, and resources can give more information are important factors to consider when creating an instrument for ethical argumentation. Furthermore, a data framework or maturity model also allows for analysis of the current processes for ethical decision-making.

2.2.2 Maturity model of Van Donge et al

As mentioned in 2.1.3 Van Donge et al. (2020) looked at future data strategies of government agencies. A government agency can adopt the strategy of a data steward or data-driven government (Van Donge et al., 2020). Important to note is that these strategies are not mutually exclusive. The main characteristics of data stewardship are to assign responsibility for the governed data, collect and document meta-data, and manage data in the best interest of all, to improve the quality of data (Van Donge et al., 2020). While a data-driven government is defined by Van Donge et al. (2020) as a public agency that uses external and internal data for process optimization and public service delivery.

Within the research of Van Donge et al. (2020), both strategies share common characteristics and challenges as a foundational layer. For both strategies additional characteristics and challenges are given, which are shown in Table 3.

Strategy	**Characteristics**	**Challenges**
Basic	Has an explicit data governance structure with chief data executives (e.g., chief information or data officer), data stewards and data scientist	Transparency and security
	Has an explicit architecture of processes, services, tools and roles that govern the organization	Resources
	Cultivates a strong data culture (also known as a data minded culture)	Change organization culture and processes
		Collaboration private sector
Data Stewardship	Formalizes responsibility over data	Fragmentation
	Formulates explicit data sharing policies	Proliferation
	Uses specifications for external data access (for instance via REST APIs or dataset download buttons)	Data quality, standardization, genericity
	Continuously strives for data quality improvements	Inflexible infrastructure
	Stimulates the use of data, within legal boundaries	Legacy systems
Data Driven	Uses data as the basis for operational (task specific) decision making, as well as tactical strategic decision making	Knowledge within organization
	Uses a well-defined set of data-metrics to monitor overall organizational performance	Legal Boundaries
	Indefinitely puts value creation for all actors based on data on its policy agenda	Privacy
		Conflicting interest in re-using data
		Norms & Value

Table 3. *Characteristics and Challenges of Data strategy.*

Within Table 3 the strategy basic represents the shared characteristics and challenges among the different strategies. Van Donge et al. (2020) note that in both strategies they saw a shift from a process-oriented mindset to a society-oriented mindset. The focus of both strategies came to lie on value delivery to society (Van Donge et al., 2020).

Within the framework of Van Donge et al. (2020), the shared characteristics and challenges among the different strategies provide information on where the process of ethical argumentation could take place. Van Donge et al (2020) specifies that government agencies who want to pursue their data strategies must have an explicit architecture of processes, services, tools, and roles that govern the organization. This explicit architecture is the context in which ethical argumentation can take place. However, Van Donge et al (2020) didn't specify the explicit architecture, so the framework offers little information about the context of ethical argumentation for the instrument.

When applying the framework of Van Donge et al. (2020) to Kadaster the external data sharing tasks can be seen as a characteristic of the data steward strategy. Within this strategy from Van Donge et al (2020) three characteristics are interesting. First, the characteristic of formalizing responsibility for data (Van Donge et al. 2020) gives information about the context in which ethical argumentation for data sharing can take place. Furthermore, formalizing responsibility for data (Van Donge et al. 2020) is important to analyze for the design of an instrument of ethical argumentation for external data sharing. Second, the characteristic of formulating an explicit data sharing policy gives information about the context and important aspects to analyze when designing an instrument of ethical argumentation for external data sharing. If an explicit data sharing policy is present in a government agency this would be a good starting point for analyzing the current ethical standards. Lastly, the characteristic of stimulating the use of data, within legal boundaries (Van Donge et al. 2020) is also a great place to start analyzing the current ethical standards.

As the strategies of Van Donge et al (2020) are not mutually exclusive it could be that a government agency pursues both strategies. Within the data-driven strategy, Van Donge et al (2020) describe that Norms and Values could be a challenge. However, Van Donge et al (2020) specify that Norms and Values are only applicable to AI development. Furthermore, Van Donge et al (2020) highlight that a moment of reflection should be incorporated into the data exploration process. This shows that the topic of ethics was considered for data-driven strategy but not incorporated.

The framework of Van Donge et al (2020) provides information for designing an ethical argumentation instrument for external data sharing. On all predetermined points, the framework of Van Donge et al (2020) is providing information. However, the provided information remains very descriptive and theoretical. For the design of an ethical argumentation instrument, a practical application of the framework would be beneficial. A maturity model which aims to be more practical is that of Cosic et al. (2015).

2.2.3 Maturity model of Cosic et al

The business analytics capabilities maturity model (BACMM) of Cosic et al. (2015) is designed to be used in practice. In contrast to the framework of Donge et al. (2020), the BACMM of Cosic et al (2015) is not designed for government agencies. However, the BACMM of Cosic et al. (2015) is more prescriptive and staged than the framework of Van Donge et al (2020). This might provide more concrete information on the context of ethical argumentation for external data sharing. The maturity model of Cosic et al (2015) makes use of lower-level capabilities, which can be grouped into higher-level capabilities. These lower-level capabilities can be scored on a five-level maturity scale. Cosic et al (2015) define the five-level maturity scale as follows:

> Level 0 – *Non-existent:* the organization does not have this capability.
> Level 1 – *Initial:* the capability exists but is poorly developed.
> Level 2 – *Intermediate:* the capability is well developed but there is much room for improvement
> Level 3 – *Advanced:* the capability is very well developed but there is still a little room for improvement
> Level 4 – *Optimized:* the capability is so highly developed that it is difficult to envision how it could be further enhanced. At this point the capability is considered fully mature.

First table 4 will provide the definitions of the lower-level capabilities of Cosic et al (2015) and then the higher-level capabilities will be given. Note that Cosic et al (2015) speak of business analytics but is also applicable to data analytics.

BA Capability	**Definition**
Decision rights	The assignment of decision rights and accountabilities, by determining those who are responsible for making each kind of decision, those who will provide input for the decision and how these people will be held accountable.
Strategic Alignment	The alignment of an organization's business analytics initiatives with its business strategy
Dynamic buiness analytics Capabilities	The continuous renewal of an organization's Business Analytics resource base and organizational capabilities in order to respond to changes in dynamic business environments
Change Management	To manage people who are impacted by Business Analytics initiatives to accept and embrace technological and process changes
Evidence-based Management	A culture where formal authority, reputation, intuition and ad-hoc decision-making are superseded by decisions based on data and quantitative analysis
Embeddedness	The extent to which business analytics has permeated the social fabric of the organization and has become ingrained into people's values and daily work habits
Executive Leadership and Support	The ability of the senior managers within an organization to infuse a passion for BA and data-driven decision-making throughout the organization
Flexibility and Agility	The level of change readiness within an organization. More specifically, it relates to how ready and how receptive an organization's non-managerial BA personnel are to respond to changes in the business environment

Data Management	Management of an integrated and high-quality data resource is crucial to the success of Business Analytics.
Systems Integration	The seamless integration of Business Analytics systems with operational systems in order to exploit the capabilities of both systems
Reporting and Visualization BA Technology	The development and utilization of reports, dashboards, scorecards, online analytical processing (OLAP) and data visualization technologies to display the output information in a format that is readily understood by its users
Discovery BA Technology	The development and utilization of sophisticated statistical and data mining software applications to explore data and identify useful correlations, patterns and trends and extrapolate them to forecast what is likely to occur in the future
Technology Skills and Knowledge	The skills and knowledge of Business Analytics technology specialists, including statistics, data management, reporting and visualization and discovery BA technologies and information technology in general
Business Skills and Knowledge	The skills and knowledge of Business Analytics business specialists
Management Skills and Knowledge	The skills and knowledge of management specialists, who are responsible for Business Analytics initiatives and projects, both enterprise-wide and in local business units
Entrepreneurship and Innovation	The skills and knowledge of technology, business and management personnel to use Business Analytics technologies to develop innovative and more effective processes and products that result in better organizational performance and create competitive advantage

Table 4. *Lower-level capabilities.*

These sixteen lower-level capabilities can be, like said earlier, grouped into higher level capabilities. (Cosic et al .2015).

Governance	**Culture**	**Technology**	**People**
Decision Rights	Evidence-based Management	Data Management	Technology Skills and Knowledge
Strategic Alignment	Embeddedness	Systems Integration	Business Skills and Knowledge
Dynamic BA Capabilities	Executive Leadership and Support	Reporting and Visualization BA Technology	Management Skills and Knowledge
Change Management	Flexibility and Agility	Discovery BA Technology	Entrepreneurship and Innovation

Table 5. *Higher-level capabilities.*

The higher-level capabilities are comprised out of lower-level capabilities and have a general definition. These definitions can be seen in table 6

Higher-level capability	Definition
Governance	The mechanism for managing the use of business analytics resources within an organization and the assignment of decisions rights and accountabilities to align business analytics with organizational objectives (Cosic et al .2015)
Culture	The tacit and explicit organizational norms, values and behavioral patterns that form over time and lead to systematic ways of gathering, analyzing, and disseminating data.
Technology	The development and use of hardware, software, and data within business analytics activities
People	All those individuals within an organization who use business analytics as part of their job.

Table 6. *Definitions of Higher-Level capabilities*.

Based on the definitions provided in Table 6 the higher-level capability of Governance is interesting regarding ethical argumentation. Based on Table 5 it can be distinguished that decision rights are a part of the higher-level capability of Governance. Decision rights and accountabilities determine who is responsible for making each kind of decision, who will provide input for the decision, and how these people will be held accountable (Cosic et al., 2015). Decision rights are interesting because they could give context in which ethical argumentation can take place like the explicit architecture characteristic of Van Donge et al. (2020). However, the decision rights specified by Cosic et al. (2015) have the advantage that it gives insight into who is providing the information for the decision. The information provided to decide should include ethical argumentation in the case of external data sharing.

Like the framework of Van Donge et al. (2020), the BACMM of Cosic et al. (2015) does not escape the feedback of also lacking practical application. However, with the combined insights of Van Donge et al (2020) and Cosic et al (2015) the context of ethical argumentation within Kadaster could be analyzed. This theoretical framework continues with evaluating the concept of data ethics.

2.3 Data Ethics

In this paragraph, the concept of data ethics will be evaluated. Floridi and Taddeo (2016) define data ethics as the branch of ethics that studies and evaluates moral problems related to data, algorithms, and corresponding practices, to formulate and support morally good solutions. Before the concept of data ethics will be evaluated a working definition of ethics will be given.

The terminology for ethics seems difficult, as Swierstra and Rip (2007) note that people use the label "ethics" and "ethical" to refer to what is good to do and what should be done. Leijen (1998) gives a more concrete definition where he defines ethics as the reflection on actions. A more comprehensive description of ethics can be found in the work of Kroener et al. (2019), they state that ethics is a branch of philosophy that rationally assess questions about morality. Morality, as defined by Leijen (1998), is the indication of certain qualities of actions, practices, and beliefs. This results in the definition that ethics is a branch of philosophy that rationally assess the question of certain qualities of actions, practices, and beliefs by reflection. According to Herschel and Mirori (2017), ethics should enable individuals to make persuasive, logical, and reasoned arguments based on the principles stated by ethical theory. Within this research, ethics is defined as the practice of rationally assessing the question of certain qualities of actions, practices, and beliefs.

It is important to note that when dealing with ethics that individuals with different expertise, viewpoints, and interests will assess the ethical significance and implications of their work in different and potentially complementary ways (Leonelli. 2016). Furthermore, when dealing with the concept of ethics the context is that greatly influences right or wrong (Spiekermann & Winkler. 2020).

The context of ethics is often human-centric. In the mid-1980s an ethical perspective emerged with a computer-centric approach (Floridi & Taddeo. 2016). Within this perspective, the computer is seen as the main actor instead of the human. At the beginning of the second millennium, this perspective changed to information centric (Floridi & Taddeo. 2016). From an information-centric perspective, ethics is viewed with information as the actor. Some authors use a level of abstraction instead of perspective. The shift to information-centric was marked from a technological means to the content that can be created, recorded, processed, and shared (Floridi & Taddeo. 2016). This field of ethics with an information-centric approach is called Information Ethics (IE).

Due to further development in the field of Big Data, another change in perspective or level of abstraction is prompting, namely from information ethics to data ethics (Floridi & Taddeo. 2016). Within this stream of ethics, the level of abstraction of data is taken, because data is the content that is created, recorded, processed, and shared (Floridi & Taddeo. 2016; O'Leary. 2016). This is further illustrated by an example of Floridi and Taddeo (2016): "*It is not the hardware that causes ethical problems, it is what the hardware does with the software and the data that represents the source of our new difficulties*".

However, data ethics has the advantage over IE in those ethical problems such as privacy, anonymity, transparency, trust, and responsibility concerning data collection, curation, analysis, and use are better understood on a data level than information level (Floridi and Taddeo. 2016). Data ethics has the goal to formulate and support morally good solutions to foster the development and applications of Big Data while ensuring respect of human rights (Floridi & Taddeo. 2016). This goal comes with the demanding task of navigating between social rejection and legal prohibition. Social rejection can be caused by overlooking ethical issues (Floridi & Taddeo. 2016). Legal prohibition can be caused by overemphasizing the protection of individual rights in the wrong context (Floridi & Taddeo. 2016).

Within the field of data ethics, three axes of research can be distinguished according to Floridi & Taddeo (2016). The first is the ethics of data, which focuses on ethical problems regarding the collection and analysis of large datasets (Floridi & Taddeo. 2016). Second, the ethics of algorithms address issues posed by the increasing complexity and autonomy of algorithms (Floridi & Taddeo. 2016). Lastly, the ethics of practices address the pressing questions concerning the responsibilities and liabilities of people and organizations in charge of data processes, strategies, and policies to define an ethical framework to shape professional codes (Floridi & Taddeo. 2016). This research will focus on the interplay of problems between the first axis, the collection and analysis of large datasets, and the third axis, the ethics of practices.

With the concept of data, and ethics explored the next chapter will focus on how other scholars used ethics in frameworks to increase practical use.

2.4 Ethical frameworks

Within this chapter, two ethical frameworks will be analyzed and evaluated. However, before the evaluation can start first the concept of the ethical framework will be further explained. Second, ethical guidelines will be introduced and evaluated. Third, from the shortcomings of ethical guidelines the requirements for the ethical framework will be described. Lastly, the frameworks will be analyzed and evaluated.

2.4.1 Introduction ethical frameworks

Floridi and Taddeo (2016) distinguish the ethics of practices as a part of data ethics. The ethics of practice addresses the questions concerning the responsibilities and liabilities of people and organizations in charge of data processes, strategies, and policies to define an ethical framework to shape professional codes (Floridi & Taddeo. 2016). The need for a framework or guidelines is shared with Franzke et al. (2021). They noticed that many issues related to data projects cannot be handled sufficiently by strictly applying privacy law and data management regulations, because legal policy often lags behind technological progress, leaving an expansive grey area where technology creates opportunities for new practices that have yet to be challenged by law and regulation (Franzke et al., 2021).

Saltz and Dewar (2019) explain that the creation of a framework or guideline for data is a challenge because of the newness of the field. Due to the newness of the field, many ethical norms and regulations may not yet have been explored or defined (Saltz & Dewar. 2019). O'Leary (2016) agrees with this statement and adds that the existence of a code of ethics provides a signal as to where a technology is in its life cycle. O'Leary (2016) continues that these codes are developed to provide constraints on behavior. However, Martin (2020) notes that these constraints on behavior can be circumvented by framing data as morally neutral or having benefits that outweigh any cost. Martin (2020) specifies that framing Big Data as an asset, ability or technique sterilizes an important ethical discussion. To motivate this discussion Herschel and Miori (2017) found that Big Data is producing increased institutional awareness and power that requires the development of ethics to protect individual rights. Furthermore, the unethical use of data could impact the reputational and economic well-being of an organization (Saltz & Dewar. 2019).

It seems that the constraining of certain behavior that is deemed unethical is a goal of the framework or guidelines. According to O'Leary (2016) adds that the formulation of policies should also be the goal of the framework or guideline. The formulation should be based on the analysis of the nature and social impact of the data. Nair (2020) is more specific with regards to the goal of guideline or framework, whereas he states that the data-analysis practices should be incorporated into guideline or framework. Nair (2020) continues with a more organizational focus on ethical framework or guideline that should enable an ethical inquiry on the core organizational values and articulate alignment of organization practices with organization values (Nair. 2020). To this discussion Fotaki et al. (2020) add the argument that organizations should not only be responsible for the current ethical implications but should also foresee its future ethical consequences. Furthermore, Herschel and Miori (2017) add to the technical side of the framework or guideline by stating that the ethical use of data involves knowing how to use data and how to protect the privacy and maintain the confidentiality of data. Thus, it seems scholars seem to agree on the goal of an ethical framework or ethical guideline. However, some scholars also seem to agree on the shortcomings of ethical guidelines.

2.4.2 Ethical Guidelines

Concerning ethical guidelines, there is currently no universal acceptable standard (Elgendy & Elragal. 2014). The guidelines that do exist tend to focus primarily on accountability, fairness, and privacy (Elgendy & Elragal. 2014). Elgendy and Elragal (2014) highlight that these guidelines lack a discussion on the effect of practice. Saltz and Dewar (2019) agree with this statement by adding that there is no widespread agreement about what constitutes ethical versus unethical use of data. There seems to be a gap between the codes of conduct's general statements and many specific ethical concerns (Saltz & Dewar. 2019). Leonelli (2016) notes that agreement on general principles does not easily translate into all-encompassing ethical guidelines. Leonelli (2016) and Saltz and Dewar (2019) agree that a general shortcoming of guidelines is that they do not take into account the situational and specific nature of ethics in data to be useful.

2.4.3 Requirements Ethical Framework

The shortcoming of guidelines could be overcome with an ethical framework. A consistent, holistic, and inclusive framework could address the diverse set of the ethical implication of data (Nair. 2020; Saltz & Dewar. 2019). O'Leary (2016) warns to prevent the lack of specificity issues an ethical data framework must be applied. He explains that a more general framework does not capture the full scope of ethical issues in data (O'Leary. 2016). An ethical framework can also help establish ethical decision points that ensure synchronization between the organizational values and practices (Nair. 2020). Furthermore, an ethical framework can increase transparency by involving stakeholders or establishing ethical governance (Nair. 2020). Saltz & Dewar (2019) found that an ethical framework could help establish a clear understanding of the vocabulary needed for discussing issues related to data ethics. The application of an ethical framework could help combat the idea that ethics is extraneous to technical concerns that are imposed and governed by outside forces (Leonelli. 2016). Fotaki et al (2020) recommend that ethical framework or policies should be supported by appropriate tools and structures, such as whistle-blowing channels, ethics training programs, or rewarding ethical behavior through a system of incentives, to weave ethical understanding in every level of the organization.

With the requirements described several ethical frameworks will be evaluated in the next section.

2.4.4 Evaluation of Ethical Frameworks

Within this section, two ethical frameworks will be evaluated. An evaluation consists of first an introduction of the framework and lastly the evaluation. First, the Anticipatory Technology Ethics Framework of Brey (2011) will be evaluated. Second, the Data Ethics Decision Aid (DEDA) of Franzke et al. (2021) will be evaluated.

2.4.4.1 Anticipatory Technology Ethics Framework

Phillip Brey (2011) introduced a new approach to the ethical study of emerging technologies called anticipatory technology ethics (ATE). ATE distinguishes three levels of ethical analysis. The first is the technology level. Ethical analyses on the technology level focus on features of the technology at large. The features are examined for finding generic ethical issues that are attached to these features. The second is the artifact level. On this level, the ethical analyses focus on features of an artifact that are the result of technology level. Finally, at the application level, the use of an artifact or resulting procedure is the focus of ethical analysis. The context and procedure are analyzed to find generic ethical issues.

Level	**Description of Ethical analyses**
Technology	Features of the technology at large
Artifact	Features of the Artifact
Application	Use of the Artifact

Table 7. *Level of Ethical Analyses*

Besides the different levels of ethical analyses, an important aspect of the ATE is the usage of different forecasting methods. Brey (2011) stresses that ethicists should utilize existing future studies and existing technology assessments about the technology, to the extent these are available. This will provide ethicists with a view of applications that will likely emerge in the future. Furthermore, ethicists should use expert surveys and roundtable discussions on the results from the existing future studies and technology assessments. The nature of forecasting is imaginative activity and that is why Brey (2011) advises considering policy documents, company studies, academic text, or even science fiction stories for ideas about possible future artifacts and applications. The result of this forecasting analysis is input for ethicists to examine possible future applications that may cause harm, violate rights, affect well-being or cause unjust distributions of goods.

Furthermore, Brey (2011) distinguishes two main stages in ATE, the identification stage and the evaluation stage. At the identification stage descriptions of the technology (or application) are cross-referenced with ethical values and principles. It is investigated if features of the technology are likely to negatively impact moral values or principles. For this investigation, ATE uses an ethical checklist. At the evaluation stage, the potential importance of ethical issues is assessed. Furthermore, the likelihood that these ethical issues will become a significant issue in society, as well as their relation to each other and potential value and conflict are also assessed. The output of this evaluation stage can be used for ethical argumentation for further actions.

Comparing the ATE framework to the requirements specified in chapter 2.4.3 several issues are interesting. The ATE framework does not avoid the findings of O'Leary (2016), which state that general ethical frameworks like ATE do not capture the full scope of ethical issues in data. This is mainly due to the usage of an ethical checklist in the identification stage. The use of an ethical checklist or guidelines is that they do not take into account the situation and specific nature of ethics in data (Leonelli. 2016; Saltz & Dewar. 2019). Furthermore, La Fors et al. (2019) found that in the Big Data context the different level of ethical analyses is difficult to distinguish. The usage of forecasting analyses to assess ethical issues helps with the statement of Fotaki et al. (2020) to foresee future ethical implications and take responsibility for them. However, Kroener et al. (2019) stress that questions of ethics should follow the lifecycle of the technology. The ATE framework is meant to be used in the research and development phase and would not fit in the often-circular life cycle of data technologies (La Fors et al. 2019).

2.4.4.2 Data Ethics Decision Aid

The data ethics decision aid (DEDA) of Franzke et al. (2021) was developed for reviewing government data projects to consider their social impact, the embedded values, and the government's responsibilities in times of data-driven public management. The development of DEDA is based on the value-sensitive design approach and ethical pluralism. Value-sensitive design approach aims to connect those who design systems with other stakeholders. It can be understood as an approach to the design of technology that accounts for human values in a principled and comprehensive manner throughout the design process. Ethical pluralism argues that on a general level difference between cultural beliefs, norms, and practices can be harmonized by discerning how these differences reflect distinct interpretations, understandings, and applications of shared norms and beliefs.

DEDA consists of a poster displaying a list of questions concerning data-related issues and general considerations. Franzke et al. (2021) found that a mere list of values alone provides little guidance. To provide more guidance values are stated and clarified with additional questions. Each question requires an extensive response and encourages group deliberation and is expressly not meant to be used by a person working on their own. Within DEDA a brief description of different ethical concepts allows for the thought experiment of how a data project is perceived through different normative frameworks. For the usage of DEDA three steps are defined. The first step is to clarify who will document all decisions that are made. The second step serves to position the project within a specific context through questions about various ethical aspects. Finally, the last step servers to compare institutional values with one's own and reflect on the practice.

DEDA encourages and facilitates a structured dialogue around ethical aspects of data projects. The framework is designed in such a way that participants start with the context and understand the complexity of the issues involved. Focus is directed towards a solution or a decision-making process. The results of a session consist of clear action points for the participants. This can be used as documentation regarding the ethical case deliberation and decision-making for the specific data project in question. The DEDA process requires the supervision of a facilitator and takes around three to four hours. A facilitator can critically engage with the debate and also serve as a moderator by asking critical questions or summarizing debates. However, the DEDA framework should be used in the early stages of the project, or during an evaluation. The project must be in a development or redevelopment phase because only then can the ethical pitfalls that have become apparent by using the framework be mitigated by changing the project.

With the use of ethical pluralism, the DEDA framework adheres to the finding of Kroener et al. (2019) that there is different understanding of ethical philosophies in different cultures. Furthermore, it fits with Leonelli (2016) finding that individuals with different expertise, viewpoints, and interests will assess the ethical significance and implications of their work in different and potentially complementary ways. Furthermore, the questions-based approach and focus on structured dialogue is corresponding with the definition of Nair (2020) and Saltz and Dewar (2019). The game approach of DEDA allows for the involvement of different stakeholders, which was a demand of Nair (2020). However, DEDA frameworks share the shortcoming of ATE concerning the lifecycle of technology. The DEDA framework is meant to be used in the development or redevelopment phase and would not fit in the often-circular life cycle of data technologies (La Fors et al. 2019).

2.5 Input for Ethical argumentation instrument

This section describes the input for the first iteration of the design science method. In this section, the described theory will be analyzed further. This will result in what theories and models are useful and worth building on. First, the proposed data strategy will be described. Second, the characteristics and capabilities of the data strategy will be applied to this research. Third, the goal of the ethical argumentation instrument will be described. Lastly, the lessons learned from the analyzes of previous ethical frameworks will be described.

2.5.1 Description of Data strategy

Within this research, Big Data is defined as an information asset characterized by high volume, velocity, and variety. This definition is based on the work of McAfee and Brynjolfsson (2012) and is supported by several scholars (Hylving & Lindberg. 2021; Nair. 2020; Günther et al. 2017; Martin. 2015; Zulkarnain et al. 2021; Gandomi & Haider. 2015). Although several scholars would include value in the definition of Big Data (Hylving & Lindberg. 2021; Martin. 2015; Zulkarnain et al. 2021) within this research the extraction of value out of Big Data is seen as a separate process, namely data analytics.

Mikalef et al. (2017) argue that Big Data can provide the organization with a competitive edge and Lepistö et al. (2021) even argues that it can create new business models. Grossman (2018) explains that new business models can be created with a data strategy. According to Van Donge et al. (2020), future data strategies for government agencies could be that of data steward or data driven. Although the strategies are not mutually exclusive within the scope of research the strategy of data steward is most useful and worth building on.

Within the strategy of data steward a government agency must make sure the data is set to certain standards, is of high quality, is up to date, can be accessed by those with the rights to access, and shared when needed, to add value to the data chain and give others the possibility to exploit data to its fullest potential (Van Donge et al. 2020). To give others the possibility to exploit data to its fullest potential could be done by offering external data. Ghasemaghaei (2019) vouches that data analytics should focus on internal data and external data. This would mean that the demand for external data would rise and government agencies with a data steward strategy could help meet this demand.

2.5.2 Applying Data strategy to this research

Within the data steward strategy and the overall framework of Van Donge et al (2020) several characteristics are useful and worth building on. Furthermore, these characteristics of Van Donge et al (2020) could be complemented by the lower-level capability decision rights from Cosic et al (2015). Cosic et al (2015) define decision rights as the determination of those who are responsible for making each kind of decision, those who will provide input for the decision, and how these people will be held accountable. In table 8 an overview of the characteristics and lower-level capabilities is given with the motivation why it should be used to build further.

Characteristics/lower-level capability	Motivation
Has an explicit architecture of processes, services, tools and roles that govern the organization (Van Donge et al. 2020)	With explicit architecture in place the usage of ethical argumentation instrument can be implemented.
Formalizes responsibility over data (Van Donge et al. 2020)	The responsibility over data could include the responsibility of making ethical argumentation.
Formulates explicit data sharing policies (Van Donge et al. 2020)	Ethical argumentation could be used to substantiate the data sharing policies.
Stimulates the use of data, within legal boundaries (Van Donge et al. 2020)	The legal boundaries form a starting point to start ethical analyze with ethical argumentation instrument.
Decision rights (Cosic et al. 2015)	The decision rights provide insight into who makes the choices regarding external data sharing. Furthermore, it also gives insight in who is involved in the decision-making process.

Table 8. *Characteristics and Lower-Level Capabilities.*

With the characteristics of Van Donge et al (2020) and the decision rights of Cosic et al (2015), it is known what to analyze before designing an instrument. These analyzes provide information that influences the design of the instrument.

As mentioned in section 2.2.3 the characteristic “Has an explicit architecture of processes, services, tools, and roles that govern the organization” of Van Donge et al (2020) and decision rights of Cosic et al (2015) have some overlap. However, by analyzing both the architecture and the decision rights the context where the instrument will be used will become clear. This analysis will provide the following information:

- Who will use the instrument.
- Where in the business process the instrument can be used.
- Who judges if ethical argumentation is needed.
- How much time using the instrument can take.

An analysis of the formal responsibility for data will provide information about what this responsibility entails and who is carrying this responsibility. Based on that information it could be assessed if this responsibility should include the responsibility of ensuring that ethical argumentation is provided or having a facilitating role in the creation of ethical argumentation.

Analyzes of the current data sharing policies will provide information about the current status of ethical argumentation. Based on this information the role who carries responsibility for data could judge if ethical argumentation is needed.

The legal boundaries are important to analyze for external data sharing. Based on the analysis of the architecture and decision rights it will become clear when the analysis of legal boundaries happens in the process.

2.5.3 Goal of the instrument

With the points of analysis described it is important to look at the goal of an ethical argumentation instrument. The ethical argumentation instrument shares its goal with data ethics. Floridi & Taddeo (2016) state that data ethics has the goal to formulate and support morally good solutions to foster the development and applications of Big Data while ensuring the respect of human rights. This goal comes with the demanding task of navigating between social rejection and legal prohibition. Social rejection can be caused by overlooking ethical issues (Floridi & Taddeo. 2016). Legal prohibition can be caused by overemphasizing the protection of individual rights in the wrong context (Floridi & Taddeo. 2016).

2.5.4 Lessons learned previous model

With the goal of the instrument known it is important what requirements and recommendations for the ethical instrument are extracted from the literature. Furthermore, it is important to note what lessons learned can be distinguished from previous ethical instruments.

Nair (2020) informs that an ethical framework can also help establish ethical decision points that ensure synchronization between the organizational values and practices. Furthermore, an ethical framework can increase transparency by involving stakeholders or establishing ethical governance (Nair. 2020). Fotaki et al. (2020) recommend that ethical framework or policies should be supported by appropriate tools and structures, such as whistle-blowing channels, ethics training programs, or rewarding ethical behavior through a system of incentives, to weave ethical understanding in every level of the organization.

Within the ATE framework, the different ethical analyses are difficult to distinguish (La Fors et al. 2019). Furthermore, the ATE framework is generic which according to O'Leary (2016) it does not capture the full scope of the ethical issues in data. With the design of the instrument, these shortcomings need to be prevented. However, the usage of forecasting analyses is an element that could be incorporated. The forecasting analyses help to foresee future ethical implications and take responsibility for them (Fotaki et al. 2020).

The DEDA framework incorporated ethical pluralism which welcomes the debate about the different understanding of ethical philosophies in different cultures. Furthermore, the questions-based approach and focus on structured dialogue is corresponding with the definition of Nair (2020) and Saltz & Dewar (2019). The game approach of DEDA allows for the involvement of different stakeholders, which was a demand of Nair (2020). However, DEDA frameworks share the shortcoming of ATE concerning the lifecycle of technology. The DEDA framework is meant to be used in the development or redevelopment phase and would not fit in the often-circular life cycle of data technologies (La Fors et al. 2019).

To conclude for the design of the instrument it is thus important to include the element of forecasting analyses of the ATE framework and the ethical pluralism, questions-based approach of the DEDA framework. However, it is also important to design an instrument that could be used in more phases than the development or redevelopment phase. Furthermore, the duration time of the DEDA framework might become a constraint.

3. Methodology

This research is used to design an ethical argumentation instrument for data sharing. For this purpose, a design science research method has been used. First, the theory of design science will be explained. Afterward, the application of design science to this research will be explained.

3.1 Research method

The difference between social science and design science is clear to Iivari (2005), as that social science tries to understand reality, and design science attempts to create a thing that serves human purposes. Design science wants to improve the environment by introducing new artifacts and the processes for building these artifacts (Hevner. 2007).

A process for building these artifacts is proposed by Peffers et al (2007). However, Peffers et al (2007) note that practice design science may contain unnecessary elements for some contexts while being much too general to support design in others. To oppose this Van der Merwe et al (2019) argue that design science can cycle through different activities. A great example of this is the iterative design science contribution of Hevner (2007). Hevner (2007) based the cycles on the framework of Peffers et al (2007) and overlayed them with three inherent research cycles.

These cycles are the relevance cycle, the rigor cycle and the design cycle. The relevance cycle bridges the contextual environment of the research project with the design science activities (Hevner. 2007). In the relevance cycle, the requirements for the ultimate evaluation of the research results are extracted from the application context (Hevner. 2007). The rigor cycle connects the design science activities with the knowledge base of scientific foundations, experience, and expertise (Hevner. 2007). Finally, the design cycle iterates between the core activities of building and evaluating the design artifact (Hevner. 2007). The framework from Hevner (2007) can be seen in figure 1, which is customized to this research.

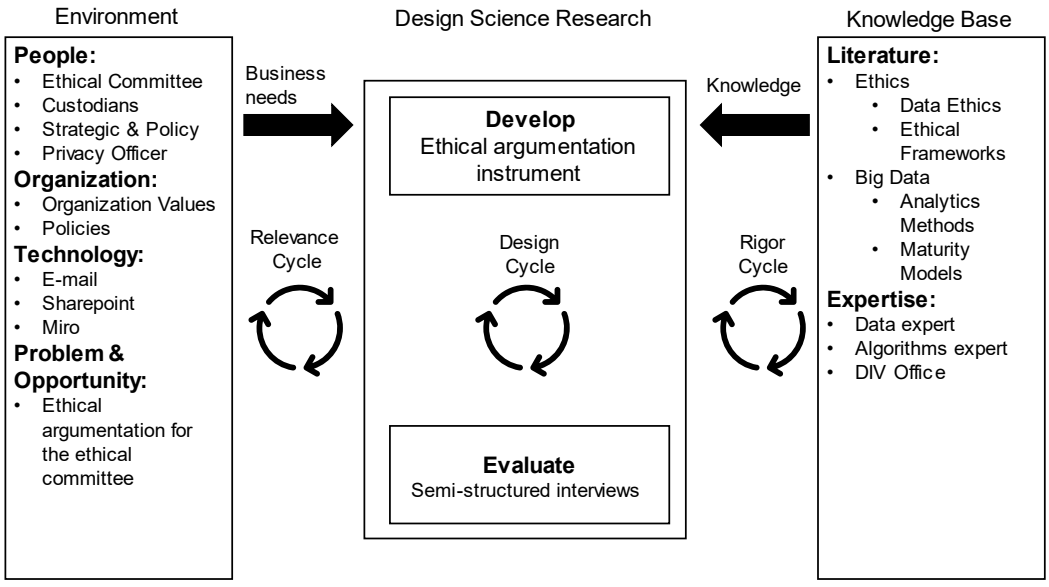

Figure 1. Design Science Cycles, adapted from Hevner (2007)

3.2 Application

The three-cycle method of (Hevner. 2007) in combination with the design science activities of Peffers et al. (2007) will be applied to this research.

The demand for practical relevance is high in this research because of the collaboration with Kadaster. An instrument that would provide ethical argumentation for data sharing could improve ethical decision-making at Kadaster. As noted by Hevner (2007) design science wants to improve the environment by the introduction of new artifacts. As Kadaster wants a practical application in the form of an instrument the best-suited methodology is design science. The application to design science in this research has the advantage that an artifact that addresses the problem will be designed. However, the disadvantage is that the produced knowledge of this artifact might be too specific to contribute to the scientific field.

The three-cycle method of Hevner (2007) is incorporated into the design activities of Peffers et al (2007) for this research. Figure 3 provides a graphical overview of this research model.

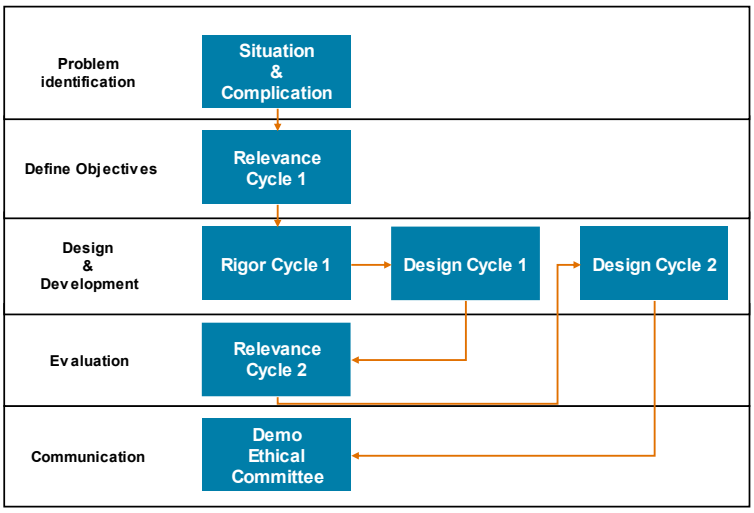

Figure 2. Research Model

The problem for design science research has been identified in chapter 1.1 with the situation and complications. The situation and complication resulted in a research goal and research question which are the objectives of this research.

Based on the situation and complications three stakeholder interviews have been conducted in Relevance cycle 1. The stakeholder “C” is from the department Strategy and Policy. Stakeholder “A” is a Privacy officer at Kadaster. The third stakeholder interviewed was “B” a registrar. The relevant stakeholders have been selected on basis of stakeholder analysis (see Appendix C). With the stakeholder interviews, requirements of the to-be-designed instrument were uncovered by using semi-structured interviews.

The next step was to analyze internal documents for the design and development of the instrument in Rigor Cycle 1. Based on the interview results from Relevance Cycle (see Appendix A) the internal documents are summarized (See Appendix D) and analyzed (See Appendix E) to assess the business process to the ethical instrument.

Combining the results from Relevance Cycle 1, Rigor Cycle 1, and the input for the ethical argumentation instrument described in chapter 2.5 the prototype was developed in design cycle 1.

The next step was to evaluate the prototype. The evaluation of the instrument was done in Relevance cycle 2 with the help of expert interviews. The experts were found based on the internal document analysis. “E” is an expert that is part of the Data and Information disclosure office (DIV Office), which is described in the disclosure policy. “F” and “D” are experts that the ethical committee can consult, which is described in the start notion of the ethical committee. The experts were interviewed to validate the prototype of the instrument. For these interviews, a semi-structured interview was used, so that experts could explain their knowledge and motives regarding their field of expertise.

The output of Relevance cycle 2 was input for Design cycle 2. In Design Cycle 2 additional feedback to increase the validity of the instrument was adjusted.

The three stakeholders' interviews and three expert interviews were recorded, transcribed, and analyzed. The interviews were analyzed with the summarizing approach (Saunders, Lewis, & Thornhill, 2019). This method allowed to summarize large amounts of text in statements. These statements could be compared to patterns, overlapping arguments, or contradictory arguments. The summaries can be found in appendices A and B.

4. Results

The results of the research will be presented in this chapter. First, the results of the stakeholder interview will be presented. Lastly, the results of the expert interviews will be presented.

4.1 Stakeholders Interview

The results of the stakeholder interviews will be presented along with the themes of the interview. First, the answer to the general questions will be presented. Second, the goal of the instrument according to the stakeholders will be presented. Third, the view of the stakeholders regarding the usage of the instrument will be described. Lastly, information about the business process will be presented.

4.1.1 General Questions

When asked about their definition of ethics all the stakeholders responded differently. The stakeholder "B" stated that "*ethics is the way one can look at a certain topic or issue from various insights*.". The stakeholder "A" finds some merit in this answer, as she states that "*ethics is about how I see societal issues or values from my own experience, expertise, and life in general*". While the stakeholders "A" definition of ethics focuses more on her personal viewpoint the definitions of her and the definition of the stakeholder "B" overlap. Both stakeholders seem to agree that ethics is about viewing or observing issues.

This overlapping definition of ethics is in high contrast with the definition of ethics by the stakeholder "C". The stakeholder "C" defines ethics as *"generally doing the right things, so choosing between right and wrong*". The definition of ethics by the stakeholder "C" has no mention of viewing or observing and instead centers around doing and choosing. The stakeholder "B" and the stakeholder "A" see ethics as a form of observation, while the stakeholder "C" views it as choosing and doing.

The stakeholder "C" specifies that "*ethics can vary across cultures*" and further describes that ethics is context dependent. These specifications of "C" overlap with the definition of "B" who specified "*various insights*". However, "B" also added that "*ethics is not necessarily about making conclusions*". This is again contradictory to the definition of the stakeholder "C" who argues for making decisions that can encapsulate making conclusions. As the answers indicate, there seems to be little consensus about the definition of ethics between the stakeholders. This is mainly caused by the considerable difference between "*viewing*" and "*choosing*". The overlap between definition is visualized in figure 3.

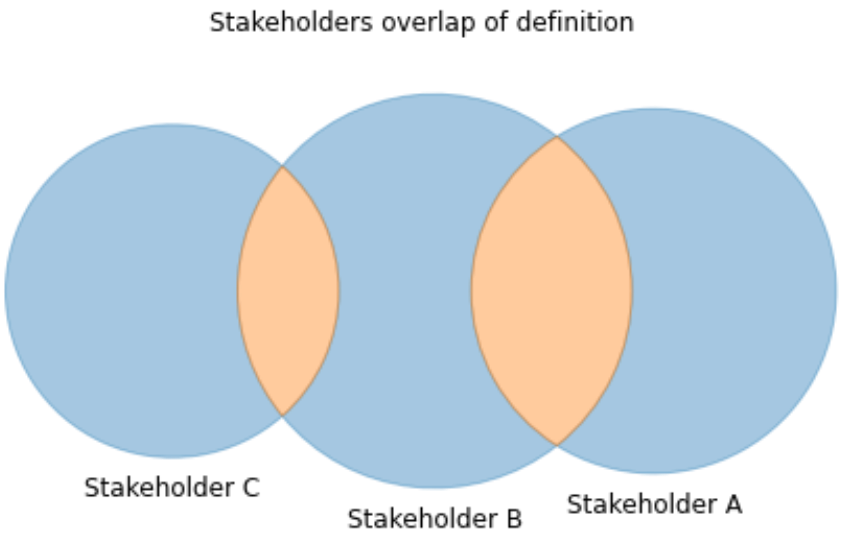

Figure 3. Overlap of definition of ethics.

The difference in the definition of ethics is contrasted by the high consensus about the goal of Kadaster. The stakeholder "A" describes the goal of Kadaster as "*to add value to society by being data-driven*". The stakeholder "B" agrees with this statement and adds to this that the Dutch society is helped on a "*societal and economical level*". Finally, the stakeholder "C" also agrees and adds a specification concerning data by saying "*data regarding real property and spatial data*".

Considering the different definitions of ethics, it is surprising to see some consensus about the opinion that ethics is beneficial for Kadaster. The stakeholders "A" and "B" seem to use similar logic as to why it is beneficial. The stakeholder "A" sees ethics as a "*requirement*" and "*ethics within Kadaster would mostly benefit citizens*". While "B" seems to explain why it is beneficial by describing that without ethics "*you would not protect all the other interests that people have without using ethics*". The logic for both "A" and "B" is that ethics is beneficial for other stakeholders besides Kadaster. The stakeholder "C" specified that ethics can be beneficial "*at the right time*". He explains that ethics is beneficial when "*the rules are not so clear. There are gray fields of issues where you can't tell what is right or wrong based on the rules*". This explanation seemed to fit his earlier definition of "*choosing between right and wrong*". The argumentation could be that choices between right and wrong only need to be made when rules are unclear, so only then ethics is beneficial. However, later he seems to come back to this answer by highlighting that "*there might also be situations where the rules are directive but also may not be the right thing to do*". He adds that in such cases it is "*very good to reflect on made choices or rules*". It is unclear if with reflecting he refers to is in this case part of ethics or part of another process. Furthermore, it would seem that ethics is beneficial in more cases than only when "*the rules are not so clear*". Ethics is beneficial for "A" and "B" regardless and beneficial for "C" when "*the rules are not so clear*" or when the rules are not the right thing to do.

Stakeholders A & B	**Stakeholder C**
Ethics is a requirement	Ethics is beneficial when the rules are not so clear or when the rules are not the right thing to do.

Table 9. Beneficial of Ethics

Ethics might be beneficial but not well implemented. At least according to the stakeholder "B" as he describes that the only implementation of ethics is the *"(re-)implementation of the ethical commission*" and "*some instrument and tools that can be used for ethics*" because of regulations and IT developments. "B" specifies that these "*instruments and tools*" have not the main goal to benefit ethics and are a side-effect of their function. The stakeholder "C" adds that ethics is also implemented by policies that "*to some extent try to explain for the operational people*" how to use ethics in practice. This is in contrast to the view of "A" who sees the implementation of ethics as "*the operationalization of the core values*". She adds that this "*operationalization is dependent on the employee*". This means that the implementation of ethics is also dependent on the employee. She highlights that "*organizational values are an important aspect for ethics to focus on*". Concerning the implementation of ethics within Kadaster a recently (re-)established ethical committee, instrument, and tools without the main goal of being used for ethics, and some policies. While "A" argues that the implementation might be dependent on the employee.

4.1.2 Goal of the instrument

Within the answers of the stakeholders concerning the goal of the instrument is quite some overlap but also some contradictions. The stakeholder "B" believes that "*the instrument could help with different insights from the organization and define the right context for the data*". Defining the right context could be done according to "B" by "*providing a structured way to look at ethical issues*". According to "B" the *"structured way*" is the way "*to create argumentation*" which can be used for policies and increase transparency within the organization.

The stakeholder "C" agrees with "B" only with different argumentation. "C" specifies that "*the main goal of using ethics within Kadaster is to make arguments to help the decision process in cases where the policy that's put-on paper does not give an exact answer*". This is quite contradictory to his earlier given definition of ethics. However, the stakeholder "C" goal of using ethics within Kadaster is based on his argumentation that ethics would be beneficial. Here he specifics why this would be beneficial because he says, "*the usage of the instrument in these cases would then be input for new policies*".

Although, the stakeholders "B" and "C" agree that a goal of the instrument would be the formulation of policies their line of thinking differs. "C" views ethics as the process of making argumentation while "B" views this as integral to the instrument. They both do agree that a structured way and transparency are important aspects. The stakeholder "C" answered that "*the main goal of the instrument would be to provide a structured way of dealing with varying interests, which can also be shown afterward*". The last part would indicate the importance of transparency.

The stakeholder "A" views the structured way as the main goal of the instrument. The "A" describes the goal of using the instrument within Kadaster as "*to make sure all questions or cases are assessed through the same steps*". She explains *"the tool would give guidelines and with it, the cases could be assessed uniformly*". Furthermore, she agrees with the goal of transparency. She explains how it could help with transparency by "*making clear what is the input, method, and output*". In her opinion, this then in turn would affect the "*future ethical culture of Kadaster*". All the stakeholders agree that a "*structured way*" and "*transparency*" are important goals for the instrument. This is visualized in figure 4.

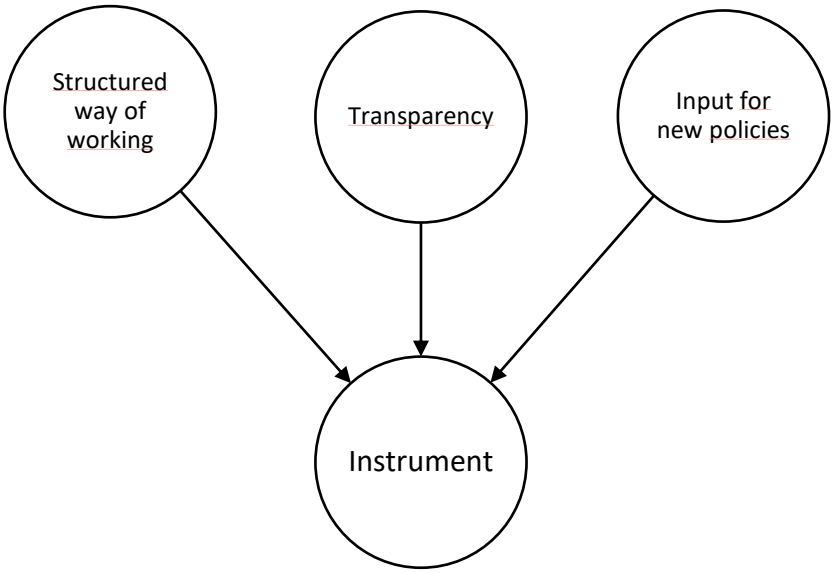

Figure 4. Goals of the instrument

With regard, if the instrument should include a forecasting element, the stakeholders were generally cautious. The only one not cautious was "B". He very pragmatically answered that a "*forecasting element is not useful to be incorporated into the instrument, because it is not useful concerning current questions*". The topic of usefulness is exactly why the other stakeholders were more cautious. As "A" stated, "*a forecasting element should only be included when the assumptions on which it is based are likely to come true*". Furthermore, the stakeholder "C" argued that including forecasting elements could lead to slowing down the decision-making process.

Furthermore, even within discussing the goal of the instrument the difference in scope between "B" and "A" became clear. "B" viewed that "*the instrument can be used for more than data sharing*". "B" later gave an example of how the instrument could be used by stating that it can "*help employees with decision-making in their ethical points*". In high contrast, "A" warns that "*the instrument should not be used to answer own cases or questions*". Later she explains that "*ethics is a very difficult field, and the ethical committee is there for the help*". The difference in scope within the goals might explain the different answer in the usage of the instrument.

4.1.3 Usage of the instrument

All stakeholders agree that dialogue is very important for the instrument. As the stakeholder "B" stated about dialogue "*it is very important for the instrument to create good argumentation*".

This level of agreement is not found when looking at the users for the ethical instrument. The stakeholder "B" views that "*the instrument should be very open, that everyone can use it*". The use of the instrument could be according to his view for "*products regarding data, the use of data*". However, "B" also views that the instrument could be used to find out "*how to behave towards colleagues*". This is in high contrast with the argumentation of "A". She argues that "*for improving the uniformity and validity of the instrument only the core group of the ethical committee should use the instrument*". The stakeholder "C" agrees with her and gives more perspective to the view of "B" by stating "*the ethical commission would be the main user in the start and later on the instrument could be used by other employees*". "A" argues that currently there is a risk of letting everyone use the instrument because "*people can come to different conclusions than ethical committee*". In the future, a possible adaption of the instrument could serve as a "*Quickscan*". This "*Quickscan*" seems to be what "B" envisioned of the instrument as he explains that the instrument "*could be used as entrance form to the ethical committee*".

The stakeholder "B" and stakeholder "C" seem to agree that in the long-term could be used outside the ethical committee. However, this agreement cannot be found in the use case of the instrument. "C" does not share the thought of "B" that the instrument could be used to find out "*how to behave towards colleagues*". "C" states that the instrument "*would be used for the cases where the existing data sharing policies do not give an exact answer*".

	Stakeholder A	Stakeholder B	Stakeholder C
Users of the instrument	Ethical Committee	Everyone	Ethical Committee
Usage of instrument	Structured way to look at ethical issues	Data sharing but also how to behave towards colleagues	Where existing data sharing policies do not give an exact answer

Table 10. Users and usage of the instrument.

Furthermore, the stakeholder "B" specifies that the instrument does not need a moderator, because "*a moderator would create an extra threshold for using the instrument*". This threshold might be important as the stakeholder "C" estimates that the instrument would have "*20 to 40 cases per year*". This estimation is based on his definition of what a case would be for the instrument.

Furthermore, in contrast to the stakeholder "A" who answered when asked about the implementation of ethics within Kadaster that organizational values are important for the stakeholder "C" believes that "*Societal viewpoints would be important*".
Stakeholder "C" believes that "*Societal viewpoint would be important*" in contracts to stakeholder "A" who finds organizational values important. Stakeholder "C" argues that societal viewpoints are more important than organizational values because "*the organizational values were in many cases derived from other viewpoints*". "A" and "C" both agree that the instrument should be hybrid. "A" stated that "*Quality goes for quantity*" and thus there is no solid time limit. Lastly, "C" proposes a stakeholder analysis to be added to the instrument. However, he explains that the analysis should not be too elaborate because "*in many cases, it is clear from the question*".

4.1.4 Business Process

All the stakeholders agree that Kadaster has an explicit architecture of processes and services, tools, and rules that govern the organization concerning data sharing. Furthermore, the internal data sharing policies Kadaster uses are the "*Afwegingskader*" and "*Verstrekkingsbeleid*".

4.2 Expert Interview

The results of the expert interviews will be presented along with the themes of the interview. First, the feedback on the requirements will be presented. Second, feedback on the basic question will be given. Lastly, the feedback on the ethical question will be presented.

4.2.1 Requirements feedback

In this section per requirement, the result of the expert interview will be presented. First, the result of "Focus on the Grey area" will be presented. Second, the results of the requirement "Structured way of working" will be presented. Third, the results of the requirement "Ethical Pluralism" will be presented. Fourth, the results of the requirement "Dialogue" will be presented. Finally, the results of the requirement "(Re-)formulation of Policies" will be presented.

4.2.1.1 Focus on the Grey Area

The focus of the instrument is hard to determine between the various expert interviews. One expert, "E", agrees with the requirement that the instrument should focus on cases from the "Grey" area. However, her argumentation as to why the instrument should focus on the "Grey" area is very pragmatical. She answers that *"in some areas, there could be room to evaluate the law whether we as a Kadaster want to do that. Unfortunately, there is no room for this so I think the tool should be focused on the Grey area*". In her opinion, the instrument should have a wider scope than cases only from the "Grey" area and should also be able to question if Kadaster wants to follow certain legislation. However, since Kadaster has no authority to do this the instrument should focus on cases from the "Grey" area.

Other experts seem to struggle with the same issues as "E" that is difficult to define a precise focus. The expert "D" argues that the instrument should first focus on "*issues that the law does not clarify*". However, "D" asks if the ethical instrument could also be applied if Kadaster her statutory duty is against the law. Furthermore, "D" points out that the law also has cases where something is allowed and *"of which you have to ask yourself is you still want to allow them*".

The expert "F" is very clear that "*Kadaster may also ethically question itself about its legal duties*". He argues that the "*consistency of laws sometimes cause loopholes*", which Kadaster must act on. "F" is very clear that the instrument should also be used to "*question shadowy cases*" in current practice. "F" argues that Kadaster needs to be "*ethical resilient*" and to achieve that Kadaster has to "*critically reevaluate the current working method*". "F" adds that this can be the case for "*new cases*" or "*old ways of working*".

Based on the answers of the different experts they see in an ideal scenario that the instrument could focus on more than the "Grey" area. However, as "E" pragmatically answered there is no room for this within Kadaster. "E" and "D" seem to agree as in the words of "E" that an application of sharing of data should "*first be checked if it is legally permissible and afterward on ethical cases*".

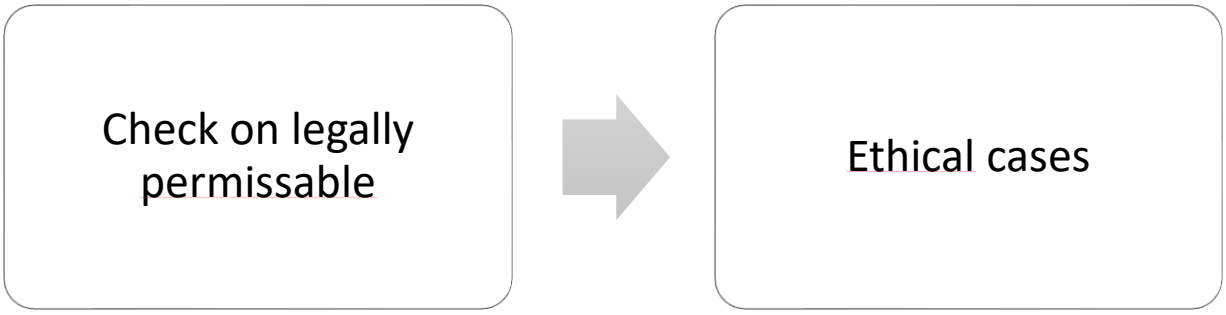

Figure 5. Input of the instrument

4.2.1.2 Structured way of working

For the expert "D" a structured way of working is a perquisite. "F" offers more feedback on the structured way of working. He states that the structured way of working must "*not be too rigid to stop recognizing the nuances of the case*". The expert "E" shares this feedback about the structured way of working and not being able to recognize nuances. Furthermore, "E" adds that she finds the validity of the instrument very important. She gives the example that "*when the instrument is being used by me or my colleague the outcome of the instrument should be the same*". "E" acknowledges that such validity needs time, and she advises letting the instrument first be used by the ethical committee. "E" argues that in that way the ethical committee "*can serve as an example with worked out cases*".

4.2.1.3 Ethical Pluralism

Among the experts, there are some doubts about the requirement of ethical pluralism. "F" finds it important all the people who help with the instrument have "*the same starting point and the same endpoint*". "F" voices his concern that ethical pluralism could lead to viewpoints that are not compatible and can hinder the use of the instrument. In a similar line of thinking "D" advises that the "*ethical viewpoints*" should all focus on the "*organizational values*". The reason for "D" his advice is that Kadaster wants to promote the values and this focus leads to "*compatible viewpoints*". "F" advises that values need to be put on "*scales*" to give more room for discussion.

Besides incompatible views "E" warns that the "*right people with the right expertise are present during the case*". She weighs in this context more value to "*different expertise and functions*" instead of the personal factors of the expert. "E" acknowledges that "*a possible disadvantage of different experts is that the process can take longer*". Furthermore, "E" answered that the "*result of the instrument needs to be made public to get additional viewpoints*". However, this should be excluded from the instrument process because otherwise "*it would take too long*". Finally, "F" states that an important requirement for ethical pluralism is that "*ethics within Kadaster will be defined*".

4.2.1.4 Dialogue

All the experts agree that dialogue is an important requirement for the instrument. "D" advises implementing multiple lines of dialogue. He categorizes "*internal*" as dialogue within the organization and "*external*" as a dialogue with other stakeholders.

4.2.1.5 (Re-)formulation of Policies

That the output of the instrument can serve as input for the (re-)formulation of policies is a good thing according to all experts. However, some experts express doubts about the feasibility. The expert "E" warns that the "*grey area of ambiguity cannot be fully captured in policies*". "D" adds to this warning that "*policy can be created by generalizing very specific cases*" which would harm the policy since it is not the proper foundation for the policy. According to "E", the effort of creating policies is not in vain. The policies might not be perfect "E" argues but "*policies give a sense of direction*". The "*sense of direction*" could provide useful information if the advice is augmented.

4.2.2 Basic Question feedback

The feedback on the first part of the question for the ethical instrument ranged from changing the wording to adding questions. "F" notified that the word "*project*" could have a different meaning within Kadaster, and "*case*" would be a better-suited word. Furthermore, "F" and "E" argued for adding a stakeholder analysis. "E" argued that "*stakeholders with their values are important to analyze and from there it must be clear which values weigh heavier and why*". Within the stakeholder analysis she emphasizes the importance of including the "*values and perspectives*" about whom it is about, so in many cases include the "*values and perspectives of the citizen*".

"E" advised adding a question for "*an impact analysis of what happens if part of the project does not go ahead*". She explains that in some cases a part of the project is blocked because of legislation and the impact of this is useful to know.

"D" argues that "*it should be standard to fill in a consideration framework before the ethical instrument will be used*". This is in line with the argumentation of "E" with the requirement of focus on the grey area that cases should "*first be checked if it is legally permissible and afterward on ethical cases*".

4.2.3 Ethical Questions feedback

The feedback on the ethical question is predominantly focused on values. Furthermore, the question is which values to use with the instrument. "F" argues that "*the ethical committee should look broader than the organizational values otherwise you lock yourself inside the organization*". "F" adds to this argument that there will be "*common values that need further elaboration*" and "*values can be deeper explored within a case*". "F" is convinced that there could be a list with common values and that a value should be used depending on the case. In contrast to the feedback of "F", the expert "D" states that the instrument should "*focus on organizational values*". However, the focus on "*organizational values*" has two important conditions according to "D". First, the "*organizational values need to be further operationalized*". Second, the "*organizational values must be compatible with values of the rule of law and universal values*".

Furthermore, "F" advises that "*other factors which might play a role in the argumentation of the ethical committee*" needs to be recorded. "F" explains that one such factor might be "*feasibility*" which can influence the argumentation.

5. Requirements

In this section, the requirements for the instrument will be analyzed. The results of the stakeholder's interview and the expert interviews will be analyzed with the literature from chapter 2. The first segment will focus on the results from the stakeholder interviews, while the second segment will focus on the results from the expert interviews.

5.1 Requirements analysis based on stakeholders interview

In this section, the requirements will be analyzed based on the stakeholder's interview and the literature. First, the general information of the stakeholders will be analyzed to better understand their arguments and viewpoints. Second, the requirements for the input will be analyzed. Third, the requirements for the transformation will be analyzed. Fourth, the requirements for the output will be analyzed.

5.1.1 General information

The stakeholder's definition of ethics greatly differs. While the stakeholder's "A" and "B" definitions of ethics overlap the definition of the stakeholder "C" was different. Swierstra and Rip (2007) warned that the terminology for ethics is difficult. The definitions of "A" and "B" focus on viewing and observing issues more along the lines of the working definition of ethics within this research. Within this research, ethics is defined as the practice of rationally assessing the question of certain qualities of actions, practices, and beliefs. The definition of "C" had more in common with the definition of Swierstra and Rip (2007). Swierstra and Rip (2007) found that people use the label ethics and ethical to refer to what is good to do and what should be done. The fundamental difference in their definition of ethics might explain other differences concerning the requirements.

By combining the several definitions of the goal of Kadaster given by the stakeholders the following goal of Kadaster can be defined as "*to add value to society on societal and economical level by being data-driven regards data of real property and spatial data*". This definition has a lot of commonalities with the definition of the data stewardship strategy of Van Donge et al. (2020). Van Donge et al (2020) found that the organization with a data stewardship strategy wants to add value to the data chain and give others the possibility to exploit data to its fullest potential. A characteristic of organizations with a data stewardship strategy is that they formulate explicit data-sharing policies (Van Donge et al. 2020). For data sharing, Kadaster uses the "*Verstrekkingsbeleid*". Furthermore, the ethical committee can be seen as an attempt to stimulate the use of data, within legal boundaries. Stimulating the use of data, within legal boundaries is another characteristic of the data stewardship strategy by Van Donge et al (2020).

There is a general consensus between the stakeholders that ethics is beneficial for Kadaster. The stakeholders "A" and "B" stated that ethics is a requirement for Kadaster to deliver value. Saltz and Dewar (2019) found that unethical use of data could impact the reputational and economic wellbeing of an organization. However, the argumentation of the stakeholders "A" and "B" did not involve arguments about reputational and economic wellbeing. The argumentation of "A" and "B" was in favor of the interests of the citizens.
The stakeholder "C" found that ethics can be beneficial at the "*right time*". He explains that when "*the rules are not so clear. There are gray fields of issues where you can't tell what is right or wrong based on the rules*". This argumentation is also used by Franzke et al (2021) to explain why an ethical instrument is needed. Many issues related to data projects cannot be handled sufficiently by strictly applying privacy law and data management regulations, because legal policy often lags behind

technological progress, leaving an expansive grey area where technology creates opportunities for new practices that have yet to be challenged by law and regulation (Franzke et al., 2021).

The conviction that ethics is beneficial for the organization is not reflected in the current implementation of ethics within the organization. This is against the recommendation of Fotaki et al (2020), who recommended that ethical framework or policies should be supported by appropriate tools and structures, such as whistle-blowing channels, ethics training programs, or rewarding ethical behavior through a system of incentives, to weave ethical understanding in every level of the organization. The lack of supporting tools and structures might be an indication of the level of ethical maturity of the organization.

5.1.2 Input of the instrument

Concerning the input of the instrument the stakeholder "B" and the stakeholder "C" described possible requirements. "B" saw that the instrument could be best used for "*products regarding data*", "*the use of data*", and "*how to behave towards colleagues*". "C" agreed that the instrument could be best used for "*products regarding data*" and "*the use of data*". He added that the instrument "*would be used for the cases where the existing data sharing policies do not give an exact answer*". This requirement is found in the literature in the research by Franzke et al (2021). In the development of the DEDA framework, they noticed that many issues related to data projects cannot be handled sufficiently by strictly applying privacy law and data management regulations, because legal policy often lags behind technological progress, leaving an expansive grey area where technology creates opportunities for new practices that have yet to be challenged by law and regulation (Franzke et al., 2021).

Comparing the result of the stakeholder interview with the findings of Franzke et al (2021) the following requirement is for the input of the instrument:

Focus on the "Grey" area

The "Grey" area in this case is a reference to Franzke et al (2021) to the area where technology creates opportunities for new practices that have yet to be challenged by law and regulation. To assess cases in this "Grey" area can be an application of the stimulation of the use of data, within legal boundaries. This is a characteristic of a data stewardship strategy by Van Donge et al. (2020).

5.1.3 Transformations

The stakeholders agree that dialogue is an important requirement for the instrument. As the stakeholder "B" stated about dialogue "*it is very important for the instrument to create good argumentation*". This importance is understood by Franzke et al (2021) who with their instrument aimed for a structured dialogue. Franzke et al (2021) found that dialogue helps to deepen the insight of the personal interpretations of values and the necessity to reflect on one's specific context. The overall agreement of the stakeholders and the benefits results in the following requirement for the transformation of the instrument:

Dialogue

The stakeholders also agreed that the instrument should be structured. As the stakeholder "A" described the instrument should ensure that "*all questions or cases are assessed through the same steps*". This is consistent with the findings of Saltz and Dewar (2019) and Nair (2020) who found that a consistent, holistic, and inclusive framework could address the diverse set of ethical implications of data. The combination of agreement on the requirement by the stakeholders and similar findings in the literature results in the following requirement for the transformation of the instrument:

Structured way of working

Spiekermann and Winkler (2020) stated that when dealing with the concept of ethics the context is that greatly influences right or wrong. The stakeholder "B" believed that "*the instrument could help with different insights from the organization and define the right context for the data*". With the help of Spiekermann and Winkler (2020), the statement of "B" can be interpreted as finding the right situation where data could be used. Leonelli (2016) and Saltz and Dewar (2019) warned to take into account the situational and specific nature of ethics in data. To analyze the situation Leonelli (2016) found that when dealing with ethics that individuals with different expertise, viewpoints, and interests will assess the ethical significance and implications of their work in different and potentially complementary ways. Likewise, the stakeholder "C" believed that the instrument should provide "*a structured way of dealing with varying interests*". A way to define the right context, analyze the situation, and deal with varying interests is with ethical pluralism. Franzke et al (2021) define ethical pluralism as on a general level difference between cultural beliefs, norms, and practices that can be harmonized by discerning how these differences reflect distinct interpretations, understandings, and applications of shared norms and beliefs. A sign of ethical pluralism is the different definitions of ethics among the stakeholders. The need for understanding the situation reflected in the stakeholders and literature results in the following requirement for the transformation of the instrument:

Ethical Pluralism

5.1.4 Output

The stakeholder "B" and the stakeholder "C" agree that the output of the instrument should be used for the "*input for new policies*". This view is in line with the characteristics of the data steward strategy as defined by Van Donge et al (2020). The formulation of explicit data sharing policies would stimulate the use of data, within legal boundaries (Van Donge et al. 2020). The fit between the argumentation of the stakeholders in comparison to the characteristics as defined by Van Donge et al (2020) results in the following requirement for the output of the instrument:

(Re-)formulation of policies

All the requirements are presented in Table 9.

Subject	**Requirement**
Input	Focus on the "Grey" area
Transformation	Dialogue
	Structured way of working
	Ethical Pluralism
Output	(Re-)formulation of policies

Table 11. Requirements of the instrument

5.2 Requirements analysis based on experts interviews

In this section, the requirements based on the stakeholder's interview will be compared to the feedback from the expert interviews and the literature. First, the requirement regarding the input of the instrument will be analyzed. Second, the requirements for the transformation of the instrument will be analyzed. Third, the requirement for the output of the instrument will be analyzed.

5.2.1 Input of the instrument

The requirement that cases should be from the "Grey" area is a difficult subject for the experts. The experts "F" and "D" see additional room for the ethical instrument to also address cases outside the "Grey" area. Specifically, they see the opportunity to reevaluate existing policies with the question that "D" phrased "*of which you have to ask yourself if you still want to allow them*". "F" argues that "*consistency of laws sometimes causes loopholes*" and that the instrument should be also useable for "*questioning shadowy cases*" in current practice. Floridi and Taddeo (2016) stated these questions belong to the ethics of practices of data ethics. Ethics of practices address the pressing questions concerning the responsibilities and liabilities of people and organizations in charge of data processes, strategies, and policies to define an ethical framework to shape professional codes (Floridi & Taddeo. 2016). However, Kadaster has a statutory duty to provide information on certain matters. This means that Kadaster is legally obliged to provide information regardless of the ethical framework or professional codes because Kadaster has limited influence on the data sharing policies as it is part of the executive branch of the government.

This explains "E" pragmatical argumentation. She argued that "*in some areas, there could be room to evaluate the law whether we as a Kadaster want to do that. Unfortunately, there is no room for this so I think the tool should be focused on the Grey area*". Like her fellow experts, she sees room to evaluate cases outside the "Grey" area. However, "E" refers to that there is no room because Kadaster has limited influence on the interplay of their statutory duty and their data sharing policies. The data-sharing policies within Kadaster are often closely related or linked to regulations.

The limited influence on the interplay of their statutory duty and their data-sharing policies seemed to be a recurring theme among the experts. The theme seems to center around the question "what is the place of ethics within the organization?". Can the ethical instrument also be applied to cases *"in which you have to ask yourself is you still want to allow them*" as "D" proposed. Or as "F" proposed that Kadaster needs to be "*ethical resilient*" and therefore needs the room to "*critically reevaluate the current working method*".

This theme is not the subject of this research and will not be further addressed. Since the goal of this research is to design an ethical instrument for Kadaster the current situation is used. This means as "E" and "D" agree that an application of sharing data should "*first be checked if it is legally permissible and afterward on ethical cases*".

5.2.2 Transformation of the instrument

Based on the stakeholder's interviews there were three requirements for the transformation of the instrument. Concerning the requirement of dialogue, all the experts agreed that is important. “D” offered advice to implement multiple lines of dialogue.

There was more concern concerning the requirement of a structured way of working. “F” and “E” shared the concern that a structured way of working might result in not recognizing important nuances. In the words of “F”, the structured way of working must “*not be too rigid to stop recognizing the nuances of the case*”. With similar argumentation, Leonelli (2016) and Saltz and Dewar (2019) warn to take into account the situational and specific nature of ethics in data. “E” adds that she finds the validity of the instrument to be very important. She explains by giving an example that “*when the instrument is being used by me or my colleague the outcome of the instrument should be the same*”. This is a different kind of structured way the stakeholder “A” envisioned. She envisioned that “*all questions or cases are assessed through the same steps*”. It seems that “A” emphasized the need for a consistent framework as in the definition of Saltz and Dewar (2019) and Nair (2020). In contrast, “F” and “E” seem to emphasize the need for a holistic and inclusive framework in the definition of Saltz and Dewar (2019). Concerning this feedback, the requirement of a structured way of working will be adjusted to:

Structured way of working that recognizes nuances.

The experts seemed to be concerned about the underlying values concerning ethical pluralism. The experts “F” and “D” are worried that ethical pluralism could lead to multiple ethical viewpoints that are incompatible with each other. To prevent this “F” advises having the people using the instrument have “*the same starting point and the same endpoint*”. “D” offers similar advice and advises to “*focus on organizational values*” to prevent viewpoints that are incompatible with each other. The focus on organizational values is also stated by Nair (2020). The organizational focus of the ethical framework should enable an ethical inquiry on the core organizational values and articulate alignment of organization practices with organization values (Nair. 2020). However, the stakeholder “C” and the expert “F” do not agree with this argumentation. “C” argues that “*societal viewpoints would be important*” instead of organizational values because *“the organizational values were in many cases derived from other viewpoints*”. “F” warns that “*the ethical committee should look broader than the organizational values otherwise you lock yourself inside the organization*”. “D” seemed to understand the concerns of the stakeholder “C” and the other expert “F” by saying that “*organizational values must be compatible with values of the rule of law and universal values*”. This indicates that “D” sees a hierarchy within the different values. On the first level “D” sees the organizational values provided that they are further operationalized. On the second level “D” views the values of the rule of law. However, this can be replaced by societal values as the stakeholder “C” argued. On the third level “D” views universal values. Universal values were also recognized by the stakeholder “C” in his definition of ethics. This hierarchy would ensure the benefits described by Nair (2020) are achieved while circumventing the downside described by the expert “F”. The challenge with this hierarchy is described by Elgendy and Elragal (2014). They found that there is currently no universal acceptable standard concerning ethical guidelines (Elgendy & Elragal. 2014). However, this challenge is acceptable and that is why the following requirement will be added to the transformation of the instrument:

The hierarchy of values will be used to guide the dialogue

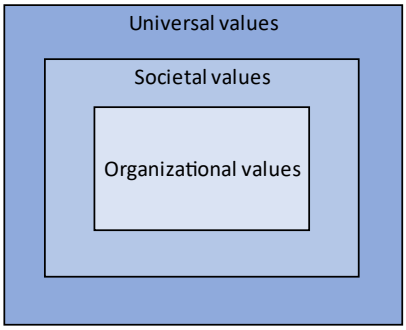

Figure 3. Hierarchy of values

The expert "E" valued the "*right people with the right expertise*" higher than the personal factors. The valuation is in line with the findings of Leonelli (2016) who found that individuals with different expertise, viewpoints, and interests will assess the ethical significance and implications of their work in different and potentially complementary ways. This is a shift in focus to the personal definition of the stakeholder "A". She stated that "*ethics is about how I see societal issues or values from my own experience, expertise, and life in general*". The shift from "E" to the" right *people with the right expertise*" and the possible benefits is the reason that the requirement of ethical pluralism will be changed to:

Right people with the right expertise

5.2.3 Output of the instrument

As seen in the results from the stakeholder interviews the importance of ethics is not reflected in the current implementation of ethics within Kadaster. Saltz and Dewar (2019) found that an ethical framework could help establish a clear understanding of the vocabulary needed for discussing issues related to data ethics. The expert "D" advocated multiple lines of dialogue, while "E" stated that the "*result of the instrument needs to be made public to get additional viewpoints*". These are forms of transparency that the stakeholders addressed in their stakeholder interviews. The stakeholder "A" already stated that the tool should "*make clear what is the input, method, and output*". In addition, Nair (2020) found that an ethical framework can increase transparency by involving stakeholders or establishing ethical governance. Transparency can be seen as a result as seen in the definition of Nair (2020). With the additional feedback from the experts interviews, transparency will be added as a requirement for the output of the instrument:

Transparent

The requirement that the output of the instrument could serve for the (re-)formulation of policies is a good thing according to all the experts. However, the feasibility of this effort is questioned. The expert "E" warns that the "*grey area of ambiguity cannot be fully captured in policies*". This argumentation can also be found in Saltz and Dewar (2019). Saltz and Dewar (2019) discuss that there seems to be a gap between the codes of conduct's general statements and many specific ethical concerns. Even though they discuss code of conduct the argumentation also applies to policies. Although, the stakeholder "C" and the stakeholder "B" argued that the output of the instrument should be used for the "*input for new policies*" they did not assess the feasibility of this requirement. Furthermore, the expert "F" was worried that the "*feasibility*" might influence the argumentation used. In other words, the requirement for (re-)formulation of policies might affect the outcome of the instrument in giving only feasible arguments. To prevent this the requirement (re-)formulation of policies will be altered. The expert "E" stated that "*policies give a sense of direction*". However, she said that a "*sense of direction*" could also be given if the advice was built on clear arguments. For that reason, the requirement will be altered to:

Arguments are clear and understandable

The requirements adapted after the insights from the experts interviews can be found in table 10.

Subject	**Requirement**
Input	Focus on the "Grey" area
Transformation	Dialogue
	Structured way of working that recognizes nuances
	The hierarchy of values will be used to guide the dialogue
	Right people with the right expertise
Output	Transparent
	Arguments are clear and understandable

Table 12. Final Requirements

6. Design of the Kadaster Ethical Data Instrument

Within this section, the design of Kadaster Ethical Data Instrument (KEDI) is presented. First, a general description of the KEDI will be presented. Second, the users of KEDI will be described. Third, the several stages and questions will be substantiated and presented. Fourth, the output of the KEDI will be discussed.

6.1 General description

The KEDI is designed to support the ethical committee in assessing ethical data sharing cases. The KEDI does not aim to provide the assessment of the case instead focusses on providing a structured way of creating argumentation for the case. The KEDI provides a structured way by incorporating several stages in the instrument.

Within the "Information gathering" stage the goal is to uncover the necessary information of the case to provide ethical argumentation. The information is uncovered by the submitter by answering questions. During the "Stakeholder analysis" stage the ethical committee tries to uncover all potential important stakeholders and their values. The "Value plotting" stage focuses on better understanding the several values and the relation to the case. In the last stage "Dialogue" the weight and importance of the values will be discovered by using dialogue. This will result in clear arguments that can be shared with people in the organization or outside the organization.

The argumentation used in the "Dialogue" stage can support the ethical committee in assessing ethical data sharing cases. By following these stages, the instrument aims to provide a clear overview of all the complexities within a case. The stages ensures that every case get the same treatment. By publishing the instrument and its application on cases increases transparency. The transparency over the instrument and its application can influence the mentioned "*ethical culture*" within Kadaster as stakeholder "A" mentioned.

6.2 Users

Within the KEDI two different types of users are distinguished. The first type of user is the submitter. This type of user only uses the instrument during the "information gathering" stage of the KEDI. The submitter is the person submitting the case. The submitter is in the lead during the stage of "Information gathering" where with questions the necessary information for the case will be uncovered. In case the ethical committee provides unsolicited advice, the ethical committee could perform this role.

The ethical committee is the second type of user and is in the lead of the other stages of the KEDI. Based on the answers from the stakeholder "A", stakeholder "C" and the expert "E" proposed the main users to be the ethical committee. As "A" stated that "*for improving the uniformity and validity of the instrument only the core group of the ethical committee should use the instrument*". "A" might refer to the findings of Saltz and Dewar (2019). They explain that an ethical framework could help establish a clear understanding of the vocabulary needed for discussing issues related to data ethics (Saltz and Dewar. 2019). When the "*uniformity and validity*" of the instrument is improved then in the words of the stakeholder "C" the instrument "*could be used by other employees*". According to Nair (2020) involving stakeholders in the instrument can increase transparency.

6.3 Stages

The KEDI has four stages each with different goals. The stages and corresponding questions will be described and substantiated in the following sections. First, the information gathering stage will be described. Second, the stakeholder analysis stage will be presented. Third, the value plotting stage will be presented. Fourth, the dialogue stage will be described.

6.3.1 Information gathering

O'Leary (2016) stated that a framework should include an analysis of the nature and social impact of the data. The analysis stated by O'Leary (2016) is built on information of the case. The goal of this stage is to uncover the necessary information for the further ethical analysis of the case. The information is uncovered with the use of questions that are answered by the submitter.

Since cases have multiple ways of reaching the ethical committee this stage ensures that all cases are "*all questions or cases are assessed through the same steps*" as in the words of the stakeholder "A". These questions are asked to satisfy the requirement of a "Structured way of working that recognizes nuances". Table 13 shows the questions for this stage with argumentation.

Question Number	Question and motivation
1	What is the name of the case? This question hopes to result in a fitting name that can give the ethical committee insight into the case. This question is adapted from the start section of DEDA by Franzke et al (2021).
2	Who are the participants of the case? This question intends to uncover the parties involved in the case. A possible answer could specify the internal departments, the customers, and possibly other stakeholders. This question is adapted from the start section of DEDA by Franzke et al (2021).
3	What are the benefits of the case? This question intends to uncover the benefits of the case to analyze the benefits and downsides of a case. This question is adapted from the start section of DEDA by Franzke et al (2021).
4	Where will the data be used for? This question intends to uncover the motives of the customers concerning the use of data. The expert "E" advised using this question instead of "What is the goal of the case?". In her experience the question "What is the goal of the case?" can be answered without giving the necessary insight. While the question "Where will the data be used for?" gives practical insight. From this practical insight, the possible values of the customer can be deduced.
5	What legal aspects are influencing this case? To ensure that all cases are "*first checked if it is legally permissible and afterward on ethical cases"* as suggested by the experts *"E"* and *"D"* all the legal aspects that influence the case must be known. This question aims to satisfy the requirement "Focus on the 'Grey' area".
6	What internal policies does this case has to adhere to? Besides legal aspects internal policies can also provide insight into the case. To further satisfy the requirement "Focus on the 'Grey' area".
7	What are different components of the case? This question is based on the feedback from expert "E". She argued that an impact analysis could help the analysis. However, based on feedback received from external

	ethicist (P. Visser-Knijff, personal communication, July 18 2022) an impact analysis is hard to conduct in this stage. Insight into the case can provide the necessary element for an impact analysis in the "Dialogue" stage.
8	What are possible problems or concerns that could arise in connection with this case?
	This question intends to uncover several areas of expertise needed to critically assess this case. This question is adapted from the start section of DEDA by Franzke et al (2021).

Table 13. Questions for stage information gathering.

6.3.2 Stakeholder Analysis

Based on the input from the stakeholder "C" and the experts "F" and "E" a stakeholder analysis stage is added. The stakeholder analysis will not be too elaborate because of the explanation of the stakeholder "C" that "*in many cases, it is clear from the question*" where it refers to the stakeholders. This stage has a goal to map the important stakeholders and their values. This mapping is done by the ethical committee and offers the opportunity for dialogue. The questions in the stakeholder analysis are presented in Table 14.

Question number	Question and motivation
8	Who are besides the participants possible stakeholder in this case?
	This question intends to explore all possible stakeholders in the case.
9	What are the important values for the stakeholders?
	Besides knowing the stakeholders, the expert "E" argued that knowing their values is also important. The stakeholders and their values can be used for the eventual analysis.
10	What other factors are important for the stakeholders?
	The expert "F" argued that "*other factors which might play a role in the argumentation*". These factors are important to note in light of the requirement of transparency. Expert "F" meant with other factors for example the feasibility of the advice or the image of Kadaster.

Table 14. Questions for stakeholders analysis

6.3.3 Value plotting

Nair (2020) advises that ethical frameworks should enable an ethical inquiry on the core organizational values that can articulate the alignment of organizational practices with organization values. However, the stakeholder "C" and the expert "F" disagree with Nair (2020) and argue that the instrument should not focus on organizational values. Within the expert, "D" argumentation was a hierarchy of values that is adapted to the hierarchy of values (See section 5.2.2).

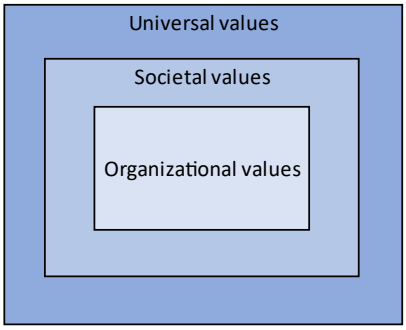

Figure 5. Hierarchy of values

The goal of this stage is to map most of the discovered values from the stakeholder analysis to figure 5. Not all values from different stakeholders can be mapped to figure 5. The process of mapping will further define values and understanding of the case. The questions of the value plotting will be presented in table 15.

Question number	Question and motivation
11	How important would the value be for the stakeholder (1 - 10)?
	Based on the advice from the expert "F" the ethical committee would scale the different values. This would benefit the dialogue further on because this forces the ethical commission to be specific.
12	Can the values be plotted on the Hierarchy of Values?
	To get a good overview of the values they need to be plotted on the hierarchy of values. Plotting the values leads to better overview of which values affect the case on what level.

Table 15. Questions in Value Plotting stage.

6.3.4 Dialogue

With all the gathered information of the previous stages the dialogue stage can start. The aim of the dialogue stage is to better understand different values and stakeholders to come to argumentation. To accomplish this the questions of Dialogue will be presented in table 16.

Question number	Question and motivation
13	What values should have the focus in this case?
	Based on the value plotting of the previous stage it first should be discussed which values need to be focused on for this case. This approach has overlap with a similar instrument developed by the external ethicist (P. Visser-Knijff, personal communication, July 18 2022)
14	What is the weight of each value?
	This question is inspired by the expert "E" who stated that "*it must be clear which values weigh heavier and why*". This question would prompt a dialogue about the difference in values.
15	What is the argumentation for the weight of these values?
	This question would focus on the second part of the statement by expert "E". It would provide argumentation on to what creates difference in values.

Table 16. Question in Dialogue stage

6.4 Output

Based on the different stages the instrument would provide argumentation, which can be used by the ethical committee to form advice. Furthermore, the result of the instrument could affect the "*future ethical culture of Kadaster*" as the stakeholder "A" stated. Several scholars agree with her. Leonelli (2016) found that an ethical framework could help combat the idea that ethics is extraneous to technical concerns that are imposed and governed by outside forces. Furthermore, Nair (2020) found that ethical frameworks can also help establish ethical decision points that ensure synchronization between the organizational values and practices.

An important factor to affect the "*future ethical culture of Kadaster*" is to satisfy the requirements of transparency and clear and understandable arguments. The stakeholder "A" proposed to "*make clear what is the input, method and output*" of the instrument. This can be done by sharing the instrument and the outcome of cases on the internal organizational webpage. This level of transparency would lead to "E" stating that the ethical committee "*can serve as an example with worked out cases*". This would imply that employees could form their answers for their cases based on the instrument and work out cases. Employees working out their cases is something "A" is against as she warns that "*the instrument should not be used to answer own cases or questions*". She explained that "*ethics is a very difficult field, and the ethical committee is there for help*". To gain the advantages and prevent the disadvantages the right level of transparency must be found.

Transparency over the output could lead to additional viewpoints as "E" argued. Furthermore, transparency can help to ensure that arguments are clear and understandable. This can be done by the proposed "*internal dialogue*" as "D" proposed. By having dialogue within the organization of different stakeholders it would become clear what makes arguments clear and understandable. As Saltz and Dewar (2019) found that an ethical framework could help establish a clear understanding of the vocabulary needed for discussing issues related to data ethics.

7. Discussion and Conclusion

Within this chapter, the discussion and conclusion of this research are presented. First, the conclusion will be presented. Second, the contribution to theory is described. Third, the contribution to practice is described. Fourth, the known limitation of the research is presented. Lastly, directions for future research are given.

7.1 Conclusion

This research main objective was to design an instrument that creates ethical argumentation for external data sharing within Kadaster. To satisfy this objective the KEDI was designed by using the design science methodology. The design methodology used the cycles of Hevner (2007) with two iterations to design the KEDI. In each iteration three semi-structured interviews were conducted. On the basis of these interviews and literature the KEDI was designed. Within the design process and design of the KEDI three key components can be distinguished.

The key components for the KEDI are dialogue, values, and consensus on ethical definition and scope of ethics. Dialogue is key to the transformation of the input of cases to the output of argumentation. Values are the foundation for the arguments and the reason why a certain argument is made. The consensus on ethical definition and scope of ethics influences the context of the instrument.

As explained by Franzke et al (2021) dialogue deepens the insight of the personal interpretations of values and the necessity to reflect on one's specific context. This explanation was not used by respondents. Instead, the respondents emphasize that dialogue offers participants the space to share information and the opportunity to refine argumentation together. The specified benefits by Franzke et al (2021) and the respondents explain why dialogue is a key component of the KEDI.

Nair (2020) argues that core organizational values should be the base for the ethical inquiry. The focus on core organizational values can align organization practices with organization values (Nair, 2020). In contrast to the findings of Nair (2020) respondents are divided upon using organizational values for the base of ethical inquiry. Some respondents use similar argumentations as Nair (2020) to propose a focus on organizational values. Other respondents disagree and argue that ethics should have broader focus than organizational values. These respondents argue for a focus on societal values or even universal values, like Brey (2011) used. As thus it can be concluded that values are important for the ethical argumentation instrument. However, which values precisely should be used remains inconclusive.

Seemingly unmentioned in the literature is the concept of consensus on the definition and implementation of ethics. Within the process of designing the KEDI the lack of consensus was noticeable. The first iteration of semi-structured interviews the lack of consensus became in the different meanings of ethics. Furthermore, the lack of consensus was also noticeable in the first iteration due to difference in goals of instrument as defined by the respondents. Within the second iteration the lack of consensus was more on organizational level. Respondents in the second iteration thought aloud about the place of ethics in the organization. This lack of consensus affected the design process of the instrument. Furthermore, the consensus on the definition and implementation of ethics acts as the context of the KEDI.

7.2 Contribution to Theory

This research contributes to theory by designing a practical application of data ethics. This application of data ethics fits within the ethics of practices as defined by Floridi and Taddeo (2016). Franzke et al (2021) argued that the field of data ethics needs a practical application. With their creation of DEDA Franzke et al (2021) partially filled that need. However, the research of Franzke et al (2021) had a focus on municipalities. Furthermore, this research hopes to contribute to theory by providing an application of how ethical analyses are performed in data analytics, in response to the statement of Martin (2015) who stated that ethical analyses are missing from data analytics.

Lastly, this research contributes to the existing theory regarding data strategies in government agencies as found in Van Donge et al (2020). With the help of stakeholders interviews the characteristics of a data steward, as defined by Van Donge et al (2020), can be applied to Kadaster.

7.3 Contribution to Practice

The contribution to practice has been made by creating the KEDI which can be used by the ethical committee to assess cases with regard to external data sharing. Although the design process and the KEDI should be subjected to further research, as discussed in chapter 7.4, the KEDI offers a structured approach for the ethical committee to assess cases. According to Leonelli (2016) the ethical framework, like the KEDI, could help combat the idea that ethics is extraneous to technical concerns that are imposed and governed by outside forces.

Furthermore, this research has contributed to practice by creating awareness for ethics within the organization. This contribution is difficult to separate from the awareness created by the re-establishment of the ethical committee. However, during this research regular demonstrations of the learned materials was conducted. This led to increased awareness of ethics within the organization.

7.4 Limitations of the Research

This research was subject to multiple limitations. The first limitation was concerning the unclarity of the end-user. At the start of the research, real demand for the instrument was hard to distinguish. This influenced the relevance of the theoretical framework to the practical application of this research.

The second limitation of this research relates to the few respondents in the different research cycles. The semi-structured interviews have the advantage that a lot of detailed information can be gathered. However, a disadvantage is that some opinions of respondents can influence the research. In the worst case, this could lead to a very biased instrument that is not suited for the end-users.

The third limitation of this research relates to the missing opportunity of testing the instrument. Within the time frame of this research, there was no time to have the members of the ethical committee use the instrument for a test. This could give valuable information as that the mandate of the ethical committee is greater than the scope of the instrument.

The last limitation of this research is the lack of consensus over the definition of ethics and the scope of ethics within the organization. This limitation distorted the results of the semi-structured interviews. The difference in the definition of ethics and discussion of the scope of the instrument influenced the validity.

7.5 Future research

Future research might focus on expanding or validating the instrument. The re-establishment of the ethical committee brings many opportunities to research further practical applications as referred to by Franzke et al (2021). Validating could be done by replication of the research in another organizational context. Second, future research could focus on the practical implication on the data strategies of Van Donge et al (2020). Lastly, this research uncovered a lack of consensus on definition and implementation of ethics within Kadaster. This needs to be addressed in separate research.

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Appendix

Appendix A: Stakeholders interview summaries

Registrar

General

- Ethics is the way one can look at a certain topic or issue from various insights. Ethics also means to force yourself to see something from a perspective you disagree with. Ethics is not necessarily about making conclusions.
- Goal of Kadaster is to use data to foster and support the Dutch society on societal and economical level.
- Ethics is beneficial to Kadaster because you would not protect all the other interest that people have without using ethics.
- Ethics is currently not well implemented in the organization. There is a new working group (ethical commission) and due to IT developments and regulations some instruments and tools can be used for ethics. However, this is not their main function.

Goal

- Data sharing is subject to the GDPR and provides check on proportionality and subsidiarity. The instrument could help with different insights from the organization and define the right context for the data. Furthermore, the instrument can be used for more than data sharing.
- Forecasting element is not useful to be incorporated into the instrument, because it is not useful with regard to current question or a current problem.
- The instrument could help with the goal of using ethics within Kadaster by providing structured way to look at ethical issues. This can be used for input for policies and help employees with decision-making in their own ethical points.
- The instrument should have as aim to have structured way to create argumentation which increases transparency within the organization.

Usage

- The instrument should be very open, that everyone can use it. The instrument could be used as entrance form to the ethical committee.
- The instrument does not need a moderator, but needs somebody who maintains that instrument. A moderator would create a extra threshold for using the instrument.
- The instrument could be used for products regarding data, the use of data, but it can also be how to behave towards colleagues.
- Dialogue is very important for the instrument to create good argumentation.

Business Process

- Kadaster does have an explicit architecture of processes and services, tools and rules that govern the organization with regard to data sharing. Data sharing is stipulated in Dutch legislation. Furthermore, there is also some enterprise architects, and data schemes.
- Kadaster does have explicit data sharing policies.

Strategic and Policy

General

- Ethics in general is about doing the right things, so choosing between right and wrong. Ethics can vary across cultures, but today there are some general human rights. Every organization has to define its own ethics in the way it operates based on the context where it's operating in. Ethics is something you define especially in your acting and in your cooperation with other people. Ethics is something that everyone deals with without really being aware of, but there are some moments where it's very important to be aware of your ethics.
- Kadaster goal is to serve the Dutch society in optimal way with data regarding real property and spatial data.
- Using ethics within Kadaster is beneficial at the right time. This is especially the case when the rules are not so clear. There are gray fields of issues where you can't tell what is right or wrong based on the rules. There might also be situations where the rules are directive but also may not be the right thing to do. So it is very good to reflect on made choices or rules.
- Ethics is currently implemented in the organization with an ethical commission. Furthermore, there are policies that to some extent try to explain for the operational people how to deal with such cases in practice. Some policies are regarding data sharing while others are regarding policy. Furthermore, we also have policies with regard to integrity.

Goal

- The main goal of using ethics within Kadaster is to make arguments to help the decision process in cases where the policy that's put-on paper does not give exact answer. The usage of the instrument in these cases would then be input for new policies. Ethics would then act as a engine to keep refreshing policies.
- Forecasting elements should be incorporated into the instrument, because you have to take into account how things could develop further. However, you need to be realistic because it could lead to freeze (not making decisions).
- The instrument could help facilitate the process of decision making. Furthermore, the instrument could help distinguish the most important aspects for decision making.
- The main goal of the instrument would be to provide a structured way of dealing with varying interest, which can also be shown afterwards.

Usage

- The ethical commission would be the main user in the start. Later on the instrument could be used by other employees.
- The instrument would be used for the cases where the existing data sharing policies does not give an exact answer.
- The estimation of cases is 1 case per week or two weeks, which will result in 20 to 40 cases per year.
- Dialogue is important for creating argumentation and thus needed for the instrument.
- The societal viewpoint would be important one to include in the organization, while organizational viewpoint should be at the bottom end of the list. That is because the organizational values were in many cases derived from other viewpoints.
- A stakeholder analysis could be added into the instrument. However, this doesn't need to be very elaborate because in many cases the question is clear.
- The instrument should be hybrid because of the current way of work.

Business Process

- Kadaster does have explicit architecture for data sharing. Kadaster is that architecture, because that is the core process.
- The explicit data sharing policy is the “Verstrekkingsbeleid”
- The responsibility of data is on operational level with the ODR and on policy level with the directorate of data governance and innovation.

Privacy Officer

General

- Ethics is about how I see societal issues or values form my own experience, expertise, and life in general.
- The goal of Kadaster is to add value to society by being data driven.
- For adding value to society using ethics is a requirement.
- The current use of ethics within Kadaster is very dependent on the individual.
- Ethics is currently implemented in the organization by the operationalization of the core values. This operationalization is dependent on the employee. Organizational values are in that aspect important for ethics to focus on.
- Ethics within Kadaster would mostly benefits citizens.

Goal

- The goal of using the instrument within Kadaster would be to make sure all questions or cases are assessed through the same steps. A structured way of addressing often unstructured problems. The tool would give a guideline and be able to handle a case uniformly.
- The instrument should help to provide a informed reasoned opinion. Furthermore, it could help with transparency by making clear what is the input, method and output. This will affect the future ethical culture of Kadaster.
- The instrument should not be used to answer own case or question. Ethics is very difficult field and ethical committee is there for the help.
- A forecast element should only be included when the assumption on which it is based is likely to come true.

Usage

- A Quickscan might be a good idea for the future. Now it comes with the risk that people can come to different conclusion than ethical committee.
- Employees currently send their case through e-mail to e-mail address of ethical committee. The PO and manager check and scan this inbox and decide which case will be discussed in the committee or which can be handled through e-mail.
- For improving the uniformity and validity of the instrument only the core group of the ethical committee should use the instrument.
- Quality goes for quantity so that every case needs to get the right amount of time, so no solid time limit.
- The instrument would be best hybrid due to different collaboration issues. There is limited possibility that the team will be always together in the same place.

Business Process

- Kadaster does have an explicit architecture of processes and services through the KEA (Kadaster Enterprise Architecture). However, it consists mostly of silo's.
- The data sharing policies are the "Afwegingskaders" and "Verstrekkingsbeleid"

Appendix B: Expert interview summaries

D

Focus on the "Grey" area

- Initially focus on the issues where the law does not provide clarity. However there are also scenarios where laws contradict each other, for example in the Legal task of Land Registry and AVG in that case you should also evaluate the laws.
- In some cases the law also allows things that would not be allowed with current technologies.
- Structured Way of Working
- A structured way of working is needed for the tool

Ethical Pluralism

- There is room for many ethical views within the tool, but they must be focused on the organization's values, because Kadaster wants to project those values to the outside world.
- Focus on organizational values ensures that there are also compatible views on a subject.

Dialogue

- There must always be dialogue. There has to be internal dialogue within the organization, but also external dialogue. This keeps you sharp in terms of whether things have been missed.
- (Re-)formulation of policies
- The danger with the focus for policy formulation is that specific cases are generalized. This can cause it to be too well-defined that it becomes just a checklist to be ticked off. This should be avoided because you are precisely in the discussion areas.

Questions Instrument

- It should be standard that the consideration framework be completed before ethical instrument is used.
- There should also be an ethical assessment framework for project leaders who start a new project. For this it is important that the ethical assessment framework focuses on Kadaster's core values. However, these core values need to be operationalized a bit further.
- Instrument should be more widely applicable and for that the "ethical questions" are not useful now.
- The tool should be focused on the organizational values. However these must be compatible with universal values or with the values of the rule of law.

E

Focus on the "Grey" area

- The instrument should focus on the "grey" area. However in some areas there may/could be room to evaluate the law whether we as a Cadastre want to do that. Unfortunately there is not room for this, so I think the tool should be focused on the "grey" area.
- The application should be checked first if it is legally permissible and then what the ethical advice is. This may mean that a small part is not allowed and then the whole project may become different.

Structured Way of Working

- It is important that if I fill out the tool or my colleague that it gives the same result.
- If the method is well explained and structured, the tool can later be used more widely. Here the Ethics Committee can serve as an example with statements and the tool can then also refer you to the Ethics Committee.
- The nuances are very important for cases and this should be able to be captured well in the tool.

Ethical Pluralism

- Ethical Pluralism is very important and I look at it more from different functions/expertises involved. They see other parts of the case that can be very important. Life view is less applicable here because it's often about business stuff anyway.
- A possible disadvantage of involving different experts is that it can take longer, but that does not outweigh the advantages.
- Making the results of the tool public (internally/externally) is not a problem and useful to get additional views. However, this should not be part of the advisory process.
- A point of attention here is to make sure that the right people (with the right expertise) are involved in the case.

Dialogue

- This is a requirement for making arguments.
- (Re-)formulation of Policies
- The gray area of ambiguity cannot be completely captured in policy documents. However, policy documents do provide direction and so an attempt must be made to capture advice in policy.
- The outcome must also be a useful piece of advice, because it is unlikely that you can put in grey and get out black and white.
- It is important to give substantiated advice, so that it is clear why something is being done.

Questions Instrument

Basic questions

- Question 5 is perhaps also a part of 4.
- A good addition to question 3 is to ask what is done with the results. This can give more insight into the final results.

Ethical questions

- What I miss here is an impact analysis of what happens if part of the project does not go through (by legislation) what impact that has on the entire project.
- I think it is very important that in decision making it is also taken into account what it means about whom it is about, so the perspective and values of the citizen are included.
- Stakeholders with their values are important to analyze. And that from here it is looked at which values weigh more heavily and why.

F

Focus on the "Grey" area

- The context of a case can change, so that you may now be on the right side of the line (ethical right), but at some point you have to conclude that if you continue like this you will end up on the wrong side of the line (ethical wrong). Because of this it is good to keep questioning whether something should still be done on the same path. This can be new cases but also Cadastre working methods that have existed for a long time. Our way of working must be "ethically resilient".
- Kadaster needs to look closely at what the task is as an implementing organization and evaluate from there. This ensures that Kadaster is more than a tool and builds itself.
- Kadaster may also question itself ethically about its legal tasks. This is because the coherence of laws sometimes causes loopholes (think that it was allowed to disclose personal data for Privacy Laws).
- Instrument should be able to be used to question shadowy cases in current practice.

Structured Way of Working

- The structured way of working should not be too rigid to stop recognizing the nuances of the caseload. The starting point is good but it must be possible to deviate from it with good reason.

Ethical Pluralism

- A good condition for ethical pluralism is that ethics is defined within Cadastre.
- In order to streamline, all people thinking along must operate from the same starting point or the same end point.
- The values for starting point and ending point should preferably also be placed in scales (instead of agree/disagree).

Dialogue

- Dialogue is the only good way to formulate good arguments. Democracy is not really an alternative in this respect.

(Re-)formulation of Policies

- It's good if a decision leaves room for Kadaster to act on it.

Questions Instrument

Basic Questions

- Project has a different connotation with me in these questions, so the word Case would be more appropriate in my opinion.
- The question with participants should be widened to what do all stakeholders want, to get a better picture of the case.

Ethical questions

- It is important to capture not only ethical value but also other factors that may play a role in ethics committee arguments. The ethics committee can give advice on ethics, but can be influenced in a case by the feasibility of advice, for example.
- Deeper examination of values by focusing more on the casuistry.
- I am sure there will be common values that need to be further elaborated.
- The ethics committee should look broader than the organization values otherwise lock yourself within the organization.

Appendix C: Stakeholder Analysis

The downside of not having the correct idea during the stakeholders interview can be mitigated by interviewing the correct stakeholders. Interviewing the correct stakeholders can be assured by using the stakeholder typology of Mitchell et al. (1997). A stakeholder is defined as a group or individual who can affect or is affected by the achievement of the organizations objectives (Mitchell et al., 1997). To differentiate between different stakeholders Mitchell et al. (1997) used three attributes which are presented in table 1.

Attribute	Definition
Power	A relationship among social actors which one social actor can get another social actor to do something that he/she would not have otherwise done.
Legitimacy	A generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, definitions
Urgency	The degree to which stakeholders claims call for immediate attention.

Table 1. *The attributes of Mitchell et al. (1997)*

The strength and combination of the attributes of Mitchell et al. (1997) influence the priority given to the stakeholders. In the context of the design of the instrument the stakeholders will analyzed on these attributes.

The role of privacy officer is focused on the development and maintaining of the privacy policy. Furthermore, within Kadaster the privacy officer took the initiative of forming the ethics committee. This initiative in combination with responsibilities of privacy officer influence the attributes defined by Mitchell et al. (1997). First, the privacy officer has a high power within Kadaster. This is evident due to that advises given by the privacy officer are often taken over. Second, the privacy officer has high legitimacy as well due to the responsibilities of the function compared to the goal of the instrument. Lastly, as the privacy officer was the one taking the initiative for the ethics committee the urgency is high as well.

Registrars are responsible for registering and updating the public and basic registration. Furthermore, registrars are in close cooperation with other governmental agencies with regards to data sharing. The responsibilities of registrars influence the attributes defined by Mitchell et al. (1997). First, since their influence in sharing data is high they have high power within Kadaster. Second, since registrars are responsible by law for the registration their legitimacy is high. Lastly, the registrars are helping the privacy officer with the ethics committee so the urgency would be moderate.

The department strategy and policy is responsible for writing and maintaining policy within Kadaster. This would also include the policy for ethics with regard to data sharing. This influence the attributes defined by Mitchell et al. (1997). First, the department strategy and policy have high power within Kadaster. Second, since they are in close collaboration for the right policy the legitimacy is high. Lastly, the urgency of the department would be moderate. They are open to help with the ethics policy.

Appendix D: Summary of Internal Documents

Based on the outcome of the experts' interviews several internal documents could help the design of the ethical argumentation instrument. The summaries of several internal documents are presented in this chapter. First, a summary of the disclosure policy is given. Second, a summary of the consideration framework is presented. Lastly, a summary of the Start Notion for the Ethical Committee is given.

Disclosure policy

The disclosure policy contains the rules used by Kadaster to determine to whom, for what purposes, and under what conditions data from registries and facilities may be accessed and provided, and how requests for information will be handled.

Under the Kadaster act, anyone can consult the public registers and registrations for consultation at the individual object level. In the case of applications for mass forms of distribution and for customized and combination products, an assessment is made in advance as to whether the distribution is permitted under the Kadaster act, the privacy legislation, and the rules concerning market and government. Additional conditions also apply to use by resellers.

The process of providing for the distribution of mass forms or for customized and combination products has the following phases:

- Intake customer wishes
- Drawing up quotation
- Checking the planned delivery against the policy
- Offering
- Producing and delivering
- Invoicing and quality control
- Enforcement

Within the phase of “Intake customer wishes” there may be a suspicion that the delivery is in not allowed with the Disclosure Policy. In that case, a preliminary investigation can be done with the case, which offers no formal ground for delivery because that check is later in the process.

Checking the planned delivery against the policy is the main responsibility of the DIV Desk (DIV Loket). This concerns both the policy on the provision of information and, for example, the Land Registry Tariffs and the policy on market activities. For this purpose, the DIV Desk coordinates with all relevant departments within the organization. The employees of the DIV Desk give an opinion to the supply department regarding the planned delivery. This can vary from an agreement, an agreement with conditions of some changes to negative advice. The advice is always unequivocal. If necessary, the DIV Loket may consider that one or more aspects require further consideration by a specialist department. These departments advise the DIV Loket based on their own responsibilities. DIV will incorporate this into an unambiguous recommendation. If no unequivocal recommendation can be given based on the opinions collected, the issue may be referred to an ethics committee.

Consideration Framework

Triggers for new initiatives can either be within the Kadaster or come from outside. In both cases, when developing new initiatives, consideration must be given to whether the Kadaster is willing, allowed and able to take it up. This assessment framework is intended to help Kadaster staff ask the right questions when doing so.

Will

1. Social demand/added value: Does the initiative provide social value and/or added value for customers?
2. Fit with Kadaster: Does the initiative fit with Kadaster ambitions, policies and current operations?
3. Urgency: Is there urgency on this initiative and with whom?

May

4. Legal framework: Does the initiative fit within the legal frameworks of the Land Registry or are the rules around market and government applicable?
5. Environment view: How do stakeholders view this initiative and is there a clear mission and client?
6. Other compliance: Does the initiative fit in with policies on privacy, disclosure and procurement?

Can

7. Financial feasibility: Is there funding for the initiative?
8. Organizational feasibility: Is the initiative feasible in terms of processes and personnel?
9. Technical feasibility: Is the initiative technically feasible?

Start notion Ethical Committee

The ethics committee is reflective, questioning, and investigative. Filing dilemmas rather than testing them. The committee works across the organization and can give solicited and unsolicited advice. The committee also focuses on raising awareness of ethical issues among employees themselves. The Ethics Committee therefore also ensures that ethical issues and dilemmas are recognized and acknowledged at the Land Registry and provides advice on them.

The Kadaster wants to establish a renewed Ethics Committee because there is an increasing need for a ruling on the desirability of certain products and services, and automatic applications deployed in the work process. Questions and cases are also regularly submitted to the current Ethics Committee from within the organization. The ethics committee will work with questions about new projects, collaborations, or data applications. But it can also look at existing data applications in response to current events and social developments.

The Kadaster ethics committee can give solicited and unsolicited advice on data applications that may affect citizens, beneficiaries, suppliers, customers, and employees of Kadaster. The ethics committee does this by looking at data applications through the lens of values, such as the core values of the Land Registry. Include the purpose of the application and the effect on citizens/employees/customers/Kadaster.

The ethics committee will do this by initiating the conversation, where issues are looked at from multiple angles. Ethics then provides a good conversation, about our core values.

Appendix E: Business Process analysis

Based on the summary of Internal Documents (Appendix D) the business process can be analyzed. With this analysis it can be seen if requirements are already met due to existing business processes.

Based on the disclosure policy the described business process for data request is visualized in figure 1.

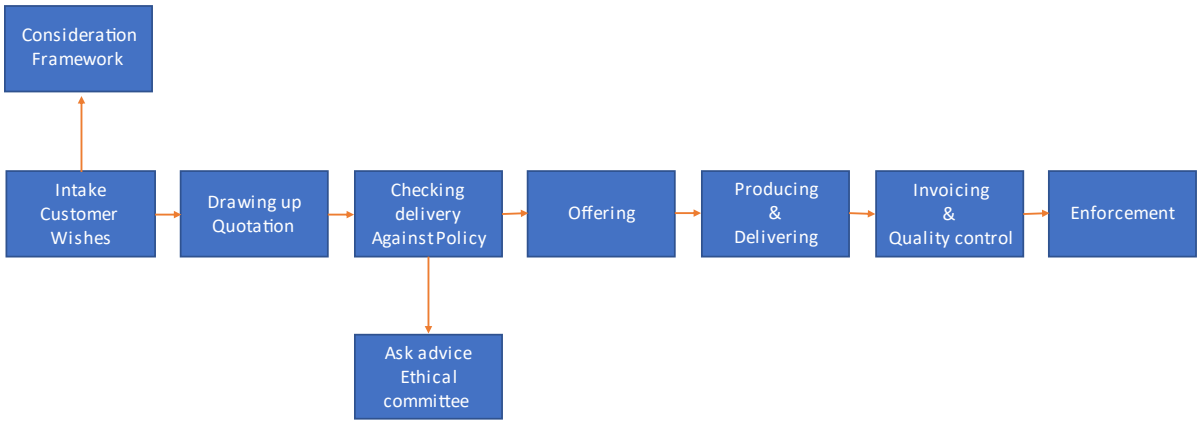

Figure 1. Business process as described in the disclosure policy.

Figure 1 shows the business process concerning cases of applications for mass forms or distribution and customized and combination products. Within the step “Checking delivery against Policy” the DIV office can ask for advice from the ethical committee. If the DIV office asks for advice from the ethical committee concerning specific cases then the case is within the “Grey” area. As the stakeholder “C” explains that the instrument should focus on cases “where the policy that’s put on paper does not give an exact answer”.

However, as stated at the start notion of the ethical committee accepts more cases than only from the DIV office. The ethics committee will work with questions about new projects, collaborations, or data applications. For these cases, a consideration framework can be applied but is not mandatory. Furthermore, the ethics committee can also look at existing data applications in response to current events and social developments. In these cases, the disclosure policy is not applied which means it is unclear if the case is a “Grey” area.

Within the start notion of the ethical committee, it was stated that the ethical committee wants to assess cases by initiating the conversation by looking at issues from multiple angles. The desire to start a conversation is a good start for the requirement of dialogue. However, as there is a difference in definition between conversation and dialogue the requirement is not met.

Based on the analysis of the business process it can be assessed that cases send in by the DIV office are from the “grey” area. However, the ethical committee has the mandate to accept cases besides those send in from the DIV office. Furthermore, since the ethical committee wants to start a conversation this can serve as a start point for the requirement of dialogue.