



More than one way leads to Brussels

A RESEARCH TO THE NECESSARY AND
SUFFICIENT CONDITIONS FOR THE
IMPLEMENTATION EFFORT OF MEMBER
STATES FOR DIRECTIVE 2008/98/EC
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Preface

In front of you lies the Masterthesis: “*More than one way leads to Brussels. A research to the necessary and sufficient conditions for the implementation effort of member states for directive 2008/98/EC*”. I conducted this research to fulfil the graduation requirements of the Public Administration Master programme: Comparative Politics, Administration and Society at Radboud University. I started in April 2019 with writing and now, in December 2019, I can look back with satisfaction.

It was not an easy process. For almost seven months I challenged myself to dive into difficult topics and push myself to the limits. Compliance, issue saliency and the structure of the European Union pushed me to really dive into the literature and reports. However, it was nothing compared to the method I chose: qualitative comparative analysis. For my thesis, I wanted to do something new so I chose the method I knew least about and seemed most interesting. Right choice or not, I liked to learn about this method I discover how it works and why it is useful. After some struggles and perseverance, I am proud to say, I managed to figure out the method and apply it.

I could not have done it alone. First, I want to thank prof. Ellen Mastenbroek for stimulating me to reflect on what I wrote and pushing me to achieve the best result. Second, I would like to thank Daniela Villalba Belisario, Jordy Broekmeulen and Menno Hoppen, with whom I together formed a thesis group. Thank you for the feedback and the mental support. Further I would like to thank my family and my girlfriend for their help, patience, and mental support. Lastly, I want to thank all who read my thesis to help me with the last check.

Enjoy your reading.

Abstract

This research tested whether the five of the main explanations for transposition deficits with EU directives also are applicable to the implementation effort to practically implement these directives. The findings show that these explanations are applicable to implementation effort. This allows future research to study multiple stages of the EU policy cycle with the same explanatory variables. This study used a qualitative comparative analysis (QCA) to find in what way a culture of law-abidingness, EU support, policy preferences, issue salience and capacity can explain the level of implementation effort for EU directives. A QCA was chosen as the research design because transposition research is subject to equifinality, more ways could lead to the same outcome. By using a QCA, this research could adhere to that assumption and find more than one applicable causal path to implementation effort. All 28 member states were studied on their implementation effort for the Waste Framework Directive 2008/98/EC. The results show that the absence of issue salience is a necessary condition for low implementation effort. Moreover, there are three causal paths that lead to implementation effort. High member state capacity, the combination of EU support and an absent culture of law-abidingness, or the combination of an absent support for the EU and a present culture of law-abidingness could lead to implementation effort. Two causal paths could be sufficient conditions for low implementation effort. A low issue salience and low capacity combined with either an absent culture of law-abidingness or an absence of policy preference for the directive could lead to low implementation effort.

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Abbreviations

AU – Austria

BE – Belgium

BU – Bulgaria

CAP – Capacity

csQCA – Crisp Set QCA

CY – Cyprus

CZ – Czech Republic

DE – Germany

DK – Denmark

EC – European Commission

EST – Estonia

EU - European Union

FI – Finland

FR – France

fsQCA – Fuzzy Set QCA

GR – Greece

HR – Croatia

HU – Hungary

IE – Implementation Effort

IR – Ireland

IT – Italy

LA – Culture of law-abidingness

LE – Latvia

LT – Lithuania

LU – Luxembourg

MT – Malta

NL – the Netherlands

PL – Poland

POS – Policy Position

PT – Portugal

QCA – Qualitative Comparative Analysis

RO - Romania

SAL – Issue salience

SE – Sweden

SK – Slovakia

SL – Slovenia

SP – Spain

SUP – EU support

UK – United Kingdom

WFD – Waste Framework directive 2008/98/EC

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1. Introduction

1.1 Puzzle

The European Union (EU) influences the laws and regulations of its member states on a wide variety of policy domains. The EU does so via treaties, regulations and directives. Most interesting are the directives, because they, as opposed to regulations, only provide a goal that member states need to achieve, but provide them with the discretion to choose their own means to this end (Mastenbroek, 2003, p.372). This discretion raises concerns to what extent member states actually comply with these directives. Records show that these concerns are not necessarily unjustified as there are numerous of member states that are not compliant with EU directives (European Commission (EC), 2019a). Many scholars have tried to understand why these countries display non-compliant behaviour (e.g. Angelova et al., 2012; Toshkov, 2010; Falkner, Hartlapp and Treib, 2007; Mastenbroek, 2005; Spendzharova and Versluis, 2013). Ultimately, the purpose of this field of research is to explain “to what extent member states really make the effort to ‘make European policies work’ (Siedentopf and Ziller, 1988)” (Mastenbroek, 2005, p.1104).

So far, EU policy research has mainly focused on explanations for compliant behaviour by looking at transposition rates and infringement procedures. A search for the one true explanation has led to a wild growth of possible explanations for non-compliant behaviour. In a research synthesis Toshkov (2010, p.63) reported 263 possible relationships between explanations and compliant behaviour. Around the same time Falkner, Hartlapp and Treib (2007) acknowledged that research to transposition of EU directives might rest on “sometimes true theories” (p.407). This led to a typology in which countries were clustered according to their compliance culture. The clusters did not only score differently on the same variables, rather their compliance records could be explained by different variables (Falkner et al., 2007). Consequently, multiple causal paths can thus lead to compliant or non-compliant behaviour in the transposition of directives. The notion of multiple possible causal paths that lead to the same outcome is a phenomenon called equifinality (Rihoux, 2008, p.726).

This acknowledged equifinality offers the possibility for transposition researchers to find even more explanations for non-compliant behaviour. Bondarouk and Mastenbroek (2018), however, argued that compliance research could use another focus than only transposition. Implementation performance, rather than transposition rates, should indicate whether EU policies actually work (Bondarouk and Mastenbroek, 2018, p.16). Although a

directive could be timely and correctly transposed from the EU to domestic legislation, the practice may deviate from the law in the books (Zhelyazkova, Kaya and Schrama, 2016, p.828). The notion of a difference between the law in the books and the practical implementation is called a decoupled process. This leads to the consideration of practical implementation as an appropriate indicator for policy performance to complement the assessment of the transposition to domestic laws. “The mere fact that a member state [...] lives up to a procedural obligation does not have any bearing on the extent to which the implementer really makes ‘EU policy work’”(Bondarouk and Mastenbroek, 2018, p.16).

Much has been written about the practical implementation of laws in both domestic settings and the EU context (Bondarouk and Mastenbroek, 2018; Börzel and Buzogany, 2019). The equifinal character of EU policy implementation led to a significant amount of qualitative case studies on the member state level (Börzel and Buzogany, 2019, p.317). This makes it difficult to compare the outcomes and explanations of these studies (p.318). Qualitative comparative analysis (QCA) makes it possible to compare different cases while respecting equifinal causal possibilities (Ragin, 2008). By using QCA this thesis makes it possible to compare all EU member states on their implementation performance while embracing the equifinality that is characteristic for compliance research (Ragin, 2008; Toshkov, 2010).

This thesis compares EU member states by examining the causal relevance of the main explanations of transposition for implementation performance. By doing so, it takes the notion of equifinality as a starting point and seeks to find out whether these explanations are necessary and/or sufficient conditions. Instead of studying implementation performance as a whole, it focuses on one key aspect of implementation performance: implementation effort (Bondarouk and Mastenbroek, 2018). This concept refers to the use of the factors that are required to achieve the goals set by the policy (Bauer and Knill, 2014, p.33). Out of the three dimensions of implementation performance - substance, scope and effort (Bondarouk and Mastenbroek, 2018) -, implementation effort resembles transposition the most, as transposition and implementation effort both require an active attitude of the member state.

1.2 Research aim and question

The primary aim of this research is to enhance our knowledge of compliance with EU directives. It will do so by using the main findings of previous transposition research for understanding variance in policy performance. The QCA method makes it possible to test in

what way explanations for the transposition of directives also apply to implementation performance for directives. The secondary aim of this research is to enhance the monitoring system of the EC for compliant behaviour. By connecting explanations for transposition deficits to practical implementation performance, this thesis could be used for a more comprehensive monitoring system of a larger part of the policy cycle. In order to reach these goals the Waste Framework Directive 2008/98/EC (WFD) is taken as a case within which all member states are compared. This directive serves as a typical case (Gerring, 2008, pp.648-649). The legal nature of the WFD does not differ from other directives, which makes it a representative case. Moreover, there are sufficient differences between member states, in how they approached the implementation of the WFD to assume that they do not share the same explanations for their implementation effort (Tsiarta, Watson and Hudson, 2015).

Consequently, the research question will be: *To what extent and in which combinations do explanations for transposition of directives apply to implementation effort of the Waste Framework Directive by EU member states?*

In order to answer the research question several sub-questions need to be answered:

1. How can implementation effort be conceptualised?
2. What are the theoretical conditions for implementation effort based on existing transposition research?
3. What does the Waste Framework Directive 2008/98/EC entail?
4. How are the theoretical concepts to be measured and analysed?
5. How do the conditions explain the implementation effort for the Waste Framework directive?

1.3 Case

The Waste Framework Directive (WFD) 2008/98/EC is the policy area of concern in this thesis. This directive regulates the provisions and targets for better waste management and even prevention of waste. It does so by putting more emphasis on waste prevention, waste reduction and by requiring national plans to act on these targets. Three reasons led to the choice of this research area. First of all, the policy is a high priority for the EU. A circular economy is one of its policy areas of priority and waste prevention and reduction are a big part of that (European Commission (EC), n.d.a; EC, 2014, p.2). Evidently, the EU expects effort by its member states to implement this part of the *acquis*.

The second reason is the variance between the member states on both the effort and the conditions that provide an explanation. Effort should be considered in this case as the commitment of member states to reaching the goals set in the WFD. As an indication of the effort, the outcomes that are reached diverge much between the member states from almost twenty tonnes per capita of waste recycled in Finland to not even one tonne in Croatia, Portugal and Latvia (Eurostat, 2019a). Although outcome indicators cannot be mistaken for output, nor are those necessarily a result of implementation output, outcomes and inputs are related (Hill and Hupe, 2014, pp.139-143). Therefore it is interesting to test which conditions for implementation effort are shared by countries that actually show it.

The last reason is one of data availability. The EU policy sector of environment (to which waste prevention belongs) publishes systematically reviews on the implementation of the directives (Tsiarta et al., 2015; Eunomia, 2018). Therefore it is a good starting point for this kind of comparative research.

1.4 Theoretical relevance

The contribution to the existing literature is threefold. The first contribution is that it incorporates the three overarching explanations for compliance instead of just focusing on the enforcement and management approach. Not many research has been done previously to the effect of legitimacy explanations on compliance with EU directives (Börzel et al., 2010; Börzel et al., 2012; Zhelyazkova et al., 2016). However, it has been found that legitimacy factors do play a role in compliant behaviour (Gibson, Caldeira and Spence, 2005). This research adds to the literature on compliance in the context of the EU by considering legitimacy as an explanatory factor for compliance.

The second contribution is that the outcome this research is interested in is implementation effort. Most literature on EU compliance focuses on the legal transposition of the directive. Because it is established that legal transposition and practical implementation are two decoupled processes (Zhelyazkova et al., 2016), a new strand of research should investigate to what extent these factors that influence transposition influence practical implementation too. However, until recent years practical implementation of EU law has not deserved much attention (Bondarouk and Mastenbroek, 2018, p.16). Since this practical implementation is the focus of the research, this thesis contributes to the existing literature on the full policy process of EU directives.

Moreover, the focus of the research is on implementation effort, rather than on substance or scope of the implementation. Bondarouk and Mastenbroek (2018, p.23) found that a research gap exists in this particular aspect of implementation performance. It has been a question in compliance research to what extent member states actually devote their resources to the implementation of directives (Spendzharova and Versluis, 2013, p.1371), yet how willingness factors translate to actual implementation effort has thus been under-investigated. By using this as the starting point of the thesis it seizes the opportunity to enrich the scientific literature.

The last contribution is the use of QCA as a research technique, which allows the researcher to evaluate causal paths between the theoretical conditions and the outcome (Berg-Schlosser et al., 2009, p.10). As will be further explained in chapter three, QCA assumes that multiple ways could lead to Rome, which is called equifinality. This might be the case too with compliant behaviour. As Thomann (2015, p.178) highlights, too much research on compliance has been caught up with single case studies which make it difficult to draw cross-case comparisons. This research does include multiple case studies in one research while maintaining a focus on context. Hence, it provides a more general idea about the necessary and sufficient conditions for effort with implementation of EU directives and adheres to the idea that compliance research is subject to “sometimes-true theories” (Falkner, Hartlapp and Treib, 2007).

1.5 Practical relevance

The research and outcomes of this thesis have practical relevance. First of all, the aforementioned reason for the scientific relevance accounts for practical relevance too. As opposed to a single case study, QCA provides a more generalisable outcome on the implementation effort (Toshkov, 2016, p.261). This could lead to a better understanding of the tools the European Commission should focus on to improve compliant behaviour. Especially, since this research does multiple qualitative studies taking context into account. It could lead to the EU knowing how to get even closer to perfect compliant behaviour (European Commission (EC), 2018, p.3).

The second reason is concerned with the outcome of the research. “Without proper transposition, a directive will not be fully integrated into the national legal order, and the *acquis communautaire* risks becoming fragmented and unevenly applied” (Steunenberg and Rhinard, 2010, p.495). However, the *acquis* could be under even more pressure if the member

states do transpose the directives correctly, but fail to implement them appropriately. The European Commission might be unaware if the *acquis* is not practically implemented and thus fragmented. From a rational choice perspective, member states would not report that they fail to invest effort in the implementation, because this would lead to sanctions or close supervision of the European Commission. Instead, by identifying the necessary and sufficient conditions for implementation effort the Commission at least has some indicators they can focus on in order to get a sense of the effort member states invest in the implementation of the directives. If the EU believes that a member state does not invest enough effort measures could be taken to enforce the directive.

A third way this thesis is useful for the Commission, is that they could establish a different strategy to help different member states. Policy outcomes are not necessarily the result of the policy itself, but external conditions (Hill and Hupe, 2014). Therefore it is more useful for the EU to consider implementation effort as a measure of compliance. If they find that a member state does invest enough effort in the implementation, yet the targets set by the directive cannot be met within the set time frame, the Commission could help the member state via another way than sanctioning. For example, the Commission could assist via an agency, capacity building strategies or extra funding in order to reach the directive's targets. This research could serve as a stepping stone for this new approach.

1.6 Preview of theoretical framework

The research of this thesis is concerned with implementation as a policy output. This means that it considers the content of the implementation rather than the results (Bondarouk and Mastenbroek, 2018, p.16). It focuses on implementation performance, which has three dimensions: substance, scope and effort (p.18). The outcome of interest in this thesis is implementation effort (in QCA research the outcome refers to the dependent variable). Implementation effort refers to the use of the factors that are required to achieve the goals set by the policy (Bauer and Knill, 2014, p.33). Implementation effort consists of three factors: resources, prioritisation, and monitoring. The first factor is resources: number of staff, the type of expertise and the budget that is devoted the implementation of the directive (Bauer and Knill, 2014, p.33; Bondarouk and Mastenbroek, 2018, p.20). The second and third factor are concerned with the behaviour of the implementers. This comes down to respectively the prioritisation of policy and monitoring of policy (Bondarouk and Mastenbroek, 2018, p.20).

The conditions that were taken into consideration as causal explanations for implementation effort are posted under three overarching explanations. First, there is legitimacy theory. It is believed that if there is a law-abiding culture in a member state the member state is more likely to display more effort in the implementation process (Börzel et al., 2010, p.1370). Likewise, if the EU enjoys support from the citizens of a certain member state, the government of that member state is more likely to show compliant behaviour out of the belief that the EU will favour them in the long-run (Gibson et al., 2005, p.189; Zhelyazkova et al., 2016, p.832).

The second set of conditions indicate the willingness of a member state. These are issue salience and policy preference. If an issue is highly salient and the public favours the EU policy, via the mechanism of government responsiveness the government will show effort in the implementation of the policy (Franklin and Wlezien, 1997). The opposite is believed to be true too. If the preferences are incongruent, the member state will likely show less effort with the implementation.

The last set of conditions stem from the management approach and reflect the ability of a member state to comply with EU law. It is believed that if a member state does have the financial and bureaucratic capacity to implement the directive, they will devote at least sufficient resources to the implementation of the directive (Tallberg, 2002, p.613; Börzel et al., 2010, p.1369).

1.7 Preview of methodological framework

This thesis uses a qualitative comparative design as its research technique. This means that multiple cases are assessed on qualitative anchors on their implementation effort of the WFD. These assessments are translated into a fuzzy set QCA which allows for a systematic comparison between the different cases (Berg-Schlosser, De Meur, Rihoux and Ragin, 2009, p.4; Toshkov, 2016, p.258). A QCA merges the merits of the case study, the interpretation and context of cases, with the merits of a qualitative assessment of variables by comparing the cases very systematically (Toshkov, 2016, p.259). Practically, it means that a case study leads to the appointment of non-, partial or full membership in a certain condition. These are fuzzy sets, which can be analysed in a systematic way, like a quantitative analysis, with special QCA software.

A QCA can cover for the complex causality that compliant behaviour is subjected to. There are multiple possible causal paths that seem to lead to compliant behaviour. While one

case study nor a linear regression analysis shows the multiple options that could lead to the outcome, a QCA does (Ragin, 2008). Therefore QCA is considered to be the appropriate method for this research. With the help of a truth table, the necessary and sufficient conditions for explaining implementation effort can be identified (Engeli, Rihoux and Rothmayr Allison, 2014, p.88).

1.8 Structure of the Thesis

This structured is structured as follows. The second chapter provides the theoretical framework. Section 1.6 of this chapter already covers what can be expected in the framework. The third chapter consists of an overview of the Waste Framework Directive. Chapter four covers the methodological considerations for this research. Section 1.7 already briefly introduced the methodology. Chapter five shows the raw data, which is analysed using QCA in chapter six. Chapter seven provides the conclusion, answer on the research question and a discussion about improvements for this research and suggestions for future research.

2. Theoretical Framework

This chapter provides the theoretical framework. The framework consists of three sections. The first section consists of an elaboration on implementation process of EU directives and identification of the dependent variable: implementation effort. The second section is concerned with possible explanations for effort as a part of implementation performance. Legitimacy, willingness and ability form the overarching theories for the independent variables. The last section shows the conceptual framework and the relations between the dependent and the independent variables.

2.1 EU policy implementation process

EU directives are distinct from the EU's other legal tools because of one characteristic: the extent to which they grant member states discretion in the implementation of the directive (Angelova et al., 2012, p.1269; Haverland, Steunenberg and Van Waarden, 2011, p.266). Directives “are binding not in their entirety, but only ‘as to the result to be achieved’, and leave national governments ‘the choice of form and methods’ (Article 249 EC)” (Mastenbroek, 2003, p.372). Member states have to transpose EU directive into national law before they can practically implement them (Steunenberg and Rhinard, 2010, p.495). The process of EU policy implementation can thus be characterised as a decoupled process (Zhelyazkova et al., 2016, p.828). First legal implementation, which refers to the transposition of EU directives into national laws. Secondly practical implementation, where these national laws have to be put in practice.

Because of this two-step procedure of implementation “‘the law in practice’ [may] deviate from ‘the law of the books’” (Zhelyazkova et al., 2016, p.828). In both the legal and practical implementation phase there is a chance for member states to show non-compliant behaviour (Bondarouk and Mastenbroek, 2018; Zhelyazkova et al., 2016; Haverland et al., 2011). Yet, legal transposition is a temporary phenomenon and compliance on this part of the policy process will eventually be reached; either by enforcement or intrinsic willingness of the member state (Börzel and Buzogány, 2019, p.320). Therefore, this research focuses on the practical implementation of the EU directives.

2.1.2 Practical implementation

There are two ways of analysing practical implementation. Literature on public policy identifies outputs and outcomes as the tools to analyse the performance of practical implementation (Hill and Hupe, 2014, p.10; Bondarouk and Mastenbroek, 2018, p.17; Winter,

2006, p.158). Outcomes refer the effects of a certain policy (Bondarouk and Mastenbroek, 2018, p.17) while outputs refer to the content of the policy (p.17); more specifically how the content becomes apparent to the addressees of the policy (Bauer and Knill, 2012, p.29). In order to capture the implementation of EU policy in the purest sense, this thesis focuses on the outputs rather than the outcomes. The main rationale behind this is that “isolation of the EU effect is practically impossible” when evaluating the performance of public policy (Bondarouk and Mastenbroek, 2018, p.17).

A proper assessment of the policy outputs requires an analysis of the policy instruments as the content of policy (Pressman and Wildavsky, 1984; Bauer and Knill, 2014, p.29; Bondarouk and Mastenbroek, 2018, p.17). Three dimensions are of importance to assess the performance of policy instruments (Bondarouk and Mastenbroek, 2018, p.18). The first dimension is substance, which consists of both the definitional details and the objectives (pp.18-19). Definitional details refer to the process that local implementers go through when operationalising the EU law into practical measures. For practical implementation, the legal objectives have to be translated too in practical, obtainable objectives (p.19).

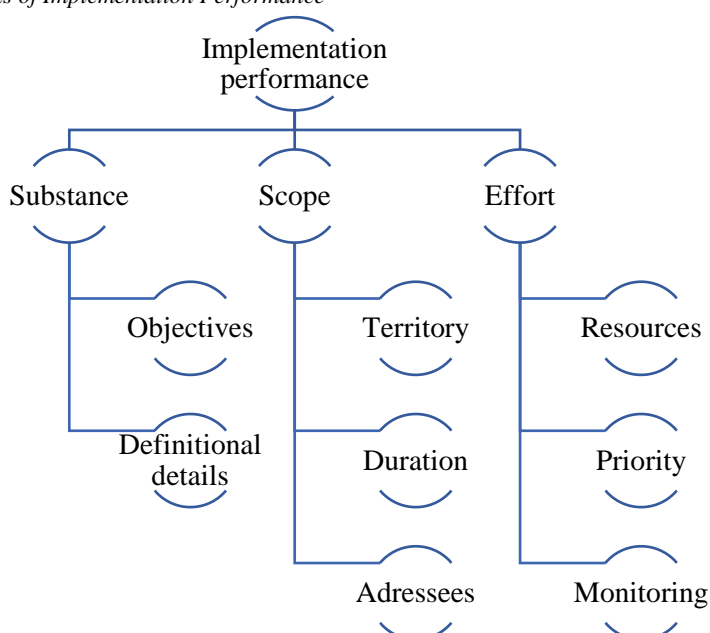
The second dimension is scope. “This refers to the range of the policy: where, when and to whom does the policy task apply?” (Bondarouk and Mastenbroek, 2018, p.19). Territory, duration and addressees of the policy are specifically important for this dimension. Territory is concerned with the area to which the policy applies. Policies could vary between different areas according to the choice of the policymakers (p.19). Policies could also differ in their duration. The last aspect of scope is concerned with who actors that are affected and targeted by the policy (p.20).

The third and last dimension is the effort that is put in accomplishing the goals of the policy (Bondarouk and Mastenbroek, 2018, p.20). Effort is the use of the factors that are required to achieve the goals set by the policy (Bauer and Knill, 2014, p.33). Effort has two dimensions. The first dimension is concerned with the resources devoted to the implementation of a policy (Bauer and Knill, 2014, p.33; Bondarouk and Mastenbroek, 2018, p.20). Resources are the share of the capacities of a member state, either on the central or the regional level of government, that are devoted to the implementation of the directive. The number of staff, the type of expertise and the financial budget are the resources of interest. The more of each of the aspects are devoted to the policy, the more effort is invested in the policy (Bondarouk and Mastenbroek, 2018, p.20). The second dimension is the behaviour of the implementers, which consists of two separate aspects (Winter, 2006, p.159; Bondarouk

and Mastenbroek, 2018, p.20). Winter (2006, p.159) argues that in order to avoid mistaking goal-achievement for policy performance the behavioural aspects of implementers as indicators for policy output have to be analysed. Behavioural aspects that testify of a greater effort express themselves in priority setting and monitoring (Winter, 2006, p.160; Bondarouk and Mastenbroek, 2018, p.20). Prioritising certain policy over another is a sign of putting in more effort (Winter, 2006, p.160; Bondarouk and Mastenbroek, 2018, p.20). Monitoring, as an indicator of effort, tells to what extent the implementors actually want a policy to work (Howlett et al., 2009, p.186).

This thesis focuses on the differences in the effort member states put in the implementation of the directives at the member state level. Implementation effort relates most to compliant behaviour, because like displaying compliant behaviour, displaying an effort requires an action. Moreover, the other two aspects of implementation performance are less likely to show the relation of interest of this thesis. Directives are designed to vary to some extent yet hold some aspects consistent among the policies that member states have to implement (Mastenbroek, 2003, p.372), finding an explanation for implementation performance measured as substance and scope will only confirm the nature of the directive. A visual representation of the implementation performance is provided in Figure 2.1.

Figure 2.1 Dimensions of Implementation Performance



2.2 Explanations for transposition deficit

For a relatively long period the main explanation for transposition deficits by member states has been the mis-fit hypothesis (Zhelyazkova et al., 2016, p.829). The main rationale behind the misfit premise is the compatibility between the institutional demands of an EU directive and the domestic institutional traditions (Zhelyazkova et al., 2016, p.829; Mastenbroek, 2003, p.378). For instance, some times EU directives are based on national policies of one of the member states. These member states do not have to change their legislation much to comply with the directive. Other member states, however, would have to change their current legislation radically to comply (Mastenbroek, 2003, p.378). According to the misfit hypothesis, scholars thought that a low compatibility between current legislation and EU legislation would lead to non-compliance. However, there has not been much empirical evidence for this theoretical explanation (Mastenbroek, 2005, p.1115). Moreover, the institutional filter of the misfit hypothesis had implicit assumptions of the preferences of member states. National governments have, according to the misfit hypothesis, only the preference to protect its existing legislation and are not willing to change (Treib, 2014, p.9).

As a reaction, scholars tried to unpack the underlying explanations for transposition deficits (Zhelyazkova et al., 2016, p.829). This led to a focus on the core explanations for transposition deficits: capacity and willingness (Zhelyazkova et al., 2016, p.829). Capacity as an explanation entails that member states only show non-compliant behaviour if they are not capable to implement the directive, while willingness refers to the politics of compliance where compliant behaviour is seen as a choice (Zhelyazkova et al., 2016, p.829). In recent years, scholars re-discovered a third explanation for transposition deficits: legitimacy. Member states would then comply with EU directives out of a normative belief the EU as a rule setting institution should be obeyed (Zhelyazkova et al., 2016, p.829; Börzel et al., 2010, p.1370; Versluis and Tarr, 2013, p.320). These three explanations will be discussed in more depth below. First, legitimacy explanations will be elaborated on. The preference-based explanations follow. Thirdly, capacity as an explanation will be detailed.

2.2.1 Legitimacy

From a legitimacy perspective, member states comply with EU directives because of a sense of moral obligation (Börzel et al., 2010, p.1370). If an institution is considered legitimate, it is more likely that other actors will respect the actions and consequences of that institution (Gibson et al., 2005, p.189). From this perspective, legitimacy is the level of diffuse support a

member state has for the EU (p.189). Diffuse support, as developed by Easton (1975, p.444), is a “reservoir of favo[u]rable attitudes or good will that helps members to accept or tolerate output”. This kind of support generates a feeling of obligation to accept the policies that are issued by institutions that are perceived as legitimate.

This imaginary reservoir of favourable attitudes is filled via two ways: via a law-abiding culture and EU support of the citizens (Börzel et al., 2010, p.1370; Zhelyazkova et al., 2016, p.832). First, A domestic culture of law-abidingness is a sign of accepting the rule of law. Member states with a law-abiding culture tend to accept the EU as a rule setting institution (Börzel et al., 2010, p.1371). Consequently, out of a logic of appropriateness the member states would be compliant with the set directives even when these directives do not show immediate benefit for the member state or even bear high costs (Börzel et al., 2010, p.1370; Versluis and Tarr, 2013, p.320). Therefore, a member state that has a culture of law-abidingness is expected to go along with more implementation effort.

Second, EU support represents a sense of loyalty towards the institution (Gibson et al., 2005, p.189; Börzel et al., 2010, p.1371). A member state would transpose EU law out of a belief that the EU eventually benefits them (Gibson et al., 2005, p.189). Moreover, it works vice versa too. Member states with a Eurosceptic public take more time to transpose EU directives (Williams, 2018). Hence, it is also likely that they display less effort in the practical implementation phase of the directive. EU support is expected to lead to more implementation effort, while Euroscepticism correlates with a lesser effort.

2.2.2 Willingness

A second series of explanations is concerned with the willingness of member states to comply with EU directives. From this perspective, compliance is a political game and member states act in accordance with their preferences (Zhelyazkova et al., 2016, p.830). If there is a political will to implement a directive, governments are likely to put in more effort in the implementation (Bondarouk, Liefferink and Mastenbroek, 2019, p.5). When a directive is issued, the decision-makers and implementers of the member states decide whether the costs outweigh the benefits of the directive. If this is the case, member states have an incentive to display non-compliant behaviour (Tallberg, 2002, p.611). The willingness of member states is thus shaped by the incentive to deviate.

Although incentives come in a lot of different forms like budgetary, ideological or punishment-avoidant incentives among others, preference-based incentives have been the

main focus of previous studies on compliance with EU directives (Toshkov, 2010, p.22). The same perspective is used in this thesis. The willingness of member states is the sum of two variables: issue preference and issue salience (Spendzharova and Versluis, 2013, p.1503; Bondarouk et al., 2019, p.6). Issue preferences are the policy positions the governments of member states have on a certain issue. If the preferences of a member state are the same as the decision outcome as intended by the directive, “the member state has no incentive to deviate in implementation” (Thomson, Torenvlied and Arregui, 2007, p.695). Therefore, it is expected that governments whose policy positions are congruent with the goals of the directive are likely to devote at least sufficient effort to the implementation of the directive.

Issue salience influences the priority and intensity of the member state’s preferences (Franklin and Wlezien, 1997; Soroka and Wlezien, 2010; Warntjen, 2012). Issue salience is the importance an actor attributes to an issue (Warntjen, 2012, p.169). Salience refers to the “proportion of an actor’s potential capabilities it is willing to mobilize in attempts to influence the decision outcome” (Thomson and Stokman, 2006, p.41). Salience is thus distinct from issue preferences since it is a measurement of the intensity of the preferences (Thomson and Stokman, 2006, p.43; Leuffen, Malang, and Wörle, 2014, p.618). Saliency determines to what extent a government is willing to influence a certain outcome (Warntjen, 2012, p.169) and it sets a reason to prioritise an issue over another one (Spendzharova and Versluis, 2013, p.1502; Bartle and Layrock, 2012, p.681). Issues become salient for a government when the public considers it the most important issue the government should act on (Thomson, 2011, p.42; Arregui and Creighton, 2018, p.1325). With the incentive of getting re-elected, the government adapts its priorities to the priorities of the public (Arregui and Creighton, 2018, p.1325). Consequently, there is the expectation that a government will prioritise a certain directive more if the public considers it the most important problem. Hence, the government will devote more effort to the implementation of the directive.

2.2.3 Ability

The third possible explanation for member states displaying compliant behaviour is their ability to do so. From this perspective, the main argument is that non-compliance is the result of a lack of capacity rather than the unwillingness to comply (Tallberg, 2002). The ability of member states to be compliant is dependent on three factors. First of all, resources, both financial and human, determine the ability of a member state to implement the directive (Tallberg, 2002, p.613; Treib, 2014, p.26; Börzel et al., 2010, p.1369). If a member state has more budget to implement the directive and more staff that is well equipped for the task, they

are at least able to implement the directive. Without resources to implement the directive, member states are not able to make the appropriate effort to implement the directive. Therefore it is expected that more state capacity improves the level of implementation effort.

Secondly, institutional constraints could hamper the implementation of an EU directive (Börzel et al., 2010, p.1369). If there are numerous veto-players that could prevent the directive from being implemented, it is more likely that the member state would fail to successfully implement the directive (p.1369; Zhelyazkova et al., 2016, p.831). The last factor that influences the ability of member states to implement the directive is the nature of the directive (Tallberg, 2002, p.613). Ambiguous goals set by the directive, for instance, could lead to a less effective implementation (p.613). Moreover, the level of discretion a directive entails could also influence the compliant behaviour. If a directive relies heavily on the free interpretation of the goals and rules by member states, they are more likely to be able to implement the directive effectively (Thomson et al., 2007, p.690). Yet, these factors will not be taken into account as institutional factors often intercorrelate with each other (Toshkov, 2010, p.6). In order to prevent any ambiguity about which factors actually has an influence, the institutional constraints are left entirely out of the model.

2.3 Conclusion and conceptual model

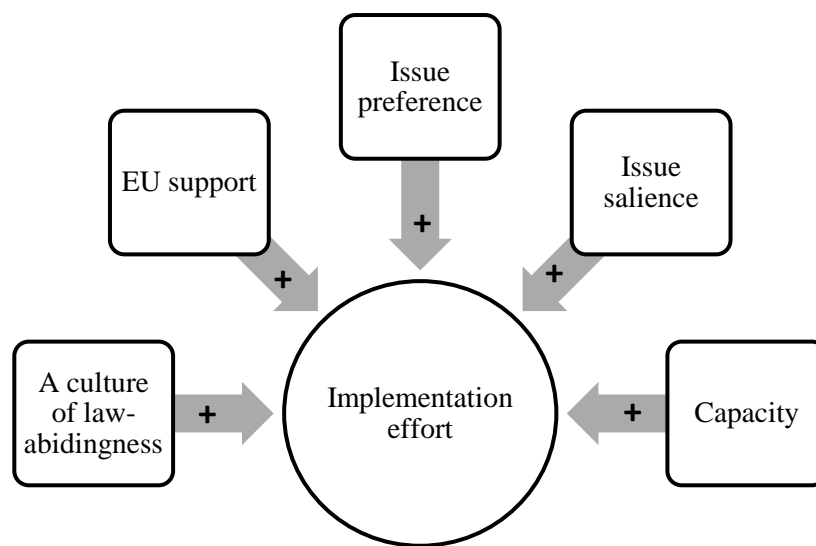
In short, in order to determine if member states show implementation performance for EU directives this thesis looks at the output factors for performance of the implementation process by member states. Implementation performance knows three dimensions: substance, scope and effort. For this thesis, the effort that is made to implement the directive serves as the dependent variable. Effort consists of three components: resources devoted to the implementation process, priority of the implementation and monitoring.

From the literature on transposition deficits, there were five conditions derived which are each expected to contribute to a greater implementation effort. First, the presence of a culture of law-abidingness leads to more implementation effort, because of a logic of appropriateness. Secondly, a member state where citizens support the EU provides the government with an incentive to devote more effort to the implementation of the directive. Thirdly, preference congruence between the goals of the directive and the aims of the national governments will also lead to more implementation effort. Fourth, if the directive concerns a salient issue governments are likely to prioritise it and therefore put more effort in the implementation of it. Last, the bigger the capacity is of a member state, the more likely it is

that they devote the necessary effort to the implementation of the directive, because they simply can. Figure 2.1 provides an overview of these causal relations in a conceptual model.

Any combination of these factors is expected to contribute to a greater implementation effort. The expectation is that implementation effort is subjected to equifinality and that combinations of the discussed conditions lead to implementation effort. The existing theory does not indicate which factors would be sufficient and/or necessary conditions for implementation effort. Therefore there are no hypotheses formulated for the individual conditions (Fischer and Maggetti, 2017, p.349).

Figure 2.1 Conceptual model Implementation Effort



3. Case description

The case description is twofold. The first section provides an overview of the letter of law for the Waste Framework Directive. The main purpose and principles are introduced. The second section serves to connect the theoretical concept of implementation effort to the practicalities of the WFD.

3.1 The Waste Framework Directive

Directive 2008/98/EC is the successor of Directive 2006/12/EC on waste, and redefines what waste is and how it should be managed (EC, 2016a). The Waste Framework Directive (2008/98/EC) has the ultimate purpose of protecting the environment and human health. It does so by laying down a framework how waste could be properly managed (Publications Office, 2016). It is one of the key pillars of the environmental policy of the EC. Besides the redefinition of waste, the WFD also has a more comprehensive framework for waste management. The directive introduces the “*polluter pays principle*” and the “*extended producer responsibility*” (EC, 2016b). Moreover, the legislation of waste of member states should adhere to the so-called *waste management hierarchy*. These concepts will be discussed in detail below.

The primary aim of the directive is to reduce the use of resources that cause waste according to the *waste management hierarchy* (2008/98/EC, Article 0.6). Waste refers to every substance which is discarded or required to discard (Article 3.1). The waste management hierarchy is a tool that displays “the priority order of what constitutes the best overall environmental option in waste legislation and policy” (Article 0.31). The directive promotes the prevention of waste if this is not possible the waste management hierarchy provides a priority ladder (Article 4.1). Moving down the ladder the member states should focus on re-use, recycling and recovery – like energy recovery – in that particular order. In a worst-case scenario waste can be disposed (Article 4.1). Member states should act according to the hierarchy according to the directive (Article 4.2). The waste management hierarchy is presented in figure 3.1.

Figure 3.1 Waste Management Hierarchy. Retrieved from <http://ec.europa.eu/environment/waste/framework/>, on 25 June 2019



If the waste cannot be prevented nor reused, the directive ensures that the legally responsible person for the waste keeps being responsible after the usage of the product (Article 8.1). This is the *extended producer responsibility*. The purpose of including this principle in the WFD is that it makes member states think about how they can force producers to design more environmental-friendly products (OECD, n.d.). If the products become waste, the costs shall be borne by the entity that originally produced or currently holds the waste according to the directive (Article 4.1). This is known as the *polluter pays principle*. Member states have the choice on how to split these costs between the national government and the actual producers and polluters (Tsiarta et al., 2015, p.10).

The member states have the freedom to develop a policy, which should ensure the following targets. By 2020 the re-use and recycling of waste from households should be increased to 50% of the overall weight. The non-hazardous construction and demolition waste, excluding naturally occurring material defined in category 17 05 04 in the list of waste, shall be increased to a minimum of 70 % by weight (Article 11.2). In order to achieve these goals, the member states have to establish a network of waste disposal installations and mixed municipal waste collection (16.1). Moreover, hazardous waste should be treated with care and separated from household waste (19.1).

In order to reach these targets, the member states are obliged to develop waste management plans (28.1). These must set out the analysis of the domestic situation regarding waste and how waste will be collected during the period the programme is active (28.3-4). In addition, the member states are required to develop a waste prevention programme before 2014 (29.1). These documents set out benchmarks and a monitoring of the progress that is booked (29.2-5). The legal transposition of the directive should be before 2011 (40.1).

In later revisions the EC decided (2011.753/EU) on the calculations the member states should use for the reporting on the targets for Directive 2008/98/EC. In 2018 Directive 2008/98/EC was amended with directive 2018/851. These amendments reconsidered foremostly definitions of waste. Yet, it also required member states to establish a scheme for the extended producer responsibility (Article 8a). Moreover Article 9 requests the member states to put more emphasis on the promotion of waste prevention. However, these measures cannot be taken into account with the analysis since the transposition deadline for this amendment is July 2020 (article 2).

Table 3.1 Legal provisions WFD

2008/98/EC – Waste Framework Directive	
Purpose	“Minimize negative effects of the generation and management of waste on human health and the environment” (Article 6).
Targets	Re-use and recycling of 50% of the household waste’s overall weight by 2020 Re-use and recycling from non-hazardous waste should be at 70% of the overall weight by 2020
Instruments	Waste management hierarchy Economic instruments Legal provisions
Requirements	Waste Management Plan Waste Prevention Plan
Key concepts	Waste management hierarchy Polluter pays principle Extended producer responsibility

3.2 Implementation effort and the WFD

As is the case with any directive, the EC expects effort of the member states to implement this directive. The Commission actively advocates the priority of the directive, stresses member states to devote sufficient resources to waste programmes, and assigns itself to the job to actively monitor the performance of member states (European Commission, 2019). The EC tries to stimulate the implementation explicitly. However, the EC is still dependent on the member states to implement the directive due to its legislative character. Member states are responsible for the implementation and have the discretionary room to adapt the directive so it

fits with their country's preferences and state structures (Haverland, Steunenberg and Van Waarden, 2011, p.266). This discretionary room does allow for diversity within the same legislation, but it also allows for differences in effort to transpose and implement the directive (p.265-266). The WFD is no exception to this.

In the Theoretical Framework, implementation effort is explained as the sum of three factors: resource devotion, prioritisation and monitoring (Bondarouk and Mastenbroek, 2018). The devotion of resources refers to the share of the capacity of a member state that is allocated to the implementation of a certain directive (Bondarouk and Mastenbroek, 2018, p.20). In the case of the WFD, capacity is mostly related to the extent to which member states have the appropriate methods in place to treat the waste. In order to recycle waste, a member state must have the machines and expertise to do so. Besides they have also to be willing to use their time and money on the treatment of waste.

The willingness is, intuitively, even more related to prioritisation. Prioritisation is the extent to which member states find the WFD more important than other issues that are on the political agenda (Bondarouk and Mastenbroek, 2018, p.20). The EC also tries to create a sense of urgency surrounding the WFD. It is framed as one of the top priorities and one of the key pillars of the road towards a circular economy (EC, 2014). The EC is, however, dependent on the EU's member states to implement the directive. Prioritisation can, in the light of the WFD, be interpreted in two ways. On the one hand, as the extent to which the member states are performing according to the deadlines. Do they transpose and implement the necessary laws to adhere to the WFD in time? On the other hand, the WFD also proposes a treatment hierarchy which could be seen as a priority ladder. Then, member states should place priority on certain levels of the waste management hierarchy like a primary focus on prevention. The question is then what waste treatment is prioritised by the member states.

The last factor of implementation effort is monitoring. Monitoring is the extent to which the member states actually want to make the policy work (Howlett et al., 2009, p.186). This is the only part of implementation effort that is legally arranged by the WFD. Article 29.3 requires the member states to have regular assessments of their policies in the extent to which they reach the targets set by the directive. Moreover, Article 34 and 36 ensure that the domestic laws should include regulations for inspections and penalties if one violates the waste laws.

4. Methodology

This chapter describes the methodological framework. First, the research design is explained and how a qualitative comparative analysis helps answering the research question. Section 4.2 elaborates on the case selection. Section 4.3 shows which data sources are used for the analysis. Section 4.4 details how the concepts from the theoretical framework are operationalised and calibrated. Section 4.5 explains the measures of consistency and coverage in QCA. The last section of this chapter sheds light on the validity and reliability of this research.

4.1 Research design

This research aims to identify which explanations contribute to member states' implementation effort and what kind of relationship they have to the outcome. In order to establish how each of the explanations relates to the implementation effort, this thesis compares the effort different member states have devoted to the implementation of one specific directive, the Waste Framework Directive (WFD) 2008/98/EC. Since the EU does not have enough members to construct a regression analysis with a large enough number of respondents, multiple case studies are conducted (Berg-Schlosser, De Meur, Rihoux and Ragin, 2009, p.4; Toshkov, 2016, p.258). A medium-size N-comparative research design is a hybrid combined of a large-N design with an analysis that is more common for case study research. These hybrid approaches are well suited for retrospectively attributing causes to

Box 4.1 Terminology QCA

QCA has its own terminology to describes its method and drawing the analysis. The most important basic terms are highlighted here. All other relevant terms are presented in the text.

Outcome – Instead of using a dependent variable, a QCA is concerned with an outcome as the phenomenon to be explained

Conditions – Instead of using an independent variable, a QCA is concerned with conditions as the factors that explain a phenomenon

Configuration – A combination of conditions

Membership – The extent to which a case displays a certain conditions

Boolean operators – Way of describing the combination of conditions that lead to the outcome. ~ or lower-case letters stand for a *negation*; + refers to *or*; * refers to *and*.

Truth table – Systematic overview of the possible and observed combinations of conditions that lead to the outcome along with the actual results

(Legewie, 2013; Rihoux, 2008)

certain outcomes (Toshkov, 2016, p.258). One of these hybrid approaches is a qualitative comparative analysis (QCA). QCA is a research technique that allows the researcher to conduct a comparative analysis in a systematic manner while maintaining the merits of qualitative research (Engeli et al., 2014, p.88). Yet, before turning to the reasons why QCA is the appropriate method for this research, it needs some explanation and elaboration. QCA as a method uses its own terminology for describing the causal relations and analysing it. Box 4.1 provides an explanation of the most important terms.

4.1.1 QCA: A research method

The main goal of a QCA is to explain how a certain outcome is produced (Legewie, 2013). The method incorporates the advantages of both qualitative and quantitative methods (Berg-Schlosser et al., 2009, p.5). On the one hand, it uses the merits of a qualitative case-oriented approach by considering cases in depth (Legewie, 2013; Berg-Schlosser et al., 2009, p.5; Toshkov, 2016, p.261). This allows the researcher to touch upon the complex causality which is the core assumption of a QCA approach (Legewie, 2013; Engeli et al., 2014, p.86). Complex causality means that a certain outcome could be the consequence of different sets of conditions (Rihoux, 2008, p.726; Legewie, 2013). Different causal paths could lead to the same outcome, which is known as *equifinality* (Rihoux, 2008, p.726). For a single case study it is impossible to adhere to this assumption since it can only show one configuration. On the other hand, QCA uses a medium-sized N in order to compare these possible causal paths and identifies the shared conditions between them. This is done in a very systematic way comparable to quantitative analysis techniques by having more emphasis on a strict definition of the variables (Engeli et al., 2014, p.87; Berg-Schlosser et al., 2009, p.12). QCA is thus a research method that is able to capture the causal complexity of case studies, while still being able to draw systematic comparisons (Rihoux, 2008, p.727).

Even though QCA assumes causal complexity, no conclusion can be drawn about causality (Berg-Schlosser et al., 2009, p.3). QCA cannot control for all factors of influence and therefore it cannot prove the causal relationship. Yet, QCA is suitable to eliminate factors that do not influence the outcome (p.3). The research method achieves this by defining relationships between conditions and outcomes as sufficient, necessary, INUS or SUIN (Toshkov, 2016, p.270). A condition is necessary for an outcome if the outcome cannot occur without the presence of this particular condition. It remains possible the outcome might not occur despite the presence of the condition. A sufficient condition entails that the outcome will always occur if the condition is present, but as opposed to necessary conditions the

outcome could still be present even if the condition is absent. INUS and SUIN conditions are more complex. An INUS condition is an “insufficient but necessary part of a condition which is itself unnecessary but sufficient for the result” (Mackie, 1965, p.245). It is thus a condition which cannot explain an outcome by itself, yet it is a vital part of a set factors which combined are a sufficient condition. A SUIN condition is a sufficient but unnecessary part of a set conditions that are necessary for the outcome. This means that a condition is not necessary in itself, but a sufficient part of a combination that would necessary for the outcome to display.

By means of a truth table, the causal patterns of sufficiency can be identified (Legewie, 2013). For each case it is determined to what extent they have membership in a certain condition. This could be either a dichotomous membership, known as crisp set QCA (csQCA) (Rihoux and De Meur, 2009, p.42) or a fuzzy set QCA (fsQCA), which allows for a continuous scale or an interval scale ranging from 0 and 1 (Legewie, 2017; Ragin, 2009, p.88). A fsQCA combines the qualitative and quantitative approaches even more. “Fuzzy sets combine qualitative and quantitative assessment: [1] and [0] are qualitative assignments (“fully in” and “fully out,” respectively); values between [0] and [1] indicate partial membership” (Ragin, 2009, p.92). The main advantage of a fuzzy set is that it allows for partial membership (Engeli et al., 2014, p.92). This allows for a more nuanced attribution of scores than the csQCA. A truth table shows to what extent each of the cases has membership in the conditions and to what extent the outcome is present (Ragin, 2009, p.101). It shows also which cases show the same configurations (Engeli et al., 2014, p.98). When multiple cases with the same configuration share the same outcome, the researcher is able to identify them as either sufficient, necessary, INUS, SUIN or irrelevant (Legewie, 2013).

4.1.2 QCA as the appropriate method

There are four reasons why QCA, and more specifically fsQCA, is an appropriate method for this research. The first reason is the aforementioned core assumption of QCA: complex causality (Rihoux, 2008, p.726). Based on research syntheses by Angelova et al. (2012) and Toshkov (2010) it seems that compliance is also subject to this phenomenon of equifinality. To begin with, the sheer diversity of possible explanations for compliant behaviour – Toshkov (2010, p.63) mentions that 263 possible relationships between explanations and compliant behaviour have been studied – is an indication that there is not one main explanation for compliant behaviour. The diversity in results (Toshkov, 2010) leads to the educated guess that compliance is subject to equifinality; more than one way could lead to Rome (Rihoux, 2008,

p.726). Besides, the variety in variables that are used as an explanation for compliant behaviour and are proved to be true (Angelova et al., 2012) indicate that compliant behaviour could not only be explained via different ways, it also seems to be a combination of factors rather than one sole factor. Moreover, Falkner, Hartlapp and Treib (2007) even developed a typology to explain that different explanations apply for the differences in compliance between different groups of member states; “crucial theoretical propositions in EU implementation research [...] are only ‘sometimes-true theories’”(Falkner et al., 2007, p.410). QCA acknowledges this complex causality and will not prove any causal path, but rather indicate which factors are important for the causal paths that could lead to implementation effort with the EU directives.

The second reason for choosing fsQCA is the purpose of this study. The research aim is to contribute to theory on EU policy by identifying the causal paths that lead to implementation effort. It does so by testing existing theories. QCA is a research approach that is well suited for this purpose (Engeli et al., 2014, p.88; Rihoux, 2008, p.728). A QCA tests whether theories could either co-exist in a very systematic manner (Engeli et al., 2014, p.88) or the method could falsify certain theories through conflicting configurations (Berg-Schlosser et al., 2009, p.14).

The third reason for QCA as a suitable method is that in order to test these theoretical hypotheses properly a cross-case study is the most appropriate research design (Gerring, 2007, p. 38). One advantage of a cross-case study is the greater degree of confidence, because the interpretation of results is more strict than with single case study research (p.41). Moreover, the comparison does not rest on one crucial case. Therefore, there is a lesser chance preliminary or incorrect conclusions are drawn (p.41). QCA is the most appropriate comparative design for this research because of the possibility of equifinality. Falkner, Hartlapp and Treib (2007) found that different explanations compliant behaviour apply to different groups of member states. “Crucial theoretical propositions in EU implementation research [...] are only ‘sometimes-true theories’”(Falkner et al., 2007, p.410). QCA acknowledges this complex causality, but still allows to draw a comparison between the countries.

The fourth reason is that QCA not only allows for cross-case comparison, but also for within-case analysis (Toshkov, 2016, p.264). Based on the aforementioned complex causality, compliant behaviour and implementation effort require an analysis that considers the cases within their respective contexts. The cases should be considered within their own particular

context. Case studies leave more room for interpretation of the data than cross-case studies (Gerring, 2007, p.41). As opposed to large-N cross-case studies, case study research allows for a heterogeneous population (Toshkov, 2016, p.264). This is required when doing research on EU member states, since they all have their own characteristics. A QCA allows for a within-case analysis and is, therefore, an appropriate method to analyse the different conditions and the outcome (p.264). In order to fully take advantage of this feature of QCA as a medium-N comparative design, the QCA technique that is used is a fuzzy set. A fuzzy set allows for partial membership which is a more flexible technique than csQCA and allows for a better interpretation of the conditions for each of the cases (Engeli et al., 2014, p.92; Toshkov, 2016, p.281).

4.2 Case selection

The case selection for a QCA is two-fold. First, the case selection is concerned with the domain of investigation (Berg-Schlosser and De Meur, 2009, p.21). In QCA terminology this is called the *area of homogeneity* (p.21). The area of homogeneity ensures that a valid comparison can be drawn between the cases within the same dimension. Second, the cases within the area of homogeneity have to be chosen. These cases serve as the unit of analysis.

4.2.1 Area of Homogeneity

For this thesis, the area of homogeneity is the Waste Framework Directive (2008/98/EC). This directive serves as the policy for comparison and classifies as a typical case (Gerring, 2008). A typical case is a case that is representative for the population (Gerring, 2008, p.648). Four considerations led to the WFD as the case for this research.

The first consideration was that the policy sector of the case had to stay close to the origins of the framework of policy performance by Bondarouk and Mastenbroek (2018). This framework is developed based on studies on environmental policies. At the moment of writing the policy performance framework has only be applied in assessments of environmental EU policies (Bondarouk and Mastenbroek, 2018; Bondarouk et al., 2019). Therefore it seems preliminary to shy away from environmental policies. This research does not intend to go beyond the boundaries of the framework and will not test the applicability of the theoretical basis of this framework to other policy sectors. Hence, the directive must be within the environmental policy sector.

The second consideration relates to the notion of a typical case. The basis of this research is that the implementation of directives very likely have equifinal explanations. Over

the years this has become a characteristic of directives (Falkner et al., 2007; Angelova et al., 2012, Toshkov, 2010). Therefore the selected directive must also be subject to this causal complexity; there must be no indication that the case deviates from this characteristic. There are clear indications that the WFD is representative for directives as being subjected to complex causality. In a guidance document, the EC (2012, p.2) even writes: “enforcement practice may differ between member states, depending on circumstances, administrative structures, regional or local conditions or some other reason. In practical cases similar to the examples presented, other facts may justify a different decision by the competent authority”. Different contexts in the member states might lead to different approaches in practical implementation.

The third consideration for choosing the WFD as the area of homogeneity has a more methodological fundament to it. QCA requires sufficient between-case diversity on the outcome (Berg-Schlosser et al., 2009, p.7). The cases have to show variance between the membership in the conditions, but also on the outcome. Although outcome indicators cannot be mistaken for output, nor necessarily are a result of implementation output, outputs and outcomes are related and outcomes can indicate scores on the output (Hill and Hupe, 2014, pp.139-143). Taking a look at the outcomes of the domestic policies, there seems to be great variance in the waste management, that is the treatment of waste, per capita. In 2016, six years after the transposition deadline, the tonnes of waste managed varies from almost twenty tonnes per capita in Finland to not even one tonne in Croatia, Portugal and Latvia (Eurostat, 2019). While it cannot be fully attributed to the WFD as there might be other underlying factors influencing the outcome, it does indicate a difference between the member states in their approach to the WFD.

The last consideration for choosing the WFD as the case is a matter of practicality. Although data availability cannot serve as the sole reason to select a certain case or area of homogeneity, yet it does contribute to the choice. The Directorate-General (DG) Environment, is one of the few DGs that has multiple extensive reports on the implementation of its regulations and directives (Tsiarta et al., 2015; Eunomia, 2018). Due to time and resource constraints, it did influence the choice to choose this directive because of data availability.

4.2.2 Cases to analyse

The second part of case selection for a QCA is the selection of the cases as units of analysis. This selection is based on four considerations. One is the number of cases, two the familiarity

with the cases, three the variation on the outcome and four the shared background characteristics of the cases (Berg-Schlosser and De Meur, 2009).

The first and second considerations are interrelated. A QCA requires a balance between familiarity with the cases but still a generalisable sample (Thomann and Maggeti, 2017, p.7). Rihoux et al. (2013) recommend to use an intermediate N (>10 ; <50) for QCA, as the scale for this balance. This research includes all 28 member states of the EU as case studies. As the number of EU member states fall within this scale, it is possible to select all 28 cases while still become familiar with the cases. Moreover, by taking the full population the outcomes are generalisable. Although time constraints limit the possible familiarity with the cases, a fuzzy set analysis provides already nuance to the cases.

The third consideration, variation on the outcome, is ensured by selecting the full population. A considerable number of cases is necessary because of the number of conditions. This research identified five conditions. This results in 32 (2^5) logically possible causal paths (Legewie, 2013, p.12). Therefore, selecting all member states instead of only 10, for example, provides the opportunity to cover 90% of all causal paths instead of 30%. Moreover, the diversity on the outcome is maximised this way.

The only disadvantage of selecting this number of cases is that the background characteristics, like institutional context and previous waste legislation, and become also more diverse. QCA does not control for background characteristics, therefore it is desirable to have a fair amount of similar background characteristics (Berg-Schlosser and De Meur, 2009, p.22). The selected cases now share the characteristic of being an EU member state and are assumed to have implemented the same *acquis*. The QCA tries to overcome this deficiency by considering deviant cases, cases who cannot be explained via the found causal paths, in their own specific context (Schneider and Wagemann, 2010, p.14). This way case-specific explanations can be found for these deviant cases.

4.3 Data collection

The used data are all secondary data. Due to time and resource constraints, there was no opportunity to collect the necessary primary data to conduct the QCA. Secondary data sources can be divided into secondary material and raw secondary data (Vennix, 2011, p.192). This thesis makes use of both. Secondary material is data that has already been interpreted by previous users of the data set (p.192). In this thesis, the secondary material consists of several EU documents. The Environmental Implementation Review of both 2017 and 2019, the

municipal waste treatment descriptions of the European Environmental Agency of 2016 and the Implementation Report for Directive 2008/98/EC (Tsiarta et al., 2015; 2017) were used to make an assessment of the prioritisation of the directive. The analysis of these document was done in a systematic way by searching for the words that are related to the waste management hierarchy. The exact search terms are described in the operationalisation. Because secondary material could harm the internal validity of the research, the analysis for that indicator was combined with secondary data (issues of validity are discussed in section 4.5).

Secondary data are data sources that are retrieved by others, but not edited, interpreted or adjusted (Vennix, 2011, p.192). The secondary data sources consist of data from Eurostat on GDP per capita, waste generation and waste treatment of member states (Eurostat, 2019a;b;c). Eurobarometer provided a data source for public opinion on the EU. The Chapel Hill Expert Survey (Polk et al., 2017) provided the data for the assessment on government's stance on environmental issues. The data provided by these sources were collected and edited to calculate the appropriate ratios if necessary.

4.4 Operationalisation and Calibration

Two of the most important steps in conducting a QCA are the operationalisation and calibration of the outcome and the conditions (Engeli et al., 2014, p.93). Operationalisation is the process referring to make the abstract theoretical concepts measurable (Bleijenbergh, 2015, p.53). Calibration refers to the process of translating these measurements of the outcome and conditions into QCA membership sets (Engeli et al., 2014, p.93). Calibration can be done in several ways depending on the data available and the kind of QCA technique that is applied. Depending on the nature of the conditions, the data either could be nominal, ordinal, interval or ratio. This should be translated into either a crisp set or a fuzzy set, depending on the choice of technique (p.93). The approach for this research is a fsQCA so the outcome variable has to be calibrated into a fuzzy set, which means that as opposed to a crisp set QCA, the outcome variable is not interpreted as a dichotomous variable but as one with an interval or ratio scale. However, for the conditions both crisp set calibration and fuzzy set calibration are allowed (pp.93-94).

There are two rules for the calibration process. First of all, membership scores always vary between 0 and 1. Zero represents no membership in the condition, while one represents perfect membership in that particular condition. With fsQCA, there is the option for partial membership by using decimal numbers (Engeli et al., 2014, p.94; Ragin, 2009, p.89).

Secondly, the cases are not ranked relative to each other, but to theoretically defined gradations (Ragin, 2009, p.90). The valuation of the conditions needs well-defined cross-over points that determine to what extent a certain case has membership in one particular condition (Engeli et al., 2014, p.94; Ragin, 2009, p.91).

4.4.1 Operationalisation and Calibration Implementation Effort

The outcome, implementation effort, has to be operationalised and calibrated first. The definition of implementation effort is the use of at least the minimal required factors to achieve the goals set by the policy (Bauer and Knill, 2014, p.33). These factors were identified as the use of resources, prioritisation of the policy and monitoring of the policy (Bauer and Knill, 2014; Bondarouk and Mastenbroek, 2018; Howlett et al., 2009). These factors are at the basis of the measurement of implementation effort. The extent to which member states have membership in each of the factors contributes to the extent to which the member states have membership in the outcome. Hence, the set membership of the overall implementation effort is the sum of the set membership scores on the resources and prioritisation divided by two (Table 4.2). As will be explained below, monitoring is not taken into account. A summarised overview of the operationalisation and calibration is presented in Table 4.1 and 4.2.

Each of these factors should be operationalised and calibrated in order to determine if the cases have membership in the outcome. First, the *resources* are the share of the capacities of a member state, either on the central or the regional level of government, that are devoted to the implementation of the directive. Bondarouk and Mastenbroek (2018, p.20) identified the number of staff, the type of expertise and the amount of the financial budget devoted to the policy as the relevant indicators for resources devoted to the implementation of a directive. Due to insufficient data available on staff and expertise, this research considers budget as the indicator for resources. The expenditure per country on waste treatment gives an indication of how big the budget is for each country. In an attempt to include expertise this number will be set off against the percentage of recycling for household waste.

The calibration of waste treatment expenditure by member states is done according to how much they would have to spend more to reach the 50% target for recycling of household waste as a proportion of what they spent in 2017 (2008/98/EC, Article 11.2). In order to calculate the most recent numbers were used (2017). Full membership is accredited when this goal is reached and the proportion of the investment a member state should make is below zero. The cut-off point is based on the assumption that in order to attain the target the member

states invest each year a similar proportion in waste treatment. After 2017, the member states have three of the twelve years left to reach the 50% mark. Therefore, it is decided that if a country needs to make an investment more than a quarter (3/12) it will lose its membership. Hence, the cut-off point is 0.25.

Table 4.1 Operationalisation of Implementation effort

	Definition	Indicators	Definition	Indicators	Measurement
Implementation effort		Resources	the share of the capacities of a member state, either on the central or the regional level of government, that are devoted to the implementation of the directive.	National government expenditure on waste management	Proportion of previous investment necessary to invest in order to reach the goal of 50% recycling of household waste
	The use of the factors that are required to achieve the goals set by the policy	Prioritisation	The minimal required actions taken by the member state as requested by Directive 2008/98/EC	Implementation of the waste management hierarchy	Ratio between landfill, incineration and recycling Existence of a separate Waste Prevention programme Nationally emphasised waste treatment Decrease in waste generated

No membership is accredited when there has not been done any investments. This is the case when a member states investment needs to be more than what they already have spent on waste treatment. Appendix 1 provides a full overview of the calculations, original numbers and formulas.

The second factor of effort is the extent to which the policy is a *priority* (Winter, 2006, p.160). Prioritisation of policy is the extent to which a policy deserves more attention as compared to other policies (Bondarouk and Mastenbroek, 2018, p.20). This research uses the waste management hierarchy (2008/98/EC, Article 4.1) as a measure of priority being part of implementation effort. The waste management hierarchy lays down a prioritisation of waste treatment activities, with waste prevention as the top priority and disposal the last option to treat waste. Prioritisation of the WFD as part of implementation effort is assessed as to what extent the emphasis for member states' policy has been on waste prevention¹. Four indicators display the emphasis on waste prevention. The indicators are used as an indication for a process rather than an assessment on how effective the policies are. First is a decrease of landfill and an increase in recycling of waste (Eunomia, 2018, p.32). A second indicator is the existence of a separate Waste Prevention Programme, instead of a mere inclusion in the Waste Management Program. A third indicator is the overall waste strategy from the central government: what layer of the waste management hierarchy are they promoting? The fourth indicator is a decrease in overall waste generated by member states, although this indicator cannot carry too much weight since it could be influenced by a lot of other factors. However, the decrease should be taken into consideration because symbolic policy without any action should not be rewarded.

The calibration of this factor is according to the layers of the waste management hierarchy. Full membership is accredited for an emphasis on waste prevention. A membership level of 0.8 is accredited for emphasis on the re-use of products, 0.6 for a focus on recycling, 0.4 for other recovery methods and 0.2 for disposal activities. No membership is accredited when there is no strategy developed for waste treatment at all.

The last factor of implementation effort is monitoring. Monitoring indicates that a government actually wants a policy to succeed (Howlett et al., 2009, p.186).). Accordingly, monitoring is defined as an assessment of the quality of the implementation of the directive

¹ This thesis does not make use of saliency, the more conventional measure for prioritisation (Spendzharova and Versluis, 2013), because this measure is already part of the conditions.

(Bondarouk and Mastenbroek, 2018, p.20). Every government is required to report on its progress to reach the 2020 targets (2008/98/EC, art. 37). Hence the EC serves as the gatekeeper of quality for this directive. Moreover, inspections are required by Article 34 of the directive and penalties and enforcement in the member states by Article 36. Because this part of implementation effort is arranged by the directive, monitoring is not taken into account as a factor of implementation effort. Because of these legal arrangements, confusing substance of the domestic monitoring law for the effort is perceived as a pitfall. Moreover, considering the use of monitoring and sanctioning might contain a bias towards under-performing member states. In order to capture only implementation effort, monitoring is not taken into account.

Table 4.2 Calibration of Implementation Effort

Condition	Scores	Calibration
Implementation effort	Resources	(Resources +
	Prioritisation	Prioritisation) /2
Resources	Index of previous investments	
	0	1
	0.25	0.5
	1	0
Prioritisation	No use hierarchy	0.05
	Increase in landfill	0.1
	High landfill (>50%), but stable	0.2
	Decrease Landfill, but still high (>40%)	0.3
	Decrease landfill, increase recovery	0.4
	Increase in recovery > Increase recycling	0.45
	Increase recycling > increase recovery	0.55
	Increase recycling	0.6
	Increase recycle, no decrease waste generated OR <50% recycle rate	0.7
	Decrease waste generated, 50% recycling	0.8
	Decrease waste generated > EU average, no separate WPP	0.9
	Decrease waste generated > EU average AND separate WPP	0.95

4.4.2 Operationalisation and Calibration of the Conditions

Legitimacy Conditions

Legitimacy is defined as the level of diffuse support a member state has for the EU (Gibson et al., 2005, p.189). This explanation for compliant behaviour consists of two conditions: a law-abiding culture and support for the EU (Börzel et al., 2010, p.1370; Zhelyazkova et al., 2016, p.832). A member state with law-abiding culture complies with the rule of law out of normative belief (Börzel et al., 2010, p.1370). This is a culture where the addressees accept the rule of law (p.1370). There is a lack of good data to measure this condition (Börzel et al., 2010, p.1376), hence the focus is on the acceptance of the EU as a law-setting institution (p.1371). In order to measure this acceptance the general trust in the EU is taken into account, this is a reflection of the belief of the public that the EU is capable and willing to make desirable policy (Gibson et al., 2005, pp.189-190). This indicator is measured via the Eurobarometer (EC, n.d.b). In order to capture the percentage of the population that trust the European Union versus the percentage that does not trust the EU, the answer option “Don’t know” was left out. Appendix 2 presents the percentages for each country as well as the calculation method. For this condition, no pre-set benchmarks were existent. Therefore, this indicator could not adhere to the rule that the calibration should be theoretically funded (Ragin, 2009, p.90). In order to provide a solution, the EU’s own qualified majority rules are followed. If 65% of the population is in favour then the decision is considered legitimate (European Parliament, 2014). The difference between the average trust in the EU over the timespan March 2008 till November 2018 and the average distrust in that period provide the indicator. This difference is corrected for the omittance of the “Don’t know” -option. Appendix 2 shows how the percentages were corrected. If both sides are equal and there is no majority for trust, nor distrust the difference is zero (50%-50%). This is accredited with 0.5 membership, the crossover point. Full membership is accredited when the difference is 15 percentage points positively for the population that trust the EU. No membership is accredited when the difference is 15 percentage points negative.

For support for the EU as the second condition within the legitimacy argument, there is much more agreement on how to properly measure and calibrate the factor (Williams, 2018, p.60). EU support is the belief that the EU is favourable for the public and a show of loyalty towards the institution. The measurement that is used comes from the Eurobarometer (EC, n.d.c). It is the question whether, on aggregate, the public has a positive image of the EU (Fjølstul and Carrubba, 2018, p.10; Rauh et al., 2018). The support for the EU is measured

through this indicator by taking the average percentage of the population that supports the EU in the period from March 2008 until November 2018. The percentage of EU support is calculated by adding the answer options “Fairly positive” and “Very positive”.

Euroscepticism is measured by adding the answer options “Fairly negative” and “Very negative” for the same time period as the EU support². The calibration is according to Swinkels (2019, p.12), she used the average trust in the EU to calibrate the crossover point in membership accredited. She set full membership on one standard deviation towards a more positive view and no membership when it deviated one standard deviation negatively. In Appendix 3 all averages are presented as well as the standard deviations. Table 4.3 contains the operationalisation of the legitimacy factors and table 4.4 the calibration of a law-abiding culture and EU support.

Table 4.3 Operationalisation of Legitimacy Conditions

Conditions	Definition	Indicators	Measurement
Law-Abiding culture	A culture in which the addressees accept the rule of law	Acceptation by EU citizens of the EU as a law-setting institution	Percentage of EU citizens that has trust in the EU as an institution
EU Support	the belief that the EU is favourable for the public and a show of loyalty towards the institution	Average EU support Average national Euroscepticism	The percentage of EU citizens that either has a positive or negative image of the EU

² There is a debate whether the a neutral view on the EU is a form of soft Euroscepticism (Williams, 2018). This thesis opts to not include this answer option in the analysis. Yet it is not discarded as an answer option, since the average perentages for support and Euroscepticism are not corrected but used as the raw data.

Table 4.4 Calibration of Legitimacy Conditions

Condition	Scores	Calibration
Law-abiding Culture	Difference in percentage population that trust the EU and percentage that does not trust the EU	
	+ 15 percentage points	1
	0 percentage points	0.5
	- 15 percentage points	0
EU support	45.7 percentage points	1
	38.33 %	0.5
	30.95 percentage points	0

Willingness Conditions

As defined in the theoretical framework willingness consists of two parts: policy preference and issue salience. The policy preference refers to policy positions the governments of member states have on a certain issue. By lack of a clear measurement for the policy positions on the Waste Framework Directive by the government's of the member states between the issuance and 2018, there is opted to use the Chapel Hill Experts Survey (CHES) for 2010 and 2014 (Polk et al., 2017). Polk et al. (2017) reviewed the stance of political parties on the environment. 0 indicated support on the environment even at the costs of the economy, while 10 indicated that the party insisted in that period on economic growth even at the cost of the environment. The answers of the experts were averaged for those two periods and the governing parties represent the countries. The calibration followed the CHES allocation of scores: full membership was accredited if the member state had an average of 0, the crossover point is represented by a score of 5 and a member state would be fully excluded from membership if the average score was 10.

For the public salience of the directive, the Eurobarometer is used. Public issue salience is the degree to which a certain policy area is considered as important by the public (Warntjen, 2012, p.169). The question from the Eurobarometer that is taken is the question which policy area the public thinks is the most important for the European Union (EC, n.d.d). For each Member State the average ranking of the environment between the years 2010 and

2018 is taken into account³. The calibration of this environment is according to Arregui and Creighton (2018, p.1331). They considered the average ranking of an policy sector for each member state to make a comparison. In the analysis of this thesis full membership is accredited if the average ranking is one out of sixteen sectors. The member state is excluded from having membership in the saliency of environment issues if the environment ranked sixteen on average. The crossover point (0.5) is accredited if the average ranking is 8.5, which is right in the middle. The operationalisation of policy preferences and issue salience are represented in table 4.5. Table 4.6 contains the calibration of these two conditions.

Table 4.5 Operationalisation of Preference Conditions

Condition	Definition	Indicator	Measurement
Policy preferences	Policy positions the governments of member states have on a certain issue	Government position on environmental protection	Chapel Hill Expert Survey: Stance on environment vs economic growth
public salience of the directive	The importance the public attributes to a certain issue	Which policy area is considered as most important by EU citizens	Average ranking of the environment as the most important problem of the EU between 2010 and 2018

Table 4.6 Calibration of Preference Conditions

Condition	Scores	Calibration
Policy preferences	Score Environment – Economic growth	
	0	1
	5	0.5
	10	0
Public salience of the directive	Average ranking of Environment	
	1 out of 16	1
	8.5 out of 16	0.5
	16 out of 16	0

³ The EU started to measure the saliency of EU issues from November 2010 onwards. Hence, the years 2008 - 2009 are not taken into account in measuring the saliency of the environment in this period.

Ability condition

The last condition is the ability to implement directives. This factor was defined as the amount of resources an implementing institution is able to devote to the implementation of a certain directive (Börzel et al., 2010, p.1369). A common practice is to use the gross domestic product (GDP) per capita as a proxy for capacity (p.1376). This thesis follows this tradition. The GDP per capita is taken from Eurostat (2019d). According to Eurostat, this indicator resembles the economic activity in a country. The GDP per capita is measured in Euros for the period 2008-2018 (Eurostat, 2019d). By lack of clear benchmarks for GDP per capita, the calibration method from Swinkels (2019, p.12) was used here too by using the mean and the standard deviation. The mean EU GDP per capita between 2008-2018 serves as the cut-off point (0.5 set membership). The standard deviation provides the amount for full set membership and full non-membership by respectively addition and subtraction. Table 3.10 provides the actual numbers for these thresholds. Tables 4.7 and 4.8 provide the operationalisation and the calibration of capacity.

Table 4.7 Operationalisation of Capacity

Condition	Definition	Indicator	Measurement
Capacity	The amount of resources an implementing institution is able to devote to the implementation of a certain directive	Economic activity in a member state	GDP per capita

Table 4.8 Calibration of Capacity

Condition	Scores	Calibration
Resources	€9258,429	0
	€25019,89	0.5
	€40781,36	1

4.5 Consistency and Coverage

In QCA there are two parameters to test the relations of necessity and sufficiency (Legewie, 2013, p.10). Consistency and coverage provide these measures. Consistency, on the one hand, is closely related to the measure of significance in statistics (Legewie, 2013, p.10), it shows to what extent a condition or combination of conditions is responsible for the outcome (Ragin, 2008, p.44). Coverage, on the other hand, shows the empirical relevance of the conditions (p.44). Both measures are discussed in detail below.

4.5.1 Consistency

Consistency, thus, “measures the degree to which a relation of necessity or sufficiency between a causal condition and an outcome is met within a given data set” (Legewie, 2013, p.11). It is an important measure to identify the sufficient and necessary relations between the conditions and the outcomes. For different relations, different thresholds for consistency apply. For a condition to be necessary, an analysis of necessity should show that the condition’s consistency ≥ 0.9 (Legewie, 2013, p.19). This means that the condition reveals itself in roughly 90% of the cases in the same manner. For a solution to be used in the minimalization process to find the sufficient conditions, a threshold of 0.75 suffices (Ragin, 2008, p.144). All configurations below that threshold will be used as a logical remainder. Logical remainders are the configurations which are not observed empirically (Schneider and Wagemann, 2012, p.151). When assessing the minimised solutions a stricter threshold of 0.8 is more applicable (Schneider and Wagemann, 2012, p.185). This way, the researcher enlarges the possibility equifinality, but does not accept it to quickly.

4.5.2 Coverage

Coverage measures the empirical relevance of a condition (Legewie, 2013, p.11). Simplified, it asks the question: “How much of outcome Y is covered by condition X?” (Schneider and Wagemann, 2012, p.129). Hence, it shows how many cases have membership in both condition X and outcome Y. The coverage can be assessed in different ways. First by an assessment of an XY Plot. The further away the cases are from the diagonal, the lower their coverage score (Schneider and Wagemann, 2012, p.133). A second possibility is to look at the coverage scores calculated by the QCA software. There are, however, no pre-set thresholds for coverage scores (Schneider and Wagemann, 2012; Ragin, 2008). Yet, recent scholars who used QCA reported that scores above 0.6 were regarded as fairly high coverage scores (Hagemann, 2019; Swinkels, 2019).

4.6 Validity and Reliability

This section deals with the issues of validity and reliability. These are two important indicators of the quality of the research (Vennix, 2011, pp.183-187). First internal validity is discussed. An elaboration on ensuring the external validity of this research follows. Lastly, the reliability of this research is explained.

4.6.1 Internal validity

Because of the intermediate N this study has, it “cannot rely on the law of large numbers to reduce measurement error” (Toshkov, 2016, p.259). Hence, internal validity needs to be treated with care. Internal validity is concerned with the question whether the presumed causal relationship is actually measured in the cases (Yin, 2014, p.46). In other words, the researcher has to give account for why the concepts are measured in that particular way (Bleijenbergh, 2015, p.120). The internal validity is guaranteed in this study because of four reasons. First of all, the theoretical concepts that are used for the presumed causal relationship are carefully developed using existing and proven theories. This leads to an adequate operationalisation to ensure a valid empirical measurement of the concepts (Adcock and Collier, 2001, p.531). This is necessary to select the crossover points in the calibration to translate the measurements of the concepts to a fuzzy set (Thomann and Maggeti, 2017, p.13). It reduces the chances of a measurement error (p.14).

The second precaution taken to ensure optimal internal validity was the choice of the cases and the way these are analysed. One challenge of QCA research is the balance between an as large as possible N and in-depth knowledge of the cases that are studied (Thomann and Maggeti, 2017, p.7; Toshkov, 2016, p.261). On the one hand, a larger N reduces the chance for measurement error due to the law of large numbers (Toshkov, 2016, p.259), so a greater number of cases would be preferred in the analysis. On the other hand, the larger the N, the harder it becomes to get in-depth knowledge about the cases due to time and resource constraints (Thomann and Maggeti, 2017, p.8; Gerring, 2007, p.54). Hence, this research chooses an intermediate level N (>10; <50) of fifteen cases in order to get the best of both worlds (Rihoux et al., 2013; Thomann and Maggeti, 2017, p.7-8). The number of cases is large enough to reduce the measurement error to some extent, while also maintaining the feasibility of conducting an in-depth case study.

The third argument that the internal validity is safe guarded in this research is concerned with the choice for a fuzzy set QCA instead of a crisp set QCA. When the actual results of the measurements of the case studies are calibrated into set memberships, there is always to some extent a loss in the meaning of the measurement. Although it is not as much removed from the context as with quantitative studies, a purely qualitative analysis is designed to hold the context even more into account (Gerring, 2007, p.49; Engeli et al., 2014, p.86; Toshkov, 2016, p.261). This could lead to a decreased internal validity since the measurement could be subjected to some measurement errors. By choosing for a fsQCA

instead of csQCA, this research minimizes the possible loss of contextualities in the interpretation of the cases. A crisp set uses a dichotomous translation of the condition, there is either membership or not. A fuzzy set uses an interval between 0 and 1, allowing the researcher to grant partial membership for a case in a certain condition (Berg-Schlosser et al., 2009, p.90). Hence, the internal validity could be optimised by giving a more accurate and controlled membership in a certain condition.

A fourth argument for ensuring internal validity, is to conduct robustness tests and consider the validity scores. Marx and Dusa (2010, p.110) argue that considerably low consistency scores in all conditions relate to a low internal validity of the model. It is only rarely that none of the theoretical propositions do not relate to the outcome. Hence, if there are low consistency levels the researcher might reconsider if the conditions are adequately measured. In this research, there were five causal paths that passed the threshold of 0.75 consistency scores (Ragin, 2008, p.144). Hence, the possible problem for internal validity that Marx and Dusa (2011) pose did not occur in this research.

In the same breath, one should mention robustness tests. Robustness checks are an underemphasised issue with QCA research (Skaanig, 2011, p.392). QCA has been accused of having low robust models because of the researcher's choice for the thresholds of membership scores. By conducting robustness tests, the researcher can identify if the model is sensitive to changes (Thomann and Maggeti, 2017, p.14). The smaller the changes in the output of the model, the more robust the model is. Significant fluctuations in the model output indicate potential measurements errors (p.14). For this QCA model three robustness tests were conducted. The sensitivity of the results is checked by means of a change in calibration threshold (Skaanig, 2011p.395), secondly by changing the frequency thresholds for the minimisation process (p.402) and thirdly by changing the consistency thresholds for the minimisation process (p.402). This model seems to be a robust QCA model as it passes all three tests. Appendix 9 provides an in-depth analysis of the robustness of the QCA model.

4.6.2 External validity

The external validity of a certain study is concerned with the question whether the results are representative for the full population or in another way generalisable (Yin, 2014, p.48). There are two ways to generalise results. First, there is statistical generalisation. Statistical generalisation is what is commonly meant with generalisation and refers to inference about a population on the basis of a smaller sample of the population (p.48). In this thesis this the full population is used for analysis, hence the external validity is maximised for the member

states. However, EU member states are a rather heterogeneous population. The member states have all different institutional and historical characteristics and because of the limitations of conditions a QCA cannot control for all differences between the countries due to a limitation in the number of conditions that can be involved in the analysis (Berg-Schlosser and De Meur, 2009, p.25). All in all, the QCA is more representative than a single or small N case study, yet it cannot be as generalisable as a large-N study.

The second way of considering the generalisation of a study is to look at the analytical generalisation (Yin, 2014, p.40). According to Yin (2014, p.40), case studies should not be focused on statistical generalisation but on the opportunity to shed light on theoretical concepts and principles. Analytical generalisation aims to specify to which concrete situations the theories could apply (p.41). In this sense, the research is generalisable. It tests whether the theoretically assumed explanations for transposition can apply to other stages in the EU policy cycle (Thomann and Maggeti, 2017, p.11).

4.6.3 Reliability

Reliability is the last factor of influence on the quality of the research design. Reliability of a research design refers to the extent to which a study could be replicated with the same results (Yin, 2014, p.46; King, Keohane and Verba, 1994, p.25). The research can minimise the risk of getting different results by carefully describing how the concepts are operationalised and cases are interpreted (pp.48-49). This thesis explained the operationalisation and calibration in an elaborated fashion in order to be as transparent on the interpretation of the data provided by the cases as possible.

Another way to enhance the reliability of the research is to develop a case study database (Yin, 2014, p.49; p.124). A case study database contains all the information that is relevant to the analysis of the case study as conducted by the researcher. If the research is to be replicated the same data and consideration could be used. This thesis has for each case a database with all the relevant documents regarding the cases and how these are interpreted to making the fuzzy sets.

5. Case descriptions

In this chapter, the results of each country on their effort and the conditions are discussed. These results are used in the analysis in Chapter 6. A summary and quick overview of these descriptives can be found in Appendix 4 and the fuzzy set membership in Appendix 5. This chapter deals first with implementation effort in section 5.1. Section 5.2 is concerned with the descriptive data for the conditions. First, the invested resources and the level of prioritisation are discussed for each of the countries. Then the conditions are presented. First as the actual scores and secondly what their set membership is.

5.1 Implementation effort

This section deals first with the invested resources of each member state, secondly the prioritisation of the directive and at last monitoring of the WFD.

5.1.1 Resources invested

Resources invested are defined as the share of capacities of a member state that are devoted to the implementation of directive 2008/98/EC. In order to measure and compare the countries, it was considered how many Euros the countries had to invest in waste treatment in order to reach the 50% recycling mark of household waste. To keep the comparison fair, the amounts that need to be invested were seen as a proportion of the countries' earlier investments.

This way of measuring exposed four different groups of member states. The first group is the group that already reached the 50% mark of recycling household waste in 2017 and do not need to invest any more money in waste treatment. These countries are Austria, Belgium, Germany, the Netherlands and Slovenia (Eurostat, 2019a). This does not mean that they invest the same amount of money in waste treatment. Belgium, Germany and the Netherlands belong to the seven biggest spenders on waste treatment, each spending more than €2000 million on waste treatment. Meanwhile, Austria is around the middle with €179,9 million expenditure in 2017 and Slovenia is second to last in their expenditure (€13,1 million) (Eurostat, 2019b). Slovenia appears to be rather efficient with its resources. It results in a set membership of at least 0.98 for each of the countries. In the fuzzy set analysis this translates to a full membership (0.95) (Ragin, 2008, p.88).

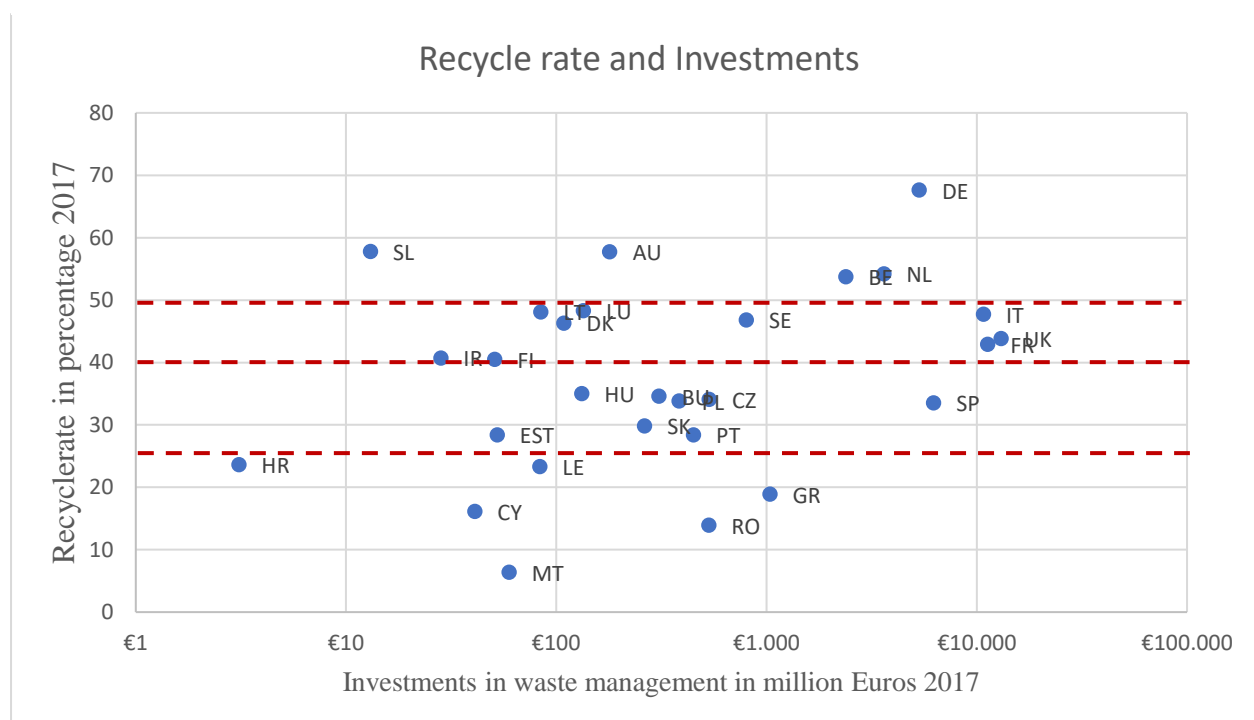
The second group of member states is formed by the ones that do not have invested enough resources to get to the 50% mark, but are on track to reach this by 2020. Denmark, Italy, Lithuania, France, Finland, Ireland, Sweden, the United Kingdom and Luxembourg fall in this group. The necessary investment to make are between €1900 million for France and

Great Britain and €3 million for Lithuania (Eurostat, 2019b). For France and Great Britain this around 15% of their previous investments, while Lithuania and Luxembourg have to invest an amount that equals to 4% of their previous investments. The set memberships for this group of countries differ from 0.93 for Lithuania and Luxembourg to 0.73 for France.

The third group consists of countries that have invested not nearly enough to be on track to reach the 50% mark, but they did invest some money (Eurostat, 2019a). Hungary, Bulgaria, the Czech Republic, Poland, Spain, Estonia, Slovakia and Portugal qualify for this group. Hungary, Bulgaria and the Czech Republic have to invest proportionally 45% of their investments in 2017 in order to reach a recycling rate of 50% (Eurostat, 2019b). Their set membership is around 0.3. Portugal, Estonia and Slovakia do worst in this group, having their set membership between 0.15 and 0.10.

The last group is the one that appears to have not made an effort to invest in waste treatment at all. This group consists of Croatia, Cyprus, Malta, Romania, Latvia and Greece. Each of these countries needs to at least double their investments in order to reach the 2020 goal of 50% recycling rate for municipal waste (Eurostat, 2019a; 2019b). Malta even has to invest seven times its 2017 expenditure in order to reach this goal. Hence, all these countries received no membership in the set for resources invested. Figure 5.1 shows the recycling percentage and the amount of resources invested in waste management in 2017. The three red lines show the demarcations between the four groups.

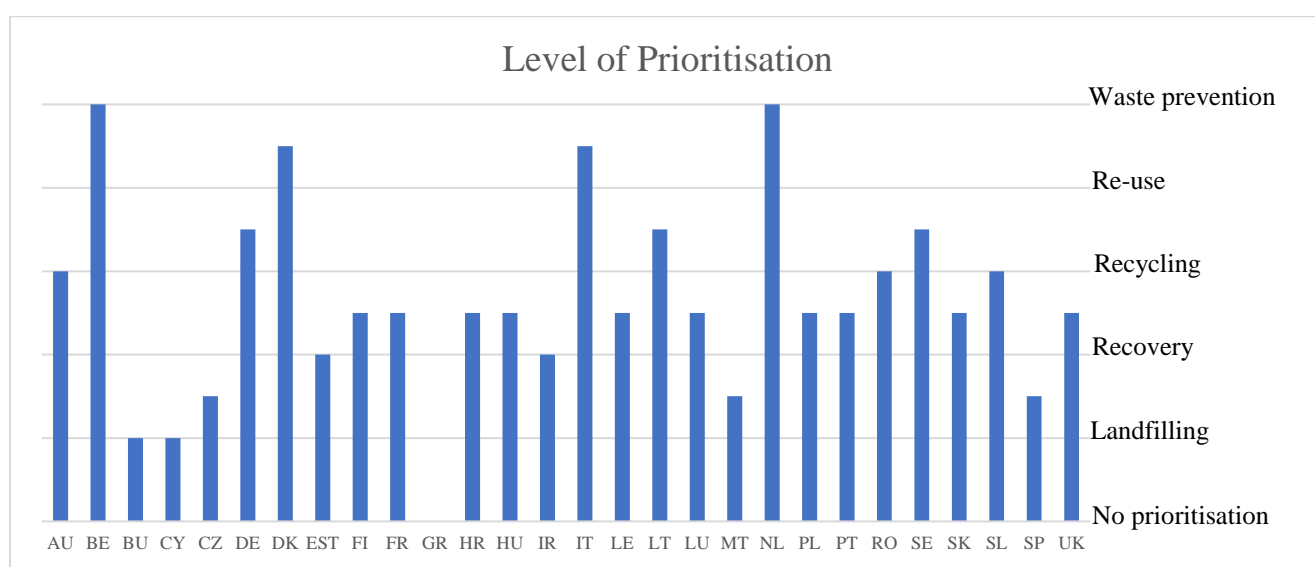
Figure 5.1 Resources devoted to waste management



5.1.2 Prioritisation

The measurement of prioritisation as a factor of implementation effort is based on the waste management hierarchy. When a member state emphasises a higher level on the hierarchy, the more they prioritise the main goals of the Waste Framework directive. The results of these measurements can thus be divided into six groups. Member states with a focus on (1) waste prevention, (2) re-use of materials, (3) recycling, (4) recovery, (5) disposal and (6) no waste treatment at all. Some member states do not fall explicitly in one of the categories. These countries are placed in-between the two layers they focus on. The set membership was accredited on the basis of whether a member state ‘passed’ a certain level. If so, the member state was considered membership in the next level, until they failed to display prioritisation of that particular level. The member states are discussed at the level where they stranded. Figure 5.2 provides a quick overview of the level each member state prioritises.

Figure 5.2 Level of prioritisation



No prioritisation of waste treatment

Greece is considered to be the only member state that does not prioritise waste treatment at all. During the period 2008-2017, landfilling remained the most prominent use of waste treatment in the country (Eurostat, 2019c). Even though it increased its recycling rate and promoted some re-use activities, the fact that their landfill rate increased to over 80% from 2008 to 2017 shows that moving up the waste management hierarchy had no priority for the member state (EC, 2019e1, p.7).

Prioritisation of disposal of waste

Bulgaria and Cyprus are the two countries that received set membership in the prioritisation of disposal activities instead of higher levels of the waste management hierarchy, while Spain and Malta were in between disposal activities and the prioritisation of recovery activities. In the period 2008-2017 Cyprus and Bulgaria both made major improvements in their waste treatment, yet landfilling remained the top treatment of waste (Eurostat, 2019c). However, based on the Environmental Implementation Review for Bulgaria (EC, 2019bu, p.8) waste dumping and landfilling were not as much addressed as they should be. Consequently, it seems as if they did not prioritise to move away from the treatment method. As for Cyprus, in 2017 landfilling was still over 80% of their waste treatment, while the recycling activities remained under 20% (Eurostat, 2019c). Hence, moving upwards on the waste management hierarchy does not seem like a priority. Malta and Spain, on the other hand, did make remarkable progress in moving away from landfilling but replaced it for recovery methods instead of higher-ranked methods of waste treatment (Eurostat, 2019c). Moreover, their waste disposal rates remained fairly high indicating that moving towards waste prevention does not seem like a priority for them (Eurostat, 2019c).

Prioritisation of recovery methods

Ireland and Estonia were considered the two countries that prioritise recovery methods as their main waste treatment methods. The United Kingdom, Finland, the Czech Republic, Poland, Slovakia, Portugal and Croatia were also considered to promote mainly recovery methods, but there were also signs of prioritising recycling of waste. Estonia increased its recovery practices with 16400% during the period 2008-2017, while reducing its landfilling activities with almost 70% (Eurostat, 2019c). Recovery methods now make up for almost 50% of its waste management practices. At the same time, waste generation has not decreased a lot (Eurostat, 2019c), showing signs of promoting recovery treatments over waste prevention (EC, 2017est, p.8; 2019est, p.7). Ireland increased its recovery methods too, albeit slightly less, by 844% between 2008 and 2017, while reducing its recycling and landfilling rates (Eurostat, 2019c).

The “in between-countries” increased both their recycling activities and recovery activities by a significant amount or shifted their focus to recycling but maintained landfilling as their prime method of waste treatment. Finland improved its recycling rate by 16% between 2008 and 2017 to 40% of their waste treatment activities, yet recovery methods increased much more by 232% to a share of 60% of all waste treatment activities (Eurostat,

2019c). Also, the EC noted that Finland needs to move away from incineration activities and has to make re-use and recycle activities more attractive (EC, 2019fi, p.8).

Prioritisation of recycling activities

Luxembourg, Latvia and Hungary had their primary focus on improving the share of recycling activities during the 2008-2017 period. Yet, their main goal was seemingly to move away from landfilling activities instead of promoting higher levels of the waste management hierarchy. Luxembourg as the prototypical example of this group decreased its waste disposal activities by 60% during 2008 and 2017, yet they also decreased their recycling activities by 9% and held their recovery methods constant (Eurostat, 2019c). Hungary and Latvia walked similar paths.

Slovenia and Romania were classified as member states that prioritised recycling over any other waste treatment activity. Slovenia, for instance, improved its share of recycling activities by 166% to 72% of all waste treatment activities, while reducing its landfill activities by 85% (Eurostat, 2019c). Yet, waste prevention does not seem like a priority as the country does not have a Waste Prevention Programme (Eunomia, 2018, p.392). Romania does not have a recycling rate as high as Slovenia's, but its recycle activities increased by 850% between 2008 and 2017 (Eurostat, 2019c). Yet, Slovenia does state that it does not see a need to introduce measures for re-use or more waste prevention (Eunomia, 2018, p.126).

Prioritisation of re-use activities

Austria is the only country that is characterised as a member state that promotes the re-use of waste. Its share in recycling is significantly bigger than the other two forms of waste treatment (Eurostat, 2019c), indicating that it does have some membership in the prioritisation of waste prevention. Yet, its waste generation has not dropped a lot over the years (Eurostat, 2019c).

The country is identified however as the frontrunners in the implementation and promotion of re-use activities (EC, 2019au, p.8). Therefore it was granted with a membership of 0.8.

France, Germany and Lithuania also show signs of promoting re-use of waste, but as opposed to Austria, there was an increase in waste generated instead of a decrease (Eurostat, 2019c).

Therefore they were attributed a set membership of 0.7, to show that they prioritise more than just recycling, but are not fully committed yet.

Waste Prevention

Sweden, Denmark and Italy belong to the group of member states that prioritise activities that are in-between waste prevention and waste re-use. Their waste generation has decreased

between 2008 and 2017 (Eurostat, 2019c), but not as much as the general trend in the EU. They do have mostly appropriate laws in place for re-use activities and their waste prevention programme is often incorporated in their national waste management plans (**Eunomia, 2018**, pp.386-393). This is as opposed to Belgium and the Netherlands, who are the frontrunners in Europe regarding the prioritisation of waste prevention. They have separated waste prevention programmes (**Eunomia, 2018**, pp.386-393) and show no signs of symbolic prioritisation as their waste generation has decreased more than the trend between 2008 and 2017 (Eurostat, 2019c). This all points towards full membership in the set.

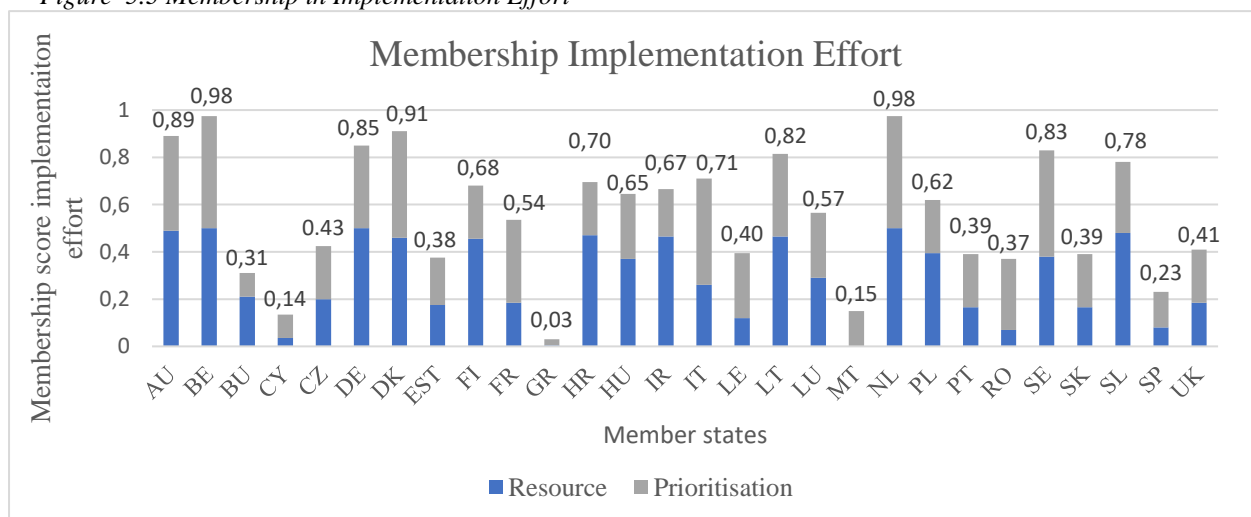
5.1.3 Monitoring

The way monitoring is operationalised in this thesis, does not differ between the member states. Directive 2008/98/EC arranges a system of supervision, lawful compliance check and a system where the polluters have to pay. Hence, on an aggregated level the systems of monitoring do not seem to differ. In the discussion section of the concluding chapter, this will be reflected on. For now, it is decided to eliminate monitoring from the analysis.

5.1.4 Scores on Implementation effort

In order to come to the implementation effort membership scores, the membership scores for resources and prioritisation were summed and divided by two. In Figure 5.3 the scores are presented. The grey area presents the share of prioritisation and the blue are the share of resources of the overall membership for implementation effort. It strikes that the member states with a non-membership (below 0.5) have seemingly a higher share of prioritisation of their total score. While member states with membership in the outcome seem to have an equal share of both or a higher share of resources. The Netherlands and Belgium are the two countries with almost full membership in the outcome. Greece has the lowest membership in

Figure 5.3 Membership in Implementation Effort



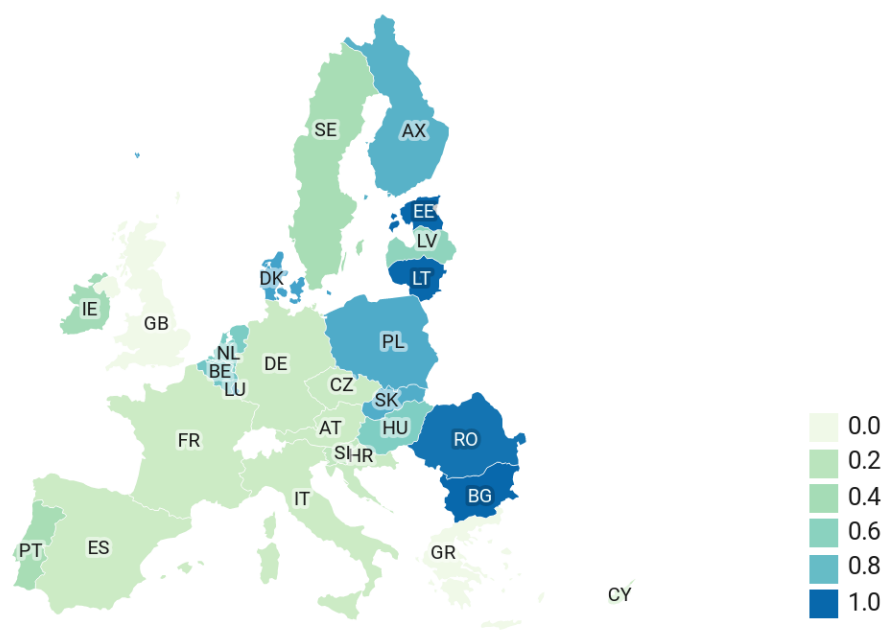
the outcome with 0.03. Most countries with partial membership score between 0.6 and 0.78. The countries with partial non-membership score most often between 0.3 and 0.4.

5.2 Legitimacy conditions

A culture of law-abidingness is the first condition in this category. It is measured via the Eurobarometer (EC, n.d.b) for the years 2008 till 2018. The results show that this condition is fairly divided between the member states: half of the countries have on average a larger population trusting the EU than not trusting for this period of time. Figure 5.4 shows the memberships of each member state in culture of law-abidingness. Full membership was attributed for countries with higher surplus than 15 percentage points of citizens that do trust the EU. Five countries reached this mark: Lithuania, Bulgaria, Estonia, Malta and Romania. Eight countries have a surplus between 14,5 percentage points and 1,19 percentage points. These countries have partial membership, that is between 0.5 and 1. There are also eight countries with full non-membership: Germany, Austria, Italy, Spain, Cyprus, France, Greece and the United Kingdom have considerably more citizens that do not trust the EU. There are only five countries with partial non-membership of which two (Croatia and the Czech Republic) come close to full non-membership with a score of -14 percentage points.

Figure 5.4 Culture of Law Abidingness in Europe

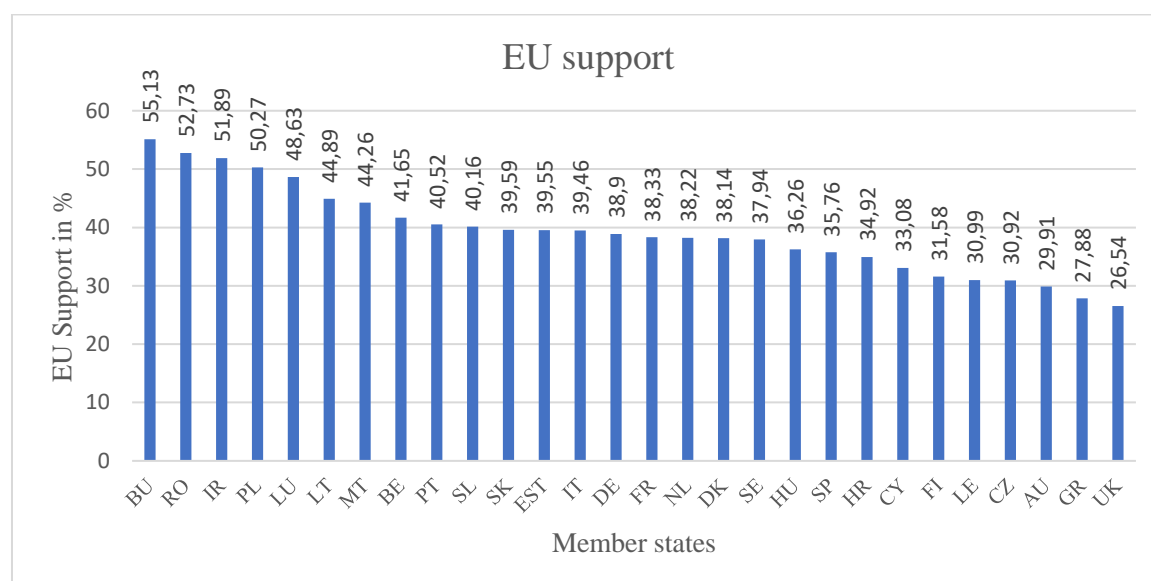
Membership Culture of Law-Abidingness



The second condition in this segment is public support for the EU. This condition has also a fairly equal spread. Fourteen countries have membership in this condition, by having a

population larger than 38,33% that has a positive image of the EU (EC, n.d.c). One country is right on the cut-off point, France. With QCA no cases can score on the cut-off point, so by taking a closer look using more decimals it turns out that France also has a larger population that has a positive image of the EU. Hence, their set membership is set at 0.51 instead of 0.50. Another eleven countries have partial non-membership in the set. Greece and the UK have no membership in the set. Less than 28% of their population has a positive image of the EU during the 2008-2018 period (EC, n.d.c). Figure 5.5 provides an overview of the EU support for all member states.

Figure 5.5 EU support



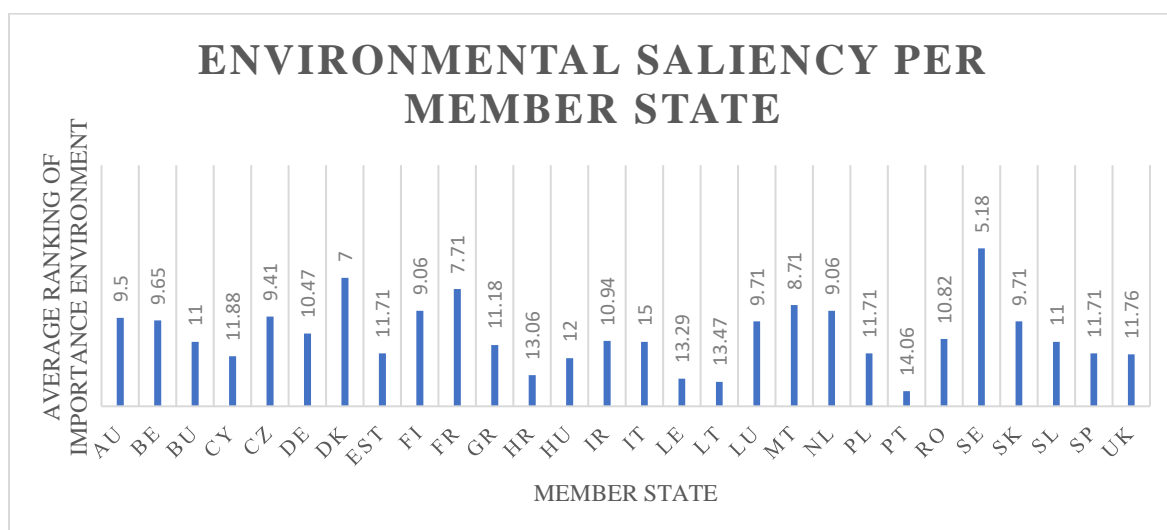
5.3 Willingness conditions

Two conditions form the theoretical argument for willingness. First the policy position of the member states. These were retrieved from the Chapel Hill Expert Survey (Polk et al., 2017). Several experts ranked parties on their position towards policy on environment, 0 indicated high concern about the environment and 10 a greater concern about the economy than the environment. Each of the member states the governing parties were measured and averaged. For Malta, Luxembourg and Cyprus only data from 2014 was used as opposed to the other countries which had also data on 2010. The member states are spread fairly close to each other on this variable (figure 5.5). All actual scores range from 4.61 for Slovenia to 7.5 for Malta. 23 Member states have a score between 4.61 and 6.61. Hence, also the set memberships are between 0.18 and 0.56. One remark has to be made, Ireland was granted 0.5 set membership by the software. This was manually changed to 0.49, because sets that are on the cut-off point will not be taken into account when conducting the QCA. The reason for

0.49 and not 0.51 is that Ireland scored slightly under 5, which was determined to be the cut-off point. In the end, only seven countries have partial membership and none comes even close to full membership.

The second condition is the saliency of environmental issues. Environmental issues are not really considered salient for the EU by the public (EC, n.d.d). Only in Sweden, the environment was ranked on average fifth during the 2008-2018 period (figure 5.6). The only other countries where the environment was considered slightly salient were Denmark and France. All other countries considered the environmental issues not salient or at least not salient enough. Environment has not been a rather salient issue for EU member states. In only three member states the environment was ranked on average above eight, while more than half of the member states had the environment ranked below ten on average between 2008 and 2018.

Figure 5.6 Ranking environmental saliency per member state

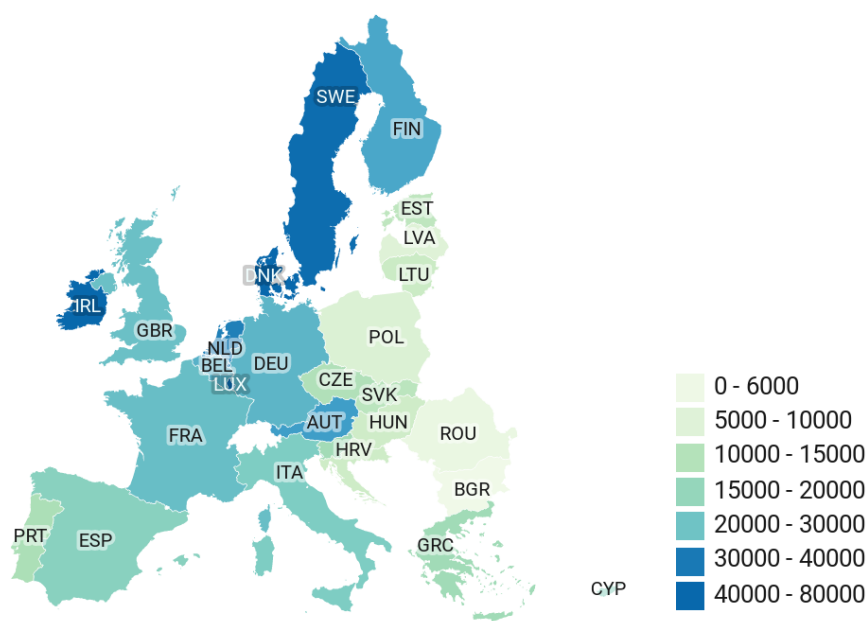


5.4 Capacity

Member states' capacity was measured as their GDP per capita. Appendix 4 provides a full overview of the average GDP per capita between 2008 and 2018 for each of the member states. The average GDP per capita for that time period is €25020. Luxembourg's GDP per capita is the highest at €79545. The lowest GDP per capita belongs to Bulgaria at €5500 (Eurostat, 2019d). These two countries had respectively a set membership score of 1 and 0. Figure 5.7 gives a visual representation of the averages in GDP per capita between 2008-2018 for each member states. North-Western European countries have in general a higher GDP per capita than both East EU member states and Southern EU member states.

Figure 5.7 GDP per Capita in Euro

GDP per Capita in Euro



5.5 Summary

To resume, two factors of implementation effort and five conditions were measured in 28 EU member states. The table below (5.1) shows the membership scores for each member state for each condition. The closer the membership approaches 1, the higher the membership is in that condition. Below 0.5 means that the member state has no membership in the condition. 0 means full non-membership and the closer the membership score approaches 0.5, the closer it gets to having membership. Appendix 4 contains all the actual measured values.

Table 5.1 Membership scores

Country	Law Abidingness	EU support	Position Environment	Environmental Salicy	Capacity	Implementation Effort
AU	0,03	0,03	0,42	0,39	0,89	0,89
BE	0,75	0,79	0,39	0,38	0,85	0,98
BU	1	1	0,29	0,26	0,02	0,31
CY	0,02	0,11	0,35	0,19	0,38	0,14
CZ	0,05	0,05	0,3	0,4	0,15	0,43
DE	0,04	0,56	0,38	0,3	0,83	0,85
DK	0,95	0,48	0,52	0,66	0,98	0,91
EST	1	0,62	0,44	0,2	0,09	0,38
FI	0,86	0,06	0,55	0,44	0,87	0,68
FR	0,02	0,51*	0,52	0,58	0,77	0,54
GR	0	0,01	0,44	0,24	0,22	0,03
HR	0,05	0,2	0,36	0,12	0,06	0,70
HU	0,68	0,3	0,26	0,18	0,06	0,65
IR	0,42	1	0,49*	0,26	0,97	0,67
IT	0,02	0,61	0,22	0,26	0,56	0,71
LE	0,56	0,05	0,39	0,11	0,06	0,40
LT	1	0,94	0,4	0,11	0,06	0,82
LU	0,89	0,99	0,55	0,37	1	0,57
MT	1	0,92	0,18	0,48	0,2	0,15
NL	0,71	0,49	0,24	0,44	0,94	0,98
PL	0,9	0,99	0,32	0,2	0,06	0,62
PT	0,38	0,71	0,46	0,08	0,17	0,39
RO	0,99	1	0,29	0,27	0,03	0,37
SE	0,38	0,46	0,53	0,81	0,96	0,83
SK	0,89	0,63	0,27	0,37	0,1	0,39
SL	0,13	0,68	0,56	0,26	0,22	0,78
SP	0,02	0,26	0,36	0,2	0,42	0,23
UK	0	0,01	0,44	0,2	0,75	0,41

* These set memberships have been manually adjusted in order to prevent them from being on the cut-off point. See Chapter 4 for an explanation.

6. Analysis

The qualitative comparative analysis of the conditions in relation to the outcome consists of three parts. First, an analysis of necessity is conducted to find the necessary conditions for implementation effort and a lack of implementation effort. In section 6.2 the truth table is presented to analyse the sufficient conditions and sufficient configurations. Then, the causal paths are presented. Based on these solutions a number of deviant cases are identified and discussed more in depth. The last section provides a short summary of the results.

6.1 Analysis of necessity

Using the fsQCA software 3.0 by Ragin (2017), the first step in analysing the configuration is the test for necessity of conditions (Legewie, 2013, p.19). The analysis of necessity can be done by either the eye test of an X/Y plot or a test necessary conditions in the software (Legewie, 2013, p.17). For reasons of undisputable output, there is opted for an analysis of necessary conditions. The output was given by the software is presented in table 6.1. The threshold for being a necessary condition is a minimum consistency level of 0.9 (Legewie, 2013, p.19). From the analysis of necessity it becomes apparent that none of the conditions qualifies as a necessary condition for implementation effort. Table 6.1 shows the output of the analysis. Capacity is the condition that comes closest to being a necessary condition for implementation, yet it reaches a consistency score of only 0.7. However, it does not pass the 0.9 consistency threshold.

A second analysis of necessity was conducted to determine whether the absence of a certain condition would lead to the absence of implementation effort. The output of this analysis contains one preliminary conclusion. The absence of a culture of law-abidingness and EU support are not necessary conditions for the absence of implementation effort, as they both do not exceed a consistency score of 0.65. Although the absence of a more congruent policy position with the directive and the absence of capacity come close, they do not reach the 0.9 consistency score. Hence the absence of these factors are neither necessary conditions for non-membership in implementation effort. Yet, the absence of issue saliency exceeds the 0.9 consistency score and is thus a necessary condition for absence of implementation effort. Moreover, the coverage is fairly high at 0.65. There is a fair amount of cases where the negation of issue saliency is present along with presence of negated implementation effort. This means that without the absence of issue salience, implementation effort cannot be absent. In other words, the absence of implementation effort implies the absence of issue saliency (Schneider and Wagemann, 2012, p.70). Using Boolean algebra, the solution is as follows:

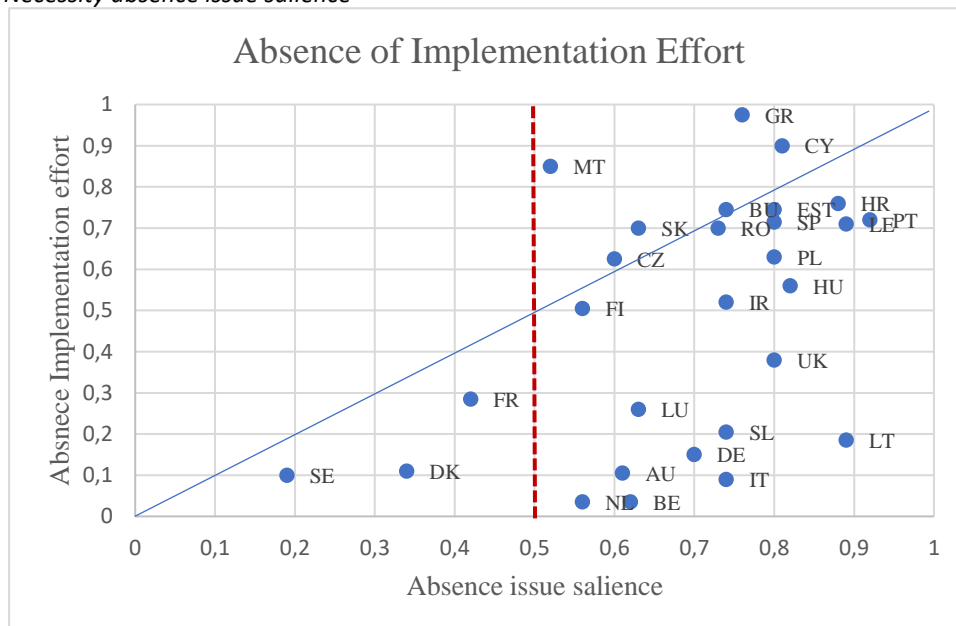
~SAL \leftarrow ~IE

Table 6.1 Analysis of Necessity Implementation Effort

Condition tested: Implementation effort			Condition tested: ~Implementation Effort		
	Consistency	Coverage		Consistency	Coverage
Culture of Law	0.56	0.60	~ Culture of Law	0.58	0.55
Abidingness			Abidingness		
EU support	0.65	0.66	~ EU support	0.63	0.62
Policy position	0.64	0.87	~ Policy position	0.89	0.69
Issue Saliency	0.55	0.92	~ Issue Saliency	0.94	0.65
Capacity	0.72	0.83	~ Capacity	0.84	0.73

One must be careful to conclude that the absence of issue salience leads to an absent implementation effort. This is not the case. A necessary condition should be interpreted as a phenomenon that is always present when the outcome is present, yet the outcome does not have to occur. It is a primary condition that has to be met, but the absence of issue salience alone is not enough to let the absence of implementation effort occur (Legewie, 2013, p.9). Figure 6.1 serves to clarify this statement. When a condition is necessary, the cases are all spread below the diagonal line (Legewie, 2013, p.17; Schneider and Wagemann, 2006,

Figure 6.1 XY Plot Necessity absence issue salience



p.755). From figure 6.1 one can see that on the right side of the red dotted line on 0.5 on the X-axis, which represents an absence of issue salience, that almost all cases are on the right

sight of the line. The only cases that have non membership in the absence of issue salience (Sweden, Denmark and France) are also below the diagonal; showing almost full non-membership in the absence of implementation effort.

6.2 Analysis of sufficient conditions

The next step in conducting a QCA is to consider the levels of sufficiency for the outcome. In order to analyse sufficiency, a truth table has to be constructed (Appendix 6). The table consists of 2^k rows which presents all the possible configurations (Legewie, 2013, p.12). This truth table has 32 rows, because there are five conditions (2^5). Table 5.1 presents the observed configurations. The ones and zeros in the first five columns show in which conditions the case has partial or full membership indicated by a one. A zero indicates a set membership of below 0.5. The N shows how many cases show that particular configuration. The case column shows the cases that show that particular configuration. Behind the country codes the membership in that configuration is shown as well as the membership in the outcome implementation effort. For instance, in row 7 of the truth table (Appendix 6) states that Slovenia has set membership in the configuration that there is support for the EU and the policy position of the government is in favour of the environment. Slovenia has a combined membership of 0.56 in this configuration, while having 0.8 membership in implementation effort.

The truth table shows three things. First, it shows that there are fourteen unique causal paths to implementation effort. Five of those configurations are shared by multiple cases. One configuration is even shared by seven member states. They have all at least partial membership in a culture of law-abidingness and EU support. Like in most research in social science, also this research is subject to limited diversity (Ragin, 2008, p.147). Fourteen observed causal paths mean eighteen logical remainders. For these configurations, there is no empirical evidence found (Ragin, 2009, p.108). The logical remainders are important for the following steps in the QCA. The three solutions to arrive at the causal paths treat the logical remainders differently. This will be further explained in section 6.2.1.

Second, only two configurations do not pass the 0.75 threshold of raw consistency to be taken into account for the minimisation process (Ragin, 2008, p.144). Lithuania shows one of these causal paths and will thus not be taken into account. Hence, it is not necessary to solve this sole issue of contradictory cases. Only configurations three to fourteen will be taken into account for the deriving solutions from the causal paths.

Third, the truth table shows that Lithuania is a contradictory case. Lithuania is the only case in its configuration that has partial membership in the outcome. While this is normal in QCA to find contradictory configurations, it is an issue that needs consideration before the simplification of solution can start (Rihoux and Meur, 2009, p.49). Because the configuration has a raw consistency of 0.61, it will not be taken into account as it does not exceed the 0.75 threshold. Therefore, the case of Lithuania will not influence the solution paths and the issue of a contradictory case does not have to be addressed any further.

6.2.1 Causal paths

In order to arrive at the causal paths, it is necessary to consider how to deal with the logical remainders (Schneider and Wagemann, 2012, p.197; Ragin, 2008, p.136). Logical r There are three possible solutions that deal differently with these remainders. First the conservative solution which does not make any assumption about the logical remainders (Schneider and Wagemann, 2012, p.162). The non-observed causal paths are not taken into account. The second solution is the parsimonious solution, which may take all logical remainders into account (Ragin, 2009, p.109). Last, there is the intermediate solution which provides a middle way between the conservative and parsimonious solution (Legewie, 2013, p.14). “Only the logical remainders that “make sense” given the researcher's substantive and theoretical knowledge are incorporated into the [intermediate] solution” (Ragin, 2009, p.109). Ragin (2009) and Schneider and Wagemann (2012) argue that the intermediate solution is always superior to the other two solutions. Also in this research, there are arguments for both the conservative solution, as the full population is observed and the logical remainders are not observable, and the parsimonious solution, because the logical remainders are theoretically not illogical. The conservative and parsimonious solutions are included in Appendix 7, since all solutions must be transparent (Schneider and Wagemann, 2010, p.12). Yet, only the intermediate solution will be discussed in detail.

As mentioned in section 6.2, the threshold for a configuration to be taken into account for the solution is set at 0.75. This means that rows three to fourteen are taken into account. The solutions are calculated via the Standard Analysis option in the fsQCA software 3.0. The theoretical expectations for all of the conditions were that they would contribute to implementation effort if present. In the analysis this option was chosen. The fsQCA software provided the following intermediate solution, presented in table 6.2 according to the format of Ragin and Fiss (2008). A black dot represents the presence of a condition in the sufficient

solution, while a crossed dot represents the absence of a condition as a part of the sufficient solution.

Table 6.2 Intermediate solutions

	Implementation Effort			~ Implementation effort	
	Path 1	Path 2	Path 3	Path 4	Path 5
LA		⊗	●		⊗
SUP		●	⊗		
POS				⊗	
SAL				⊗	⊗
CAP	●			⊗	⊗
Consistency	0.83	0.93	0.79	0.88	0.84
Raw	0.72	0.38	0.29	0.75	0.47
Coverage					
Unique	0.33	0.05	0.05	0.31	0.03
Coverage					
Cases	LU, DK, IR, SE, NL, BE, AU, FI, DE, FR, UK, IT	SL, PT, IT, IR, DE, FR	FI, HU, LE, DK, NL	HU, BU, RO, PL, HR, SK, CY, LE, CZ, LT, SP, GR, EST, PT, MT	HR, GR, SL, CY, PT, CZ, SP
Consistency	0.84			0.85	
total					
Coverage	0.80			0.78	
Total					

Only path 1 and 2 show sufficient conditions as the threshold for consistency in the interpretation of the solutions was set at 0.8 (Schneider and Wagemann, 2012, p.185). However, Schneider and Wagemann (2012, p.127) also mention that the thresholds are not set in stone and should be reviewed in each individual context. Since path 3 comes close to the 0.8 threshold, it is adopted in the sufficient solutions. Using Boolean algebra the solution for sufficient conditions for implementation effort is as follows:

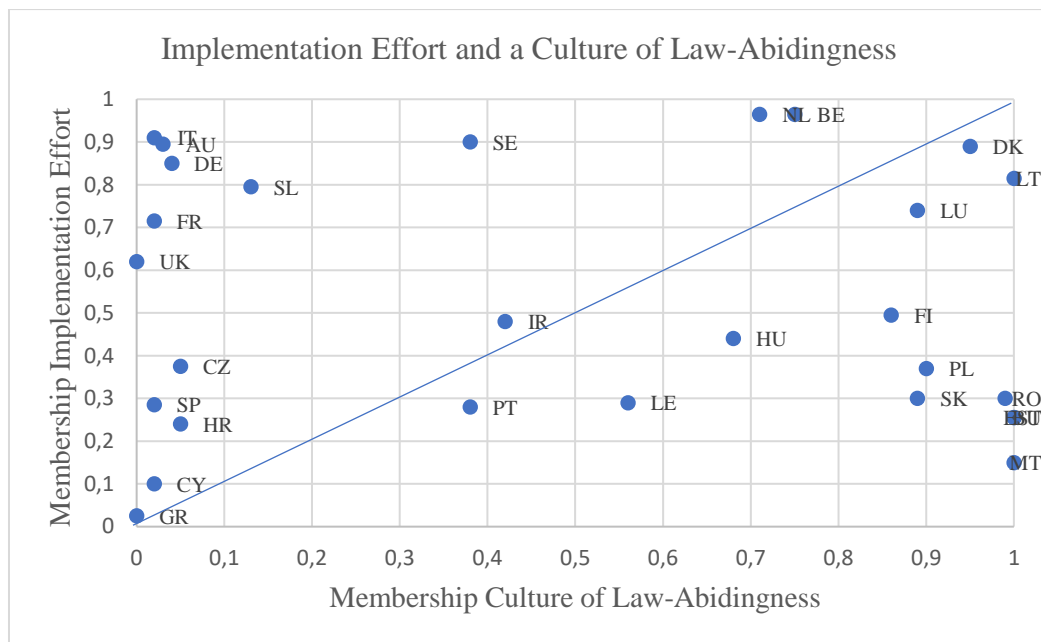
$$\text{CAP} + \sim\text{LA} * \text{SUP} + \text{LA} * \sim\text{SUP} \rightarrow \text{IE}$$

This means that capacity or a culture of law-abidingness and the absence of EU support lead to implementation effort. Capacity (CAP) is a sufficient condition. If a member state has a GDP per capita higher than the average, it displayed at least some effort in the implementation of the Waste Framework Directive. This solution has a coverage score of 0.72 which is a fairly high coverage score. Moreover, the unique coverage of this solution is 0.33 which is rather high. It means that at least a fairly amount of the outcomes can be explained only via this solution (Legewie, 2013, p.21).

Capacity is part of the configuration of twelve cases. Most of the cases have a membership level of 0.85 or higher. This means that they have almost full membership in the condition and can be considered to have sufficient resources to implement a certain directive. Two cases, however, stand out and deserve further inspection. Ireland (0.97) and Finland (0.87) have rather high level of membership in the condition, yet do not have membership in the outcome, although they come close (0.48 for Ireland and 0.495 for Finland) (See Appendix 5 for membership scores). These odd and deviant cases are analysed in-depth in section 6.3.

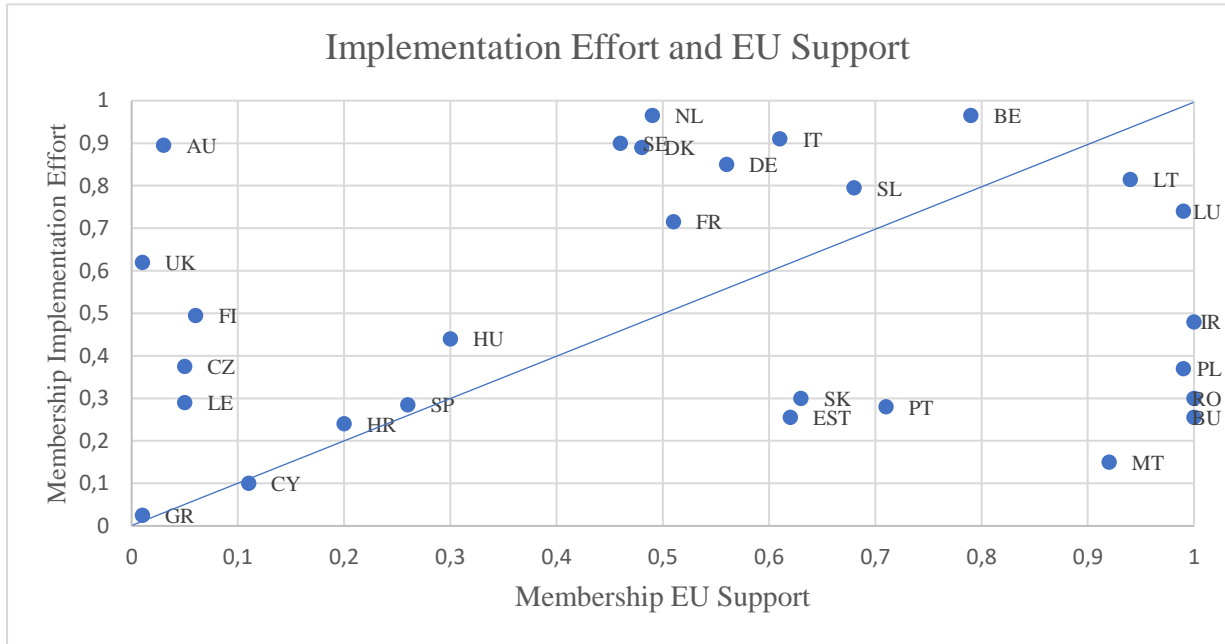
The second path consists of an absence of law-abidingness (~LA) combined with the presence of EU support (SUP), these are INUS conditions. This means that when member states have support for the EU but the citizens do not trust the EU as an institution, this leads to at least partial membership in implementation effort. Without the other, either condition is not sufficient for the outcome implementation effort. Although this configuration seems theoretically odd, it has a 0.92 consistency score. Which means that the combination of these conditions leads in most cases to implementation effort. The raw coverage of this configuration is rather low at 0.38. The combination of EU support without the presence of a culture of law abidingness is not observed in many of the cases. Only Portugal is uniquely covered by this solution. The solution is also at odds with the theoretical expectations. It was expected that the presence of a culture of law-abidingness would contribute to implementation effort. One possibility could be to operationalise the condition differently. Since there is low consensus how to measure this condition (Börzel et al., 2010) it is possible that another measurement would provide a better representation of the culture. Another possibility is the calibration. As becomes apparent from Figure 6.2, the XY plot of the condition the set membership are rather extreme, almost resembling a crisp set. Future research should point out whether these culture do differ so extremely within Europe, or that a more nuanced calibration is more applicable.

Figure 6.2 XY Plot Culture of Law-Abidingness



The low coverage of path two might be explained by the existence of causal path three: presence of a culture of law-abidingness (LA) combined with the absence of EU support (\sim SUP). This is the reversed path of solution path 2. The consistency score of this path is considerably lower at 0.79 and the coverage is also lower at 0.29. It means that the combination less often leads to the outcome and that the combination is observed even less than the combination of path two. This exact configuration is observed only in Latvia and Hungary and deserves more attention, especially the comparison between Latvia and Portugal is interesting because of their similar membership in implementation effort. This sufficient path is also contrary to the theoretical expectation that presence of EU support would contribute to implementation effort. Figure 6.3 gives a rather unexpected insight that the member states who score rather low on implementation effort do score high on EU support. Because conventional measures and calibration were used for this indicator (Williams, 2018), there might be other factors intervening in this relationship.

Figure 6.3 XY Plot EU support



Yet, before the in-depth analysis of deviant cases, the solutions for an absence of implementation effort need to be considered. The analysis of negated membership in implementation effort is conducted in the same manner as the presence of implementation effort: a standard analysis in the fsQCA software 3.0 with case presence $N \geq 1$ and a consistency threshold of 0.75. Again, the intermediate solution is covered in this chapter, the complex solution and the most parsimonious solution are reported in Appendix 8. The intermediate solution provides two paths to the absence of implementation effort for the WFD. The first path (path 4 from now on) is that the combination of incongruent policy positions, absence of issue salience and an absence of capacity lead to a lack of implementation effort. The second path (path 5) consists of the combination of an absence of a culture of law-abidingness, absent issue salience and absence capacity lead to an absence of implementation effort. Using Boolean algebra, the solution is formulated as follows:

$$\sim \text{POS} * \sim \text{SAL} * \sim \text{CAP} + \sim \text{LA} * \sim \text{SAL} * \sim \text{CAP} \rightarrow \sim \text{IE}$$

This formula can be minimised and simplified to:

$$\sim \text{SAL} * \sim \text{CAP} (\sim \text{POS} + \sim \text{LA}) \rightarrow \sim \text{IE}$$

This simplified formula shows that the absence of public salience (SAL) of the environment and a low GDP per capita are sufficient conditions for the absence of

implementation effort. These factors are present in all solutions and it can thus be expected that if these factors are absent the outcome will be absent too. Incongruent policy positions (POS) and the absence of trust in the EU as an institution are both INUS conditions. These are not sufficient for the absence of the outcome alone, but are a vital part of the combinations that lead to the outcome. The total consistency of the solution is above the 0.8 threshold at 0.85. Combined with a high coverage of 0.78 it indicates a relevant model.

The fourth path $\sim\text{SAL} * \sim\text{CAP} * \sim\text{POS}$ has a consistency score of 0.87 which is a fairly high score. This means that a significant amount of cases that have no membership in these conditions, neither have membership in the outcome. Moreover, a raw coverage of 0.75 indicates that this solution has a rather high empirical relevance. Closer inspection of the truth table tells that all possible combinations including these factors have been observed. Also the unique coverage is fairly high at 0.31. In all fifteen cases where this combination of solutions is observed, Lithuania is the only deviant case with 0.81 membership in the outcome.

The fifth path consists of again absence of salience of the environment and capacity, yet this time in combination with the absence of a culture of law-abidingness. This means that low implementation effort is to be expected in member states where these conditions are absent. Absence of a culture of law-abidingness as an INUS condition follows logically from the theoretical belief that it is expected to contribute to implementation effort. If a particular culture is absent, it comes as no surprise that member states invest less effort in the implementation. This is confirmed by the high consistency score of 0.84 for this path. The empirical relevance is rather low. One explanation is that absence of a culture of law-abidingness is also a INUS condition for the presence of implementation effort. In the next section this contradiction will be discussed in detail both methodologically and by means of Slovenia as a case where both paths are present.

6.3 Deviant cases and contradictory solutions

In the previous section five cases were mentioned that required a deeper analysis in order to enhance the understanding of the five identified causal paths. For path one, Ireland and Finland serve as deviant cases. Section 6.3.2 sheds light on Luxembourg, as the country's resources do not show the same relationship with the outcome as member states with similar membership scores on capacity. The next section compares the cases of Latvia and Portugal, on how opposite configurations can lead to the same outcome (path two and three). The fourth subsection explains the deviant case of Lithuania for path four. The last section explains the

contradictory situation of the absence of a culture of law-abidingness as both an INUS for implementation effort and an absence of effort by means of an in-depth analysis of Slovenia's implementation effort on the WFD.

6.3.1 Ireland and Finland

All cases that have membership in capacity measured as the GDP per capita have also membership in implementation effort, except for Ireland and Finland. Ireland has a set membership of 0.48 in implementation effort and its configuration consists of full membership in support and full membership in capacity. The same configuration is shared by Italy and Germany, yet these countries do display at least partial membership in implementation effort. One might notice, that the membership in the outcome cannot be explained only by path one, but by path two too. Neither of these countries has membership in a culture of law-abidingness. This only stresses the question: why does Ireland not have membership in the outcome?

A first approach is to take a closer look at the set memberships of Ireland and compare this to Italy and Germany for any differences on the one hand, and compare it to Finland in quest for similarities on the other hand. What becomes apparent from the set membership in resources, which is used for the calculation of implementation effort, Ireland does not deviate from Italy and Germany. The country has a set membership in resources of 0.54, although this is lower than Germany (1) and Italy (0.92) all member states have at least partial membership. The difference in the outcome is thus in the level of prioritisation. Ireland has set membership of 0.4, while Germany emphasised recycling and re-using of waste (0.7) and Italy was even prioritised prevention (0.9). Further inspection shows that Ireland had a higher score on EU support (1 as opposed to 0.6) and on a culture of law-abidingness: 0.42 as opposed to Germany's membership of 0.04 and Italy's 0.02.

The second approach is to look for additional explanations for the specific case and its set memberships. The reason for Ireland's partial non-membership in priority is due to its large increase and emphasis on recovery as a method of waste management (Eurostat, 2019c). One explanation for the low prioritisation is that Ireland has been historically been a laggard in waste management. Landfilling was the main treatment of waste for many years (Eurostat, 2019c). The quickest way of reducing landfills is to recover energy and other resources from waste (Environmental Protection Agency (EPA), n.d.). Yet, it becomes clear from the Irish EPA that waste reduction and prevention is a goal. However, it cannot be classified as their

main priority yet. Future research should determine whether Ireland will prioritise waste prevention eventually.

The other condition on which Ireland scored slightly different than Germany and Italy is EU support. Absence of EU support was not expected to be an INUS condition for implementation effort. Based on previous theory it was expected that the presence of EU support would be part of the solution for the implementation effort. Therefore Ireland's non-membership in implementation effort is more in line with theoretical expectations. Italy's and Germany's low scores are deviant from theory, but as discussed in the previous section future research should explain this odd relationship.

Finland does not differ much from Ireland in its fuzzy set values on the conditions. The only difference in set membership is that Finland has close to 0 membership in EU support. Finland's only sufficient combination is thus its score on GDP. Like Ireland, Finland also prioritised recovery methods for waste management, but there were also signs for recycling prioritisation in Finland. On the one hand, the Finnish government stresses to recycle waste. On the other hand, it sees in energy recovery from waste an opportunity to obtain green energy (AF, 2017). Hence, there is an emphasis on the recovery of waste. This results in a set membership in implementation effort of 0.495. Finland could thus have been a typical case, if it were not for its focus on green energy.

6.3.2 Portugal and Latvia

Portugal and Latvia were both identified as deviant cases for respectively solution path two and three. Portugal has membership in EU support, while all other factors are absent. It is also the only case which is uniquely covered by that path. Yet, while this path is identified as sufficient for implementation effort, Portugal had only partial membership in the outcome (0.29). The case is similar for Latvia. Together with Hungary it is the only country uniquely covered by solution path three. As a sufficient solution, one would have expected that the outcome should be present in those countries. This is not the case however as Latvia has 0.28 membership in implementation effort and Hungary 0.44. Because of the similar levels of non-membership in the outcome Portugal and Latvia are compared to find any explanations for non-membership.

This is not the only resemblance between the countries. Latvia and Portugal both have membership in a conflicting solution. Portugal has membership in the conditions that combine to solution paths two, four and five. Path two is a sufficient path for the presence of

implementation effort, while paths four and five are sufficient for the absence of it. Latvia has membership in the conflicting paths three and four. Although it seems contradictory, logically the simultaneous presence of the solutions can be true. The two solutions are based on different conditions. Additional research is needed to point out why sufficient solutions for the absence of implementation effort outweighs path two and three. One explanation might be that the degree of membership in a condition matters for the outcome. Both Portugal and Latvia have considerably low membership in capacity and issue salience (Appendix 5). Compared to paths two and three where their membership levels are much more near the cut-off point (0.5).

6.3.3 Lithuania

Lithuania has membership in the fourth solution path that is found to be sufficient for the absence of implementation effort. Yet, Lithuania has a fairly high set membership in implementation effort (0.81). Lithuania is, therefore, a deviant case. Especially when one examines the set membership more closely. The set membership in the conditions that form solution path four, Lithuania has high levels of non-membership in issue salience (0.11), capacity (0.01) and policy position (0.4). On the other hand, Lithuania does have almost full membership in EU support (0.94) and full membership in a culture of law-abidingness. Most interestingly, although Lithuania's small capacity, the member state does have 0.93 membership in resources, while one would expect a more direct relationship between the two.

One explanation could be that Lithuania makes use of EU investment funds for their waste management of (EC, 2017lt, p.8). Over the period 2008-2017 Lithuania received almost €280 million to invest in their waste management (p.8). This could explain Lithuania's sudden growth in recycling rate from 5% in 2010 to 48% in 2017 (Eurostat, 2019a) even though the country has little capacity. This investment could also be an incentive for more effort if the EC stressed the member state to invest it in the assigned policy area. Future research should reveal if EU funding undermines the discovered sufficient solution.

6.3.4 Slovenia

The fifth solution path is a sufficient condition for the absence of implementation effort. If a member state has little to no capacity, nor would there be issue salience and a culture of law-abidingness, then absence of implementation effort is to be expected. Slovenia is the only deviant case that has membership in this path. It has a score above the threshold for EU support and policy position, but under the threshold for capacity, a culture of law-abidingness and issue salience. The first explanation that comes to mind is that the country also has

membership in solution path 2: absence of a culture of law abidingness and the presence of EU support. Once again, future research should look at the strength of each causal path in order to explain these co-existence of the contradictory paths.

6.4 Summary

To summarise, the QCA analysis revealed one necessary condition and five sufficient causal paths. The absence of salience is a necessary condition for the absence of implementation effort: $\sim\text{SAL} \leftarrow \sim\text{IE}$. Without the absence of issue salience, the absence of implementation effort cannot occur. It means that with the absence of issue salience, if the public does not consider the environment one of the most important issues, there is also no implementation effort in implementing the WFD.

Three causal paths form sufficient conditions for the presence of implementation effort: $\text{CAP} + \sim\text{LA} * \text{SUP} + \text{LA} * \sim\text{SUP} \rightarrow \text{IE}$. First of all, capacity is a sufficient condition for implementation effort. If a member state has high GDP, it is very likely that they will invest in the implementation of the WFD. Secondly, the absence of a culture of law-abidingness and the presence of EU support are INUS conditions. Together they form a sufficient condition for implementation effort. If a member state lacks a culture of law-abidingness, but there is support the EU in general, then the member state is more likely to invest effort in the implementation. The reverse is also a sufficient path: the combination of the presence of a culture of law-abidingness and the absence of EU support leads also to some degree of implementation effort.

Two causal paths form sufficient conditions for the absence of implementation effort: $\sim\text{SAL} * \sim\text{CAP} (\sim\text{POS} + \sim\text{LA}) \rightarrow \sim\text{IE}$. The absence of issue salience is not only a necessary condition, but also an INUS condition. It is part of set conditions that together form a sufficient causal path. Also the absence of capacity is part of the two possible combinations. Together with the aforementioned conditions either an absence of policy position or an absent culture of law-abidingness leads to the absence of implementation effort. All these conditions are INUS conditions, insufficient on their own but in combination they present a sufficient causal path.

7. Conclusion

The aim of this research was to provide a bridge between two different aspects of EU policy research. On the one hand, research has been done on transposition deficits of member states with EU directives. Scholars found a wide variety of explanatory variables for the phenomenon. It led to the notion that transposition deficits are subject to equifinality. There are multiple causal paths that can lead to the same outcome. On the other hand, there is the more recent research focus on practical implementation of directives. After all, practical implementation tells if EU policy actually works in reality. Recently, scholars have tried to determine the implementation performance of member states regarding EU directives. This thesis tried to bridge these two fields of EU policy research by testing whether the explanations for transposition deficits also apply to implementation effort. It led to the following research question:

To what extent and in which combinations do explanations for transposition of directives apply to implementation effort of the Waste Framework Directive by EU member states?

By means of a qualitative comparative analysis, this research tried to find an answer to this question. A QCA approach was best suitable for this question since it embraces the equifinality that compliance research is subjected to. Moreover, it allows for a comparison between cases, making the results more externally valid. All 28 member states were compared on their implementation effort for the Waste Framework Directive as it is a typical case. Like with most directives, there were indications that the member states differed in their motivation to practically implement the directive. More importantly, the EC acknowledged that there are differences in the approaches of the member states to the practical implementation of the WFD.

7.1 Main findings

This thesis researched whether combinations of explanatory factors for transposition deficits could also be used for explaining implementation effort of member states. A culture of law-abidingness, EU support, policy position, issue saliency and capacity were the used explanatory factors. The QCA showed that there are five different combinations of these factors that lead to either implementation effort or low implementation effort. Moreover, there is one factor that was identified as a necessary factor for low implementation effort.

The absence of issue salience was identified as a necessary condition for the absence of implementation effort. It means that if you find that the government does not invest effort

in the implementation of the WFD, you are likely to find also that the public does not find environmental issues significantly important. Low implementation effort for the implementation of the WFD goes hand in hand with low salience of environmental issues. To stay more closely to the QCA terminology: if the public finds environmental issues important, the government will invest at least some effort in the implementation of the WFD. This does not mean that low issue salience leads to low implementation effort, rather the absence of the one is not found without the absence of the other.

Five combinations of factors were identified that do lead to either implementation effort or the absence of implementation effort. Three of these combinations are causal paths that lead to the presence of implementation effort. First, if a country has a high capacity it is very likely that this member state will invest effort in the implementation of a directive. High capacity is in itself a sufficient condition to lead to implementation effort. As opposed to combinations two and three, capacity does not need to be accompanied by another factor. The second causal path consists of the combination of an absent culture of law-abidingness and the presence of EU support. If a member state does not consider the EU a legitimate law-setting institution but does support the EU, it will lead to implementation effort. The reverse forms the third causal path: the combination of the presence of a culture of law-abidingness and the absence of EU support leads also to some degree of implementation effort. The factors that form paths two and three cannot lead to implementation effort by themselves, but need to be present in these combinations to be sufficient for leading to implementation effort.

The last two combinations of factors lead to low implementation effort. Causal path four consists of the absence of the factors policy position, issue saliency and capacity. If the government of a member state has a policy position more oriented towards economic issues, environmental issues are not very important and there is little capacity, it will lead to a low implementation effort. Yet only if these three factors are absent at the same time. According to the last path, a member state shows low implementation effort if there is no culture of law-abidingness, no issue salience of environmental issues and no capacity. Hence, for a low implementation effort there should be a low salience of the environment, low capacity and either an absent culture of law-abidingness or an economically oriented policy position.

In an attempt to answer the research question, one can state that the explanations for transposition deficits also apply to the concept of implementation effort in EU policy research. Not every tested factor leads contribute to implementation effort by itself, rather it is combinations of factors that contribute to either the presence or absence of implementation

effort. The results thus confirm the expectation that explanations for transposition deficits also apply to implementation effort.

7.2 Discussion

In this section three topics are discussed. First the implications of this research, both theoretical and practical. Secondly, the limitations of this research are addressed. And lastly recommendations for future research will be suggested.

7.2.1 Implications of the research

The outcomes of this research have both theoretical and practical implications. The main research goal of this thesis was to contribute to the existing literature on EU policy implementation. The first implication is that this research provides reasons to connect research on transposition deficits and implementation performance not only as subsequent stages in the policy cycle, but also in their explanations. This research found that the same conditions that apply as explanations for compliant behaviour can also be used for explaining implementation effort. This allows for an analysis of multiple parts of the policy cycle using the same explanatory variables. It is a small step in the direction of comprehensive policy analysis from policy formulation to policy implementation.

The second implication is that this thesis confirms causal complexity as a feature of implementation effort. This suggests that future comparative research on implementation performance should be careful with case selection and the choice of explanatory variables. Not every country can be explained via the same configuration. Hence, future research should be careful when attempting to find the one true explanation. Even if there is an explanation that is in itself a sufficient explanation - like capacity for implementation effort - or a necessary factor – like the absence of issue salience for low implementation effort -, the researcher should be aware that there are more causal paths that can lead to implementation effort (like causal paths two, three, four and five).

The third implication of this research elaborates on the former, yet is more practice-oriented. The findings of this research suggest that implementation performance is subject to equifinality. Hence, it becomes harder for the EU to find one common approach to quickly notice if a member state makes the EU policies actually work. However, the QCA also shows which combinations of factors generally speaking lead to a certain outcome, or absence of a certain outcome. Therefore, it provides a chance for European Commission to focus on certain combinations of factors as indicators rather than single factors that were discovered as most

influential on average by large N regression analyses. Moreover, by finding that the same conditions apply to implementation effort as for compliant behaviour, the EC does not have to change their approach of monitoring considerably.

7.2.2 Limitations

Like every research, also this thesis has certain limitations. Some of the limitations were already touched upon in the previous chapters, some remained more implicit. The first limitation of this research is that the Waste Framework Directive has articles that require the member state to set up a decent monitoring system. Hence, it became difficult to measure this feature of implementation effort and was ultimately dropped as an indicator. The main reason was that measurement and calibration of the factor could be biased, leading to a compromised internal validity. Future research should therefore take this into account when selecting a case or find a way to measure the concept in a non-biased way.

Another limitation of this researched is that the fact that a QCA does not apply any weights to the causal paths in comparison to one another. In this research, the results show that some sufficient causal paths could exist simultaneously. Although this is logically possible, it is not ideal for the interpretation of the results and leads to the identification of cases that are both typical and deviant. This inherent flaw of QCA calls for additional research to investigate more closely how certain causal paths explain certain outcomes in relation to other causal paths.

The last limitation of the research is the fact that some data is skewed. The measurements for issue salience and policy position have a tendency towards non-membership. Although conventional measures are used and the calibration was theoretically sound, one could wonder why this data is skewed. It could have influenced the results even though the model was robust for small changes in calibration. Future research could focus on how the internal validity of these measures can be improved or apply the same research to another policy field to find commonalities and deviations.

7.2.3 Future research

In the previous sub-section, some suggestions for future research were already mentioned. This section highlights another three suggestions for future research. First of all, future research to the deviant cases could help the model and improve the application of the theory on implementation effort. Lithuania, Ireland and Finland seem to be the most interesting cases in this regard. Ireland and Finland have membership in a sufficient causal path yet do not

display the outcome. For Lithuania the opposite accounts. Although some explanations have been hypothesised why these countries do not display the expected outcome, future research could improve the theoretical framework by looking into these countries.

A second recommendation is to apply this research on the member state level. As the research continued it became more clear that in most member states waste management was arranged at the regional or local level. It would be interesting to consider this member state level theory on a more decentral level. Would the same causal paths be sufficient too? Besides investigating on the level where the action is, it would also allow for a more valid comparison as within-country differences are less numerous than on the country level. Some conditions, like capacity, do have to be measured differently since they are now measured as country-level variables. More decentral focused research does allow, however, for the collection of primary data which would enhance the internal validity.

A third recommendation is to extend the framework from Bondarouk and Mastenbroek (2018) for implementation performance to other policy domains than the environmental policy sector and test the applicability of the transposition explanations in that particular policy field. This requires first study to confirm that the model of Bondarouk and Mastenbroek applies to other policy domains too. This is however expected as they base their literature study also on generic policy research. This extension of research does not necessarily has to be a comparison between member states. One could also test the framework and the found causal paths in a within-country longitudinal setting. As Börzel and Buzogány (2019) mention, there is a need for comparison over time in EU policy research. This could apply to both cases from the same policy domain in different times or different policy domains in different eras. All in all, research to EU policy is far from done.

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Appendix 1. Resources Implementation effort

Country	Recycle rate Municipal waste 2017	General Government expenditure Waste Management 2017 in million Euros	Percentage increase to reach 50% municipal waste recycle rate	Increase recycle rate Municipal waste as index	Increase in expenditure to reach 50% recycle rate in million Euros
Belgium	53.7%	2.383,0	-6,8901304	0,9310987	-164,19181
Denmark	46.3%	108,6	7,99136069	1,07991361	8,67861771
Greece	18.9%	1.040,0	164,550265	2,64550265	1711,32275
Hungary	35%	132,1	42,8571429	1,42857143	56,6142857
Netherlands	54.2%	3.614,0	-7,7490775	0,92250923	-280,05166
Poland	33.8%	383,4	47,9289941	1,47928994	183,759763
Portugal	28.4%	450,3	76,056338	1,76056338	342,48169
Sweden	46.8%	802,0	6,83760684	1,06837607	54,8376068
EU	46.4%	57.965,5	7,75862069	1,07758621	160,618688, on average

Table 1.1 Data on resources, retrieved from

https://ec.europa.eu/eurostat/databrowser/view/sdg_11_60/default/table?lang=en and

<https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>.

Formulas

Percentage increase:

$$\text{Increase percentage recycling municipal waste} = \frac{50 - \text{Recycle rate MS 2017}}{\text{Recycle rate MS 2017}} * 100$$

$$\text{Increase index recycling municipal waste} = \frac{50 - \text{Recycle rate MS 2017}}{\text{Recycle rate MS 2017}} + 1$$

* 50 is the target recycle rate

Increase in expenditure = (Index * Expenditure MS 2017) – Expenditure MS 2017

Average EU expenditure = 57.965,5/28
2017

*28 is the number of EU countries

Appendix 2. Law abiding culture

	Average trust March 2008 – November 2018	Average distrust in EU March 2008 – November 2018	Average size of population that doesn't know the answer March 2008- November 2018	Corrected average Trust	Corrected average Distrust	Difference in percentage points
Belgium	50.70%	45.30%	4.00%	52.81%	47.19%	5.62
Denmark	52.79%	39.49%	7.71%	57.21%	42.79%	14.41
Greece	30.24%	68.08%	1.69%	30.76%	69.25%	-38.49
Hungary	47.43%	44.06%	8.51%	51.84%	48.16%	3.67
Netherlands	47.90%	43.70%	8.40%	52.29%	47.71%	4.58
Poland	46.85%	37.66%	15.49%	55.43%	44.57%	10.87
Portugal	43.98%	46.16%	9.86%	48.79%	51.21%	-2.42
Sweden	44.75%	46.91%	8.34%	48.82%	51.18%	-2.36

Table 2.1 Trust in the EU.

***Total might deviate from 100% because figure roundings**

Formulas

Corrected

$$\text{Correction "Don't Know"} = \frac{\text{Average Trust OR Average Distrust}}{1 - \text{Average Don't Know}} * 100$$

Appendix 3. Calibration EU support

Country	Average Very positive	Average Fairly positive	Average EU support	Average Very negative	Average Fairly negative	Average Euroscepticism	Neutral	Don't know
Belgium	3.54%	38.11%	41.65%	3.08%	17.69%	20.76%	37.08%	0.51%
Denmark	5.41%	32.73%	38.14%	3.65%	14.18%	17.93%	43.11%	0.91%
Greece	3.37%	24.51%	27.88%	23.95%	12.77%	36.72%	35.02%	0.36%
Hungary	3.15%	33.12%	36.26%	4.67%	16.37%	21.04%	41.91%	0.79%
Netherlands	2.86%	35.37%	38.22%	3.29%	19.75%	23.04%	38.26%	4.81%
Poland	6.83%	43.43%	50.27%	1.38%	8.46%	9.84%	38.05%	1.84%
Portugal	2.15%	38.37%	40.52%	2.49%	19.30%	21.79%	34.38%	3.31%
Sweden	4.25%	33.71%	37.96%	4.04%	20.14%	24.19%	37.32%	0.53%

	AVG EU support	Standard deviation
EU AVG	38.33%	7.37 percentage points
EU AVG + 1 std dv	45.70 percentage points	
Eurscepticism – 1 std dv	30.95 percentage points	

Appendix 4. Results

Country	GDP/C €	Law- Abidingness	Support	Issue Saliency	Policy position	Investment	Prioritisation
AU	36264	-17,01	29,91	9,5	5,57	-2,72	Recycle
BE	34018	5,62	41,65	9,65	5,76	-14,4	Waste Prevention
BU	5564	34,53	55,13	11	6,47	19,42	Landfill
CY	22391	-20,16	33,08	11,88	6	99,89	Landfill
CZ	15736	-14,42	30,92	9,41	6,44	23,49	Incineration and Recycling
DE	33518	-16,35	38,9	10,47	5,79	-16,77	Recycling and Re-use
DK	45182	14,41	38,14	7	4,87	1,5	Re-use and Prevention
EST	12891	32,62	39,55	11,71	5,38	30,21	Incineration
FI	35209	9,03	31,58	9,06	4,66	2,17	Incineration and Recycling
FR	31427	-20,81	38,33	7,71	4,86	27,88	Re-use and Recycling
GR	18482	-38,49	27,88	11,18	5,4	159,32	No waste priority
HR	10720	-14,26	34,92	13,06	5,93	0,84	Incineration and Recycling
HU	10709	3,67	36,26	12	6,76	5,79	Recycling and Incineration
IR	43136	-1,7	51,89	10,94	4,97	1,34	Incineration
IT	26355	-18,57	39,46	11	7,11	8,57	Reuse and Prevention
LE	10164	1,19	30,99	13,29	5,74	49,52	Recycling and Incineration
LT	10873	35,69	44,89	13,47	5,67	1,19	Recycling and Re-use
LU	79545	10,45	48,63	9,71	4,67	7,88	Recycling and Incineration
MT	17882	30,33	44,26	8,71	7,5	853,53	Landfill and Incineration
NL	39245	4,58	38,22	9,06	6,89	-16,3	Waste Prevention
PL	10400	10,87	50,27	11,71	6,29	4,84	Incineration and Recycling
PT	16818	-2,42	40,52	14,06	5,25	33,28	Incineration and Recycling
RO	7082	23,72	52,73	10,82	6,5	70,66	Recycling
SE	41164	-2,36	37,94	5,18	4,78	5,42	Re-use and recycling
SK	13555	10,37	39,59	9,71	6,69	32,78	Incinerationa and recycling
SL	18245	-9,62	40,16	11	4,61	-0,86	Recycling
SP	23218	-19,99	35,76	11,71	5,93	65,85	Landfill and Incinieration
UK	30764	-43,52	26,54	11,76	5,41	27,94	Incineration ad Recycling

Appendix 5. Fuzzy set membership

Country	Law Abidingness	EU support	Position Environment	Environmental Saliecy	Capacity	Resources	Prioritisation
AU	0,03	0,03	0,42	0,39	0,89	0,98	0,8
BE	0,75	0,79	0,39	0,38	0,85	1	0,95
BU	1	1	0,29	0,26	0,02	0,42	0,2
CY	0,02	0,11	0,35	0,19	0,38	0,07	0,2
CZ	0,05	0,05	0,3	0,4	0,15	0,4	0,45
DE	0,04	0,56	0,38	0,3	0,83	1	0,7
DK	0,95	0,48	0,52	0,66	0,98	0,92	0,9
EST	1	0,62	0,44	0,2	0,09	0,35	0,4
FI	0,86	0,06	0,55	0,44	0,87	0,91	0,45
FR	0,02	0,51 ⁴	0,52	0,58	0,77	0,37	0,7
GR	0	0,01	0,44	0,24	0,22	0,01	0,05
HR	0,05	0,2	0,36	0,12	0,06	0,94	0,45
HU	0,68	0,3	0,26	0,18	0,06	0,74	0,55
IR	0,42	1	0,49 ⁵	0,26	0,97	0,93	0,4
IT	0,02	0,61	0,22	0,26	0,56	0,52	0,9
LE	0,56	0,05	0,39	0,11	0,06	0,24	0,55
LT	1	0,94	0,4	0,11	0,06	0,93	0,7
LU	0,89	0,99	0,55	0,37	1	0,58	0,55
MT	1	0,92	0,18	0,48	0,2	0	0,3
NL	0,71	0,49	0,24	0,44	0,94	1	0,95
PL	0,9	0,99	0,32	0,2	0,06	0,79	0,45
PT	0,38	0,71	0,46	0,08	0,17	0,33	0,45
RO	0,99	1	0,29	0,27	0,03	0,14	0,6
SE	0,38	0,46	0,53	0,81	0,96	0,76	0,9
SK	0,89	0,63	0,27	0,37	0,1	0,33	0,45
SL	0,13	0,68	0,56	0,26	0,22	0,96	0,6
SP	0,02	0,26	0,36	0,2	0,42	0,16	0,3
UK	0	0,01	0,44	0,2	0,75	0,37	0,45

⁴ These set memberships have been manually adjusted in order to prevent them from being on the cut-off point. See Chapter 4 for an explanation.

Appendix 6. Truth Table

LAW	SUP	POS	SAL	CAP	N	IE	cases	raw consist.	PRI consist.	SYM consist.
1	1	1	0	0	0	7	MT (0,52;0,15) BU (0,71;0,25) EST (0,56;0,25) RO (0,71; 0,3) SK (0,63;0,3) PL (0,68;0,37) LT (0,6;0,81)	0.61	0.20	0.2
2	0	0	0	0	0	5	GR (0,56; 0,03) CY (0,62;0,1) HR (0,64;0,24) SP (0,58;0,24) CZ (0,6;0,38)	0.65	0.21	0.21
3	0	1	0	0	1	3	DE (0,56; 0,85) IT (0,56; 0,91); IR (0,51; 0,48)	0.99	0.98	0.98
4	1	0	0	0	0	2	LE (0,56;0,29) HU (0,68;0,44)	0.78	0.16	0.19
5	0	0	0	0	1	2	AU (0,58; 0,89) UK (0,56; 0,62)	0.88	0.76	0.76
6	0	1	0	0	0	1	PT (0,54; 0,28)	0.92	0.73	0.73
7	0	1	1	0	0	1	SL (0,56; 0,8)	0.94	0.77	0.77
8	1	0	0	0	1	1	NL (0,51; 0,96)	1	1	1
9	1	1	0	0	1	1	BE (0,61; 0,96)	0.99	0.97	0.97
10	1	1	0	1	0	1	FI (0,55; 0,5)	0.98	0.93	0.99
11	1	1	1	1	0	1	LU (0,55; 0,74)	0.99	0.98	0.98
12	1	0	0	1	1	1	SE (0,53; 0,90)	0.93	0.85	0.85
13	1	1	0	1	1	1	DK (0,52;0,89)	1	1	1
14	1	0	1	1	1	1	FR (0,51; 0,71)	0.99	0.99	0.99
15	1	0	0	1	0	0				
16	1	1	0	1	0	0				
17	1	1	1	1	0	0				

1	0	0	0	1	0	0
8						
1	1	0	0	1	0	0
9						
2	0	1	0	1	0	0
0						
2	1	1	0	1	0	0
1						
2	0	0	1	1	0	0
2						
2	1	0	1	1	0	0
3						
2	0	1	1	1	0	0
4						
2	1	1	1	1	0	0
5						
2	0	0	1	0	1	0
6						
2	0	1	1	0	1	0
7						
2	0	0	0	1	1	0
8						
2	1	0	0	1	1	0
9						
3	0	1	0	1	1	0
0						
3	1	1	0	1	1	0
1						
3	1	1	1	1	1	0
2						

Appendix 7. Conservative, Parsimonious and Intermediate Solution

7.1 Conservative Solution

	Implementation Effort						
	Path 1	Path 2	Path 3	Path 4	Path 5	Path 6	Path 7
LA		X	X	~	~	X	
SUP			~	X		~	~
POS	~		~		X	X	X
SAL	~	~	~	~	X		X
CAP	X	X		~	X	X	X
Consistency	0.92	0.97	0.84	0.91	0.94	0.98	0.94
Raw	0.507	0.30	0.26	0.23	0.29	0.19	0.33
Coverage	483						
Unique	0.07	0.01	0.05	0.04	0.00	0	0
Coverage							
Cases	DE (0.62, 0.85) BE (0.61, 0.965) AU (0.58, 0.895) NL (0.56, 0.965) UK (0.56, 0.62), IT (0.56, 0.91), IR (0.51, 0.48)	LU (0.63,0.7 4), BE (0.62,0.9 65), NL (0.56,0.9 65), FI (0.56,0.4 95) (0.56, 0.965)	HU (0.68,0.4 4), LE (0.56,0.2 9), NL (0.51,0.9 65)	SL (0.68,0.7 95), PT (0.62,0.2 8)	SE (0.53,0.9) FR (0.52,0.7 15)	FI (0.55,0.4 95), DK (0.52,0.8 9)	SE (0.53,0. 9), DK (0.52,0. 89)
Consistency	0.85						
total							
Coverage	0.68						
Total							

7.2 Parsimonious solution

	Implementation Effort		
	Path 1	Path 2	Path 3
LA		X	~
SUP		~	X
POS			
SAL			
CAP	X		
Consistency	0.83	0.80	0.93
Raw Coverage	0.72	0.29	0.38
Unique Coverage	0.32	0.05	0.05
Cases	LU (1,0.74), DK (0.98,0.89), IR (0.97,0.48), SE (0.96,0.9), NL (0.94,0.965), AU (0.89,0.895), FI (0.87,0.495), BE (0.85,0.965), DE (0.83,0.85), FR (0.77,0.715), UK (0.75,0.62), IT (0.56,0.91)	FI (0.86,0.495), HU (0.68,0.44), LE (0.56,0.29), DK (0.52,0.89), NL (0.51,0.965)	SL (0.68,0.795), PT (0.62,0.28), IT (0.61,0.91), IR (0.58,0.48), DE (0.56,0.85), FR (0.51,0.715)
Consistency total	0.795675		
Coverage Total	0.838435		

Appendix 8. Solutions Absence Implementation Effort

8.1 Conservative solution

	~ Implementation Effort	
	Path 1	Path 2
LA		~
SUP		X
POS	~	
SAL	~	~
CAP	~	~
Consistency	0.88	0.74
Raw Coverage	0.75	0.21
Unique Coverage	0.55	0.01
Cases	HU (0.74,0.56), BU (0.71,0.745), RO (0.71,0.7), PL (0.68,0.63), HR (0.64,0.76), SK (0.63,0.7), CY (0.62,0.9), LE (0.61,0.71), CZ (0.6,0.625), LT (0.6,0.185), SP (0.58,0.715), GR (0.56,0.975), EST (0.56,0.745), PT (0.54,0.72), MT (0.52,0.85)	SL (0.68,0.205), PT (0.62,0.72)
Consistency total	0.86	
Coverage Total	0.76	

8.2 Parsimonious Solution

~ Implementation Effort	
Path 1	
LA	
SUP	
POS	
SAL	
CAP	~
Consistency	0.73
Raw Coverage	0.84
Unique Coverage	0.84
Cases	BU (0.98,0.745), RO (0.97,0.7), HR (0.94,0.76), LE (0.94,0.71), PL (0.94,0.63), HU (0.94,0.56), LT (0.94,0.185), EST (0.91,0.745), SK (0.9,0.7), CZ (0.85,0.625), PT (0.83,0.72), MT (0.8,0.85), GR (0.78,0.975), SL (0.78,0.205), CY (0.62,0.9), SP (0.58,0.715)
Consistency total	0.73
Coverage Total	0.84

Appendix 9. Robustness tests

An underemphasised issue with QCA research is a robustness check (Skaanig, 2011, p.392). QCA has been accused of having low robust models because of the researcher's choice for threshold. In order to counter these arguments, three robustness tests were conducted. The sensitivity of the results is checked by means of a change in calibration threshold (p.395), secondly by changing the frequency thresholds for the minimisation process (p.402) and thirdly by changing the consistency thresholds for the minimisation process (p.402). If the model is robust, the adaptations would show little variation compared to the original outcomes (Schneider and Wagemann, 2012, p.286).

9.1 Calibration threshold

When re-calibrating the thresholds, one has to be careful that the changes are not too substantive (Skaanig, 2011, p.395). For this research, the thresholds were moved a little upwards and a little downwards to show maximum comparison, table 9.1 shows the new calibration thresholds. The new thresholds do not yield any substantive value as the original values were carefully selected. The re-calibration merely serves as a test for robustness.

The two new calibrations were compared to the original data. Table 9.2 shows the analysis of necessity for the three calibrations. Both Skaanig (2011) and Schneider and Wagemann (2012) are not explicit about the threshold for robustness. Skaanig (2011, p.399) states that a difference of 0.1 is not a significant change in consistency score. Based on only the analysis of necessity, the calibration seems to be robust. Only with the third calibration, EU support shows a real deviation from the original score, but for the outcome it does not change much; EU support is still not a necessary condition. Table 9.3 gives the intermediate solutions, if truth tables analyses is applied to the newly calibrated measurements. Although the solutions differ somewhat, they all share the same core elements: a culture of law-abidingness, EU support and capacity. Hence, one may conclude that the model is robust based on this first test.

	Full membership	Cross-over point	No membership
Resources (1)	0	0.25	1
Resources (2)	0.1	0.35	1.1
Resources (3)	0	0.15	0.9
Prioritisation (1)	WPP (0.95)	Recycle/Recovery (0.45/0.55)	No hierarchy (0.05)
Prioritisation (2)	0.9	0.42	0
Prioritisation (3)	1	0.58	0.1
A culture of law-abidingness (1)	+15	0	-15
A culture of law-abidingness (2)	+18	+3	-12
A culture of law-abidingness (3)	+12	-3	-18
EU support (1)	45.7	38.32	30.95
EU support (2)	50	40	34
EU support (3)	42	36	26
Preferences (1)	0	5	10
Preferences (2)	2	6	10
Preferences (3)	0	4	8
Issue saliency (1)	1	8.5	16
Issue saliency (2)	3	9.5	16
Issue saliency (3)	1	7.5	13
Capacity (1)	40781.36	25019.89	9258.43
Capacity (2)	45000	28000	10000
Capacity (3)	35000	22000	8400

Table 9.1 Adjusted calibration

	Original Implementation effort		Implementation effort 2		Implementation 3	
	Consistency	Coverage	Consistency	Coverage	Consistency	Coverage
Culture of Law	0.56	0.560	0.50	0.68	0.61	0.52
Abidingness						
EU support	0.65	0.66	0.48	0.71	0.842391	0.58
Policy position	0.64	0.87	0.75	0.84	0.440217	0.90
Issue Saliency	0.55	0.92	0.59	0.90	0.397516	0.92
Capacity	0.72	0.83	0.62	0.92	0.79	0.71

Table 9.2 Robustness test necessary conditions

Implementation 1		Implementation 2		Implementation 3	
TrustFS*~SupportFS		~Support2*~saliencw2*~capacity2		trust3*capacity3	
GDPFS2		Support2*Pref2*~saliencw2		support3*capacity3	
~TrustFS*SupportFS		Trust2*saliencw2*capacity2			
		~Trust2*~Support2*~Pref2*~capacity2			
		Trust2*Support2*~Pref2*~capacity2			
		~Trust2*~Support2*Pref2*capacity2			
Coverage	0.845	Coverage	0.76	Coverage	0.68
Consistency	0.80	Consistency	0.73	Consistency	0.76

Table 9.3 Intermediate solutions robustness tests

9.2 Case frequency threshold

The second test of robustness is a change in the frequency of the cases. Usually only one case is sufficient for a solution to be taken into account for the minimisation process. If the model is truly robust, a threshold of two cases would not make significant difference in the solution outcomes (Skaanig, 2011, p.402). Hagemann (2019) rightfully makes the notation that with a small to medium sized N this test is not the most important test. Yet, for measures of completeness the test is still conducted.

By using a frequency threshold of two cases, only five solution paths are taken into account, the others are used as logical remainders. The results of this minimisation process are presented in Appendix 10. Also based on this analyses the model is robust. The intermediate solution is almost exactly the same regarding the consistency and coverage scores. Moreover,

the same solutions are presented with the exception of solution $\sim LA * SUP \rightarrow IE$. For the exact outcomes, please contact the researcher.

9.3 Consistency threshold

The last test is a change of the consistency threshold for solution paths to be taken into account with the minimisation process. According to Skaanig (2011, p.403) it is best to do this test once with a higher threshold (0.85) and a lower threshold (0.65). Here too, the model is confirmed to be fairly robust. With the higher consistency threshold, the same outcomes are achieved as with the higher frequency threshold. Lowering the threshold to (0.65) even produced the exact same outcome with similar consistency and coverage scores. Hence, one may conclude that based on the third test the QCA model remains robust. For the exact outcomes, please contact the researcher.