

MASTER'S THESIS

Challenges of organizational diversity and interdependence on GDPR compliance behaviour

Bosch van de, B.

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Challenges of organizational diversity and interdependence on GDPR compliance behaviour

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Thesis supervisor Laury Bollen

Second reader Rachelle Bosua

Abstract

This thesis investigates whether organizational diversity and interdependence lead to symbolic GDPR (General Data Protection Regulation) implementation. The difference between symbolic or meaningful (substantive) GDPR implementation within an organization is defined by the behaviour of employees measured by GDPR compliance behaviour assessment.

GDPR compliance behaviour is measured using a self-assessment of four influencing factors: education or training, evaluation, involvement and motivation. Organizational diversity and interdependence are two multidimensional concepts described from an internal market-driven perspective. The reliability and validity of the constructs organizational diversity and interdependence were impacted by extreme values in the data and the need to categorize these constructs. The relationship of organizational diversity and interdependence with GDPR compliance behaviour can be influenced by adaptive governance (an internal organizational capacity that defines the response to change) and the market environment. The adaptive governance and the market environment are moderating variables.

The relationship between organizational diversity and interdependence with GDPR compliance behaviour was not significant while the moderating variable adaptive governance made the regression significant. Additional analyses showed that a higher organizational adaptive governance relates to a better GDPR compliance behaviour.

Key terms

GDPR, compliance, symbolic, substantive, implementation, organizational diversity, organizational interdependence, adaptive governance, market environment

Summary

This thesis describes the relationship between both organizational diversity and interdependence with the level of GDPR compliance behaviour. The relation can be influenced by organizational adaptive governance and the market environment. The challenges of organizational diversity and interdependence decrease the GDPR compliance behaviour, while the experience of adaptive governance and market environment decreases the challenges described in the relation. see Figure 1.

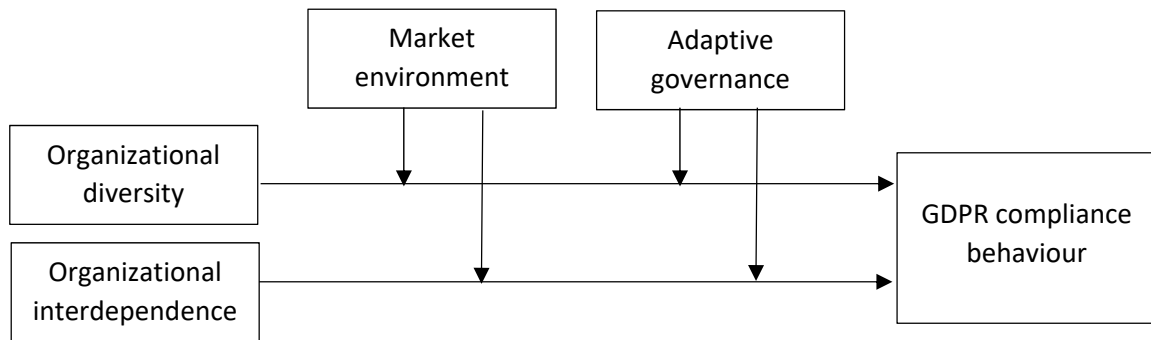


Figure 1 Conceptual model

To determine the relationship between organizational diversity and interdependence with GDPR compliance behaviour quantitative research is executed performing statistical analyses of the relationship.

- The first variable, GDPR compliance behaviour, is the dependent variable and is defined by the behaviour of employees with respect to the proposed change. Since the behaviour of employees is difficult to measure directly, especially considering a large number of samples, the behaviour is measured indirectly by the influencing factors stimulating proper behaviour. The influencing factors are arranged in the dimensions of knowledge, critical self-reflexivity, stakeholder management and motivation. They are measured using a self-assessment survey with translated parameters training, evaluation, involvement and motivation.
- The independent variables are organizational diversity and interdependence. These are multidimensional concepts that are described from internal and external perspectives. In order to acquire a large number of data, the measurement of organizational diversity and interdependence focuses on the market-driven internal perspectives. This allows the dataset to be created largely deduced from the financial overview in the annual statements that large organizations are obliged to create.
- The moderating variable, adaptive governance, is defined by the anticipation and response to change that transforms management in organizations toward a learning environment from a governance perspective. A learning environment influences the approach towards the GDPR and influences the relationship between organizational diversity and interdependence with GDPR compliance behaviour.
- The moderating variable, market environment, is defined by the external factors that affect the experience gained in implementation projects influencing the relationship between organizational diversity and interdependence with GDPR compliance behaviour.

The hypothesis states that both more organizational diversity and interdependence leads to a decrease in GDPR compliance behaviour. This can be explained by the challenges of managing organizational behaviour. The first moderating variable is the adaptive governance causing the perceived challenges from organizational diversity and interdependence to be reduced due to the adaptivity, creativity and learning capacities. Due to the adaptive governance, employees will experience fewer difficulties leading to an increase in GDPR compliance behaviour. The second moderating variable is the market environment where more volatile markets decrease the perceived challenges due to the gained experience coping with these challenges.

The measurement of GDPR compliancy using the method of self-assessment on influencing factors is a reproducible method and reliability is expected to be good. The validity of a construct that measures behaviour with respect to the GDPR compliancy behaviour will always lead to discussions, for measurement of behaviour is prone to interpretation. In order to have more insight on the measurement of behaviour using quantitative data requires more research, data and verification on this specific topic to further increase validity. The validity of the constructs organizational diversity and interdependence, measured by multiple indicators, are discussed. The reliability and validity of the constructs organizational diversity and interdependence showed issues with parameter distribution and needed categorization in order to calculate the variables. When using organizational parameters in regression analyses the construct validity can be increased by specific descriptions or by choosing a narrow construct.

The relationship between organizational diversity and interdependence with GDPR compliance behaviour is analysed using regression, but the regression model was not significant. When testing the regression using the moderating variables only the organizational adaptive governance generated a significant regression model with about 32% predictability. However, the variables adaptive governance, organizational diversity and interdependence from the conceptual model showed no significant values.

The limits in reliability and validity, specific to organizational diversity and interdependence, could explain that no significant relationship between organizational diversity and interdependence with GDPR compliance behaviour was found. Fewer reliability issues were identified when determining the organizational adaptive governance, which showed a much more significant relation.

Additional analyses showed that organizations with more adaptive governance relate to a better GDPR compliance behaviour. This turned out to be the best predictor with a significant relation. This means that organizations can influence behaviour by increasing the variable adaptive governance.

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1. Introduction

The EU faced a problem with privacy protection and agreed on forming the General Data Protection Regulation (GDPR). The GDPR became active in May 2018. All targeted organisations are obliged to comply with these regulations. An organization that does not comply risks a penalty. However, the GDPR requires differences in implementation for each organization. In order to help organizations to implement the GDPR, strict and specific regulations are required that imply almost infinite practical requirements. Therefore, the GDPR is not translated into practical requirements.

1.1. Background

The concept of privacy has developed over the years from the rules that define the degree of protection of the data of respondents to the more meaningful and truthful protection of the data of respondents (De Capitani Di Vimercati, Foresti, Livraga, & Samarati, 2012). Personal data is data that can be connected to a person. When the consent of a person is required to generate personal data conflicts and friction is reduced and make people feel more secure and safe. People that feel safe and secure are stimulated into entrepreneurship that forms the foundation of our economic system (Solove, 2005). The amount of personal data increased for it represents a certain value to society and organizations. Due to technological progress, personal data can be extended with gathered information to predict customer demands and can be used for profiling and therefore creates economic value. When the government evaluated the situation, they found insufficient arguments to forbid the trade of valuable personal data, but they also did not find sufficient arguments for free trade, the different insights have led to the exploration of the field of personal data (Schwartz, 2003). In the meantime, the personal data that could predict demand causes organizations to push the boundary of what data can be collected and disseminated and the amount of personal data was growing rapidly.

Personal data was managed using normative institutional pillars characterized by obligations, expectations and moral behaviour. The first European privacy directive dates from 2002 (Salbu, 2002), and was based on normative institutions' emphasis on how things should be done with a strong need for instructions, which leads to a need for certification (Scott, 2013). The desired privacy protection using normative principles went too slow with respect to the sense of urgency. To identify privacy problems and understand privacy violations a framework was needed that helps guide privacy laws (Solove, 2005). Identifying and understanding violations helped raise the privacy issues in society and the EU responded by initiating the GDPR. The GDPR is designed to give control of personal data back to the data subject to create meaningful privacy protection (De Capitani Di Vimercati et al., 2012). Handling personal data in the EU is regulated since May 2018 by the GDPR (European Union, 2016).

Due to the GDPR, all organizations need to protect personal data and follow requirements for data handling. Therefore, privacy and security are essential for organizations, outsourcing privacy and security does not relieve organisations from the obligation of GDPR compliance.

1.2. The context of the research

The main purpose of the GDPR is to protect privacy by minimizing personal data privacy risks (European Union, 2016). In order to implement the GDPR, an organization needs to apply organizational and technical measures with the appropriate level of personal data protection (minimizing risks) defined in the GDPR (Huth, 2019). This means that when personal data is required in a process, the personal data is protected using maximal measures referring to managing traceability, confidentiality, availability, protection and storage of the data. There are many appropriate, specific, technical and organizational measures that can be found in Appendix 1. Defining the necessity of personal data in a process and the required personal data measures is a complex and challenging task that requires careful analyses (De Capitani Di Vimercati et al., 2012). This is supported by the aid to guide organizations to comply with the GDPR (European Union, 2018) and it explains the existence of different levels of GDPR implementation. Substantive GDPR implementation is related to the proper procedures integrated into daily practices even if it significantly changes business model, goals and processes. In contrast, symbolic implementation can be described where firms fail to use the prescribed practices in daily operations in an attempt to produce evidence of implementation (Iatridis & Kesidou, 2018) (Christmann & Taylor, 2006). The main difference in the description of symbolic and substantive GDPR implementation is the use of the

procedures in daily practices. Therefore, this thesis does not focus on the technical GDPR measures but focuses on the employee GDPR compliance behaviour. In order to behave according to the GDPR, proper procedures and measures are still required.

The structuration theory explains that different structures interact differently with employees and influence employee behaviour. The employee actions are based on free choice and structure limits the free choice. It describes that proper procedures (control structures) can still lead to GDPR non-compliant behaviour depending on other structures and interactions limiting the choice. In other words, without meaning or clarification of norms, the employees could still choose not to follow the procedures. The dominance of organizational culture can be recognized by what people tell you “this is how we do it” or “this is what you should do” (Stones, 2005) (Vermeulen, 2012). In order to increase organizational GDPR compliance behaviour employees need to break with habits, create new structures and stimulate interactions (Bresnen, Goussevskaia, & Swan, 2005). New structures and interactions depend on external influences and interactions with internal stakeholders (Philip, 1999). Therefore the GDPR compliance behaviour can be measured by the actions organizations take and the measures organizations display towards the implementation influencing factors (Demby et al., 2014).

Organizational diversity and organizational interdependence are dimensions that increase the challenges to properly implement GDPR procedures (Schwandt, 2009) (Dooley, 2002). Furthermore, complex responsive processes (connected to organizational diversity and interdependence) create challenges to interaction and participation in the management of the organization (Streatfield, 2003). This research quantifies the level of GDPR compliance behaviour in relation to organizational diversity and organizational interdependence.

The combination of the challenges of implementing proper GDPR procedures and the free choice of the employee makes GDPR compliance behaviour a complex and interesting subject. This is also supported by the expectation that in 2018, 80% of the organizations will fail to comply with the GDPR and about 50% of these organizations will fail in execution (Forrester, 2018).

1.3. The motivation of GDPR compliance research

The goal of this research is to construct and execute structured research into symbolic or substantive GDPR implementation. A theoretical framework is constructed to assess the level of GDPR implementation by measuring influencing factors of GDPR compliance behaviour and relating it to the operationalized and measured variables of organizational diversity and organizational interdependence. Quantitative methods and statistical analysis will be used on the data set to test the hypothesis.

After the privacy directive concerning the processing and protection of personal data (Salbu, 2002), the EU faced the problem with organizations failing to protect “personal data” and the EU hoped to solve this by formulating the GDPR (European Union, 2016). The predicted poor compliance shows that organizations struggle to implement the GDPR (Forrester, 2018) and the government needs to act in order to reach its goal of organizational compliance. The EU helps to cope with the GDPR implementation challenges by organizing a commission to support experts in order to increase GDPR compliance behaviour (European Union, 2018). This research aims at helping organizations and governments to understand and act upon challenges of organizational diversity and interdependence in order to increase GDPR compliance behaviour.

The GDPR became active in May 2018 and only after this date can the difference in GDPR compliance behaviour be measured. Therefore different dimensions or indicators that influence GDPR compliance behaviour have an exploring character that can also be found from the statement that most research focuses on actions and design (Bélanger & Crossler, 2011). Research indicates that implementation is meaningful (GDPR compliance behaviour) when taking into account the internal influences, external influences and interactions with internal stakeholders (Philip, 1999). To what degree GDPR compliance behaviour is achieved is assessed by measuring the influencing factors; training, motivation, stakeholder management and evaluation (Demby et al., 2014).

The variables organizational diversity and interdependence require more interaction, participation and responses that are particularly hard to achieve (Marion & Uhl-Bien, 2001; Stacey, 2002; Streatfield,

2003). Therefore organizational diversity and interdependence are important parameters that increase the challenges on GDPR compliance behaviour. The challenge becomes even bigger for organizational diversity and interdependence because of the difficulty to connect between people and organization elements, the required constant commitment and the unpredictability of both employee behaviour and organization performance (Kwak, 2003) (Raveendran, Silvestri, & Gulati, 2020).

This thesis describes how the level of GDPR compliance behaviour depends on organizational diversity and organizational interdependence. Quantitative methods allow us to draw statistical conclusions about the population that does not depend on strict context (Saunders et al., 2007). The independent variables organizational diversity and organizational interdependence of a large number of organizations are determined and related to the GDPR compliance behaviour. Statistical analyses will be performed in order to analyse the main research question:

“Does organizational diversity and interdependence influence the organization to implement the GDPR more symbolically?”

This research endeavours to measure the GDPR compliance behaviour, but organizations do not feel safe enough to give detailed information about their compliance due to the fear of being fined and negative publicity. The validity of the GDPR compliancy behaviour measurement is increased by formulating questions relating to facts that will not result in a fine for the organization. In order to increase the size of the dataset, the GDPR compliance behaviour is measured by using self-assessment of the influencing parameters (Penley & Gould, 1988; Touré-Tillery & Fishbach, 2014). This method is also chosen because privacy-sensitive information makes interviews difficult to analyse and time-consuming. The parameters organizational diversity and interdependence will be measured analysing mainly data from annual reports (Schwandt, 2009).

The result of this research defines the mathematical relation and how significant the relationship is between a more general measurement of GDPR compliance behaviour using influencing factors and the measurement of organizational diversity and interdependence.

1.4. Overview

The research into the relation of organizational diversity and interdependence with the level of GDPR compliance behaviour is structured in the following chapters. The second chapter describes the theoretical framework; the elaboration on the GDPR, the influencing components on GDPR compliance behaviour, the organizational diversity and interdependence and finally the conceptual model of how organizational diversity and interdependence influence GDPR compliance behaviour. The third chapter describes the research design; the research method, the model concepts, the selected data collection, selected organizations and the analysis to perform. The fourth chapter presents the results and the data analyses, confirming or rejecting the hypotheses. The fifth chapter presents the conclusions and the discussion.

2. Theoretical framework

The goal of the literature research is to define a theoretical framework supporting the hypotheses that more organizational diversity and interdependence will result in a more symbolic GDPR implementation. In the first section, the research approach is explained. It describes how the goal of the research is divided over different themes that are detailed in the following sections: history of GDPR, substantive GDPR implementation (GDPR compliance behaviour), organizational diversity and interdependence, and finally a conceptual model of the hypotheses.

2.1. Research approach

This theoretical framework is formulated using the critical review technique described by Saunders et al (2007). The followed procedure describes multiple circles each containing search terms related to research themes and evaluation of the results. The first theme describes the origin of personal data, the need to protect personal data and why personal data regulations are generated. The second theme describes the implementation and organizational dynamics involved. It explains influencing factors that can be used to achieve an effective implementation associated with the desired organisational behaviour. GDPR compliance behaviour is the result of an effective and substantive GDPR implementation. The third theme defines the variables organizational diversity and interdependence. It also explains the challenges, the required management effort and the unpredictable behaviour that plays an important role. The final section describes the relation of organizational diversity and interdependence with the GDPR compliance behaviour in a model.

For each theme, several search terms are defined and new search terms are added after evaluation of the results. The search process and the specific search terms used are noted in Appendix 3. From the relevant articles found for each theme, the references are used for forward and backwards snowballing.

2.2. History of privacy regulation

There have been several socio-economic revolutions throughout history. After the industrial revolution, the fourth revolution is described by many as the digital revolution. The information drawn from raw data is the main product in a digital market (Martínez-Martínez, 2018). Information technology makes it possible to generate a lot of “personal data”. “Personal data” is information that can be linked to a living human being. There are five elements of personal data that play a role in the regulation of privacy; the restrictions on possession, the trade, the right to be forgotten, determination of abuse, and authority to maintain rights (Schwartz, 2003).

When personal data is first stored on the internet, privacy issues relating to this were not noticed. People and organizations did not recognize the full extent of personal data and its consequences. As an example of a privacy issue, a person filed a complaint and went to court in order to delete a piece of personal information held by the government. The prosecutor won and the government experienced that personal information stored at an external webpage was difficult to erase from all servers because of the lack of authority over the information. Cases like this have led to the realization that privacy protection is needed and that the subject, the person of whom the information is about, should be able to change or delete his or her personal data (Sandefur, 2015)

The first step to the protection of privacy was a European convention in 1981, it was the first legally binding international instrument that recognises the protection of individuals regarding the automatic processing of their personal data (Martínez-Martínez, 2018). The next big step was to write a directive to regulate the processing of personal data (Salbu, 2002). The directive did not result in organizations protecting “personal data” due to the lack of authority, and in 2012 the European Union initiated the goal to enforce and unify privacy regulation. The GDPR was created to secure personal data and to return the control of personal data back to the subject (European Union, 2016).

Although formulating the regulations seems like a logical step to improve organizational privacy behaviour, it comes with advantages and disadvantages that are important to this research. This can be explained by comparing the effects of formulating directives to regulations. A directive is formulated in guidelines that stimulate organizations as an opportunity to stand out, from which they can receive appreciation on the issue giving them a competitive advantage and not an obligation

(Vojvodic & Hitz, 2019). Furthermore, guidelines clearly state the goal without the need for detailed context required when formulating regulations. Writing guidelines is the best way to support organizations to implementation because it allows general instructions and will decrease ambiguity (Martínez-Martínez, 2018). The big advantage of regulations is they make privacy protection mandatory and arrange privacy rights where a subject can force an organization to delete personal data (Sandefur, 2015). On the other side, organizations are pushed to act according to the regulations while organizations do not feel the need to put more effort than strictly required into the GDPR compliance. This means that using regulations organizations are tempted to use symbolic implementation at the risk of being fined. Furthermore, when choosing regulative institutionalization, the regulations describe what to comply to, but do not describe how to implement the GDPR and give less direction or meaning (Scott, 2013).

How to achieve GDPR compliance behaviour and properly protect privacy is a challenge that requires careful analysis (De Capitani Di Vimercati et al., 2012). This thesis requires analyses regarding privacy protection and how to distinguish different levels in GDPR compliance behaviour. The dependency of GDPR compliance behaviour on organizational diversity and interdependence is an interesting relation and subject to investigate.

2.3. GDPR compliance behaviour

The GDPR is a complex regulation that describes the regulation, but it does not describe how to implement the GDPR and gives less direction or meaning (Scott, 2013). Therefore, there are multiple ways to implement the GDPR and the best way depends on the organization. Furthermore, the best way is prone to change and mainly depends on external and internal factors that can change over time (Donaldson, 2001).

The meaning of GDPR implementation is the integration of the GDPR within the organization. An organization needs to apply organizational and technical measures with the appropriate level of personal data protection (Huth, 2019). Organizations comply with the GDPR when employees act according to the appropriate technical and organizational measures that are integrated into daily practices, even if it significantly changes business model, goals and processes (Huth, 2019).

The first step towards GDPR compliance is to ensure that the GDPR is properly translated into all organizational processes. Extensive documentation indicates that creating procedures with respect to the GDPR is not a straightforward process and leaves room for interpretation (European Union, 2018). Translating the regulation to the organization is a complex task that requires careful analyses (De Capitani Di Vimercati et al., 2012). The second step towards compliancy is defined by organisational behaviour where employees act in agreement with the GDPR. An organization is compliant if both steps are taken and therefore all employees must act according to the GDPR.

Symbolic GDPR implementation can be described where firms fail to use the prescribed practices in daily operations and attempt to produce evidence of implementation (Iatridis & Kesidou, 2018) (Christmann & Taylor, 2006). Substantive GDPR implementation is the application of the proper measures and integration into daily practices that are described by GDPR compliance behaviour. The main difference in the description of symbolic and substantive GDPR implementation is the use of proper procedures and processes in daily practices. The most prominent distinction can be found in the behaviour with respect to the GDPR. Therefore, this thesis does not focus on the technical GDPR measures but focuses on the employee GDPR compliance behaviour. In order to behave according to the GDPR, the proper procedures and measures are still required.

In order to achieve organizational GDPR compliance behaviour, the organizations set up implementation projects. When comparing GDPR compliance behaviour to the implementation project goals, many implementation project goals do not relate to the effectiveness goals, but those goals typically relate to time, money and satisfaction (Pinto & Slevin, 1988). The project success criteria of time, budget and satisfaction are always measured but do not have a direct influence on the effectiveness or employee behaviour. The effectiveness goal is typically hard to measure because it requires taking into account the relevant implementation perspectives. Setting effectiveness goals is a complex task and ambitious goals will harm the project success (Pinto & Slevin, 1988). Therefore, many effectiveness goals are not made 'SMART' (Specific, Measurable, Achievable, Relevant, and

Time-Bound) causing implementation projects to miss the proposed impact. Only if the effectiveness goal of the GDPR implementation project matches proper organizational GDPR behaviour, could the success of the project indicate positive GDPR compliance behaviour. Therefore, successful implementation is only weakly related to the effectiveness goal and success is not to be mixed with substantive GDPR compliance behaviour.

When the GDPR became active in 2018 the predicted GDPR compliance was poor, estimating roughly 20% compliance (Forrester, 2018). In order to increase GDPR compliance behaviour, a reference document was written. Based on the expected GDPR compliance the effect of the guidance documents is not clear (European Union, 2018). The predicted low compliance could be explained by the fact that compliance requires both proper process and daily practice. GDPR compliance is planned using implementation projects that typically have only 30% success to properly change daily practices (Burke, 2017) (Vermeulen, 2012).

Organizational GDPR compliancy behaviour is opposed by the existing structures and processes that maintain organizational behaviour. They are part of the culture and need to be dismantled in order to change behaviour, such that new procedures will not be accepted before old ones are broken down (Bresnen et al., 2005). The institutional theory describes the context for an organization to act according to its culture. Institutional influence protects organizational collective self-esteem and maintains the existing identity (Brown & Starkey, 2000). The behaviour within regulative institutions like the GDPR can be recognized by; denial, rationalization, idealization, fantasy and symbolization (Brown & Starkey, 2000).

Employee behaviour can be explained using the structuration theory that explains why employees choose to act differently. The structuration theory extends the institutional theory by the inclusion of behaviour and individual choices (Stones, 2005). In general, a structure is an arrangement or organization of interrelated elements in a system, and modalities explain the properties of the structure. Structuration theory describes structures and agency where structures are all things influencing decision making and agency is the capacity to act and make a free independent choice. The three different structures in the structuration theory are described by “meaning”, “control” and “norms” and together they interact with the employee to influence (limit) the choice and therefore the employee behaviour (Staber & Sydow, 2002) (Stones, 2005).

The GDPR measures form control structures, but together with the “norms” and “meaning” they influence the behaviour of the employees. Structuration theory explains how structure limits free choice, causing one to act in a certain way. It focuses on the interplay of interrelated aspects and describes the duality of structure and agency (Stones, 2005) see Appendix 2. In many organizations, people will tell you that the organization does things in a certain way. This is an indication that structure is dominant in the organization (Vermeulen, 2012). The existing structures and processes can form an obstacle to changing behaviour.

2.3.1. Internal influencing factors

In order to increase organizational GDPR compliance behaviour employees need to break with habits, create new structures and stimulate interactions (Bresnen, Goussevskaia, & Swan, 2005). Organization GDPR compliance behaviour can best be achieved with a holistic approach taking into account the internal influences, external influences and interactions with internal stakeholders (Philip, 1999). The GDPR compliance behaviour cannot be measured directly within this research for practical reasons (it requires shadowing techniques or complex investigations) but can be measured by the absence or presence of positive influences to stimulate behaviour. The article (Demby et al., 2014) describes critical success factors for effective project implementation. It gives us a good view of the important effective success factors, but it also claims that success cannot be described in these factors alone because success also relates to the interrelationships (Pinto & Slevin, 1988). In this research, GDPR compliance behaviour is measured by the following internal influencing factors:

- Increased knowledge (Mendoza, Dekker, & Wielhouwer, 2016)
- Critical self-reflexivity (Brown & Starkey, 2000) (Capwell, Butterfoss, & Francisco, 2000).
- Stakeholder management (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010) (Iatridis, 2018) (Pardee, 1990)(Vojvodic & Hitz, 2019)
- Motivation (Bednar, Spiekermann, & Langheinrich, 2019) (Pardee, 1990) (Parijat & Bagga, 2014) (Waeger & Weber, 2019)

Increased knowledge

The GDPR is an extensive and complex regulation where proper integration requires interactions in organizations. Organizations are struggling to understand the full extent of GDPR compliance and need some help. Organizations are supported by the government to increase their knowledge of the GDPR. Reference for this support can be found in “An Implementation and Compliance Guide” (European Union, 2017). This literature is not a manual for implementation of the GDPR, but it guides you through all aspects of the GDPR. The book starts with the principles and roles of different stakeholders and is an extensive reference on data handling processes, security and protection. The book is extensive and describes the regulations that are not optional, so all aspects need to be taken into account, in order to comply with the GDPR. The implementation and compliance guide is designed to educate and train the data officer that usually combines the knowledge and the skills to implement the GDPR in an organization (European Union, 2017). Furthermore, the EU announced the launch of a website at the International Association of Privacy Professionals aimed at further guidance translating the GDPR into measures and daily practice (European Union, 2018). Increasing the knowledge on the subject of GDPR makes the regulation seem fair and makes employees understand the solution, therefore employees will be open to change (Mendoza et al., 2016). An increase in knowledge increases GDPR compliance behaviour.

Critical self-reflexivity

The history of an organization shapes the values of the organization. It defines a set of norms justifying their behaviour and gives the organization a “right to play”. Employees will tend to act according to the existing norms or identity (Brown & Starkey, 2000). Organizations are often unaware of the existing norms that are persistent as new procedures will not be accepted before old ones are broken down (Bresnen et al., 2005). Employees will need more guidance in order to break down old habits and to implement changes to procedures.

Critical self-reflexivity is the ability to challenge assumptions, analyse the impact on behaviour, and understand interactions and relations. Evaluation based on critical self-reflexivity provides guidance and verification if the goals or objectives are achieved. It stimulates compliance behaviour by the desire to do well (Capwell, Butterfoss, & Francisco, 2000). Performing evaluation, based on critical self-reflexivity, stimulates an increase in GDPR compliance behaviour.

Stakeholder management

In order to stimulate proper behaviour, stakeholder management is required to manage organizations (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010). From the organizational perspective of this thesis, the internal stakeholders need to be motivated to act according to the GDPR. The motivation of internal stakeholders by involvement is the key to meaningful implementation (Vojvodic & Hitz, 2019) (Iatridis, 2018). Involved employees that interact and connect with internal stakeholders associate proposed change with satisfaction (Pardee, 1990). The satisfaction will make employees committed to the proposed change. Therefore, proper internal stakeholder involvement increases the GDPR compliance behaviour.

Motivation

Deviating from prior organizational practices will be better accepted when all stakeholders are properly motivated, by creating the feeling of being safe and secure and other social or emotional aspects of motivation (Bednar, Spiekermann, & Langheinrich, 2019). The motivation of stakeholders requires a good implementation plan that stimulates organizations to act (Waeger & Weber, 2019) and the interaction and connection that translates to satisfaction (Pardee, 1990). A reward is only a motivator when there is a relationship between the effort they put forth and the reward they receive (Parijat & Bagga, 2014). Motivation makes the implementation more meaningful and increases the GDPR compliance behaviour.

2.3.2. Adaptive governance

Other internal and external factors affect organizational perspective in relation to GDPR compliance behaviour. These factors change the perspective on organisational change due to the skills of the organization and the experience gained.

Adaptive capacity refers to the conditions that enable people to anticipate and respond to change (Cohen et al., 2016). Individuals and organizations can be involved in activities to overcome the existing information and knowledge that preserves existing structures. Organizations should evaluate their existing assumptions and identity and should promote a dialogue focused on desirable future identities (Brown & Starkey, 2000). An organization that is successful in having a dialogue on future identity is better able to adapt. The adaptive capacity does not come automatically. Systematic guidance and motivation of organizational actors are required. These actors should question traditional practices with respect to their implications to increase adaptive capacity (Staber & Sydow, 2002).

The adaptive capacity is a theoretical construct described in four dimensions from internal and external aspects (Lockwood, Raymond, Oczkowski, & Morrison, 2015). The external influences are difficult to measure and to distinguish between the gained experience and the organization capacity when looking at the market environment. This research is focused on internal aspects that determine the variable of organizational adaptive governance. The variable of adaptive governance describes the mechanisms by which adaptive capacity is realized within the organization. Actors engaged at all scales and levels of governance develop and implement adaptive policies, foster adaptive capacity, and undertake adaptive actions (Lockwood et al., 2015).

Adaptive governance transforms the management of organizations toward a learning environment that lowers the costs of collaboration and conflict resolution from a governance perspective. Adaptive governance enables the implementation of legislation and governmental policies by self-organization while framing creativity for adaptive management efforts (Folke, Hahn, Olsson, & Norberg, 2005). The variable of adaptive governance influences the perceived challenges and enables organizations to cope with the GDPR compliance challenges.

2.3.3. Environment

Organizations attempt to adjust and fit within their environment. To what extent organizations react to their environment depends strongly on external and internal factors. The external business environment influences on organizations are described in many factors; political, economic, social, technological, environmental and legal (Yüksel, 2012). Operationalizing the external influences on GDPR compliance behaviour could be executed using expert teams to identify the relevant influences (Yüksel, 2012). Expert identification is beyond the scope of this thesis considering the relevance, and therefore the selection is based on expected significance, for argumentation see Appendix 4. The positive and negative influences of the political, social and environmental factors lack direction and are therefore neglected. The external economic and technological factors increase the experience of how to cope with challenges and therefore decrease the perceived challenges in GDPR compliance.

Technology

Organizations like a nuclear facility are more demanding to manage compared to a normal power plant due to higher levels of technology and innovation within the organization. Organizations with high technology products or business innovations are more demanding (Dooley, 2002). Information technology increases the complexity of organizations and their systems and making them much more difficult to manage (Sarout & Mc Grath, 2011). Dealing with technology and innovation requires organizations to adapt at a much higher rate and a good insight into the process and new technical solutions. Managing such an organization requires more vision and decisiveness from management (Dooley, 2002). The experience gained by dealing with technology and innovation creates insight and vision decreasing the organization's perceived challenge to achieve GDPR compliance behaviour.

Economical

The economic environment influences each market differently. Organizations operating in a market that can be characterized as volatile are actively solving existing problems and scanning for new ones (Dooley, 2002). The experience gained in such an environment gives the organizations an advantage in coping with challenges. The volatility of markets is a statistical measure of the tendency of a market to rise or fall sharply within a short period (Beers, 2020). Market fluctuation is described as organizational and business environment change that also influences the perceived challenges in organizations (Schwandt, 2009). In the context of this thesis, the economic environment decreases the perceived challenges to achieve GDPR compliance behaviour.

2.4. Organizational diversity and interdependence

This section elaborates on organizational diversity and interdependence and the consequences for GDPR compliance behaviour. The terms organizational diversity and interdependence are described from internal perspectives.

2.4.1. Organizational diversity

Diversity is the amount of differentiation or the clarification defined by the number of organizational elements (multiplicity) and the dissimilarity of elements (variety) (Schwandt, 2009). Elements are defined by structure, authority, the focus of control, attributes of personnel, products, and technologies (Dooley, 2002). Diversity can have both internal and external sources. Internal diversity can be determined by the number of organizational entities, the different technologies, processes, products or norms (Dooley, 2002).

2.4.2. Interdependence

Interdependence is defined by the number of interconnected elements from internal or external sources. The interconnection also holds for current and future events and by the interdependency of goals (Schwandt, 2009). Interdependence affects behaviour in organizations. The behaviour within an organizational element that is intertwined with another element depends on these elements, and the dependency typically exceeds the visible formal responsibility. Elements are defined by structure, authority, the focus of control, attributes of personnel, products, and technologies (Dooley, 2002).

2.4.3. Consequences

In order to profit from the advantages of diversity in the field of creativity and innovation, constant nurturing and commitment is required (Bassett-Jones, 2005) (Kwak, 2003). Without tackling these challenges, the performance can be lowered instead of boosted. Organizational diversity and interdependence create challenges in many areas (Kreitz, 2008) that influence GDPR compliance behaviour. The consequences for organizations are explained in this section.

Organizational diversity creates challenges; the ability to connect, the communication, the interactions, the predictability and the personal perspectives in assessments.

The diversity within an organization imposes a challenge to objectivity. Appraising people with an objective rating is a challenge because employees are involved and their perspectives and employee behaviour makes objectivity a challenge (Kossek, Lobel, & Nkomo, 1997). Adding to the fact that different people will be motivated by different things, and that a single individual is likely to be motivated by different things at different times. Therefore diversity demands managers to be more flexible, adaptive, experimenting and learning (Dooley, 2002).

Diversity affects communication and interactions in organizations. Communication is easier with similar elements (or people) as opposed to different elements (Dooley, 2002). When connected to another similar element the support makes sense and actions are accepted. The diversity of people, skills and capacity increases the inability to connect and makes behaviour hard to predict (Dooley, 2002; Philip, 1999). The product portfolio diversification and market diversification makes the information more scattered and hard to predict performance (Sarout & Mc Grath, 2011) (Schuijt, 2011) (Dooley, 2002). Communication and interaction with the internal market and product stakeholders become more uncontrollable and limit predictability, for instance by the increasing number of elements (Dougherty & Dunne, 2011).

Organizational interdependence creates challenges caused by: role differentiation, interconnectivity, the required interaction, the required participation, predictability and unintended consequences. The specialization of employees in roles and functions gives people different perspectives within the organizations that impose challenges (Raveendran et al., 2020) (Dooley, 2002). Organizational dependence cannot be related to one single event but numerous events occurring over extended periods of time (Dooley, 2002). When similarities between interconnected structures and functions are weak the inability to connect makes behaviour hard to predict (Dooley, 2002; Philip, 1999) (Schuijt, 2011) (Abernethy & Stoelwinder, 1995). When the interconnective capacity of an element is reached, the interdependent organization becomes more unpredictable (Dooley, 2002). When an element is connected to multiple elements and also depends on diverse elements, the interdependencies can make actions to cause unintended consequences that limit the manoeuvrability of the organization (Sarout & Mc Grath, 2011) (Schuijt, 2011).

In order to regain “control” of organizational behaviour in organizations with an increasing and unpredictable number of interactions, managers design control systems and install further procedures (Stacey, 2002). These complex structures and control systems are frequently used to manage organizational interdependence (Daryani & Amini, 2016) (Schuijt, 2011). Managers emphasize the predictable aspects of these complex systems and see their modelling work as a route to increase the ability to control (Streatfield, 2003). However, managing behaviour is determined by too many parameters and creating these complex systems is an inherently difficult task (Root, 2019). Managing behaviour by complex structures and systems requires interaction, participation and response, which is particularly hard to achieve (Marion & Uhl-Bien, 2001; Stacey, 2002; Streatfield, 2003) (Raveendran et al., 2020). Therefore within interdependent organizations where many people are interrelated, frequent interaction and stimulation is needed in order to change behaviour (Vojvodic & Hitz, 2019).

Both organizational diversity and interdependence make a manager’s job much more difficult (Sarout & Mc Grath, 2011). When making decisions the challenge is to predict a long term benefit while short term benefit is attractive for the ability to formulate expectations (Barry & Bateman, 1996 1996). In this situation, risk mitigation becomes hard where simple actions can cause unintended consequences (Sarout & Mc Grath, 2011) (Schuijt, 2011).

The consequences of organizational diversity and interdependence are related to the challenges of applying the influencing factors on GDPR compliance behaviour.

2.5. Conceptual model

The explanation of the theoretical framework starts in section 2.2 with the struggle of government to improve personal data protection. The government chooses to regulate by formulating the GDPR. Section 2.3 explains the difference between symbolic and substantive implementation and how it translates to GDPR compliance behaviour. It describes how old habits need to be broken down in order to create and stimulate new practices. Furthermore, the influencing factors are explained in order to stimulate new practices of GDPR compliance behaviour. Section 2.4 describes the organizational diversity and interdependence and the consequences of organizational diversity and interdependence that influence the challenge to achieve GDPR compliance behaviour.

The increase of organizational diversity and interdependence increases the challenges to improve knowledge, perform critical self-reflexivity, perform stakeholder management and motivate people which is required to increase GDPR compliance behaviour. The level of GDPR compliance behaviour is measured by rating the required influencing factors that are in place. Therefore the level of GDPR compliance behaviour is not measured by the effort but by the actions and measures that are in place.

In order to answer the main question “Does organizational diversity and interdependence influence the organization to implement the GDPR more symbolically” the following hypotheses are formulated.

H1: An increase in organizational diversity, leads to a decrease in GDPR compliance behaviour.

H2: An increase in organizational interdependence, leads to a decrease in GDPR compliance behaviour.

The relation of organizational diversity and interdependence with GDPR compliance behaviour is influenced by other organizational internal and external influences. The market environment and the variable adaptive governance influence the perceived challenges of diverse and interdependent organizations and are the moderating variable in the model. The adaptive governance influences the perceived challenges because an organization with high adaptive governance can cope with change, and therefore decreases the relation of organizational diversity and interdependence with GDPR compliance behaviour. The market environment will influence the perceived challenges of diverse and interdependent organizations, they will have more experience to cope with change, and will decrease the relationship of organizational diversity and interdependence with GDPR compliance behaviour:

H3 For organizations with high adaptive governance the challenges imposed by organizational diversity and interdependence with respect to the GDPR compliance behaviour decreases.

H4 For organizations operating in a hostile and innovative environment the challenges imposed by organizational diversity and interdependence with respect to the GDPR compliance behaviour decreases.

The conceptual model and the hypotheses can be seen in Figure 2

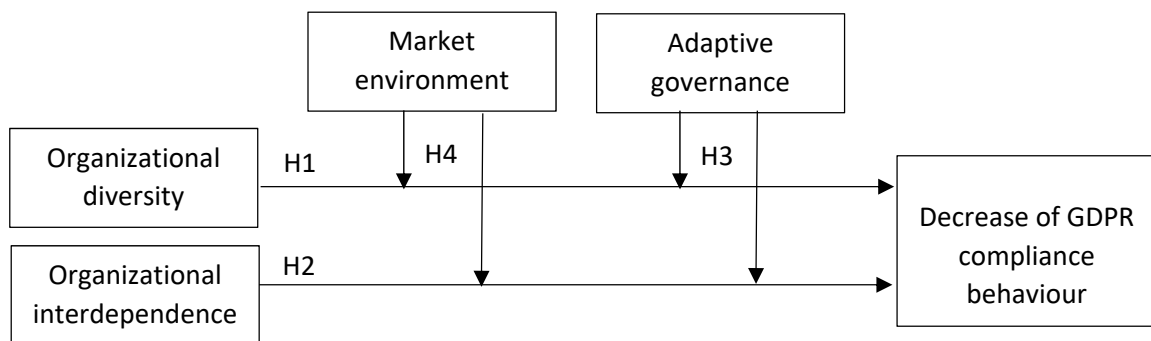


Figure 2 Conceptual model with corresponding hypotheses

3. Methodology

3.1. Conceptual design: select the research methods

This research is on the relation between organizational diversity and interdependence with GDPR compliance behaviour. This relation is tested using the deductive empirical research method. The theoretical framework is defined in chapter 2. The concepts are described in the model displayed in section 2.5.

All empirical research is executed using quantitative or qualitative principles or a mix of both principles. Instead of providing a broad view of a phenomenon that can be generalized to the population, qualitative research seeks to explain a current situation and only describes that situation for that group. Since only a current situation is observed, all qualitative research is done in the field (Lowhorn, 2007). Qualitative research is typically executed in a well-documented contextual environment using non-numerical data and in-depth interviews (Saunders et al., 2007). It describes an event in its natural setting and tries to find answers on why and how.

Quantitative studies describe the relationship between constructs in the form of a mathematical model. It establishes statistically significant conclusions about a population by studying a representative sample of the population. Quantitative research seeks to validate a theory by conducting an experiment and analysing the results numerically (Lowhorn, 2007). The attribute of high-quality field research in organizations is the methodological fit between the research question, prior work, research design and theoretical contribution (Edmondson & McManus, 2007).

The GDPR became active in May 2018 and organizations that are non-compliant with the GDPR will risk significant penalties. As a result, the willingness of organizations to participate in an interview is expected to drop. Qualitative research will be less reliable due to the expected large participant bias. People and organizations will be tempted to answer in line with how people should act and not how people really act (Saunders et al., 2007).

This thesis contributes to the field of GDPR implementation by investigating the relation of organizational diversity and interdependence with the level of GDPR implementation measured by GDPR compliance behaviour. It is described in a mathematical model that requires a large amount of accurate data. In order to get the most accurate data, GDPR compliance behaviour is measured by the stimulating factors using self-assessment while taking care of validity issues (Penley & Gould, 1988; Touré-Tillery & Fishbach, 2014)

In order to increase the reliability and validity of the collected data, the used variables and collection methods are chosen to focus on objective organizational data. Numerical data from documents is preferred, but some parameters will be categorical (Saunders et al., 2007). However, not all parameters can be determined using document analyses and a hybrid form of data collection will be used. The adaptive governance and GDPR compliance behaviour will be rated using self-assessment with categorical surveys.

3.2. Technical design: elaboration of the method

3.2.1. Selected organizations

The GDPR is formulated for all EU organizations and every organization needs to comply. Therefore, the size of the total population is very large. In this research, the focus is on large organizations with a Dutch (head)office. Dutch offices are selected in order to focus more on the Dutch translations of the GDPR. Large organizations are selected because they are obliged to report on operations and the implementation cost aspect is not dominant.

The number of large companies in the Netherlands was 3120 in 2018, this is the number of companies with more than 250 employees. The top 500 largest companies are presented in a list (Elsevier, 2020) and are invited to participate in the survey. Due to insufficient participants, the list of

organizations is extended by the search option on organisations on vacancies sites (werkzoeken.nl). Further company extensions of participants are found in the public and semi-public domain.

From the initial 500 organizations about 20% are expected to respond, if so, the minimum required response of 70 organizations will be achieved. When the response is higher a more accurate determination of the relation can be obtained, which allows a more accurate investigation of the moderating variable.

3.2.2. The constructs and concepts

The research goal is to investigate how organisational diversity and interdependence leads to GDPR implementation in a more symbolic manner. The conceptual model shows the variables and the hypotheses concerning the research goal. All concepts in the model will be described including how they are measured. This section will be the operationalization of the conceptual model.

GDPR compliance behaviour

Substantive implementation is achieved when all employees act according to the implemented change in daily practice while symbolic implementation is not translated into daily practice. Substantive implementation is defined by GDPR compliance behaviour. As explained in section 2.3 direct measurement of GDPR compliance behaviour is impossible and therefore the influencing parameters from the theoretical framework are being measured. In order to measure GDPR compliance behaviour, the employee behaviour is measured by the application of influencing factors using self-assessment while taking care of validity issues (Penley & Gould, 1988; Touré-Tillery & Fishbach, 2014). The measurement of GDPR compliance behaviour does not refer to the effort, but it refers to the application of the influencing factor. Challenges require organizations to put more effort into the influencing factor in order to achieve the same status and effect. The four influencing factors (dimensions) are translated into questions for a self-evaluation survey that can be found in Appendix 5:

Training	The parameter Training is related to the influencing factor education in section 2.3 where knowledge improves the ability to comply and it mediates the association between perceived fairness and compliance (Mendoza et al., 2016). The parameter Training is measured by the clarity of explanation and instructions, the availability of training and the organized information sessions and should not be mistaken by learning, associated as a negative influence (Touré-Tillery & Fishbach, 2014).
Evaluation	The parameter Evaluation is related to the influencing factor critical self-reflexivity in section 2.3. The evaluation stimulates compliant behaviour by setting active goals that describe the proper behaviour (Brown & Starkey, 2000). The parameter Evaluation is measured by the use of pre-defined criteria with respect to behaviour, the frequency of evaluation and the focus on critical processes. Evaluation stimulates behaviour with respect to the evaluation criteria and frequency (Touré-Tillery & Fishbach, 2014).
Involvement	The parameter Involvement is related to the influencing factor stakeholder management in section 2.3. Stakeholders will be motivated to apply the imposed change when properly involved, they will show commitment to the imposed change (Penley & Gould, 1988). Aspects of involvement are given by the moral or alienative commitment and the calculative commitment (Penley & Gould, 1988).
Goal motivation	The parameter Goal motivation is related to the influencing factor motivation in section 2.3. People are motivated to act properly if the purpose and consequence of proper behaviour are clear. The appeal of an organizational goal is increased by a clear added value and the goal should be reachable or in range (Touré-Tillery & Fishbach, 2014). The parameter Goal is measured by clarity, appeal and achievability.

An extra question is constructed to verify the correlation with the overall GDPR compliance behaviour.

Organizational diversity

The concept of organizational diversity is explained in section 2.4. Diversity is frequently used in articles, but the context in the articles does not relate to the internal organizational diversity in this

thesis. The parameter organizational diversity is measured using a market-driven organizational approach. The organizational diversity in this thesis is based on the article of Schwandt (2009) that measures the product, market, geographical diversity and the size of the organization see Appendix 6.

Organizational diversity is defined by:

- The first indicator of organizational diversity is the size of an organization and in this case related to the diversity of the people in it. The size of an organization is determined by the three parameters; the total asset, the turnover and the number of employees Schwandt (2009). The number of employees was found insignificant in the case of Schwandt (2009). However, looking at a more general approach on diverse collected datasets all three parameters need to be used. This statement is also supported by the European Committee (European Commission, 2003) that categorizes a wide variety of organizations for their size based on the same three parameters; employees, assets and turnover.
- The second indicator of organizational diversity is portfolio diversification. It is determined by the index of the parameters product diversification, market segment diversification and knowledge diversification (Schwandt, 2009). All indicators are difficult to measure using objective data without looking at the context. For instance, one organization can make the distinction between cow and calf while another organization would distinguish between food and electronics. Furthermore, it is critical to understand the product and the processes of the organization. As an example, normal hospitals come closer to managing the beds and not the specialists, this is a very important distinction to categorize organizations. In order to rate the portfolio diversification, a scoring table is put together based on; the type of products (product, services), the amount of specialization or required knowledge and the number of market segments. is defined by the number of segments. The scoring table is displayed in Appendix 7.
- The third indicator of organizational diversity is the geographical diversification or globalization that increases the organizational challenges Schwandt (2009). The influences on diversity are described by the boundary erosion, factory mobility and variety of options in the article of Schwandt (Schwandt). The parameter globalization influences the differences in processes and value creation, realization economics of scale, the opportunities to shift recourses, social, cultural and even political environments (Schwandt, 2009). The parameter geographical diversification should be defined by the difference in geographical assets, sales and segments. The difference in assets or sales for each area or segment is not available in the annual report. Since the data is unavailable the area of operation is used.

The indicators to determine organizational diversity that could not be measured due to the lack of detailed information in the annual statements, such as the volume of foreign sales, relative foreign sales, international assets, relative international asset, segments, segment sales, relative segment sales and the diversification of shareholders. Due to the quantitative analyses, it is necessary to focus on parameters that can be methodically collected on a large scale (Schwandt, 2009).

Organizational interdependence

The concept of organizational interdependence is explained in section 2.4. Interdependence is frequently used in articles, but the context in the articles does not relate to the internal organizational interdependence in this thesis. The parameter organizational interdependence is measured using a market-driven organizational approach. The organizational interdependence in this thesis is based on the article of Schwandt (2009) that measures the added value, technological intensity, the organization structure and board members see Appendix 8.

Organizational interdependence is defined by:

- The first indicator of organizational interdependence is a measure of value creation. It is determined by 'cost of goods to sales inverted' and the research & development costs. The 'cost of goods to sales inverted' is related to the added value and is measured by all costs other than personnel costs including inventory change in relation to the revenue and this number is inverted (Schwandt, 2009). The research & development costs contribute to the added value of the product. The information about research & development costs is insufficiently available in the annual statement (Schwandt, 2009).

- The second indicator of organizational interdependence is the parameter technological intensity. Classically the information technology is used to manage interdependence (Rockart & Short, 1989). The parameter Technological intensity is measured by the assets divided by the number of employees (Schwandt, 2009).
- The third indicator of organizational interdependence is the organization structure where the distinction is made between division, functional and matrix(Schwandt, 2009).
- The fourth indicator of organizational interdependence is the number of board members that indicates the difference of interest and the required collaboration (Schwandt, 2009).

The indicators to determine organizational interdependence that could not be measured are the research and development costs and the number of subsidiaries. Due to the quantitative analyses, it is necessary to focus on parameters that can be methodically collected on a large scale and this parameter is not used (Schwandt, 2009)

Adaptive governance

The concept of adaptive governance is explained in section 2.3.2. The variable adaptive governance influences the perceived challenges and enables organizations to cope with the implementation of governmental policies like GDPR. These factors change the perspective on organizational change due to the skills and capacities of the organization (Staber & Sydow, 2002).

The governance describes the mechanisms by which adaptive capacity is realized within the organization. Actors engaged at all scales and levels of governance develop and implement adaptive policies, foster adaptive capacity, and undertake adaptive actions. The aspects of adaptive governance are described by (Lockwood et al., 2015):

- legitimacy
- accountability
- inclusion and fairness
- leadership
- coordination and collaboration.
- vision

Only the governance dimension is used within this thesis. The questions in the survey are translated from the measured dimension adaptive governance by Lockwood (2015) see Appendix 9.

Market environment

The concept that defines the market environment is explained in section 2.3.3. The market environment is defined by the stimulating environmental factors that affect the experience gained in implementation projects influencing the challenges imposed by organizational diversity and interdependence on GDPR compliance behaviour.

The variable business environment in this research is defined by the technological and economical parameters. The market environment technology parameter is measured by the market adoption and change of technology, the creation of IP and the R&D support of government (Yüksel, 2012). The economic market environment is measured by the organizational response and entrepreneurship and the tendency of a market to rise or fall sharply within a short period of time (Beers, 2020). Documents are used in order to quantify the market environment parameters into categorical data. The scoring criteria are defined in Appendix 10.

Size (test concept)

In order to conclude the causality of the thesis conceptual model, the model is tested using the variable 'size' as an independent variable required to have a weaker relation with GDPR compliance behaviour compared to the variables in the model. Also from the literature, the size of the organization itself does not have an impact on the GDPR compliance behaviour and the costs are not significant as is the case for the smaller organizations (Gabriela, 2018). The variable 'size' is one of the sub-parameters in organizational diversity and interdependence. It is a variable often used for similar studies and can be easily calculated. If the level of GDPR compliance behaviour shows a stronger relation towards the test parameter, the hypotheses in this research will not be significant.

3.2.3. Data collection

Document research

Documents are an important source of information that leads to more objective and more reliable and valid results for organizational characteristics. The annual report should be used to determine organizational diversity and interdependence. Furthermore, in order to measure the market environment technology and economics, the annual report is used to rank the organization on the defined criteria. The annual reports and the financial statements give the best objective data that is expected to be found online or on request. All large-sized companies are obliged to make an annual report. The information required to determine GDPR compliance behaviour and adaptive governance would require sensitive business information that would limit the response significantly and is therefore not measured based on document research.

Categorical survey

The required information about GDPR compliance behaviour and adaptive governance can be collected using a categorical survey. This survey is a self-assessment using the 5-point Likert scale. The parameters and the questions are based on existing research as referred to in section 3.2.2. This should lead to the measurement of proper variables with sufficient reliability and validity.

3.3. Data analysis

This research describes the dependency between variables or concepts. Exploratory research would benefit from qualitative research while relations like the one described in this thesis can be best analysed using quantitative methods (Saunders et al., 2007) (Lowhorn, 2007). All acquired data is numerical by nature or transformed into numerical values using a 5-point Likert scale. The numerical data allows the use of statistical methods to test the relationship between variables and parameters. The parameter data descriptive statistics are presented to verify the reliability and validity of each variable before they are used in regression statistics.

3.3.1. Concept variables

The conceptual model describes four variables that consist of multiple parameters (dimensions or indicators). These parameters can only be merged into one variable if the parameters are consistent and correlate sufficiently to one and the other. The indicator or dimension data is tested using correlation. When coping with multiple parameters that merge into one variable the individual parameter weight needs to be taken into account. In order to minimize correlation issues and weighting the constructs are based on existing research when measuring the construct, see section 3.2.2.

3.3.2. Regression

The hypotheses and the conceptual model predict a relation of organizational diversity and interdependence with a decrease of GDPR compliance behaviour, where the organizational diversity and interdependence are the independent variable (predictors). The relation is analysed using linear regression; the spread of the variables of organizational diversity and interdependence and the dependent variable GDPR compliance behaviour is explained by the variance in the regression. The significance of the relation, the predictability and how they relate is explained in the results.

Multicollinearity is a phenomenon in which one independent variable in a multiple regression model can be linearly predicted from the other variables with a substantial degree of accuracy. Hence the predicting variable is not as independent as the model assumes. Collinearity provides an index that measures how much the variance (the square of the estimate's standard deviation) of an estimated regression coefficient is increased because of collinearity. Multicollinearity does not reduce the predictive power or reliability it only affects calculations regarding individual predictors.

3.3.3. Reliability, validity and ethical aspects

In this research, reliability and validity are taken into account and discussed in this section. Reliability is defined by the characteristics of reproducibility, accuracy and consistency. The validity is defined by trustworthiness and the reality the data should represent. See Figure 3.



Figure 3 Reliability and validity (source: <https://www.unthsc.edu/center-for-innovative-learning/assessment-reliability-and-validity/>, accessed on 12-4-2018)

Due to sensitivity and privacy, the dataset is not made public and no organization is mentioned in this thesis. No privilege is given during or after this research to any specific organization. Using quantitative analyses all organizations can benefit from research on GDPR compliance behaviour.

Reliability

Reliability refers to the extent to which your data collection techniques or analysis procedures will yield consistent findings. It can be assessed by posing the following four types (Saunders et al., 2007):

- Will the measures yield the same results on other occasions?
- Will similar observations be reached by other observers?
- Is there transparency in how sense was made from the raw data?

Reliability has been an important boundary when measuring variables striving for the best stability, accuracy and reproducibility. The first choice of data analyses for qualitative methods is on document research, preferably numerical data (Saunders et al., 2007). This makes the research less sensitive to interpretation and increases reproducibility. When documentation is not available, categorical surveys will be used. The categorical survey will increase the sample size but is dependent on response. It costs effort to create a good survey, but it reduces the effort of data collection once the survey is created. The required categorization of collected data is minimized and will be documented resulting in good consistency.

Validity

Validity is concerned with whether the findings are really about what they appear to be about. Is the relationship between two variables a causal relationship (Saunders et al., 2007). The internal validity is defined by the trustworthiness that the data present the reality. Focussing on categorical surveys decreases internal validity risk (Saunders et al., 2007).

- The collected data in this research can misrepresent the population due to non-response when organizations implement symbolically (that is typically described as a mortality issue). However, the relation that is researched is not influenced, as long as the sample size is sufficient.
- The internal validity will have a stronger influence when using categorical surveys of socially desirable answers. For sensitive topics, the researcher must be aware of the possibility or even likelihood that survey data will provide the answers which they think are socially desirable (that is typically described as a testing issue). That is why constructing the survey questions on GDPR compliance behaviour need extra attention.

The external validity is defined by whether your findings may be equally applicable to other research settings, such as other organisations (Saunders et al., 2007). No constraints are limiting the research to Dutch organizations. Hence generalization towards other European countries should be possible.

4. Data analysis and model testing

The previous chapter described the methodology for data analyses. In this chapter, the quantitative analysis is performed and reported. This chapter presents parameters, variables, hypotheses and relevant statistics. Section 4.1 presents the descriptive statistics of the collected data and the performed reliability statistics and the correlations. Section 4.2 presents the regression analysis and the main hypothesis testing. Section 4.3 presents additional regression analyses.

4.1. Data characteristics

About 350 companies that fulfilled the organizational requirements received the first invitations for the survey, but the response quickly showed that a significant increase of invitations was required. In order to increase the number of participants the selection of organizations was increased by inviting more companies, government organizations like municipalities or semi-government organizations like hospitals, for the survey and the required size of an invited organization was decreased. These changes influence the diversity of the organizations included in the data. Finally, a total of about 1350 organizations were invited for the survey of which a total of 177 organizations responded but only 76 organizations completed the survey. Due to the lack and availability of annual statements an acceptable dataset was available of only 58 participants.

For the variables GDPR compliance behaviour and adaptive governance, the parameters are measured using a survey self-assessment that are described in Appendix 5 and Appendix 9. The survey consists of one page with 12 5-point Likert scale questions about GDPR compliance behaviour and the second page consists of 6 5-point Likert scale questions about adaptive governance.

The variable market environment is defined by the aspects of technology and the economy. However, the total response is low and about half of the participants is from the public sector where municipalities are over-represented. The economic market environment is therefore defined by the public, semi-public and private organizations. A further distinction in the economical market environment would decrease validity and reliability.

4.1.1. GDPR compliance behaviour

The GDPR compliance behaviour is measured using a self-assessment categorical survey. Each answer is measured on a 5-point Likert scale. The summarized survey data on GDPR compliance behaviour dimensions are presented in Table 1.

The individual question statistics are displayed in Appendix 11. All 12 questions are divided over 4 dimensions of each 3 questions. When looking at the reliability and validity the third question of the evaluation dimension has a negative correlation coefficient while a positive influence is expected. Therefore, the dimension evaluation is determined by 2 questions, leaving out the third question. The calculated GDPR compliance behaviour score is defined by the average of the dimension scores taking into account missing values. The question about the overall GDPR compliance behaviour score is added to the survey in order to verify the contributions of the dimensions to the GDPR compliance behaviour.

Table 1 Descriptive statistics for the GDPR compliance behaviour dimensions and total GDPR compliance behaviour score

GDPR compliance behaviour scores	N	Min	Max	Mean	Std Dev
Influencing factor Education and Training	76	1.00	5.00	3.474	0.847
Influencing factor Evaluation	76	1.00	5.00	3.263	1.041
Influencing factor Involvement	76	1.33	5.00	3.684	0.872
Influencing factor Motivation	76	1.33	5.00	3.702	0.562
Calculated GDPR compliance behaviour score	76	1.38	4.83	3.531	0.661
Verification GDPR compliance behaviour	76	1.00	5.00	3.210	0.943

The first observation is that the full range of the answers is used by participants. The second observation is that the averages of the influencing factors are close to each other especially

considering the dimension spread. The third observation is that missing values for influencing factor questions are very low.

The reliability and internal consistency of the parameters and aspects within the dimensions were planned to be tested by using Cronbach alpha or by using correlations. Using the Cronbach alpha, each parameter needs to be related to the dimension in a direct way using sufficient parameters. The self-assessment questions are sometimes stated in a superlative pattern and refer to other aspects of the dimension. Furthermore, the number of influencing factor questions is low, so it puts a stronger focus on the average parameter inter-item correlation. Therefore, reliability is tested using correlations. The inter-item correlation coefficients as can be seen in Appendix 11 indicates the significance and a correlation between specific dimensions that is not too strong. The dimension involvement inter-item correlation is just outside the 5% significance limit. All correlation coefficients have a similar strength, supporting the definition of the four dimensions to the GDPR compliance behaviour and no weighting needs to take place.

The correlation between the survey verification GDPR compliance behaviour and the measured dimensions using self-assessment indicates a significant relation with positive coefficients. The correlation results (see Table 2) indicates that the influencing factors are reliable.

Table 2 The correlation results of the influencing factors with the verification question relating to GDPR compliance behaviour

Influencing factors	Significance	Coefficient
Education and training	0.000	0.424
Evaluation	0.000	0.575
Involvement	0.000	0.622
Motivation	0.000	0.473

4.1.2. Organizational diversity

The indicators of the construct organizational diversity are described in section 3.2.2 and Appendix 6. During the data collection, it became clear that information about some organizational diversity parameters is missing in the annual report. Other values might be more subject to interpretation and context. In this section, each organizational diversity indicator is checked with respect to the availability, reliability and validity before being used in a regression analysis.

Size

The size of an organization is determined by the total asset, the revenue and the number of employees. The parameter number of employees is defined by the number of FTE because it is a more accurate value, but there are still some difficulties in determining the number of FTE. This term can include or exclude interns, volunteers or hiring. The descriptive statistics of the organizational diversity indicator 'size' is displayed in Table 3.

Table 3 Descriptive statistics for the organizational diversity indicator 'size'

Parameter	N	Min	Max	Mean	Std Dev
Revenue [mln€]	58	15.84	11035	858.04	2006.757
Total asset [mln€]	52	2.29	69721	3159.91	10410.610
FTE [-]	56	17.48	451132	10852.10	60417.779
Categorized Revenue	58	1.00	5	2.22	1.351
Categorized Total Asset	52	1.00	5	2.27	1.345
Categorized FTE	56	1.00	5	2.71	1.398
Total score Size	58	1.00	5	2.37	1.242

The first observation is the large spread of all three parameters. When using the absolute parameter value for determining the indicator size, the parameters are highly dominated by extremes as can be seen in the histogram in and Table 3. Categorization of a parameter is discouraged, but the

parameters need to be categorized when the spread of the dataset is higher than the mean value and when the distribution deviates significantly from the expected distribution (chi-square). Therefore, the parameters defining the indicator 'size' are categorized as can be seen in Appendix 12 and Table 3. The reliability of the categorized parameters within the indicator 'size' is shown in the correlation matrix in Appendix 13 indicating significant reliability.

Portfolio diversification

The portfolio diversification is determined by the product diversity index as can be seen in section 3.2.2. The number of market segments is defined by the number of different market segments that can be recognized in the organizational structure (segmenting every product does not give different market segments). The index of product diversification is based on the categories type of products (product, services) and the amount of specialization or required knowledge. Examples to help scoring is displayed in Appendix 7. The descriptive statistical parameter data of portfolio diversity is presented in Table 4.

Table 4 Descriptive statistics for the parameters that define portfolio diversity

	N	Min	Max	Mean	Std Dev
Number of market segments	58	1.00	4.00	3.05	0.759
Required knowledge	58	2.00	5.00	2.66	0.828
Type of product	58	1.00	5.00	3.28	0.768
Overall portfolio diversity	58	1.33	4.66	2.99	0.694

Geographical diversification

Geographical diversification also referred to by globalization increases the organizational challenges as described in section 3.2.2. The difference in assets or sales for each area or segment is not available in the annual report and therefore the geographical indicator is simplified by determining the area of operation. The geographical diversification is stepwise increased from local to several bases in the Netherlands to international regulations and finally worldwide where GDPR is not the only privacy regulation. The cases are:

1. Local
2. National
3. Europe
4. World

The descriptive parameter data is presented in Table 5

Overall organization diversity

The variable organizational diversity in this research is measured by combining the indicators categorized size, portfolio diversification and geographical diversification into one variable. The weight of each indicator within the variable organizational diversity is equal by design (Schwandt, 2009). The data indicates that the overall organizational diversity correlations (see Appendix 13) indicate that the overall organizational diversity can be calculated by the average of the indicators, as long as the increments in the indicators have a similar step size in value and meaning. The descriptive statistics are displayed in Table 5.

Table 5 Descriptive statistics for the variable overall organizational diversity

	N	Min	Max	Mean	Std Dev
Categorized size	58	1.00	5.00	2.374	1.242
Overall portfolio diversification	58	1.33	4.66	2.99	0.694
Geographical diversification	58	1.00	4.00	1.700	0.971
Overall organizational diversity	58	1.56	4.33	2.377	0.744

4.1.3. Organizational interdependence

The indicators of the construct organizational interdependence are described in section 3.2.2 and Appendix 8. In this section, each organizational interdependence indicator; value creation, technology intensity, organizational structure and number of board members, are described and checked with respect to the availability, reliability and validity before being used in a regression analysis. During the data collection it became clear that the information about subsidiaries is more difficult to interpret and, similar to the article of Schwandt (2009), it is not used in further analyses.

Value creation

The value creation is measured by 'cost of goods to sales inverted' as indicated by Schwandt (2009) but the research and development information is missing. The descriptive statistics on the value creation indicator is presented in Table 7

Technology intensity

The technology intensity is measured by asset divided by the number of FTE (Schwandt, 2009). When using the absolute parameter values for determining the indicator technological intensity, the parameter is highly dominated by extremes as can be seen in Table 6. A parameter or indicator is only categorized when the spread of the dataset is higher than the mean value and the distribution deviates significantly from the expected distribution (chi-square). However, the technological intensity indicator was not expected to deviate in distribution and spread due to the relative properties of the indicator. The indicator technological intensity is categorized and can be seen in Table 6.

Table 6 Descriptive statistics for organizational interdependence indicator 'Technology intensity'

Technology intensity indicator parameter	N	Min	Max	Mean	Std Dev
Asset to FTE	50	0.01	17.85	1.708	3.640
Categorized Asset to FTE	50	1.00	5.00	2.380	1.455

Organizational structure

The parameter organizational structure makes a distinction between division, functional and matrix (Schwandt, 2009). The descriptive parameter data is presented in Table 7

Board members

The number of board members determines the difference of interest and the required collaboration (Schwandt, 2009). The descriptive parameter data is presented in Table 7

Overall organizational interdependence

The variable organizational interdependence in this research is measured by combining the available value creation, technology intensity, organizational structure and the number of board members. The weight of each indicator within the variable organizational interdependence is equal by design (Schwandt, 2009) and therefore the correlation of the indicators is checked. The organizational interdependence indicator correlations (see Appendix 13) indicate that the overall organizational interdependence can be calculated by the average of the indicators, as long as the increments in the indicators have a similar step size in value and meaning. The descriptive statistics are displayed in Table 7.

Table 7 Descriptive statistics for the variable overall organizational diversity

	N	Min	Max	Mean	Std Dev
Value creation	50	1.01	4.58	1.766	0.947
Technology intensity	50	1.00	5.00	2.380	1.455
Organizational structure	58	1.00	5.00	2.640	1.135
Number of board members	58	1.00	5.00	2.450	0.921
Overall organizational interdependence	58	1.01	3.71	2.320	0.575

4.1.4. Adaptive governance

The adaptive governance is measured using a self-assessment categorical survey containing questions in a 5-point Likert scale. Multiple adaptive governance aspects are measured. The adaptive governance variable is defined as the mean of all adaptive governance aspects taking into account missing values. The summarized survey data on adaptive governance is presented in Table 8.

Table 8 Descriptive statistics for the moderating variable adaptive governance

Aspect	N	Min	Max	Mean	Std Dev
Legitimacy	72	1	5	3.68	0.853
Accountability	72	1	5	3.97	0.671
Inclusion and fairness	71	1	5	4.13	0.893
Leadership	71	1	5	3.87	0.809
Coordination and collaboration	71	1	5	3.61	0.933
Vision	69	1	5	3.70	0.928
Total adaptive governance score	72	1	5	3.83	0.670

The first observation is that the full range of the answers is used by participants. The second observation is that the parameter averages are close to each other considering the spread of the aspect score, similar to the data about GDPR compliance behaviour (section 4.1.1). The third observation is that the number of samples is lower compared to the data about GDPR compliance behaviour.

The total score for adaptive governance consists of six aspects directly aimed at the variable and can therefore be tested on reliability using the Cronbach alpha test and correlations. The Cronbach alpha reliability score of 0.877 indicates good reliability and internal consistency see Table 9. Removing one of the parameters decreases the Cronbach alpha. Removing a parameter will not improve the overall reliability, it rather decreases. The correlation between parameters of adaptive governance shows a good significance. The Cronbach alpha difference between the uncorrected score and the internal correlation indicates weighting parameters is not needed as can be seen in Appendix 14.

Table 9 Reliability statistics for the moderating variable adaptive governance

Parameter	Scale mean if item deleted	Scale Variance if item deleted	Corrected Item-Total Correlation	Cronbach Alpha if item deleted
Legitimacy	19.24	11.317	0.684	0.590
Accountability	18.97	12.417	0.644	0.490
Inclusion and fairness	18.81	11.381	0.587	0.409
Leadership	19.06	10.743	0.813	0.696
Coordination and collaboration	19.28	11.040	0.624	0.546
Vision	19.21	10.405	0.746	0.690

4.1.5. Market environment

The market environment is measured by the economic and technological environment as determined in section 3.2.2. The technological environment is the average of the three technological criteria related to hardware and software, IP creation and Research and Development support see Appendix 10. The economic environment is measured by private, semi-public or public due to the amount of entrepreneurship and the speed of response to market change within these categories. Differentiation within the private sector will be based on a small number of cases. Therefore, the three ranked cases for the economic environment are:

1. A public organization is an organization that falls under the responsibility of the government.
2. A semi-public organization is an organization that performs a public task, handles public interest or is largely funded by the government.
3. An organization is private when it does not fall under the other categories.

The average market environment is calculated by the average of the parameters economic and technological environment. The correlation between the technological parameters shows a good significance as can be seen in Appendix 15.

Table 10 Descriptive statistics for the moderating variable market environment

	N	Min	Max	Mean	Std Dev
Economic environment	58	1.00	3.00	1.93	0.86
Hardware and Software	58	1.00	3.00	2.28	0.62
Innovation and IP creation	58	1.00	3.00	1.74	0.85
R&S support	58	1.00	3.00	1.72	0.81
Market environment	58	1.17	2.83	1.92	0.66

The variable market environment is tested as a moderating variable influencing the relation of organizational diversity and interdependence with the level of GDPR compliance behaviour.

4.2. Regression analysis

4.2.1. Organizational diversity

The first hypothesis states that an increase in organizational diversity predicts a decrease in GDPR compliance behaviour. The regression analysis indicates that 1% of the variance is explained by the model using the independent variable organizational diversity. The relation between organizational diversity and GDPR compliance behaviour has a model adjusted R^2 of -0.013 indicating poor predictability of the model. The significance score of the model is 0.590 indicating a 59.0% chance that the relationship is not a real relation see Appendix 16. This means that the relation of the first hypotheses cannot be explained by regression analysis.

The third hypothesis states that the moderating variable of adaptive governance influences the relationship between the dependent and independent variable; Organizations with high adaptive governance reduce the challenges and therefore the relationship between organizational diversity and GDPR compliance behaviour weakens, and diverse organizations will show better GDPR compliance behaviour when influenced by organizational adaptive governance. In regression analyses, the moderating variable is the multiplication with the independent variable organizational diversity. The regression analyses contain organizational diversity, the parameter adaptive governance and the moderating parameter adaptive governance. Regression analyses with the adaptive governance as moderating variable is significant and showed 31% of the variance explained see Appendix 16. The regression variable coefficient and significance of the moderating variable adaptive governance can be seen in

Table 11. The impact of the moderating variable on the model predictability is investigated. The adaptive governance and the organizational diversity as an independent variable is measured, this regression now explains 32% of the variance. This means that the impact of adaptive governance as moderating variable is 1%, which is very weak. The statistics of the relationship without adaptive governance as moderating variable (to determine the impact) can be seen in Appendix 16.

Table 11 Regression analyses of coefficients for dependent variable GDPR compliance behaviour, the independent variable organizational diversity, the adaptive governance and the adaptive governance moderating variable

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.144	1.707		1.256	0.215
Organizational diversity	-0.327	0.688	-0.374	-0.475	0.637
Adaptive governance	0.375	0.442	0.384	0.847	0.401
Adaptive governance moderating variable	0.081	0.176	0.435	0.435	0.649

This model is explained in such a way that increasing organizational diversity by 1 leads to a decrease of GDPR compliance behaviour by 0.327, an increase of adaptive governance by one leads to an improvement in GDPR compliance behaviour of 0.375 and the moderating variable adaptive governance increases by one leads to an improvement in GDPR compliance behaviour of 0.081. The model indicates that adaptive governance decreases the relationship of organizational diversity and GDPR compliance behaviour supporting hypothesis three. The conditional relation is described as:

$$Compl = 2.144 - 0.327 OrgDiv + 0.375 AdaptGov + 0.081 (AdaptGov * OrgDiv)$$

Where:

Compl = GDPR compliance behaviour

OrgDiv = Organizational diversity

AdaptGov = Adaptive governance

However, the parameters in the relation described by hypothesis three are not significant and cannot be used.

The fourth hypothesis states that the moderating variable market environment influences the relationship between the dependent and independent variable; the dynamic and demanding market environment has a positive influence on the GDPR compliance behaviour by the experience gained. The regression analysis shows a model adjusted R² of -0.034 indicating poor predictability. The significance score of the model is 0.765 indicating an about 76% chance that the relationship is not a real relation see Appendix 16. The poor significance and the 3% variance explained leads to the rejection of hypothesis four.

4.2.1. Organizational interdependence

The second hypothesis states that an increase in organizational interdependence predicts a decrease in GDPR compliance behaviour. The regression analysis indicates that 1% of the variance is explained by the model using the independent variable organizational interdependence. The model adjusted R² of -0.013 indicates poor predictability and a 0.591 significance score indicates about a 59% chance that the relationship is not a real relation see Appendix 17. This means that the relation of the main hypotheses cannot be explained by regression analysis. The results of the variables of organizational interdependence suggest issues with multicollinearity but the analyses show a good VIF score see Appendix 18.

The third hypothesis states that the moderating variable adaptive governance influences the relationship between the dependent and independent variable organizational interdependence. Regression analyses with the adaptive governance as moderating variable is significant and showed 31.4% of the variance explained see Appendix 17. The regression variable coefficient and significance of the moderating variable adaptive governance can be seen in Table 12. The impact of the moderating variable adaptive governance on the model is measured, this regression now explains 31.6% of the variance Appendix 1. The impact of adaptive capacity as moderating variable is 0.2%, which is very weak.

Table 12 Regression analyses of coefficients for dependent variable GDPR compliance behaviour, the independent variable organizational interdependence, the adaptive governance and the adaptive governance moderating variable

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.775	1.551		1.788	0.080
Organizational interdependence	-0.513	0.542	-0.460	-0.946	0.349
Adaptive governance	0.201	0.420	0.206	0.479	0.634
Adaptive governance moderating variable	0.134	0.149	0.550	0.899	0.373

The model indicates that adaptive governance decreases the relationship of organizational interdependence and GDPR compliance behaviour supporting hypothesis three. The conditional relation is described as:

$$Compl = 2.775 - 0.513 OrgInt + 0.201 AdaptGov + 0.134 (AdaptGov * OrgInt)$$

Where:

Compl = GDPR compliance behaviour

OrgInt = Organizational interdependence

AdaptGov = Adaptive governance

Also, these parameters in the relation described by hypothesis three are not significant and cannot be used.

The fourth hypothesis states that the moderating variable market environment influences the relationship between the dependent and independent variables. Similar to organizational diversity the model adjusted R² of -0.016 and a significance score of 0.552 indicating poor predictability and significance leading towards rejection of hypotheses four see Appendix 17.

4.2.2. Overview of hypothesis testing

Table 13 Overview of the conceptual model hypotheses

Hypotheses	Primary target	Pass/Fail	Parameter Significance, coefficient	Pass/Fail
H1 Relation organizational diversity and GDPR compliance behaviour regression	No significance, Poor predictability	Fail	0.	Fail
H2 Relation organizational interdependence and GDPR compliance behaviour regression	No significance, Poor predictability	Fail	0.	Fail
H3 Moderating factor Adaptive governance with organizational diversity in regression	0.001 sig.	Pass	0.64	Fail
			0.40	Fail
			0.65	Fail
H3 Moderating factor Adaptive governance with organizational interdependence in regression	0.001 sig.	Pass	0.35	Fail
			0.63	Fail
			0.37	Fail
H4 Moderating factor Market environment with organizational diversity in regression	No significance, Poor predictability	Fail	NA	NA
			NA	NA
			NA	NA
H4 Moderating factor Market environment with organizational interdependence in regression	No significance, Poor predictability	Fail	NA	NA
			NA	NA
			NA	NA

4.3. Additional analyses

In the previous section, the hypotheses are tested, and the moderating variable adaptive governance showed some interesting results. The observation from the regression analyses showed that:

- The organizational diversity and interdependence both explain insufficient variance and are not significant.
- The model including analyses of the moderating variable adaptive governance became significant and organizational diversity and interdependence explained 31% of the variance.
- The moderating variable impact was very poor.

When investigating the impact of the moderating variable adaptive governance in the regression, the data showed that the organizational diversity and interdependence was insignificant while adding independent variables made it significant without significant model parameters see Appendix 16 and Appendix 17. Since the impact of the moderating variable is poor the regression without the moderating variable adaptive governance but including the basic variable adaptive governance was analysed. Both organizational diversity and interdependence regressions indicated that adaptive governance as an independent variable and parameter is significant while the parameter organizational diversity and interdependence was not. The result of the regression of adaptive governance as an independent variable and GDPR compliance behaviour as a dependent variable was tested see Table 14 and Appendix 19.

Table 14 Model coefficients of adaptive capacity in relation to the dependent variable GDPR compliance behaviour

	Unstandardized Coefficients	Coefficient Std. Error	T	Significance
Constant	1.227	.372	3.299	0.002
Adaptive governance	.599	.096	6.263	0.001

The adjusted R² is 0.350 indicating 35% of the variance explained while the variable adaptive governance is significant. The predictability of the relationship between adaptive governance and GDPR compliance behaviour is relatively strong. The relation is defined by the following formula:

$$Compl = 1.227 + 0.599 AdaptGov$$

Where:

Compl = GDPR compliance behaviour

AdaptGov = Adaptive governance

We can conclude from this relation that an increase in adaptive governance will increase the GDPR compliance behaviour. Scoring one point higher in adaptive governance relates to 0.599 GDPR compliance behaviour score increases to 35% predictability. Further literature research should be conducted on this relationship.

5. Conclusions, Discussion and recommendations

5.1. Conclusions

The dependent variable GDPR compliance behaviour and its dimensions show significant correlations. The correlation coefficients of the dimensions with the overall survey question for GDPR compliance behaviour is similar for all dimensions, supporting the four dimensions with equal weight. The GDPR compliance behaviour variable looks well suited although validity remains an assumption that cannot be tested. The independent variables organizational diversity and interdependence are defined by indicators that require the minimum subjective information, preferably the financial report. From the availability of organizational diversity and interdependence data, considering the spread and categorization, we can conclude that there can be issues for the validity and reliability of the construct organizational diversity and interdependence. This can be enforced by the missing organizational diversity and interdependence information. The regression analyses showed that organizational diversity and interdependence as an independent variable has no significant relation with GDPR compliance behaviour and does not explain the variance.

The first moderating variable adaptive governance is a theoretical construct and shows good internal reliability which makes it well suited for analysis. When including the adaptive governance as moderating variable 31% of the variance was explained. However, the impact of the moderating variable adaptive governance is weak. The second moderating variable market environment is not significant and does not explain sufficient variance.

For the significant regression analyses with the moderating variable, the parameters and the impact of the variables are not significant. However, during additional analyses, the variable adaptive governance is suggested to relate to the GDPR compliance behaviour in a positive way. Adaptive governance had a negligible impact as a moderating influence but a significant influence as an independent variable. The relation suggests increasing adaptive governance by one increases the GDPR compliance behaviour by roughly 0.6 on a 5-point Likert scale.

5.2. Discussion – reflection

5.2.1. Model

The conceptual model predicts a relationship between organizational diversity and interdependence with the behaviour of employees that act according to the GDPR. In this research quantitative methods are used in order to be able to evaluate the relationship between variables. The advantages and disadvantages of any chosen method will be hard to evaluate because they are very dependent on the situation (Edmondson & McManus, 2007). In this research, the model consists of multiple constructs that are difficult to define and hard to verify. Previous articles and constructs are used as often as possible, but it is still difficult to determine quantified objective measurements with external validity.

The measurement of employee behaviour needs to result in large datasets. The behaviour is very hard to measure directly because of the limited time frame and the monitoring of behaviour. The behaviour is measured indirectly from influencing factors allowing quantitative methods. The drawback of quantitative methods is that assumptions need to be made in order to couple measured parameters and variables to the theoretical construct. In this research, clear assumptions are made by the indirect measurement of the level of GDPR compliance behaviour.

The measurement of organizational diversity and interdependence can be determined from many different viewpoints and parameters, for this research the market-driven perspective from Schwandt (2009) is used. It would be best to minimize the number of constructs using well-defined parameters and validate or verify these results with the “real world”. After verification of the construct, the failure of the conceptual model is easier to explain.

5.2.1. Reliability

From the reliability tests on the variable GDPR compliance behaviour, we can conclude that the method of self-assessment is a nice method. The set of questions covers a range of dimensions without overlap or a dominating dimension, this improves the reliability by the reproducibility, the absence of observer bias and the transparency (Saunders et al., 2007).

The reliability of the variable GDPR compliance behaviour can be increased by increasing the number of questions related to one influencing factor. Furthermore, statistical measures of parameter reliability will be more accurate with an increase of participants. In order to increase participants when combining a survey with document analysis is not a practical solution, the combined data gives rise to GDPR issues that decrease response and increase data collection effort. Furthermore, generating a list of participants with a specific function or role was a challenge and the GDPR does not help you when collecting contact details. In order to increase reliability spending more time to convert the survey questions into specific actions or events that can be answered by every employee is suggested.

When the GDPR compliance behaviour dimensions and correlations are within expectations the variable is reliable and can be used for regression see Appendix 11 (Saunders et al., 2007).

The adaptive governance is measured using self-assessment showing accurate and reliable variables. The reproducibility of the adaptive governance survey is good. When looking at the organizational diversity and interdependence, the stability and the accuracy was poor. The distribution of the parameters that are based on financial reports showed that they were dominated by extreme values and therefore it was hard to fit a Chi-squared distribution through the variables causing difficulties to categorize. Furthermore, the organizational diversity and interdependence results are not similar to the results presented by Schwandt (2009). The lack of similarities with previous research could be caused by missing data on organizational diversity or interdependence, the categorization of data (used as a last resort in order to use the dataset) and the external validity. The categorization and missing parameter information influence the accuracy and reproducibility.

5.2.2. Validity

Internal validity refers to the question of how meaningful or trustworthy a variable or relation is, does the variable or relation reflect the real situation (Saunders et al., 2007). When investigating a sensitive subject, as is the case with the subject of privacy and behaviour of people, it is critical to investigate and verify the validity of the data. The validity of behaviour data will always lead to discussions, even in the case of observations and monitoring of the actual behaviour. In order to increase the validity of organizational diversity and interdependence the most objective and accurate financial data is used as a primary source. This leads to more valid data compared to other methods, but the data from annual statements is still partly influenced by the context of the parameter description. Parameters that cannot be measured using financial data are measured based on clear and measurable criteria using document research. This requires effort in order to create criteria, verify interpretation and context when collecting the data.

In this thesis, the GDPR compliance behaviour is measured by the influencing factors on organizational behaviour, as explained in the theoretical framework in section 2.3. The validity of GDPR compliance behaviour and how it relates to substantive implementation needs explanation. Gathering behaviour data or related data for qualitative analyses will impose a risk of validity by the participant bias. Using quantitative methods we can take care of improving the validity of the survey by measuring specific actions that are designed to prevent the 'desired answer' (Saunders et al., 2007). The best method to get as much and accurate data as possible is to measure behaviour or the influencing factors using self-assessment while taking care of validity issues (Penley & Gould, 1988; Touré-Tillery & Fishbach, 2014). While designing the self-assessment we took into account steps in order to improve validity (Collingridge, 2014).

Although the influencing factors form a solid basis to measure GDPR compliance behaviour. The validity can be increased by creating more questions that will help using control questions and redundancy in the survey. As an example, the control question for the dimension evaluation did not

show the expected correlation coefficient, showing more detailed information would benefit both reliability and validity.

Furthermore, variables and parameter definitions are drawn from the theoretical framework and the components are based on critical review. The parameters are put into questions and feedback of experts is used to improve the questions to be in line with the desired parameter and create a valid question. The validity of each parameter and question is defined by the meaning that the participants give to each question. An interview with a pilot participant is performed on the survey questions in order to test validity and the interpretation and improve the question based on the feedback. Still, one question had a mismatch between the answer and the designed question (it is left out for analyses). The validity of GDPR compliance behaviour relates to the relative meaning for the change in variables. The absolute meaning of the self-assessment answers does not determine the significance or predictability. In other words, the validity of the measured variables requires a meaningful difference in GDPR compliance behaviour between different organizations.

In order to improve the quality of the parameter GDPR compliance behaviour, the survey is sent to employees with specific GDPR related roles and functions within organizations. Therefore, the survey questions would be answered by an expert resulting in a reduction of undesirable answers. These questions would be hard to answer from an unskilled perspective. It improves the knowledge of the participant, but the disadvantage is that the participant is more likely to be biased due to responsibilities. This risk is minimized by the questions that relate to actions and measures to improve GDPR compliance behaviour that lies typically outside the participant responsibility. Based on the low response rate and the large number of people stopping at the first page of the survey, the choice to select specific employees needs reconsideration. When the survey is sent to any employees within the organization the questions need a redesign, but it could lead to a larger set of invitations and response could be increased. The moderating variable adaptive governance is also measured using self-assessment on the dimension of governance. When separate dimensions or variables are tested in the same survey, we need to be aware of any bias in the survey results.

The variables organizational diversity and interdependence are determined primarily based on financial statements and annual reports in order to limit the reader perspectives and influence. The most common advantage for annual statement analyses is objectivity. However, it is still partly subject to interpretation because the document sometimes lacks context and explanation (Stage & Manning, 2015). Each annual statement was presented using slightly different methods and terminology. For example, parameters like FTE could include volunteers or re-evaluation of property suddenly becomes more important for costs. To minimize the influence of interpretation data is collected and interpreted based on pre-defined definitions that require minimal interpretation in order to give meaning and to quantify the parameter. A disadvantage is that combined data collection methods for quantitative analysis are not preferred in terms of privacy issues. The difficulties measuring the organizational diversity and interdependence variables and parameters had an impact on the construct validity. Many predefined parameters are used, but the missing parameters for organizational diversity and interdependence give rise to the concern about the construct validity. Furthermore, the parameters size and the technological intensity are categorized due to the parameter distribution. The categorization influences the magnitude and direction and decreases the validity of the variable and the supposed relation (Cumsille & Bangdiwala, 2000). The reason categorization was required could be caused by the increased selection of organizations. The advantage of objectivity using document analysis is still valid, but considering the disadvantages and the required effort in data collection the trade-off needs reconsideration.

The external validity is determined by the difference in construct parameter correlations. When analysing our dataset, it became clear that there are some issues with the organizational diversity and interdependence constructs. The construct used by Schwandt (2009) focussed on a specific market, but the lack of generalization could be intensified by the diversity of the organizations in this research. When looking into more detail into the organizational diversity indicator size, the parameter is used in many articles with a good correlation without the need for categorization. Also in the article of Schwandt (2009), the measurement of the indicator size had a significant contribution to the construct without categorization. The measured organizational diversity indicator size correlations are

significantly weaker, and a more significant correlation is found after categorization that has a negative impact on the external validity of the indicator size and the variable organizational diversity. The decrease in external validity is caused by categorization that is caused by the spread of the organizational size parameters.

The construct GDPR compliance behaviour, organizational diversity and interdependence and their relation need to be considered with the mentioned limitations.

5.3. Recommendations for practice

The first recommendation refers to the variable adaptive governance. Organizations that display adaptive governance by legitimate actions, accountability, inclusiveness, fairness, leadership, vision, coordination and collaboration also stimulate proper behaviour. These organizations score higher in the influencing factors training, evaluation, involvement and motivation that is used to measure the GDPR compliance behaviour. Adaptive governance causes organizations to take more actions and use influencing factors or it makes employees more receptive to regulations. In both cases, the recommendation is to use the positive relation between adaptive governance and GDPR compliance behaviour.

The second practical recommendation relates to the use of influencing factors. Effective implementation is what organisations should strive for an effective implementation is influenced by training, evaluation, involvement and motivation. The use of influencing factors will improve the GDPR compliance behaviour for it is measured by the same parameters. Preferably the GDPR compliance behaviour measurement using the influencing factors is combined with direct measurement of behaviour.

5.4. Recommendations for further research

The first research recommendation relates to the general implementation variable. In this field, many theories coexist, and many books are written, but a well-validated measurement that can be used for quantitative studies is difficult to find. In this research, the GDPR implementation is measured by the influencing factors on GDPR compliance behaviour. When looking at articles about influencing factors much focus goes to the details that differ for all organizations. The recommendation is to investigate the behaviour parameters that can be measured in large data sets for quantitative research. The framework can be used in general, and the external validity can be tested in many areas. I am fully aware that it is impossible to convince everybody of the validity of such a framework because people tend to believe their situation or organization to be unique and requires a different approach (Martin, Feldman, Hatch, & Sitkin, 1983). Still, I was surprised that I was not able to find one or two general approaches for it is put in daily practice all over the world.

The second research recommendation relates to the variables of organizational diversity and interdependence. The reproducibility of this data set compared to the case used by Schwandt (2009) had issues. The external validity to measure organizational diversity and interdependence is a subject that needs further investigation. Preferably a similar framework is created to measure organizational diversity and interdependence in large data sets for quantitative research. It is also recommended to narrow down the constructs of organizational diversity and interdependence to specific parameters that can be measured.

The third research recommendation is to investigate the relation between the variable adaptive governance and the measured GDPR compliance behaviour. The R^2 and the significance of adaptive governance tend towards a strong model fit as an independent variable. The relation of adaptive governance and the GDPR compliance behaviour suggests that when management acts legitimate, accountable, collaborating, open, with vision and leadership, employees are accepting and acting to the proposed changes. Employees that are not convinced of the GDPR become receptive to the proposed change by the adaptive governance within the organization that allows employees and management to share ideas and be open to any idea. The relation is probably caused by the

psychological relationship with the employee where adaptive governance influences the willingness to train or explain, to be motivated, to be involved and the acceptance of evaluation.

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Appendix

Appendix 1

Organizational and technical GDPR measures

as defined by (Huth, 2019)

Reference	Properties	Category
Recital 29	Pseudonymisation, unlinkability, authorization	PP
Recital 66	Distribute data subject requests to processors	DSR
Recital 67	Restriction of processing	DSR
Recital 68	Data portability request	DSR
Recital 71	Accuracy of data	PP
Recital 78	Data minimization, pseudonymization, information	PP
Recital 81	Security	General
Recital 88	Protect data	General
Recital 156	Data minimization	PP
Art. 4 (5)	Pseudonymity	PP
Art. 5 (1) e	Non-identifiability	PP
Art. 5 (1) e	Storage limitation	PP
Art. 5 (1) f	Integrity and confidentiality	PP
Art. 17 (2)	Distribute data subject requests to processors	DSR
Art. 24 (1)	Demonstrate compliance	PP
Art. 24 (2)	Purpose limitation	PP
Art. 25 (1)	Pseudonymisation	PP
Art. 25 (2)	Data minimization	PP
Art. 28 (1)	meet the requirements of this regulation	General
Art. 28 (3) e	Distribute and execute data subject requests	DSR
Art. 28 (4)	meet the requirements of this regulation	General
Art. 32 (1) a	Pseudonymization	PP
Art. 32 (1) a	Encryption	PP
Art. 32 (1) b	Confidentiality, integrity, availability, resilience	PP
Art. 32 (1) c	access	PP
Art. 34 (3) a	render data unintelligible – (encryption, unlinkability)	PP
Art. 83 (2) d	Technical measures will be taken into account when determining fines	General

Table 1: GDPR references to “technical and organizational measures”

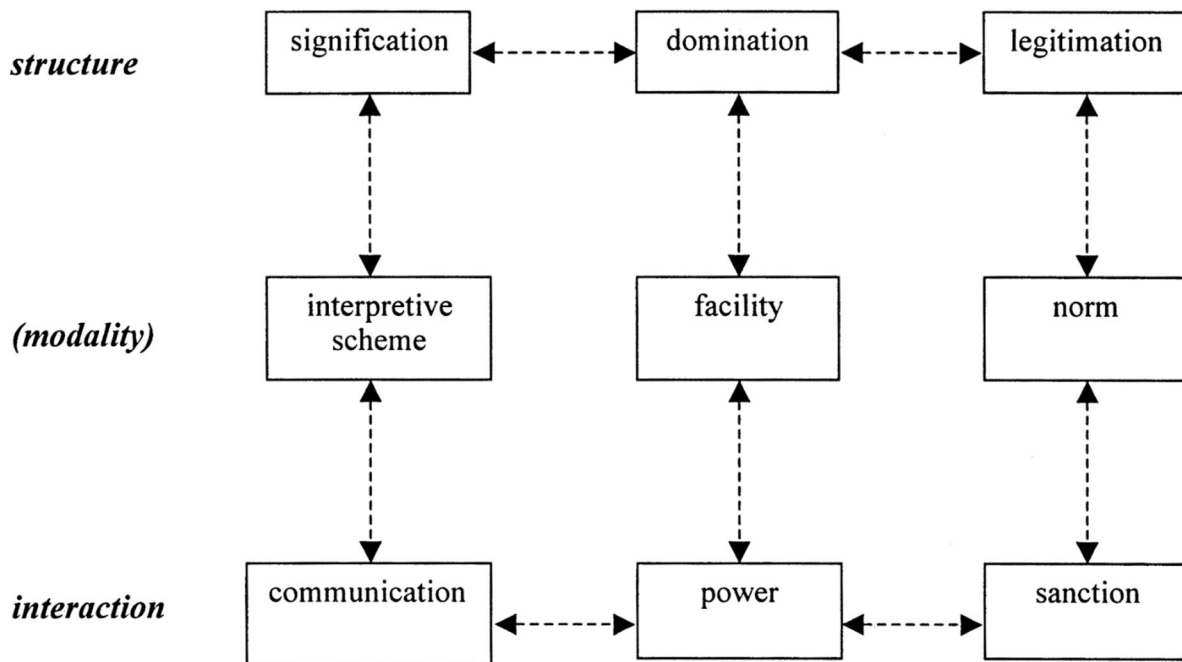
Appendix 2

Structuration theory is the theory of agent (free choice) and the structures influencing the behaviour by different interactions.

Structuration theory

In order to have a better understanding of the structuration theory, a short explanation is given. In general, a structure is an arrangement and organization of interrelated elements in a system and modalities explain the properties of the structure. The structure has both structural and individual qualities. In more detail, on the schematic, the word signification is described by “meaning” and is typically translated into “this is how we do it here”. Domination is defined by control. Legislation is

defined by norms and is typically translated into “this is how we should do it”. Power is translated into “who is the boss” (Staber & Sydow, 2002).



Source: Adapted from Giddens (1984) p. 29

Figure 1 Structuration schematic

The structuration theory is a holistic approach. Structuration theory states that both structure and agency coexist, they have a dual character. This makes it more difficult to focus on one aspect since the counterpart needs to be taken into account. The schematic of the structuration theory depicts the primary relations that exist in all organizations.

Appendix 3

Search process Theoretical framework

The theoretical framework was built using the following themes and the indicated search terms. During the process, more search terms were added and snowballing method was used to increase the search see Table 15

Table 15 Primary search terms divided over multiple themes and below the additional search terms in the secondary search.

GDPR	Implementation	Symbolic Substantive	Complex organizations
Privacy	Implementation	Compliance	Organization
Regulation	Succes factors	Symbolic	Complexity
European	Influence	Substantive	
GDPR			
Information	Challenge	Challenge	Structure
Digital	Change	Risk	Control
Forgotten	Motivation	Motivation	Management

	Involvement	Involvement	Inovation
	Culture	Culture	Impact
	Measure	Measure	Paradox
	Privacy	Predictions	Measure
	Design	Expectations	
	Identity	Process	
	Structure Agency	Leadership	
	Structuration	Participation	
	Control		
	Learning		
	Lessons		
	Evaluate		
	Stakeholder		

During the search for each theme, multiple combinations are used in the EBSCO host, Jstor and google scholar in order to search. The primary search terms are used more frequently for the relevance of the hits when extending the search. In order to retrieve full access to articles, other sources were used. The TUDelft library was found to be a good source for full articles. The list of databases used for EBSCO host is presented in Table 16.

The aim is to have a set of relevant articles by attempting to decrease the total number of hits below 100. To improve relevance several filters are used: English, Date >2012, Peer-reviewed and Full file available. All articles are ranked judging title and abstract. Relevance is based on the ability of the article to sketch the context of the theme or to explain a theory that can be used as a framework for our hypotheses.

Table 16 Databases used within EBSCO host

<i>Databases used with EBSCO host</i>
<i>Academic Search Elite</i>
<i>Business Source Premier</i>
<i>E-Journals</i>
<i>Library, Information Science & Technology Abstracts</i>
<i>PsycINFO</i>
<i>Regional Business News</i>
<i>ERIC</i>
<i>Psychology and Behavioral Sciences Collection</i>
<i>PsycARTICLES</i>

After selecting the articles the content and the references were used for backward snowballing and the relevance of the articles are checked by looking for newer and better (more referenced) work. When useful references are found in articles that are selected google scholar is used for the snowballing method.

The rest of the attachment is presented to show the journey in the theoretical framework. They should be observed as notes. The following sections determine the notes from the first cycles of search themes. Later search terms and references that were selected to be relevant can be found in the final reference list.

1. The first combinations of terms gave some first results described below:

Search terms: GDPR Compliance implementation

Hits: 4 hits are studies by their abstract.

Used articles: (Martínez-Martínez, 2018), (Wilkinson, 2018), (Vojvodic & Hitz, 2019)

Not used in research: The General Data Protection Regulation – Another Key Compliance Area for Global Business

Search terms: Privacy Organization implementation EU -health

Hits: 2 new are studies by their abstract.

Used article: (Sandefur, 2015)

Not used in research: BartCusters. A comparison of data protection legislation and policies across the EU Computer Law & Security Review. Volume 34, Issue 2, April 2018, Pages 234-243.

Search terms: Privacy Regulation Implementation Organization -health

Hits: 1 new are studies by their abstract.

Used articles: (Bednar et al., 2019)

Search terms: Succes factor implementation

Hits: Multiple

Used in research: (Pinto & Slevin, 1988)

2. From this first search term, new words are added after examining the previous results. At this second search, the more general theories or theoretical concepts are put together.

Contingency theory (Donaldson, 2001)

Structuration theory (Stones, 2005)

Adaptive capacity (Staber & Sydow, 2002)

Stakeholder theory (Freeman et al., 2010)

Successful implementation (Demby et al., 2014)

Expectancy (Parijat & Bagga, 2014)

Involvement (Penley & Gould, 1988) (Freeman et al., 2010)

Motivation (Pardee, 1990) (Brown & Starkey, 2000; Vojvodic & Hitz, 2019; Waeger & Weber, 2019).

Increase knowledge (Mendoza et al., 2016)

Learning and critical self-reflexivity (Brown & Starkey, 2000).

Complexity theory (Dooley, 2002; Philip, 1999) (Vermeulen, 2012; Waeger & Weber, 2019)

3. From these references, additional information is searched to strengthen the statements or clarify the theory. Terms used for these searches can be found in Table 15

Finally, the search terms of organizational complexity were narrowed down to organizational diversity and organizational interdependence.

Appendix 4

PESTEL environment analyses

- The political and social influences contain mixed signals. Social influence can be accidental or by persuasion but the social influence is often not clearly observed in the process (Gass, 2015). This can also be concluded for the government, for they articulated the urge of privacy while on the other hand articulating fear of criminal privacy and self-judgement.
- The economic influence is important for all organizations since organizations in crisis or in growth will choose differently (Yüksel, 2012). In this research, we focus on economic influences defined by market characteristics and not overall economic aspects. Markets, where organizations operate in a more fluctuating or volatile environment, have an impact on organizational behaviour due to entrepreneurship, where public markets influence the market environment and organizational behaviour by the lack of entrepreneurship.

- The technological environment influences the business environment of all organizations. However, it is clear that organizations in the technological environment are influenced a lot more by keeping up with innovation (Yüksel, 2012). Due to new technical solutions organizations need to adapt at a much higher rate influencing organisational behaviour.
- The environmental influence on the business environment impacts all organizations in operation (Yüksel, 2012). However, there is no distinction made in behaviour in environmental regulations. The environmental factors influence the agriculture and energy markets, but analysing the identification and impact is in too much detail.
- The legal environment influences the organization behaviour. If the legislation is followed up with penalties then the legal influence is dominant. The legal environment is defined by the GDPR and influences the business environment and the organization behaviour (Yüksel, 2012). The legal environment in this context is equal for all organizations.

Appendix 5

Substantive implementation is measured by the influencing factors. The four influencing dimensions are translated into questions for a survey to be answered on a scale from strongly agree to strongly disagree. This survey topic is categorical using a general self-assessment overall implementation score to verify dimension correlation.

Compliance survey questions

Motivation

- The description of the GDPR implementation goal is clearly stated.
- The description of the GDPR implementation goal is appealing to employees.
- The description of the GDPR implementation goal is achievable.

Training

- There are good GDPR implementation trainings available for the work floor.
- The implication of acting according to the GDPR is clearly explained.
- GDPR implementation information sessions are being organized for all employees.

Involvement

- There is or was a GDPR communication plan in order to involve all employees.
- The operational management and DPO are always involved at drafting the GDPR compliant procedures.
- The operational management and DPO are always involved at **changing** GDPR processes.

Evaluation

- Frequent measurements are being performed to test employee behaviour with respect to the GDPR procedures.
- GDPR procedures are being evaluated based on pre-defined criteria.
- The evaluation of GDPR procedures is aimed at IT solutions where privacy sensitive information is used.

The last question is about the GDPR implementation that can be used to verify the answers on the detailed implementation aspects.

- The GDPR is substantively implemented, the behaviour of employees is always in agreement with the GDPR.

The mean results of the parameters motivation, training, involvement and evaluation are combined to form the overall implementation with equal weight.

A text section is added in order to leave room for comments.

Appendix 6

This appendix describes the measurable indicators for organizational diversity.

Organizational diversity

The construct of market-driven organizational complexity parameter organizational diversity and interdependence measured. It is either directly related to early research (Schwandt, 2009) or criteria are formed to score the parameter.

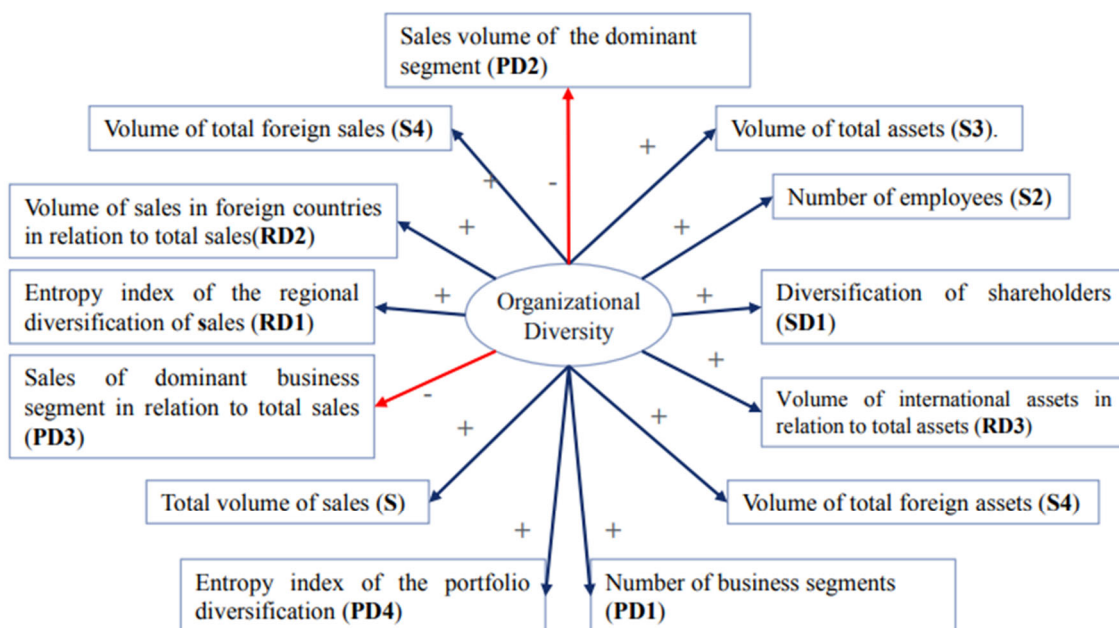


Figure 16: Selected measurable indicators of organizational diversity.⁴³⁴

The letters of the indicators are labelled for the indicators that define organizational diversity. The S stands for the size of the organization. The P for the portfolio or product diversification. The R for the geographical diversification. The S stands for shareholders diversification.

Appendix 7

Portfolio diversity

In order to determine portfolio diversification, the entropy index diversification is measured by the number of market segments, the type of product and the required knowledge.

	Very low	Low	Medium	High	Very high
Market segments					

Examples of a very low number of business segments are if the organization only produces bikes or potatoes. While a large number of business segments can be found in university hospitals.

	Fixed products	Special products	Services	Special services	Open
The type of products					
Example	Potato	Bikes	Municipale	consultancy	Research

	Very low	Low	Medium	High	Very high
The required knowledge					

Examples of very low required knowledge are an organization that does one thing like a housing corporation or retail. While a lot of knowledge is required in university hospitals.

It is expected that the type of product and the required knowledge cannot be allocated as clear as the criteria. Many organizations have a mix of products that can increase the rank or lower it. When categorizing the products not only the top is taken into account. For instance, a local municipality does create new regulations but the main product is the process of checking all the boxes for applications.

Appendix 8

This appendix describes the measurable indicators for organizational diversity.

Organizational interdependence.

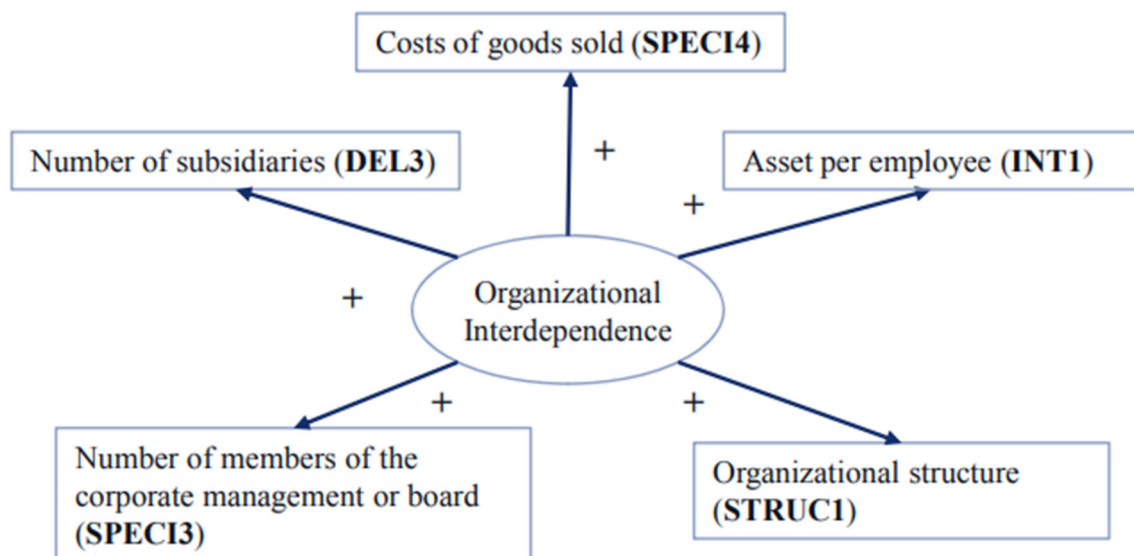


Figure 18: Measurement of organizational interdependence.⁴⁹⁷

Appendix 9

The construct of adaptive governance is measured using the following questions (Schwandt, 2009). The parameter governance is of importance for this research and the measured Cronbach alpha is 0.872.

Adaptive governance questions

Governance	0.872	For management of native vegetation in the Midlands, I believe government agencies are responsive to local community needs and concerns. For management of native vegetation in the Midlands, I believe government environment programs are fair for all Midlands landholders. For management of native vegetation in the Midlands, I believe I have opportunities to have my say about government environmental programs and decisions. For management of native vegetation in the Midlands, I believe government agencies provide good leadership. For management of native vegetation in the Midlands, I believe there is good coordination between government agencies, nongovernment organizations, and local groups. For management of native vegetation in the Midlands, I believe government agencies, nongovernment organizations, and local groups have a common vision.
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[‡]Measured on a scale 1 = never used, 2 = little used, 3 = useful, 4 = very useful. All other items measured on a scale 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree.

[†]Reverse coded.

The questions are translated into relevant questions to be answered in a scale from strongly agree to strongly disagree for the context of our research:

- It is my believe that governance is responsive to employee needs and concerns.
- It is my believe that governance regulations and decisions are fair.
- It is my believe that I have opportunities to explain my own vision about governance decisions.
- It is my believe that governance provide good leadership.
- It is my believe that there is good coordination between upper management and lower management or team leads.
- It is my believe that governance has a clear vision.

Appendix 10

The market environment technology parameter is measured by the market adoption and change of technology, creation of IP and the R&D support of government (Yüksel, 2012). The market economic environment is measured by the entrepreneurship(response and entrepreneurship and the tendency of a market to rise or fall sharply within a short period of time (Beers, 2020).

Market Environment

The technical parameters are scored based on assessment on a Likert 3 scale.

	disagree	Neutral	agree
The market is characterized by a new application of technology both software and hardware.			
The market is characterized by innovative products protected by new IP.			
The market is characterized by R&D that is supported by the government.			

For each of the technology parameters examples are presented in order to help score the organisations:

- An example of a new application of hardware and software that characterizes an organization would be ASML, Research or Tech companies. On the other end of the spectrum, we would find retail, housing corporation or any simple service.

- An example of innovative products and new IP can be found in an organization like ASML and mainly tech companies. On the other end of the spectrum, we would find municipalities and housing corporations where products stay the same.
- An example of R&D support or stimulation would be universities, hospitals or organisations with a social goal that could improve their product like durable or the safety business. The other end of the spectrum is characterized by luxurious goods or governmental organisations like municipalities that do not find R&D support.

To summarize, not all organizations that strive for innovative products and new IP does this with technology or by governmental support on R&D although some organizations will score all at the high end.

The economical parameter is based on differences in markets and influence.

	low	neutral	high
The market is characterized by entrepreneurship and the speed of response to market change.			

There are three dominant types of markets that where entrepreneurship and response are within a certain range. Further details in the private sector will be based on small numbers of cases:

- Public organizations are bound to a public task and are usually owned and operated by the government. Therefore the organization has no entrepreneurship and no quick response
- Semi-Public organizations fulfil public tasks and the government is a large contributor to benefits but is not operated by the government. Therefore the organization entrepreneurship and response time will be in the lower range.
- Private organizations are not part of the other types. Therefore the organization entrepreneurship and response time will be mid to high depending on market details.

The variable market environment is defined by the Economic and Technological parameters with equal weight.

Appendix 11

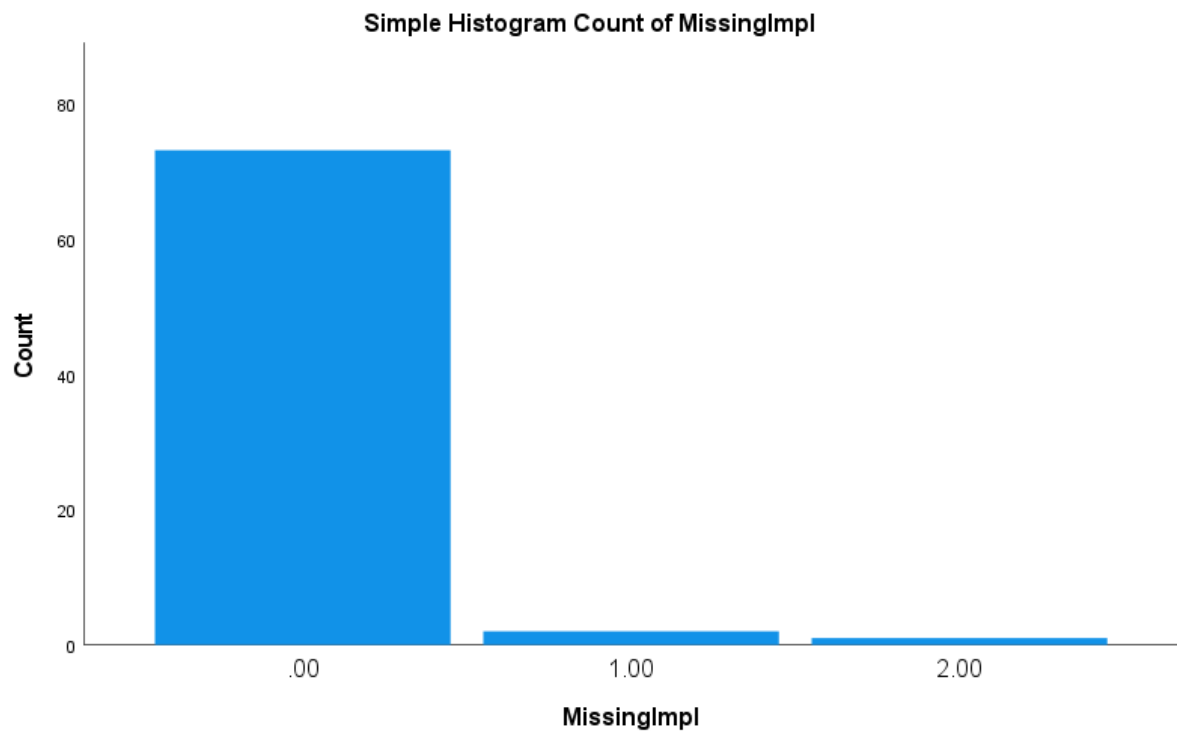
This appendix displays the individual GDPR implementation question descriptive values, the missing values for the GDPR implementation and the correlations for each of the GDPR implementation dimensions.

Implementation descriptive statistics

GDPR implementation dimensions	N	Min	Max	Mean	Std Dev
Goal question 1	76	1	5	4.11	0.741
Goal question 2	76	1	5	3.30	0.817
Goal question 3	76	1	5	3.70	0.731
Training question 1	75	1	5	3.27	1.031
Training question 2	75	1	5	3.68	0.841
Training question 3	76	1	5	3.47	1.216
Involvement question 1	76	1	5	3.91	1.110
Involvement question 2	75	1	5	3.65	1.109
Involvement question 3	75	1	5	3.45	1.056
Evaluation question 1	76	1	5	3.26	1.100
Evaluation question 2	76	1	5	3.26	1.136

Evaluation question 3	76	1	5	2.68	1.009
Overall	76	1	5	3.21	0.943

Missing values implementation



Correlations Education Training questions

Correlations

		Education Training question 1	Education Training question 2	Education Training question 3
Education Training question 1	Pearson Correlation	1	.568**	.516**
	Sig. (2-tailed)		.000	.000
	N	75	74	75
Education Training question 2	Pearson Correlation	.568**	1	.383**
	Sig. (2-tailed)	.000		.001
	N	74	75	75
Education Training question 3	Pearson Correlation	.516**	.383**	1
	Sig. (2-tailed)	.000	.001	
	N	75	75	76

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations Evaluation questions

The third question is recoded by design, but the correlation with the other questions shows a negative coefficient, where a positive influence is expected. When further investigating the question is prone to other interpretations for the focus on a critical process can be seen as a positive action while neglecting other processes is not according to the GDPR.

Correlations

		Evaluation Question 1	Evaluation Question 2	Evaluation question 3 Recoded
Evaluation Question 1	Pearson Correlation	1	.734**	-.489**
	Sig. (2-tailed)		.000	.000
	N	76	76	76
Evaluation Question 2	Pearson Correlation	.734**	1	-.473**
	Sig. (2-tailed)	.000		.000
	N	76	76	76
Evaluation question 3 Recoded	Pearson Correlation	-.489**	-.473**	1
	Sig. (2-tailed)	.000	.000	
	N	76	76	76

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations Involvement questions

Correlations

		Involve question 1	Involve question 2	Involve question 3
Involve question 1	Pearson Correlation	1	.244*	.226
	Sig. (2-tailed)		.035	.051
	N	76	75	75
Involve question 2	Pearson Correlation	.244*	1	.863**
	Sig. (2-tailed)	.035		.000
	N	75	75	75
Involve question 3	Pearson Correlation	.226	.863**	1
	Sig. (2-tailed)	.051	.000	
	N	75	75	75

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations Motivation questions

Correlations

		Motivation question 1	Motivation question 2	Motivation question 3
Motivation question 1	Pearson Correlation	1	.365**	.331**
	Sig. (2-tailed)		.001	.004
	N	76	76	76
Motivation question 2	Pearson Correlation	.365**	1	.245*
	Sig. (2-tailed)	.001		.033
	N	76	76	76
Motivation question 3	Pearson Correlation	.331**	.245*	1
	Sig. (2-tailed)	.004	.033	
	N	76	76	76

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Correlation implementation dimensions

Correlations

		Training	Evaluate	Involvement	Motivation	ImplCalc	Overll
Training	Pearson Correlation	1	.504**	.506**	.547**	.802**	.424**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	<.001
	N	76	76	76	76	76	76
Evaluate	Pearson Correlation	.504**	1	.626**	.356**	.838**	.575**
	Sig. (2-tailed)	<.001		<.001	.002	<.001	<.001
	N	76	76	76	76	76	76
Involvement	Pearson Correlation	.506**	.626**	1	.401**	.824**	.622**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001
	N	76	76	76	76	76	76
Motivation	Pearson Correlation	.547**	.356**	.401**	1	.661**	.473**
	Sig. (2-tailed)	<.001	.002	<.001		<.001	<.001
	N	76	76	76	76	76	76
ImplCalc	Pearson Correlation	.802**	.838**	.824**	.661**	1	.668**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		<.001
	N	76	76	76	76	76	76
Overll	Pearson Correlation	.424**	.575**	.622**	.473**	.668**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	
	N	76	76	76	76	76	76

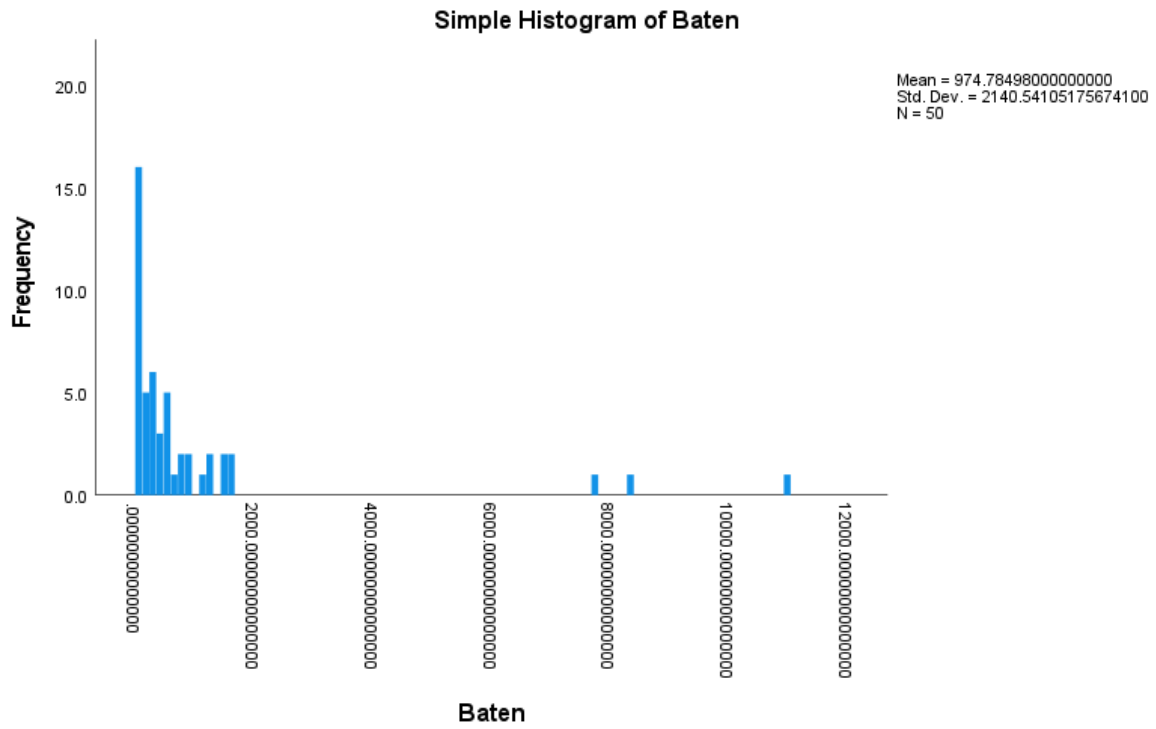
** . Correlation is significant at the 0.01 level (2-tailed).

Appendix 12

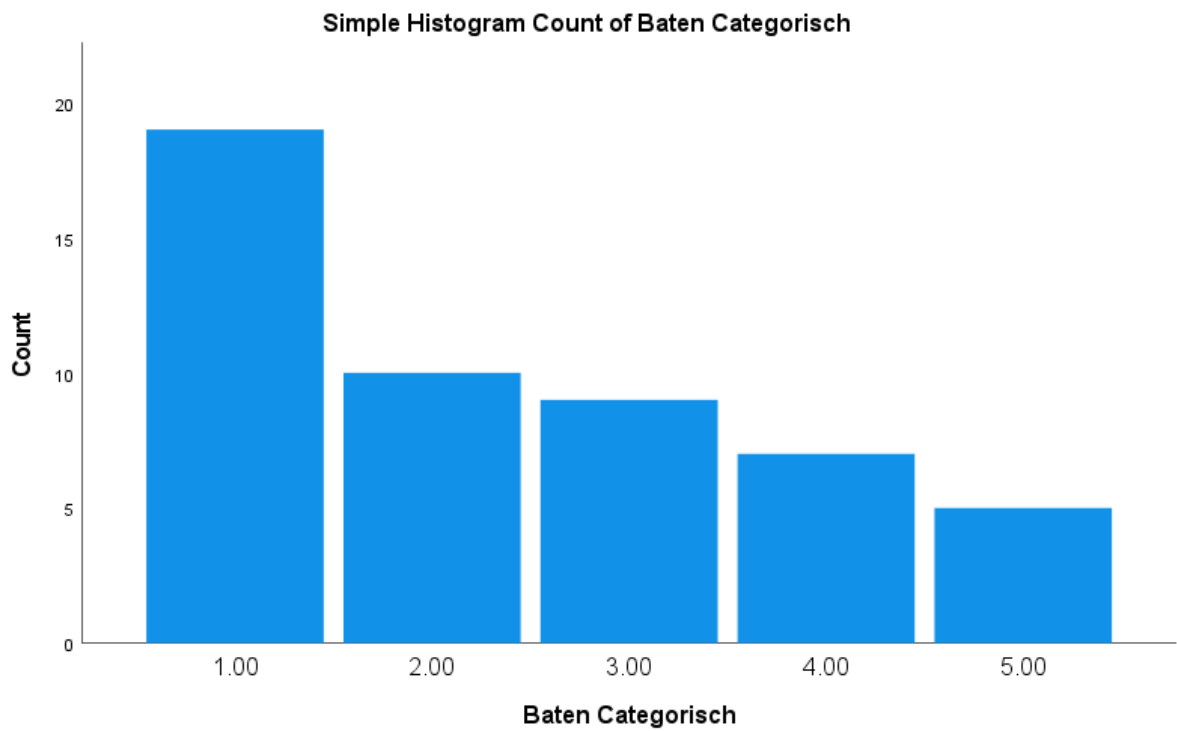
This appendix displays the distribution before categorization, the categorization categories and the distribution after categorization for both the indicator Size and the assets per FTE.

Categorization indicator 'size'

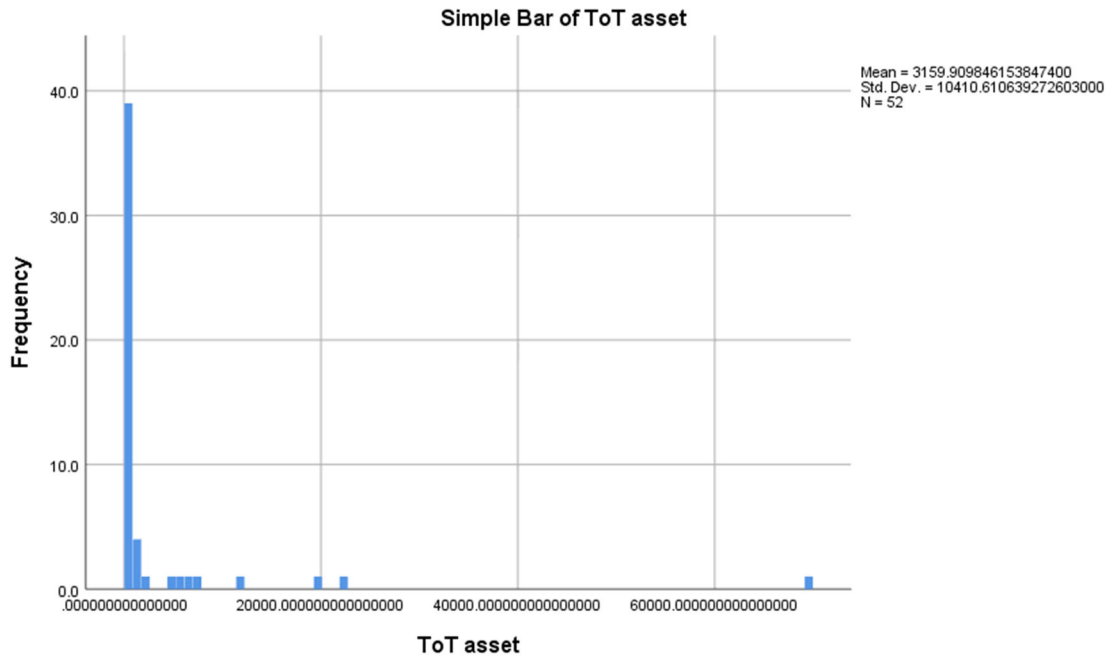
Revenue



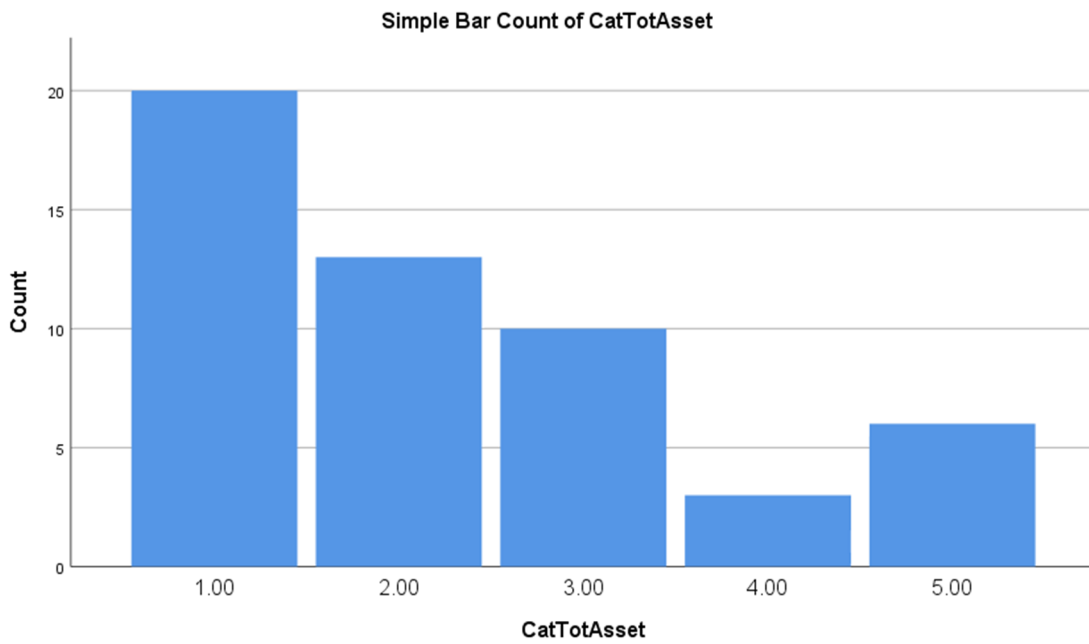
RECODE (Lowest thru 200=1) (200.001 thru 400=2) (400.001 thru 800=3) (800.001 thru 1600=4) (1600.001 thru Highest=5)



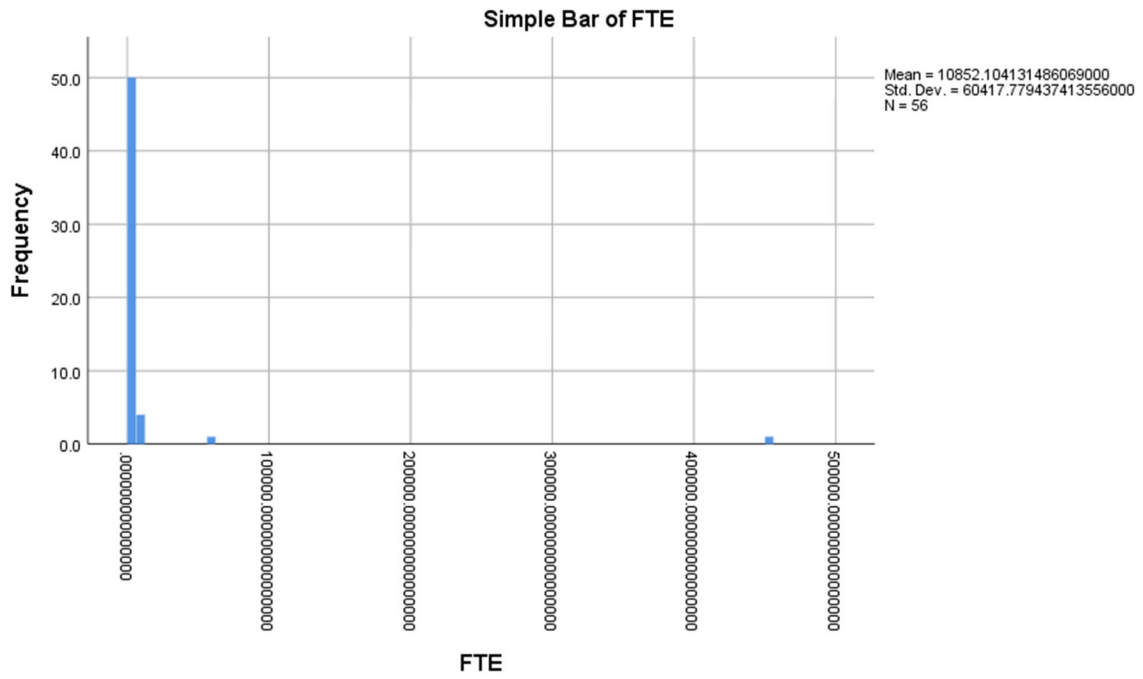
Total asset



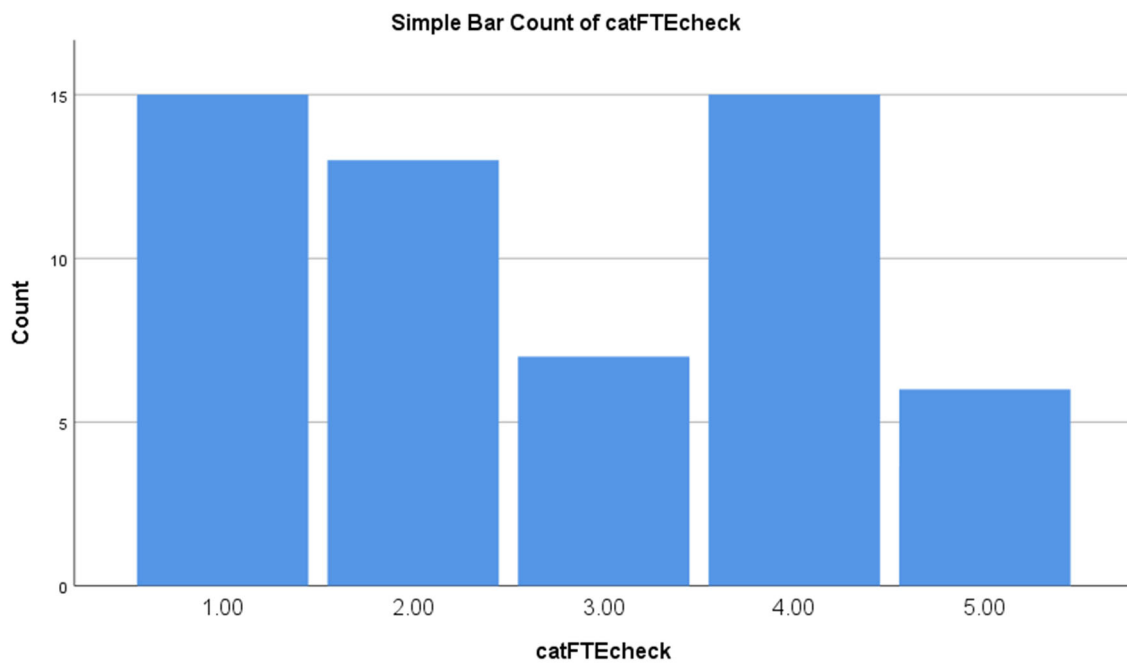
RECODE (Lowest thru 200=1) (200.001 thru 600=2) (600.001 thru 1800=3) (1800.001 thru 5400=4) (5400.001 thru Highest=5)



FTE

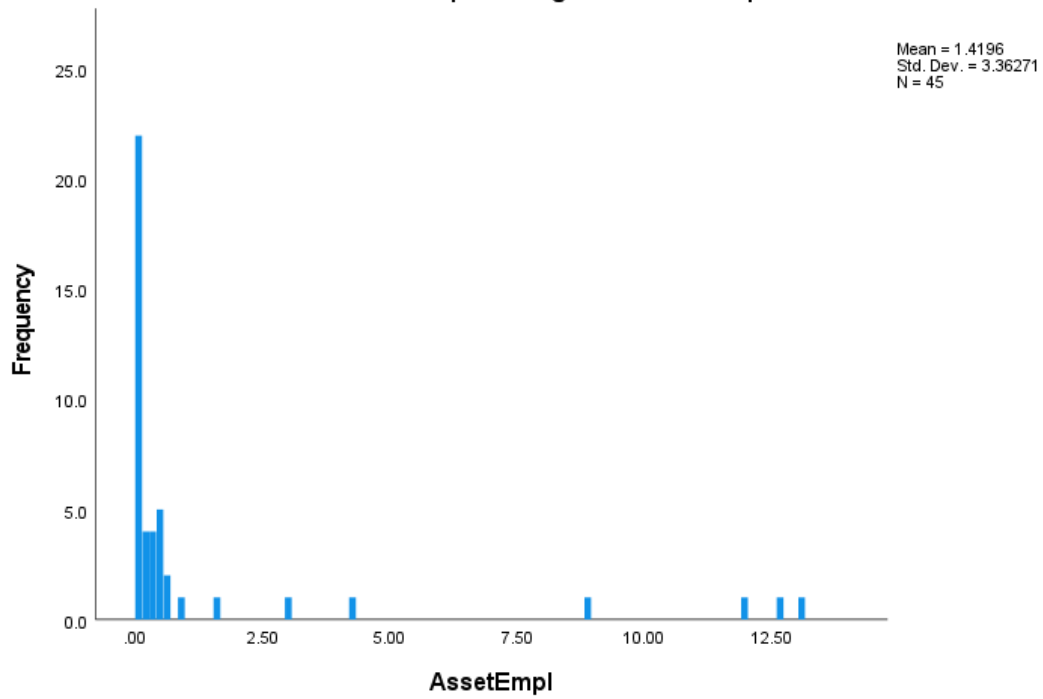


RECODE FTE (Lowest thru 200=1) (200.001 thru 600=2) (600.001 thru 1800=3) (1800.001 thru 5400=4) (5400.001 thru Highest=5)



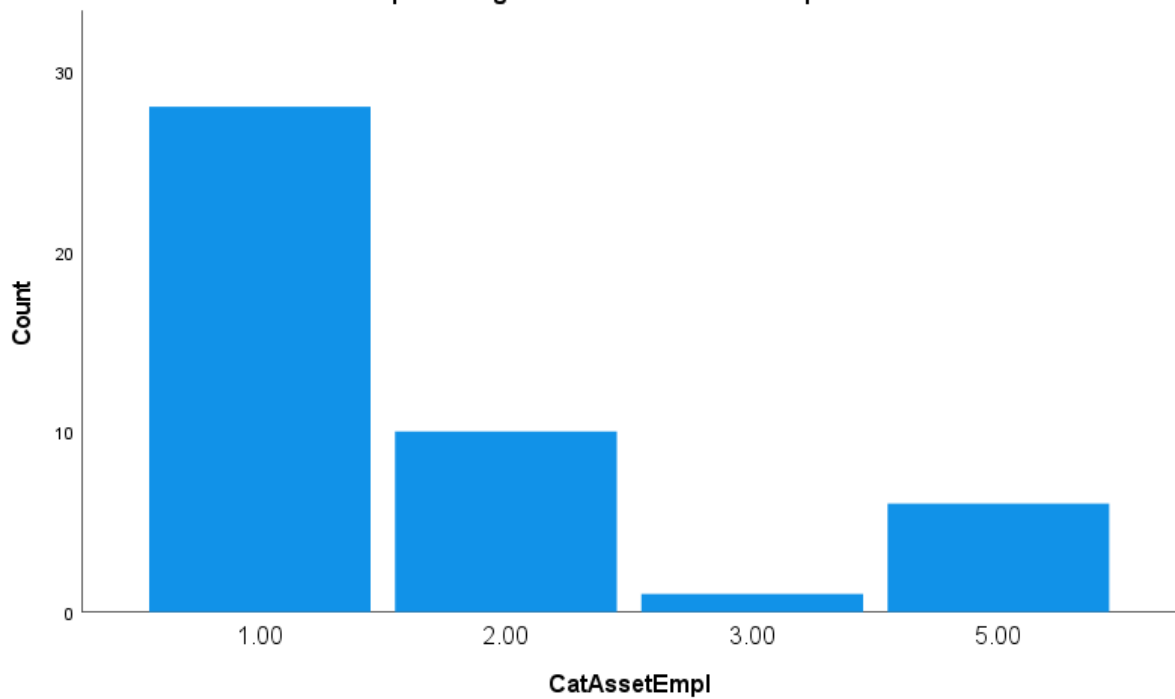
Categorization Asset to FTE

Simple Histogram of AssetEmpl



RECODE (Lowest thru 0.4=1) (0.401 thru 1=2) (1.001 thru 1.8=3) (1.801 thru 2.8=4) (2.801 thru Highest=5)easteast

Simple Histogram Count of CatAssetEmpl



Appendix 13

This appendix shows the correlations of the organizational diversity indicator size before and after categorization.

Organizational diversity indicator size correlation

Correlations

		Revenu	Asset	FTE
Revenu	Pearson Correlation	1	,697**	,549**
	Sig. (2-tailed)		<,001	<,001
	N	58	52	56
Asset	Pearson Correlation	,697**	1	,067
	Sig. (2-tailed)	<,001		,644
	N	52	52	50
FTE	Pearson Correlation	,549**	,067	1
	Sig. (2-tailed)	<,001	,644	
	N	56	50	56

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations

		Categorized revenue	Categorized assets	Categorized FTE
Categorized revenue	Pearson Correlation	1	,761**	,800**
	Sig. (2-tailed)		.000	.000
	N	58	52	56
Categorized assets	Pearson Correlation	,761**	1	,688**
	Sig. (2-tailed)	.000		.000
	N	52	52	50
Categorized FTE	Pearson Correlation	,800**	,688**	1
	Sig. (2-tailed)	.000	.000	
	N	56	50	56

** . Correlation is significant at the 0.01 level (2-tailed).

Organizational diversity correlations

Correlations

		SizeCat	Portfolio	geo div	Organization Div
SizeCat	Pearson Correlation	1	,297*	,528**	,906**
	Sig. (2-tailed)		,024	<,001	<,001
	N	58	58	56	58
Portfolio	Pearson Correlation	,297*	1	-,117	,463**
	Sig. (2-tailed)	,024		,392	<,001
	N	58	58	56	58
geo div	Pearson Correlation	,528**	-,117	1	,726**
	Sig. (2-tailed)	<,001	,392		<,001
	N	56	56	56	56
OrganizationDiv	Pearson Correlation	,906**	,463**	,726**	1
	Sig. (2-tailed)	<,001	<,001	<,001	
	N	58	58	56	58

*. Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Organizational interdependence correlations

Correlations

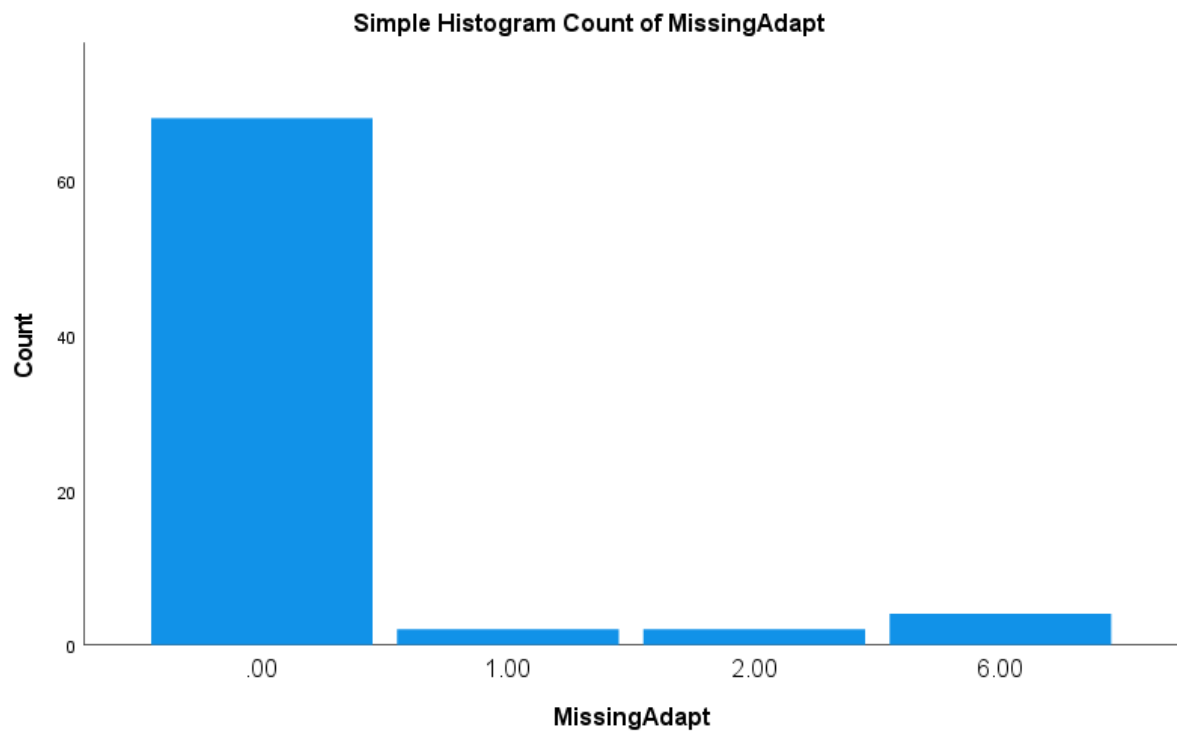
		CoGinv	CatAssetFTE	Structure	BoardMembers	OrganizationInt
CoGinv	Pearson Correlation	1	-,463**	,266	-,132	,258
	Sig. (2-tailed)		,001	,062	,361	,070
	N	50	46	50	50	50
CatAssetFTE	Pearson Correlation	-,463**	1	-,245	,081	,412**
	Sig. (2-tailed)	,001		,086	,575	,003
	N	46	50	50	50	50
Structure	Pearson Correlation	,266	-,245	1	,443**	,696**
	Sig. (2-tailed)	,062	,086		<,001	<,001
	N	50	50	58	58	58
BoardMembers	Pearson Correlation	-,132	,081	,443**	1	,662**
	Sig. (2-tailed)	,361	,575	<,001		<,001
	N	50	50	58	58	58
OrganizationInt	Pearson Correlation	,258	,412**	,696**	,662**	1
	Sig. (2-tailed)	,070	,003	<,001	<,001	
	N	50	50	58	58	58

** Correlation is significant at the 0.01 level (2-tailed).

Appendix 14

This appendix displays the descriptive values of the individual adaptive governance aspects, the missing values for the adaptive governance and the correlations of the adaptive governance aspects.

Missing values adaptive governance



When 6 values are missing there is no data. For all other samples, a maximum of 2 values is missing.

Cronbach alpha adaptive governance

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.873	.877	6

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.544	.352	.768	.416	2.183	.014	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Adaptive capacity question 1	19.24	11.317	.684	.590	.850
Adaptive capacity question 2	18.97	12.417	.644	.490	.860
Adaptive capacity question 3	18.81	11.381	.587	.409	.868
Adaptive capacity question 4	19.06	10.743	.813	.696	.828
Adaptive capacity question 5	19.28	11.040	.624	.546	.862
Adaptive capacity question 6	19.21	10.405	.746	.690	.839

Correlations adaptive governance

Correlations

		Adaptive capacity question 1	Adaptive capacity question 2	Adaptive capacity question 3	Adaptive capacity question 4	Adaptive capacity question 5	Adaptive capacity question 6
Adaptive capacity question 1	Pearson Correlation	1	.624**	.568**	.626**	.364**	.600**
	Sig. (2-tailed)		.000	.000	.000	.002	.000
	N	72	72	71	71	71	69
Adaptive capacity question 2	Pearson Correlation	.624**	1	.556**	.575**	.411**	.451**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	72	72	71	71	71	69
Adaptive capacity question 3	Pearson Correlation	.568**	.556**	1	.518**	.391**	.411**
	Sig. (2-tailed)	.000	.000		.000	.001	.001
	N	71	71	71	70	70	68
Adaptive capacity question 4	Pearson Correlation	.626**	.575**	.518**	1	.595**	.762**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	71	71	70	71	70	69
Adaptive capacity question 5	Pearson Correlation	.364**	.411**	.391**	.595**	1	.685**
	Sig. (2-tailed)	.002	.000	.001	.000		.000
	N	71	71	70	70	71	69
Adaptive capacity question 6	Pearson Correlation	.600**	.451**	.411**	.762**	.685**	1
	Sig. (2-tailed)	.000	.000	.001	.000	.000	
	N	69	69	68	69	69	69

** Correlation is significant at the 0.01 level (2-tailed).

Appendix 15

This appendix displays the market environment descriptive statistics and the inter-item correlations.

Descriptive statistics market environment

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
PPU	58	1	3	1,93	,856
HardSoft	58	1	3	2,28	,615
IP	58	1	3	1,74	,849
RD	58	1	3	1,72	,812
Market	58	1,166666667	2,833333333	1,922413793	,6609517602
Valid N (listwise)	58				

Correlation market environment

		Correlations				
		PPU	HardSoft	IP	RD	Market
PPU	Pearson Correlation	1	,303*	,506**	,401**	,885**
	Sig. (2-tailed)		,021	<,001	,002	<,001
	N	58	58	58	58	58
HardSoft	Pearson Correlation	,303*	1	,777**	,541**	,629**
	Sig. (2-tailed)	,021		<,001	<,001	<,001
	N	58	58	58	58	58
IP	Pearson Correlation	,506**	,777**	1	,861**	,839**
	Sig. (2-tailed)	<,001	<,001		<,001	<,001
	N	58	58	58	58	58
RD	Pearson Correlation	,401**	,541**	,861**	1	,733**
	Sig. (2-tailed)	,002	<,001	<,001		<,001
	N	58	58	58	58	58
Market	Pearson Correlation	,885**	,629**	,839**	,733**	1
	Sig. (2-tailed)	<,001	<,001	<,001	<,001	
	N	58	58	58	58	58

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Appendix 16

This appendix shows the regressions for organizational diversity In a stepwise pattern in order to indicate the moderating impact.

Regression organizational diversity

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,072 ^a	,005	-,013	,6511151917

a. Predictors: (Constant), OrganizationDiv

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,124	1	,124	,293	,590 ^b
	Residual	23,741	56	,424		
	Total	23,866	57			

a. Dependent Variable: ImplCalc

b. Predictors: (Constant), OrganizationDiv

Regression organizational diversity, implementation, adaptive governance and the moderating parameter adaptive governance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,586 ^a	,343	,305	,5467995358

a. Predictors: (Constant), ModeratAdaptiveGovDiv, AdaptGov, OrganizationDiv

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7,967	3	2,656	8,882	<,001 ^b
	Residual	15,248	51	,299		
	Total	23,216	54			

a. Dependent Variable: ImplCalc

b. Predictors: (Constant), ModeratAdaptiveGovDiv, AdaptGov, OrganizationDiv

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,144	1,707		1,256	,215
	OrganizationDiv	-,327	,688	-,374	-,475	,637
	AdaptGov	,375	,442	,384	,847	,401
	ModeratAdaptiveGovDiv	,081	,176	,435	,458	,649

a. Dependent Variable: ImplCalc

Regression organizational diversity, implementation and adaptive governance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,584 ^a	,340	,315	,5426295909

a. Predictors: (Constant), AdaptGov, OrganizationDiv

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7,904	2	3,952	13,422	<,001 ^b
	Residual	15,311	52	,294		
	Total	23,216	54			

a. Dependent Variable: ImplCalc

b. Predictors: (Constant), AdaptGov, OrganizationDiv

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,391	,458		3,036	,004
	OrganizationDiv	-,015	,099	-,017	-,148	,883
	AdaptGov	,571	,111	,585	5,156	<,001

a. Dependent Variable: ImplCalc

Regression organizational diversity, implementation, market environment and the moderating parameter market environment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,145 ^a	,021	-,034	,6578200511

a. Predictors: (Constant), ModeratMarketDiv, Market, OrganizationDiv

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,498	3	,166	,384	,765 ^b
	Residual	23,367	54	,433		
	Total	23,866	57			

a. Dependent Variable: ImplCalc

b. Predictors: (Constant), ModeratMarketDiv, Market, OrganizationDiv

Appendix 17

This appendix shows the regressions for organizational interdependence In a stepwise pattern in order to indicate the moderating impact.

Regression organizational interdependence

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,072 ^a	,005	-,013	,6511208404

a. Predictors: (Constant), OrganizationInt

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,124	1	,124	,292	,591 ^b
	Residual	23,742	56	,424		
	Total	23,866	57			

a. Dependent Variable: ImplCalc

b. Predictors: (Constant), OrganizationInt

Regression organizational interdependence, implementation, adaptive governance and the moderating parameter adaptive governance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,593 ^a	,352	,314	,5432520164

a. Predictors: (Constant), ModeratAdaptiveGovInt, AdaptGov, OrganizationInt

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8,164	3	2,721	9,221	<,001 ^b
	Residual	15,051	51	,295		
	Total	23,216	54			

a. Dependent Variable: ImplCalc

b. Predictors: (Constant), ModeratAdaptiveGovInt, AdaptGov, OrganizationInt

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,775	1,551		1,788	,080
	OrganizationInt	-,513	,542	-,460	-,946	,349
	AdaptGov	,201	,420	,206	,479	,634
	ModeratAdaptiveGovInt	,134	,149	,550	,899	,373

a. Dependent Variable: ImplCalc

Regression organizational interdependence, implementation and adaptive governance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,584 ^a	,341	,316	,5422463896

a. Predictors: (Constant), AdaptGov, OrganizationInt

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7,926	2	3,963	13,478	<,001 ^b
	Residual	15,290	52	,294		
	Total	23,216	54			

a. Dependent Variable: ImplCalc

b. Predictors: (Constant), AdaptGov, OrganizationInt

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,466	,533		2,750	,008
	OrganizationInt	-,039	,126	-,035	-,309	,758
	AdaptGov	,566	,110	,580	5,135	<,001

a. Dependent Variable: ImplCalc

Regression organizational interdependence, implementation, market environment and the moderating parameter market environment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,194 ^a	,038	-,016	,6521226372

a. Predictors: (Constant), ModeratMarketInt, OrganizationInt, Market

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,901	3	,300	,707	,552 ^b
	Residual	22,964	54	,425		
	Total	23,866	57			

a. Dependent Variable: ImplCalc

b. Predictors: (Constant), ModeratMarketInt, OrganizationInt, Market

Appendix 18

This appendix displays the regression analyses of organizational diversity and interdependence analyzing multicollinearity.

Multicollinearity organizational diversity and organizational interdependence

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3,584	,381		9,402	<,001		
	OrganizationDiv	,118	,132	,136	,898	,373	,781	1,281
	OrganizationInt	-,153	,170	-,136	-,898	,373	,781	1,281

a. Dependent Variable: ImplCalc

Appendix 19

This appendix shows the regression for adaptive governance that is used as additional analysis.

Regression adaptive governance

Regression implementation and adaptive governance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,599 ^a	,359	,350	,5400809051

a. Predictors: (Constant), AdaptGov

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11,443	1	11,443	39,229	<,001 ^b
	Residual	20,418	70	,292		
	Total	31,861	71			

a. Dependent Variable: ImplCalc

b. Predictors: (Constant), AdaptGov

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,227	,372		3,299	,002
	AdaptGov	,599	,096	,599	6,263	<,001

a. Dependent Variable: ImplCalc