



Sustainable Public Sector Innovations:

How do feedback, accountability and learning matter?

Wouter VAN ACKER

Proefschrift aangeboden tot het verkrijgen van de
graad van Doctor in de Sociale Wetenschappen

Promotor: Prof. Dr. Geert Bouckaert
Onderzoekseenheid: Instituut voor de overheid

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and I've sat here and took this note
before and tried to remember –
and now I do – remember what
I'm writing as I write it down
I know when I'm going to stop
I know when I'm forgetting and
know when I
take a jump and change

'Laughing Gas' by Allen Ginsberg.

Voorwoord / Foreword

Averbode / Leuven
April / Mei 2017

Zoals de meeste grote dingen loopt ook dit doctoraat met een sisser af. Je voegt een bijlage toe aan een e-mail, en drukt op 'verzenden'. Je loopt naar de keuken, ratelt wat zure, lauwwarme koffie in je mok, en gaat weer aan de slag. Net zo min als het eindresultaat is het proces alles behalve ontzagwekkend. Een marathonloper zet ten slotte ook slechts de ene voet voor de andere. Vanuit dat oogpunt stellen de rollen van degene die het leidend voorwerp van dit dankwoord vormen dan ook niet zoveel voor.

Maar het feit is dat ieder stap van de marathonloper noodzakelijk, maar niet voldoende is om de streep te halen. Juichend publiek. Aangegeven bidons. Uren training voor het startschot. Teamgenoten. Hazen.

In een bij voorbaat gefaalde poging om recht te doen aan mijn dank voor mijn hazen en op de reclameborden stampende supporters, volgt een korte, niet exhaustieve expositie.

Zes jaar geleden kwam ik in het Leuvense aan, en heb me sindsdien, al zeg ik het zelf, tamelijk goed aangepast. Het accent gaat vlot. 'Camping', 'caravan', 'lopen' en 'iedereen-weet-welk-vierde-woord' daargelaten. Ik heb een gezonde hekel ontwikkeld voor Nederlands bier, Nederlandse frieten en Nederlandse mayonaise. Gelukkig ben ik niet te oikofobisch om ons Nederlanders' subtiele arrogantie te verliezen, en dit alles op te sommen.

Voor zover mij bekend ben ik de eerste Nederlandse doctoraatstudent van Geert. Ondanks mijn assimilatie was de vertaalslag soms lastig. Misschien lastiger dan bij mijn Turkse, Israëliëse of Limburgse voorgangers. Een brede vallei is nu eenmaal eenvoudiger te bereizen dan een smalle kloof. Geert was er echter als geen ander toe in staat om een antidotum te bieden aan mijn grootste en meest on-Nederlandse zwakte bij het schrijven van een doctoraat: het 'imposter syndroom'. Telkens dacht ik dan eindelijk door de mand gevallen te zijn. Telkens zag ik m'n proefschrift op de klippen lopen. En telkens verliet ik met vertrouwen, inspiratie en energie de overleggen met Geert.

Vertrouwen, inspiratie en energie. Voor deze drie waren nog drie anderen verantwoordelijk.

Vlamingen zijn moeilijk te doorgronden, maar bij Michaël lukte het me aardig. Twee pinten in m'n nek en een kleine schermutseling in De Zak waren voldoende. Als in geen ander worden bij hem dromen, ambitie en nuchterheid bijeengedreven. Een paar jaar eerder in het doctoreren, verloven, trouwen en een familie starten, zal ik nog geregeld bij hem de toekomst kunnen afkijken over hoe je de dingen des levens nu precies aanpakt.

Het adopteren van twee volwassenen is vast een heel gedoe. Bovendien zouden mijn ouders, en die van hen niet te vergeten, er ook akkoord mee moeten gaan. Vermoed ik. Misschien dat we dat dan best toch maar overslaan. Mijn ouders hebben er bovendien geen weet van dat ik er twee broers bij heb gekregen. Maar ik heb ze zorgvuldig uitgekozen. Jos en Joris zijn beiden grappiger, slimmer, en bovenal veel betere schrijvers dan ik. Ze waren en blijven waarlijk inspiratiebronnen. Het feit dat ik dit dankwoord schrijf over de tonen van Kenny Dorham moge volstaan als bewijs.

Het Instituut voor de Overheid is een unieke werkomgeving. Met ware afgunst wordt er in de faculteit naar onze gangen gekeken. De collega-weekenden, potlucks, wijnproevingen, verkiezingsavonden, secret santa's, boekenclubs, en random uitgekozen avonden in de Reynaert waren onmisbaar om het werk fraai, serieus, en dragelijk te houden. Voor Eva, Sylke, Wout en Pieter-Jan: eiland voor altijd. Astrid, Ellen, Sophie, Marloes en Peter: bedankt voor het advies, de hulp, de begeleiding, en al het andere.

As non IO-members: William, Piret, Krista and Sophie, thanks for introducing me into the academic world without losing a skeptical view on the whole theatrics and politics of it all.

Het wordt steeds moeilijker en vreemder om vrienden te maken naar gelang je ouder wordt. Als die persoon dan ook nog eens dezelfde voornaam draagt is het helemaal ongemakkelijk. Ooit, Wouter, zal ik leren om in een kort tijdsbestek helder de politieke erfenis van de Volksunie uit te leggen, en de persconferentie van Leo Tindemans na te synchroniseren. Tot dat moment stel ik voor een standing reservation voor twee te maken bij Het Land Aan De Overkant, en mijn opvoeding daar voort te zetten.

Dan is er nog een bataljon aan vaste waarden. Mensen waarvan ik stuk voor stuk trost ben ze mijn familie en vrienden te mogen noemen. Mijn ouders, Tim, en Martine, om mee te beginnen. Miekje, Bernd, Kris, Nick, Frans, Jeroen, Noortje, Eline, Frank, Thomas, Eva en

Rik. De manieren waarop jullie me geholpen hebben strekken tot ver voordat dit doctoraat ook nog maar een verre fantasie was, en betreffen bovendien veelal zaken die veel belangrijker zijn dan een ruim 300 pagina lang relaas over innovatie.

The Dutch are the Americans of Europe. I know I've already spent far too much space and time focusing on international differences, for which I sincerely apologize. The cosmopolitan coastal elitist in me is disgusted by this. But the Dutch are, in fact, the Americans of Europe. Loud, honest, open, and a tad arrogant. The Americans are dreamers, however, which can clash from time to time with a Calvinistic upbringing like the one I enjoyed. "If you work hard and really believe, you can do anything." I don't know how many movies have tried to shove that adage down my throat, but it took a girl that I met just after midnight in Bologna in 2012, to actually believe it. Realism stands shoulder to shoulder with pessimism. It closes itself around your feet like leaded shoes while you gaze at the stars. For everything that Heather is, and for everything that she's done for me, for how sweet and pretty and funny and adventurous she is, she first and foremost made me believe in myself. I haven't reached the stars yet. But sometimes, just for a little while, I no longer feel the ground.

For those who intend to read the entire thing: good luck.

For all the others: the summaries can be found on page 242 and 245.

Wouter

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Chapter 1 – Introduction

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1.1 Why study public sector innovation sustainability?

Let's start with this, the most existential question. Why write a dissertation on public sector innovation sustainability in the first place? Overall, there are (or should be) two reasons for academics to delve into a certain research topic: its societal relevance, and its scientific relevance. These two will be discussed in that order.

Citizens' trust in government and the public sector has been low and decreasing for some time. The focus of academics on this theme, together a focus on trust within the public sector itself, and trust in the public sector towards citizens, has been clear for the past decade (Bouckaert, 2012; Van De Walle, 2016). Responsiveness and innovativeness has been argued to be possible vehicles to increase the trust and satisfaction of citizens in the public sector (Sørensen & Torfing, 2016; Vigoda-Gadot et al., 2008). "*Creating trustworthiness of government and public services is one way to normatively define the purpose of public sector innovation.*" (Fuglsang & Rønning, 2014a, p. 10, italics added) In order for the public sector to be (seen as) professional and competent, innovating is a must. From this perspective, given the assumption that the public sector works more efficiently and effectively when citizens place more trust in it (Levi 1998; Tyler 1990, in Van De Walle, 2016), public sector organizations should make innovation one of their key priorities.

However, innovations, by their very nature, also create disruption. Innovation can potentially lead to "*turbulent and unexpected impacts*" and can from this perspective be seen as "*a threat to administrative and political stability.*" (Douglas, 2016, p. 28, italics added) A government which changes too much, too rapidly, can lose the trust of its citizens. Public

servants and policy makers are thus confronted with a paradox: “*Users seek two things in a government: 1) continuity, predictability, trust and 2) an innovative and modern government.*” (Pollitt & Bouckaert, 2011, p. 193-195, italics added) This, in short, constitutes the societal relevance of this dissertation: the innovativeness of public sector organizations, as well as the stability of public services, affect the trust citizens have in government and public services. A focus on the sustainability of public sector innovations combines this ambidexterity. Innovations that are made to last, can create both the continuity and innovation which the public is looking for. Sustainable innovations could create an increase in trust through innovation, *and* an increase in trust through stability. To be clear, trust and the effect of innovations on trust, is not the focus of this dissertation. It does, however, form the framework from which this dissertation derives its societal relevance.

From a scientific viewpoint, the sustainability of public sector innovation has, to the best of the author’s knowledge, not yet been thoroughly studied. As Pollitt notes: “*much of the research on innovation has [...] focused on the early days – on the moment of innovation itself, what leads up to it, and what makes some innovations ‘catch on’ by attracting the right kind of ‘early adopters’*” (2011, p. 42, italics added). The later stages of their development have, however, been understudied. De Vries et al. (2016) also mention the lack of research conducted on innovations *after* their initiation. Therefore, Pollitt invites future research to focus upon issues such as failing innovations, and questions such as “*What proportion of administrative innovation is short-lived?*” (Pollitt, 2011, p. 42, italics added)

Besides this ‘gap-in-the-literature-argument’, focusing on the sustainability of innovation also helps to move innovation out of the New Public Management (NPM) paradigm. NPM, the prevalent manner of investigating and improving the public sector in the late 80’s, 90’s and early 00’s, looks at innovation as a means to improve the public sector’s efficiency and effectiveness. From that perspective, innovation has been an inherent part of the NPM framework (Pollitt, 2003), and one that is efficiency and effectiveness focused. Innovation and public services as tools for trust and legitimacy (through continuity and stability) are less prominent features. This facet of public sector innovation, increasing trust and legitimacy, has gotten more emphasis since the paradigm moved from NPM to New Public Governance (NPG) and the Neo-Weberian State (NWS), during the first decade of this century (Pollitt & Bouckaert, 2011). These two paradigms give trust and legitimacy more prominence. Specifically the collaborative innovation and co-creation/co-production

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literature has contributed to this shift with regards to public sector innovation as a sub-topic of the public sector literature. Much of the work around public sector innovation, however, is still mostly focused on outcome variables such as efficiency and effectiveness. Research on what helps innovations become more sustainable, given the potential effect of sustainability in terms of increasing the public's trust as discussed above, could therefore help put innovation further into the NPG and NWS paradigm.

Furthermore, the focus of public sector innovation literature (following the comments by Pollitt (2011) referred to previously), and perhaps the public sector literature at large, is for the overwhelming majority focused on organizations, policies, programmes and innovations that survive. Organizations, policies, programmes and innovations that live and exist. This is what is called 'survivorship bias' (Brown et al., 1992; Elton et al., 1996). How much can you learn about medicine if you only research those who survive a disease? How much can you learn about war if you only research peace? Such a focus on survivors alone, can potentially lead to the finding of overvalued relationships. To truly understand public sector innovation, one should also focus on innovations that no longer exist. This dissertation has this goal at its core, focusing on both sustainable *and* unsustainable innovations.

1.2 Aim and organization of the research

The aim of this research, based on the societal and academic relevance, is to investigate what causes certain public sector innovation to be sustainable, and others to be non-sustainable. To clarify: when talking about sustainability, this dissertation refers to temporal sustainability, not ecological or 'green' sustainability. This issue is discussed at length in chapter 3 on the conceptualization of this term. Considering there is very little other research on this issue in neither the private nor the public sector literature, a new set of predictors will have to be established. Three potentially influential factors surfaced during the literature review which was conducted: feedback, accountability, and learning. The model they form together will be shortened to FAL, which might be the most often used word in this study. Investigating the influence of FAL on the sustainability of public sector innovations is thus the principal research goal of this dissertation.

The opportunity to do conduct this research came primarily through funding from the LIPSE project. Learning from Innovation in Public Sector Environments (LIPSE) was part of the European Commission's 7th Framework Programme as a Small or Medium-Scale

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Focused Research Project (2011-2014), under grant agreement No. 320090. The project focused on studying innovations in the public sector (www.lipse.org). The results gathered through this project and presented here, originated from the project's work package 3, which included partners from, besides the KU Leuven Public Governance Institute as the lead: SNSPA (Romania), Matej Bel University (Slovakia), Erasmus University Rotterdam (the Netherlands), École National d'Administration (France) and the University of Edinburgh (United Kingdom).

1.3 Structure of the dissertation

The assembly of the different chapters in this dissertation is rather straightforward, with the exception that the research design enters at a later stage than perhaps is commonly expected. Chapter 2 presents an introduction into the concept 'innovation', discusses its key characteristics, the manner it is investigated in both the public and private sector literature, and how innovation differs in practice between the two. Finally, the decision in this dissertation fell on the option to not use a scientific definition for innovation, but to follow practitioners' ideas about what constitutes an innovation, through focusing on innovation award schemes. Chapter 3 is of a similar nature, yet focusing on the concept 'sustainability'. Here, different definitions of sustainability are discussed, out of which one is chosen to use throughout this dissertation: *The continuing existence of an innovation, with or without minor changes, such as up-dates or adaptations, notwithstanding discontinuations due to predetermined end-dates or performance goals having been reached.* A large part of chapter 3 is dedicated to what other research strands have found to cause sustainability in innovative projects. Based on the findings of these other strands of research, and on autonomous conceptualization and theorizing, chapter 4 introduces the FAL model, and the literature on which it is based. It presents feedback loops, accountability mechanisms and learning cultures as a conceptually and empirically intertwined model for continuous improvement and adaptation, and potentially a model to explain the sustainability of public sector innovations. This chapter then is the chief basis of the research design which is presented subsequently in chapter 5. The research design is composed of two major parts: a quantitative one (survey) investigating any correlation to be found, and a qualitative one (interviews and a focus group) to investigate the causality behind the correlations. It is that particular chapter that the mode in which the empirical evidence will be structured is introduced: the INUS-method. This method provides a manner to categorize the evidence

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and to draw appropriate conclusions about the sufficiency and necessity of the causal factors which are found. Beyond that, the usage of the INUS-method is very rare occasion in public sector innovation research (or public governance research in general, for that matter). This dissertation thus also forms a test to see how appropriate this particular methodology is for the research on public sector innovations. Chapter 6 discusses and presents the methods and results of the quantitative research. A factor analysis showed that the survey measured two interesting factors: a culture of FAL and instruments of FAL. A logistic regression then showed that a culture of FAL seems to be influential in explaining the sustainability of public sector innovations. Subsequently, chapter 7 goes on to investigate the causality between the culture of FAL, instruments of FAL and the sustainability of the innovations in three case studies. In the analysis of these case studies it is found that besides these two factors, the organizational consensus on the appropriateness of the innovation, as well as the existence of an innovation champion, are important in determining the innovation's sustainability. Chapter 8, finally, summarizes, discusses and concludes this dissertation, and brings forth opportunities for further research and implications for practitioners.

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Chapter 2 – Innovation

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In this second chapter the concept of innovation will be discussed in its many facets. First, in paragraph 2.1, ‘innovation’ will be differentiated from several other related, and often intertwined, terms and concepts. This paragraph will also go into more depth on conceptual issues such as exactly *how innovative* an innovation has to be to earn that title, and *to whom* the innovation should have to be innovative. In sub-paragraph 2.1.4, a number of definitions are listed and discussed, after which the definition for innovation maintained throughout this dissertation will be divulged. In a brief overview, paragraph 2.2 shows how public sector innovation research came into being through prior research focused on the private sector, and how it has evolved over the last several decades. Before providing a brief overview of the development of public sector innovation research in paragraph 2.4, sub-paragraph 2.2.2 discusses the specificity of *public* sector innovation vis-à-vis *private* sector innovation. Key is a discussion in sub-paragraph 2.2.3 on how the literature, findings and theories from

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private sector literature can be used in public sector research. After this discussion, the focus moves towards the differences between the private and public sector influence the different types of innovation one finds in both sectors, in paragraph 2.3. As said, with the knowledge of the similarities and differences between both the public and private sector on the one hand, and between public and private sector research on the other hand, paragraph 2.4 provides a brief overview of the public sector innovation research field.

2.1 Defining innovation in the public sector

‘Innovation’ is one of those vague but all too popular concepts in public administration and politics. A ‘magic concept’ is what Pollitt & Hupe (2011) call it. A concept which is broad, normatively interesting, marketable and *appears* to come with a consensus surrounding its precise meaning. The false normativity of the concept has been pointed out by a number of scholars. Many practitioners see innovation as the holy grail, but innovations need to serve a purpose. Innovation is not an end in itself (Seelos & Mair, 2002; Fuglsang & Ronning, 2014). Neither is there an existing consensus on the meaning of the term innovation yet, nor is this consensus likely to come about in the near future (Kattel et al., 2014). As Storey and Salaman (2005) note, innovation is dealt with in a large number of research fields, all of which bring their own specificities to the term. However, some common themes in the numerous definitions and discussions about the concept have come forward (OECD, 2015). As innovation is a very elusive concept, combined with its popularity among politicians and practitioners, there is a risk it gets intertwined with, and loses its distinct meaning from, terms such as new ideas, and inventions (Lloyd-Rcason, et al., 2002; Sørensen & Torfing, 2011). For this reason sub-paragraph 2.1.1 focusses on the distinction between innovations and related terms: new ideas, discoveries, inventions and Research & Development (R&D). Sub-paragraph 2.1.3 will further discuss the difference between change and innovation, but not before 2.1.2 has laid out how innovation can change from person to person, from organization to organization, and from context to context.

2.1.1 Things which are not innovation

First and foremost: ideas are not equal to innovations. The OECD defined innovation as:

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“The implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.” (OECD, 2005, p. 45, italics added)

Implementation, hence, is key. However creative, new and ingenious some ideas might be, as long as they are not implemented, they are not considered innovations. (Amabile, 1988; Sørensen & Torfing, 2011; Newman et al. 2001)

“There is a significant difference between the generation of the idea (creativity) and its introduction into practice. The innovation of a new product occurs when the product is conceived, produced, and used. The innovation of a production process is complete only after it is in operation. The innovation of an organizational structure is accomplished when the system has been set up and made operational.” (Knight, 1967, p. 479, italics added)

As the OECD reiterated ten years after the aforementioned definition: *“An innovation must be implemented, meaning that it cannot just be a good idea, but must be operational.” (OECD, 2015, p. 14, italics added).*

Secondly: discoveries are not equal to innovations. Discoveries could be seen as a second step, occurring after someone started investigating a luminous idea. The discovery of the Higgs boson particle, the existence of which had been thought out in 1964, is a good example in this case. However, since serendipity still has an important role to play in discoveries in all types of science, ideas can often also follow discoveries. While discoveries might lead to innovations, and coming up with an innovation might feel like a discovery, this term is reserved for the first ever observation of a natural phenomenon or object (Conway & Steward, 2009). The discovery of the rings around Saturn in 1610, or the first observation of the Higgs boson particle, finally, in 2012, were hardly innovations, since both had existed long before they became what we know them to be today. The new instruments and math which made the observations possible, on the other hand, might be called innovations. We will return to this point of ‘first observation’ in sub-paragraph 2.1.2. That sub-paragraph will discuss how innovations are not just innovations in the very first firm or organization they are introduced, and lose their innovativeness afterwards, but are innovations every single time an individual interacts with it for the first time. In this sense, an innovation stays an

innovation as long as it gets 'discovered' by new individuals. A discovery, on the contrary, loses its character as a discovery soon after its first observation and communication. Sadly, the next person to observe the rings around Saturn is no longer a discoverer.

Thirdly: invention does not equal innovation. Inventions can be seen as a step closer to the meaning of innovation. Inventions are often grounded in discoveries, and they clearly have creative and novel ideas on which they're based. However, inventions might also be called proto-types. Inventions are, as Freeman and Soete (1997, quoted in Conway & Steward, 2009, p. 9, italics added) define them: "*an idea, a sketch or model for a new or improved device, product, process, or system.*" Implementation and operationalization, again, are key. As long as the proto-type is not introduced to the market (public or private) we cannot speak of an innovation (Conway & Steward, 2009). Many scholars note that for an innovation to be called an innovation, it needs to have the chance to create added value, the result of implementation. Either in terms of profit or market share for private sector innovations, or in terms of public value for public sector innovations (Fuglsang & Ronning, 2014; Grönroos, 2011). Before implementation, this will not be possible. This is where the previously mentioned normativity comes into play for the first time. Innovations, according to those who focus on added value (either private or public) in their definition, only call products, processes etc. innovative when they are successful, and in fact produce such added value (Moore, 2005). However, according to this dissertation's position, an innovation can fail just as well, without losing its innovativity. The fact that Apple's 'Hockey Puck' was a horrible failure in terms of profit and user satisfaction, does nothing to diminish its innovative design and functioning. Knight discussed this issue as far back as 1967: "*There can be negative innovation-alternatives that do not become economically advantageous, or an unsuccessful innovation-modifications that eventually fail because they are not accepted by society.*" (p. 478, italics added). Note that the 'negative innovation alternatives' and 'unsuccessful innovation-modifications' still have the word 'innovation' in them. Finally, as Hartley (2008) argues, separating 'innovation' from 'success', at least for scholarly purposes, "*can be valuable where there is interest in [...] how innovations grow, are nurtured, meet problems – and how some of them fail.*" (p. 200, italics added) In other words: precisely the focus of this dissertation. Fourth and finally, Research & Development (R&D) is often equated with, or used as a proxy for, innovation. However, only a small part of firms and organizations is involved in R&D, whilst many other departments also innovate. As Gault puts it: "*The performance of R&D is a rare event, and the expenditures (and personnel) are*

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highly concentrated in a few firms [...] and in a few industries. Innovation is a more common event, less concentrated and more pervasive.” (Gault, 2013, p. 10, italics added) At the same time, R&D has a strong correlation with inventions. Definitions using R&D are thus “*based towards technological product and process innovations, as opposed to service or administrative innovation*” (Conway & Steward, 2009, p. 9, italics added). For the purposes of this dissertation, focusing on the public sector, the latter two are of particular importance, and R&D would most likely overlook these completely. Finally, R&D results in a lot of inventions which do not see the light of day in the market they were intended for, and thus never reach the innovation status. Taken together, this makes a pretty convincing picture to avoid drawing a direct link between innovation in its broader sense, especially considering the purposes of this research on the public sector, and R&D.

After having discussed several things which are not innovation, although often strongly related, sub-paragraph 2.1.2 turns to the discussion of perspective: to whom is something innovative?

2.1.2 Innovative to whom?

After being implemented and introduced to the market or public sector, the question arises whether an innovation can be an innovation only once, or multiple times? This concerns the ‘first observation’ issue mentioned before. An innovation is something ‘new’ (Osborne, 1998), but should it be new to the world, the country, the sector, the organization or a specific person? There seems to be a general and long-standing agreement in the innovation literature that the particular innovation has to be new to the organization in which it is introduced, for it to be called an innovation (Knight, 1967; Mohr, 1969; Pettigrew, 1973; Zaltman et al. 1973; Rogers, 1995; West & Farr, 1990). Whether it has been introduced before in another country, another sector or a sibling organization is of no matter (Conway & Steward, 2009; Sørensen & Torfing, 2011). “*What is new about an innovation in this definition is the location of its application; innovation can be old wine in a new bottle.*” (Lynn, 2013, p. 32, italics added) Knight (1967, p. 479, italics added) describes this, in a slightly politically incorrect manner/fashion:

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“When we use the phrase “new to the organization and to the relevant environment,” we are not limiting an innovation to the first known use by mankind but to the reference groups of the potential innovator. Introducing simple hand tools into agricultural use in a primitive culture represents an innovation, just as the first use of a complex biochemical technique or elaborate mechanical farming machinery in the United States is an innovation.”

As a matter of fact, the introduction of an innovation in a new organization or context always involves a translation and alteration exercise to make the innovation fit in the new organization’s and context’s existing framework, processes and culture (Røvik, 1992, cited in Sørensen & Torfing, 2011). In a sense, this makes each innovation unique.

This discussion shows that innovation is a matter of perspective. Something which might be innovative for one person, organization, sector or country, could very well be something old for another. Strongly related is the discussion of exactly how new and/or disruptive the change has to be in order to be called innovation. Again, this is highly dependent on perspective. This newness or radicalness is summarized in the term ‘innovativeness’, which is discussed in the following sub-paragraph.

2.1.3 Innovativeness

Innovation equals change, but is all change innovation? The agricultural tools mentioned by Knight (1967) earlier on might be earth-shatteringly new to the ‘primitive’ culture it is introduced to, and thus clearly constitute an innovation to them. A centuries old cure used in this ‘primitive’ culture could likewise mean a ground breaking innovation in modern medicine. Perspective thus has an important role to play in the following discussion.

The debate on whether incremental innovation is actually a thing, or if innovation *has* to be radical, revolutionary, or disruptive is an extensive one (Lynn, 2013; Abernathy et al., 1983). The main difference between the two is a matter of impact (Perry, 2010). Put this in a question and it reads: how does the innovation change the organization or the environment, and how *much* does it change them? March (1991) puts forward the distinction between exploitation and exploration. Incremental innovations, or exploiting existing products and services, in this view, are seen as improvements, enhancements on existing products and services. It is about small efficiency and effectiveness gains. Exploration, however, leads to fundamentally different ways of doing things, or radically different things altogether

(Bason, 2010; Storey & Salaman, 2005). This brand of innovation is, as Albury put it for the public sector, “[the] development of new services or a fundamentally new way of organizing and delivering a service.” (Albury, 2005, p. 52, italics added) But what exactly has to be fundamentally different? Both Osborne and Brown (2005) and Tushman and Anderson (1986) point towards the change in knowledge and skill-sets that are necessary for the involved staff and/or users before and after the introduction of a radical innovation. Tushman and Anderson name it ‘competence destroying’ innovation. A change is worthy of the name ‘innovation’, only if it destroys the competences of the current users and/or employees to make or use the product or process. These authors, then, think there shouldn’t even be a distinction between incremental and radical innovation, since anything starting with ‘incremental’, ‘small’ or ‘gradual’ should never be linked to innovation (Hartley, 2008; Bessant, 2005; Mulgan & Albury, 2003; Newman et al., 2001; Lynn, 1997; Hage & Hollingsworth, 2000). Hartley (2008), for example, argues that innovation is more than organizational change, and that the implications and processes surrounding innovation are different from incremental development. What Hartley labels as ‘incremental development’ and ‘organizational change’, Sørensen and Torfing (2011) might name ‘first order change’. They make a distinction between three different orders of change, to differentiate change from true innovation.

“Innovation is not about producing and delivering more or less of the same kind of goods, services, or solutions (first-order change) but rather about changing the form, content, and repertoire of goods, services, and organizational routines (second-order change) or transforming the underlying problem understanding, policy objective and program theory (third-order change).” (p. 850, italics added)

To Sørensen and Torfing, there is no such thing as incremental innovation, since innovation only occurs within second or third order change. Osborne (1998) admits that a large string of incremental changes can lead to very significant change over time, but these “changes occur within the existing paradigm. Innovation, however, changes the prevailing paradigm.” (p. 24, italics added)

Although there seems to be a consensus in the literature that incremental innovation is a *contradictio in terminis*, there are some deviations (e.g. Ettlie et al., 1984; Germain, 1996). It is, furthermore, difficult to pinpoint when exactly a ‘paradigm’ changes, or exactly how much skills and competencies need to change in order to be labelled ‘innovation’. “There is

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no objective way of determining the amount of qualitative change that is needed in order for a transformation to qualify as an innovation. Too much depends on the subjective perceptions of situated actors." (Sørensen & Torfing, 2011, p. 850, italics added) This, then, refers to the subjectivism mentioned at the start of this paragraph. What is transformational for one, is not necessarily transformational for the other. Besides, even a string of many incremental changes, happening in a short time span, can be perceived by some who undergo the changes as disruptive and even frightening. The labelling of change as incremental, radical, disruptive or innovative, then, will always be at least somewhat arbitrary.

It is thus hard to figure out exactly how innovative an innovation has to be in order to deserve that title. The process to do so is difficult to carry out across different organizations and contexts, which are highly important in determining innovativeness. This adds to the difficulties of arbitrariness which already existed around this topic. If this leaves the readers somewhat dissatisfied, the author shares their feeling. Differentiating innovations amongst each other, hopefully, is an easier task. To this task sub-paragraph 2.14 turns next.

2.1.4 Finding a definition

Definitions on innovation are plentiful, and they usually only have the word 'new' or 'novel' in common. There exists further confusion due to the fact that innovation is both "*a process and an outcome. It is a process of creating discontinuities in the organization or service (innovating) and it is also the fruits of those discontinuities (an innovation).*" (Hartley, 2008, p. 200, italics added) In this dissertation, the focus lies firmly on innovation as an outcome. Beyond that, the definitions range from simple ones such as 'new ideas that work' (Mulgan & Alburg, 2003, p. 3), or 'creative ideas with (successful) implementation' (Amabile, et al., 1996), encompassing almost everything remotely new that occurs on a public sector organization's work floor, to definitions as complex as the one by Osborne and Browne:

"The introduction of newness into a system usually, but not always, in relative terms and by the application (and occasionally invention) of a new idea. This produces a process of transformation that brings about a discontinuity in terms of the subject itself (such as a product or service) and/or its environment (such as an organization, market, or a community)." (2005, p. 121, italics added)

The OECD/EuroStat Oslo Manual definition, popular in private sector literature, reads:

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“An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.”
(2005, p. 45, italics added)

Sørensen and Torfing, two of the most influential innovation researchers of the past few years, have defined innovation as:

“A dynamic process through which problems and challenges are defined, new and creative ideas are developed, and new solutions are selected and implemented.”
(2012, p. 4, italics added)

De Vries et al.’s (2016) systematic review of public sector innovation literature finds that 24% of the publications which took the time and effort to define innovation, base themselves on Roger’s definition (2003, p.12, italics added): “[A]n idea, practice, or object that is perceived as new by an individual or other unit of adoption.”

Perry (2010, p. 21), finally, provides a useful overview (shown in an adapted version below in table 1) of different definitions and their characteristics/focus. He shows that ‘newness’, ‘change’, ‘creativity’ and ‘implementation’ are the strongest commonalities between the definitions, although not throughout all of them. For the purpose of this dissertation, several new definitions have been added, although it does not claim to represent an exhaustive overview of definitions.

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Table 1: Overview of innovation definitions

Source of definition	Core features	Common features
Schumpeter (1961)	Impulsive and discontinuous change/carrying out of new combinations	Change; newness; discontinuity
Daft (1978)	Adoption of a new idea that directly influences the basic output processes	Newness; implementation
Merritt (1985)	The introduction of new idea, method, or device	Newness
Deutsch (1985)	Large scale adoption of creative, new behaviour, reinventing	Change; creativity; implementation
Amabile et al. (1996)	Creative ideas, (successful) implementation	Creativity; implementation
Newman et al. (2001)	Discontinuity, new to unit, implementation	Implementation; discontinuity; newness
Green et al. (2001)	Action – introducing new practices, creating new output, new patterns of cooperation	Newness; creativity; change
Mulgan/Albury (2003)	New ideas that work: creation and implementation of new processes etc. Significant improvements	Newness; creativity; implementation; significant improvements
OECD (2005)	Implementation of a new or significantly improved product (good or service) or process, new methods, new structure, or external relations	Implementation; creativity; newness; new cooperation
Osborne & Brown (2005)	Introduction of newness into a system, the application of new idea, transformation, discontinuity	Newness; creativity; change; discontinuity
Albury (2005)	Creation and implementation of new processes, products, services and methods of delivery – significant improvement in outcomes	Creativity; implementation; newness; significant improvements
Halvorsen et al. (2005)	Changes in behaviour	Change
Koch & Hauknes (2005)	Implementation and performance of a new specific form or repertoire of social action, implemented deliberately	Implementation; change
National Audit Office (2006)	New ideas, selection, development and implementation, significant improvements	Creativity, implementation, significant improvements
Added sources:	Core features	Common features
Aiken & Hage (1968)	Process through which a new idea, object or practice is created, developed, implemented or reinvented	Newness; implementation
Kimberly & Evanisko (1981)	The adoption of a product, service, technology or managerial approach new to the adopting organization	Newness; implementation
Altschuler and Zegans (1997)	Novelty in action	Newness; implementation
Rogers (2003)	An idea, practice, or object that is perceived as new by an individual or other unit of adoption.	Newness; implementation
Sørensen and Torfing (2012)	A dynamic process through which problems and challenges are defined, new and creative ideas are developed, and new solutions are selected and implemented.	Creativity; newness; implementation

The earlier mentioned study by De Vries et al. (2016), provides probably the most current quantification/investigation of which definitions are used in the recent public sector innovation literature. They find that 76% of the studies in their review do not provide a definition at all. The important discussion, mentioned in paragraph 2.1, on the innovativeness of an innovation is hardly ever mentioned. It is furthermore difficult in most definitions to distinguish between innovations on the one hand, and ideas, discoveries or inventions on the other hand. *The academic definition of ‘innovation’ or ‘public sector*

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innovation' is still a far way off (Kattel et al., 2014). It is therefore not a suitable solution to just tag-along with the majority of the field in picking a definition, since such a majority does not exist. Furthermore, the context-specificity of determining whether or not something is an innovation makes it very difficult and time-consuming to engage in large-N innovation research.

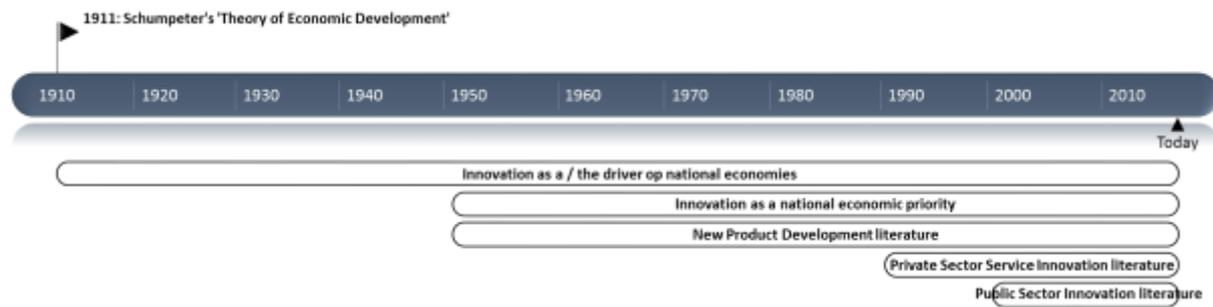
2.2 Innovation research

Sub-paragraph 2.2.1 displays how the private sector innovation literature has progressed and developed throughout a little over a century. The discussion of private sector innovation research begs the question to what extent the findings and theories from that particular strand of literature can be used in public sector innovation research. In order to assess this, sub-paragraph 2.2.2 first discusses the particularities of the public sector vis-à-vis its private counterpart. Finally, this will culminate in a discussion on *if* and *how* the findings and theories from private sector innovation literature can be used in public sector innovation research in sub-paragraph 2.2.3.

2.2.1 Private sector innovation research

A schematic and simplified overview of the literature throughout the 20th and early 21st century has been added as figure 1 below. Although the focus of innovation research (in whatever research area) is nowadays focused on the performance and management of firms, teams and organizations, it started out focusing on national economies. It is reasonable to argue that research on innovation took off in earnest in 1911, with Schumpeter's *Theory of Economic Development* (Lundvall, 2006). A macro-economic theory. The main thesis was that individual firms' innovations change sectors, entire economies, and move them forward. In fact, they move society forward as a whole (Manimala, 2009). They do so through the (in)famous idea of 'creative destruction': disrupting and destroying traditional markets, and at the same time creating new markets, niches and opportunities (Perry, 2010). This idea, innovation as the driver of macro-economic development, set the agenda for about 50 years of research.

Figure 1: Timeline of the several streams of innovation literature



“The latter half of the twentieth century saw a greater emphasis upon [the] micro-economic implications [of innovation], together with a widening of its study to include sociological, political and psychological perspective.” (Osborne & Browne, 2005, p. 118, italics added) In other words: in addition to shifting from macro to micro-level, innovation also became a social, instead of just an economic science. This micro-economic focus was at first narrowed down to the manufacturing industry. More specifically: products of the manufacturing industry. ‘New Product Development’ (NPD) thus became, and still is today, the dominant research area in the scholarly innovation field (Djellal et al., 2013; Pires et al., 2008). However, additions to this research focus were soon made. First and foremost researchers started to add ‘process innovations’: new ways of making things instead of making new things, with Ford’s assembly line as perhaps the most prominent historical example (Bessant & Grunt, 1985; Zaltman et al., 1973). A notable deviation from the mainstream economic research, is the study of economic development in (most notably) Japan and South Korea, largely attributed to their focus on innovation as a national priority instead of an action by private sector firms (e.g. Amsden, 1989; Lall, 1992; Morishima, 1982). This was done through public purchasing or public procurement of innovation as a development tool in several countries (Lember et al. 2014). For Western economies, this focus took shape in National Innovation Systems research (Nelson, 1993; OECD, 1999; Capron & Meeusen, 2000). At the same time, as most western economies progressed from industrial to more service sector-oriented economies, researchers started to question the singular focus on NPD.

In the last 25 years, service sector innovation became a significant research area in its own right (Pires et al., 2008; Miles, 2000; Gallouj, 2002). Stressing several key differences between both sectors (tangibility of the product, relationship with and the role of customers, process leading up to innovation, methodological use of innovation indicators such as R&D or patent data), the field split in four groups: demarcation,

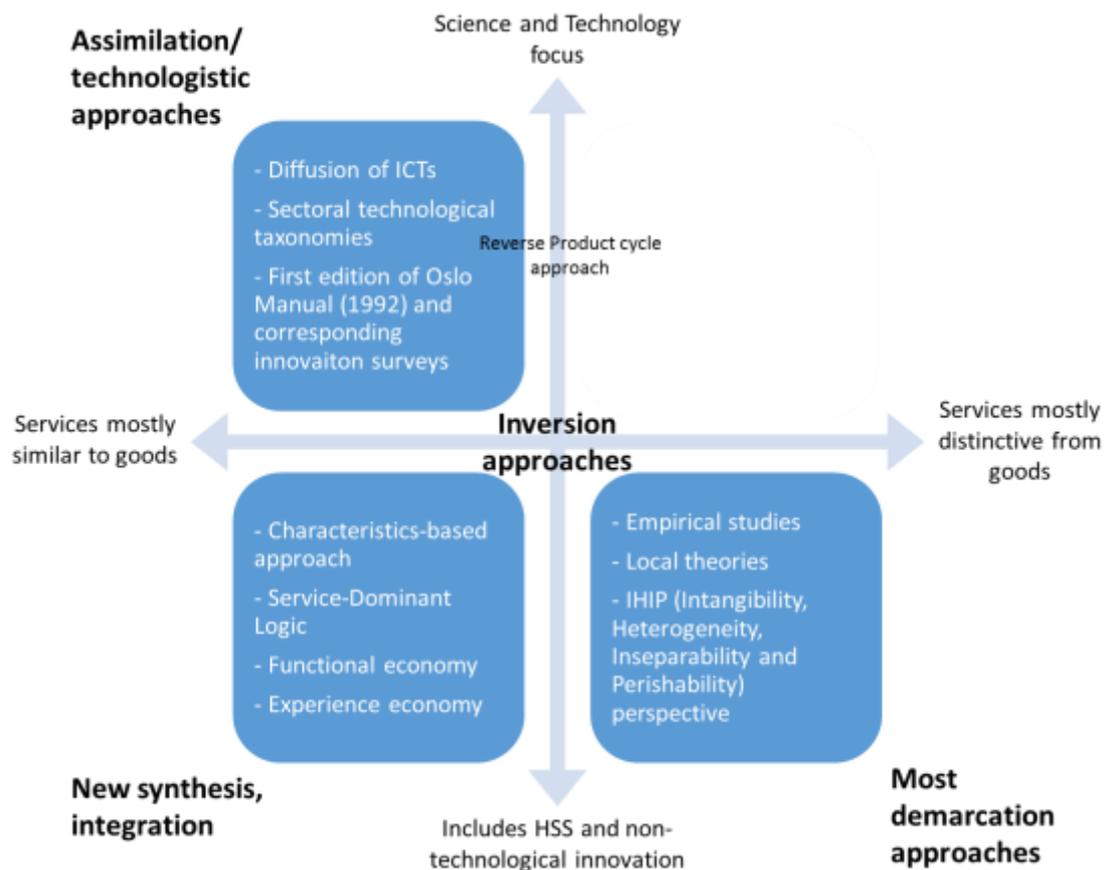
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assimilation/technologist, inversion and synthesis. In NPD an innovation “*can be observed and broadly agreed, even if its full implications or its impact are not initially known*” (Tidd et al., 2005, in Hartley, 2008, p. 199, italics added) The demarcation group argued for a radical differentiation from NPD research (Alänge et al., 1998; Lewis & Hartley, 2001) . As worded by Djellal et al.:

“It often claims to identify innovation activity where the assimilation or technologist gaze perceives nothing. It stresses the different forms that innovation can take, and the distinctive organization of innovation processes in service industries.” (2013, p. 99, italics added)

At the same time, the assimilation group claimed that findings in NPD research could in fact be used in the service sector, and saw service innovation much like it saw product innovation. Because of the link it studies between services and technological systems, this group is also labelled as the ‘technologist perspective’. Thirdly, the inversion group sees the service sector not as the weaker brother of the manufacturing sector in terms of innovation, but rather as the opposite (inversion): innovations in the service sector, rather than the manufacturing sector, form the sources of innovation throughout the entirety of the economy (Gallouj, 2010). The synthesis approach, not surprisingly, tried to find middle ground, arguing that there are ways in which innovation can be defined and studied without being limited to certain technological or intangible characteristics associated with either one of the two sectors (Chamberlin et al., 2010). “*It is able to encompass technological and non-technological, consumer- and producer-sourced innovation in components of the product, whether a good or service.*” (Gallouj & Savona, 2010, p. 37, italics added) Djellal, et al. (2013, p. 100) summarize these four strands in service innovation research in a figure which has been adapted here, and is shown as figure 2 below. The four groups are placed in the figure in bolded font.

Figure 2: Product and service innovation



Djellal et al. (2013) offer a heuristic tool with this figure, in order to assess which of the four analytical approaches is best suited to study the differences and similarities between private and public sector innovation, as it originally does for the differences and similarities between product and service innovations. First, in order to do this, it is appropriate to focus on the specific characteristics of the public sector.

2.2.2 The specificity of public sector innovation¹

Many arguments have been made on how private sector practices cannot be implemented one-on-one to the public sector, or how they have different outcomes in the two different sectors. ‘If the public sector innovates’, however, is no longer a question, as there is ample proof of that (see for example Albury, 2005 and Hartley, 2005). One of the rare

¹ Parts of this paragraph are adapted from Van Acker, W., Bouckaert, G. & Frees, W. (2015). *Mapping and Analysing the Recommendations of Ombudsmen, Audit Offices and Emerging Accountability Mechanisms*. Learning from Innovation in Public Sector Environments (LIPSE). Research Report. Available at: http://lipse.org/userfiles/uploads/LISPE%20Research%20Report%20WP3_20150328_FINAL.pdf (15/04/2015).

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investigations and comparisons between innovation rates in both the private *and* public sector was done by Earl (2002; 2004), who finds that (controlled for organizational size) organizations from both sectors adopt about just as many innovations. Which sector-specific barriers to innovation exist in the public sector, and just exactly how innovation takes place, do remain ongoing areas of research. Especially the barriers to innovation differ between the private and public sector (Røste & Miles, 2005). Below a number of these reasons will be discussed, without getting into the core NPM debate: lack of competition, risk-avoidance, short-termism, rule-obsession and another factor making the public sector innovation more distinguishable from private sector innovation: its publicness.

Monopoly position

Many observers indicate that competition is one of the most important incentives for improvement and innovation. Especially in the NPD literature it is mentioned over and over again that innovations are key in the competitive advantage of firms vis-à-vis their fellows (Ernst, 2002; Cainelli et al., 2003). Private sector firms can only survive if they are able to create new products, new services, production methods, ways of delivering services, etc. Public sector organizations, however, are (most) often in a monopolistic position. This lack of competition, it is argued, diminishes the incentive to improve and to innovate (Bekkers et al., 2011).

Public Values

Innovation in the private sector is chiefly aimed at increasing profits, and securing a firm's position in the market. Chiefly, indeed, because other values might also be tried to achieve through innovations. Corporate Social Responsibility (CSR) values are a good example of this (Fuglsang & Ronning, 2014). Employee well-being, pollution and human rights issues could all benefit from certain innovations, and could even drive them. Although critics might suggest that the sole purpose for a company to pursue CSR, is to improve the efficiency of its workforce and its PR-image, consequently increasing its profits and securing their position in the market.

Although monetary incentives certainly play an important role in public sector innovation as well, the public sector has a wider set of values to consider than the private sector. In a modern-day democracy at least, values such as transparency, equality, equity and democratic legitimacy play a much stronger role (Langergaard, 2011). Public Service Motivation (PSM) is a key component in this argument, defined as: “*an individual's*

predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations." (Perry and Wise, 1990, p. 368; quoted in Steen, 2006, italics added) Besides extrinsic (e.g. salary, job security) and intrinsic (e.g. flexible and independent work) work values, PSM is focused on values such as the opportunity to help others and the usefulness for society of one's job (Vandenabeele et al., 2006). These values are expected to be starkly different between the private and public sector, and are also expected to attract different types of employees.

Risk

Innovation involves risks, experimentation, trial and error, and uncertain outcomes (Levitt & March, 1988; Pollitt, 2011). Innovation can be seen as a journey which is not linear but more organic and at times chaotic (Van de Ven et al. 1999). Seen as the process is not 100% plannable, mistakes and failures are part of any innovation process (Bekkers et al., 2013; Hartley, 2005).

However, bureaucratic and political cultures are often viewed as particularly risk-avoiding cultures. Risk and risk-taking are generally negatively perceived by public sector organizations (Flemig et al, 2015). First of all, government works with public money. It is very hard for politicians and other public office holders to "*persuade the media and the public that it is acceptable, in certain contexts and under certain conditions, to spend public money on things that turn out to be failures*" (Pollitt, 2011, p. 39, italics added). Furthermore, politicians and policy makers carry responsibility for possible mistakes and failures. They are often harshly penalized, both by accountability mechanisms and possibly the media (Pollitt, 2011; Gilson et al., 2009). In other words, risks makes accountability and error/blame avoidance a much more important factor in public sector innovation than in private sector innovation (Hartley, 2013; Howlett, 2012; Bernier & Hafsi, 2007; Gilson et al., 2009; Bekkers et al., 2011).

Short-termism

Innovations prosper when innovations take on a systematic, long-term, and goal-oriented perspective (Drucker, 1985 – In Bekkers et al., 2011). However, public administrations, guided by politicians, in turn guided by the election cycle, lack such a long-term vision (Bekkers et al., 2011). This short-term orientation increases delivery pressures and forces public office holders to minimize risk-taking (Bekkers et al., 2013). Again, this results in a barrier for successful innovation in the public sector.

Rule-obsession

The public sector is dominated by a bureaucratic culture in which compliance with rules and procedures is highly valued. This is partly linked to the accountability mechanisms inherent to the public sector, as mentioned earlier. The risk in such organizations is that rules and procedures can become ends in themselves. When this is the case, these rules and procedures may limit the way in which innovative concepts, methods, technologies/products and processes are accepted (Bekkers et al., 2013). On the other hand, bureaucratic cultures are said to be better at exploiting innovations than smaller, more organic organizations (Damanpour, 1992). This means that public sector organizations might have an advantage over private sector organizations when it comes to incremental innovations and continuous improvement. However, it might be a barrier to more grand-scale innovations.

Publicness

Hartley (2013) speaks about the importance of the 'publicness' of both the innovation process, and the innovation itself in the public sector. Besides strongly influencing the importance of accountability on innovation, as discussed earlier on, the publicness of public sector innovations have more effects.

First of all, public organizations and managers need not only take users of the innovation into account, but also non-users (Hartley, 2013; Bozeman, 1987). Customers become citizens in this way, with different needs, wishes and stakes than they have as consumers. Also if they don't use a service, their opinion matters. "*Public innovation must be concerned about the realization of collective interests, or the public will.*" (Fuglsang & Ronning, 2014, p. 4, italics added) Secondly, diffusion processes in the public sector work differently. Public organizations are normatively bound to diffuse their innovations as much as possible, so the entire sector can reap its fruits. Companies in the private sector prefer to keep their innovations for themselves, through patents and copyrights for example, in order to secure their competitive advantage (Hartley, 2013; Greenhalgh et al. 2004). Third and last, the purpose and aims of innovations are different. Organizational winnings is not the only goal of innovations. Themes such as equity play a significant role as well, together with broader political agendas (ibid).

The reader might by now have a rather grim picture of innovation in the public sector. The first thing one should note, however, is that *the* public sector does not exist. Just as private

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sectors differ amongst each other, so do public sub-sectors. There might be sub-sectors in which the rule-obsession might be less of a problem (perhaps at lower, municipal levels), or where short-termism is not as influential (for example in auditing offices or the national banking system). Secondly, the fact that innovation does in fact take place in public organizations of all shapes and forms, happens *despite* these obstacles. These obstacles do, however, need to be taken into account when public sector innovations are investigated. Especially since they do not only constitute obstacles for innovations to occur in the first place (which was the focus of the research in the exposition above), but also for their development and sustainability afterwards, which is the goal of this dissertation.

2.2.3 Integrating private and public service innovation research

Having discussed the idiosyncrasies of the public sector when it comes to innovation, the question remains how *much* it differs from private sector innovation, and the research focused on both. For this, the dissertation makes use of the heuristic model put forth by Djellal et al. (2013) shown in figure 2 (p. 20).

First of all, like Djellal et al. do, it is important to distinguish public scientific organizations (e.g. universities, hospitals, army labs, etc.) from the public un-scientific organizations. Since this dissertation focusses on the latter, this immediately excludes the assimilation approach. The innovations that occur in the public sector organizations studied here differ sharply from high-tech, R&D-based innovations in the manufacturing industry. A one-on-one integration of public and private sector innovation research (including manufacturing sector innovation) is thus not optional. It is perhaps more suited when studying public sector innovations to adopt an assimilation approach with private sector service innovation. Innovations arise from the public sector (both through public procurement and support for private sector innovation on the one hand, and in the actuality of public management and policy making on the other (Lember et al. 2014)), as they do in the private service sector. However, considering the particularities of the public sector vis-à-vis the private sector, an assimilation with private sector service innovation is inappropriate as well. Where there are both similarities as well as important differences, it is important to learn from both strands of literature, but keep the exactitudes of both sectors in mind when trying to use findings from one sector in research on the other. This dissertation thus positions itself between the demarcation and synthesis approach of private sector service innovation, meaning that findings and theories from one field of research can

be conservatively extrapolated onto the other field of research. Constant and vigorous duplication will be necessary to see to what extent both sectors in fact overlap. Finally, the distinction between private and public sector innovation leads to the question whether or not there are different types of innovations in both sectors. To this, paragraph 2.3 turns next.

2.3 Types of innovation

In order to discuss the different types of innovation in the private and public sector, several typologies will be discussed and compared in this paragraph, after a brief historical introduction.

Osborne and Brown (2005) go back as far as the 1960s in determining which approaches to classify innovations have been adopted. Burns and Stalker (1961), for example, focus on whether the innovation was created by pull or pushfactors. Pullfactors make it *necessary* for an organization to innovate in order to survive in the market place. Push factors make it *possible* for an organization to innovate, for example through a scientific breakthrough. Cyert and March (1963) classify innovation on the basis of two causes of innovation: organizational distress or slack resources. Another group of authors organize their classification on the actors benefitting from the innovation (Daft & Becker, 1978; Von Hippel, 1978, 1982; Atuahene-Gima, 1996).

The largest group of authors in Osborne and Brown's listing, classify innovations as either product or process innovations (Zaltman et al. 1973; Bessant & Grunt, 1985; Starkey & McKinlay, 1988; Urabe, 1988). It is this typology, based on the characteristics on the innovation itself, rather than the causes and effects (such as the ones displayed above), which has gained the most attention in the literature. Many different typologies of innovations exist on the basis of their intrinsic characteristics. Some distinguish between technical and administrative innovations (Damanpour, 1991; Kimberly & Evanisko, 1981), between service and process innovation (Walker & Damanpour, 2008), or between product and process innovations (Damanpour and Gopalakrishnan, 2001). Four typologies which take four or more categories into account will be discussed below. Table 2 gives an overview of their definitions per innovation type.

Although the Oslo Manual (OECD, 2005) offers a typology focused on private sector innovation, it still constitutes an influential example of this type of typology. The first edition dates back to 1992, with a second version published in 1996, and the third one in

2005. The official title of this document, “*The Measurement of Scientific and Technological Activities, Proposed Guidelines for Collecting and Interpreting Technological Innovation Data*”, shows its true goal: unifying the research field of innovation, by proposing a common research framework, and definitions and a typology which could, and ideally would, be used by all. However, the definitions and typology were less useful for those active in public sector innovation research. The Oslo Manual typology has thus been translated into a typology specifically for public sector innovation (MEPIN Project, 2011, pp. 14). As a result, the two look strongly alike, although with some key differences. First of all, in the definition for ‘product innovation’, the MEPIN (Measuring Public Innovation in the Nordic Countries) version adds more emphasis and focus on services, as the public sector would be naturally more involved in service innovations than innovations of tangible goods. Secondly, the definition of ‘process innovations’ is elaborated upon in order to include skills, accounting and purchasing methods. Most notably, in the definition for ‘organizational innovation’, the word ‘business’ has been deleted. Finally, and most radically, the typology ‘marketing innovation’, as it stood in the Oslo Manual, was changed for ‘communication innovation’ in the MEPIN version. References to products and product design as part of communication strategies have been eliminated, and the focus has shifted towards behavioural change through communication.

However, in academic practice, in spite of the influential OECD and MEPIN papers, a different picture appears. The focus seems to be on more than the four proposed types of innovations by the OECD and MEPIN. De Vries et al. (2016, p. 8), on the basis of their systematic review of the literature (focusing on literature between 1990 and 2014), divide innovations in the public sector literature as either product/service innovations, process innovations (divided between administrative and technological innovations), governance innovations and conceptual innovations. This typology puts more focus on less tangible innovations, which are less directly related to the core business of organizations (at least at first sight), especially conceptual innovations. The greater focus on conceptual and governance innovations could be the consequence of some of the most prominent issues in public management literature over the past decades: New Public Management and New Public Governance, both of which could be seen as simultaneously conceptual innovations, and innovations in governance (more on this issue will be discussed in chapter 3). Whereas the overwhelming majority of public sector products are services, the private sector literature puts more emphasis on the difference between manufactured goods and services.

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Conway and Stewart (2009, p. 14) list eight types of innovations, from their own review of the private sector literature. They as well put forth a less tangible type of innovation: business model innovations. This could be comparable to the conceptual innovations and governance innovations of De Vries et al.

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<p>Oslo Manual, 2005 (Private sector innovation)</p> <p>A <u>product innovation</u> is the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics.</p> <p>A <u>process innovation</u> is the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.</p> <p>A <u>marketing innovation</u> is the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.</p> <p>An <u>organisational innovation</u> is the implementation of a new organisational method in the firm's business practices, workplace organisation or external relations.</p>
<p>MEPIN Project, 2011 (Public sector innovation)</p> <p><u>Product innovations</u> – The introduction of a service or good that is new or significantly improved compared to existing services or goods in your organization. This includes significant improvements in the service or good's characteristics, in customer access or in how it is used.</p> <p><u>Process innovations</u> – The implementation of a method for the production and provision of services and goods that is new or significantly improved compared to existing processes in your organization. This may involve significant improvements in for example, equipment and/or skills. This also includes significant improvements in support functions such as IT, accounting and purchasing.</p> <p><u>Organizational innovations</u> – The implementation of a new method for organizing or managing work that differs significantly from existing methods in your organization. This includes new or significant improvements to management systems or workplace organization.</p> <p><u>Communication innovations</u> – The implementation of a new method of promoting the organization or its services and goods, or new methods to influence the behaviour of individuals or others. These must differ significantly from existing communication methods in your organization.</p>
<p>De Vries et al., 2016 (Public sector innovation)</p> <p><u>Product or service innovations</u> – Creation of new public services or products.</p> <p><u>Process innovations</u> – Improvement of quality and efficiency of internal and external processes.</p> <ul style="list-style-type: none"> - <u>Administrative</u> – Creation of new organizational forms, the introduction of new management methods and techniques and new working methods. - <u>Technological</u> – Creation or use of new technologies, introduced in an organization to render services to users and citizens. - <u>Governance innovations</u> – Development of new forms and processes to address specific societal problems. - <u>Conceptual innovations</u> – Introduction of new concepts, frames of reference or new paradigms that help to reframe the nature of specific problems as well as their possible solutions.
<p>Conway and Stewart, 2009 (Private sector innovation)</p> <p><u>Product</u> – A novel tangible artefact, including materials and components, those based on high as well as low technology, and those aimed at individuals or organizations.</p> <p><u>Service</u> – Intangible and involving the undertaking of a novel activity for another individual or organization.</p> <p><u>Process</u> – Generally concerns novel technological processes, as distinct from organizational processes.</p> <p><u>Organizational / Administrative</u> – Novelty in organizing or the undertaking of processes or tasks within an organization.</p> <p><u>Delivery</u> – Novelty in the delivery of products or services, for example, from provider to consumer.</p> <p><u>Marketing</u> – Novelty in the marketing of products or services.</p> <p><u>Business Model</u> – Novelty in the 'drivers' of an organization's activities or strategy.</p> <p><u>Institutions</u> – The establishment of an organization with a novel role, whether within the private, public, or not-for-profit sector.</p>

Table 2: Typologies of Innovations

The listing of Conway and Stewart and Oslo Manual shows us that there is indeed a difference between public and private sector innovations. Although there are differences between the OECD, MEPIN, Conway and Stewart, and De Vries et al., the large overlap might be even more noteworthy. One central category is that of products and services, either as one or divided into two separate categories. Process innovations take up an equally central position in all four typologies. This is also where it starts to get tricky. In some typologies, technological and administrative innovations are part of the process category. In Conway and Stewart's typology administrative innovations form a separate category altogether, and are thrown together with organizational innovations. The latter is again a different category in the other three typologies. But at least the same topics are covered by all four. Conceptual issues receive a more prominent role in the two academic typologies, but these can potentially also find a place under the typology 'organizational innovations' of the Oslo and MEPIN Manuals. The conclusion has to be, however, that a typology, much like the discussion on innovativeness, is not yet agreed upon, although there does seem to be a larger basis for agreement on the former.

Considering the laid out discussions above, and the many small but significant variances between the different typologies, another typology is proposed here. In essence it is an alteration, mostly based on De Vries et al.'s typology in table 2. The typology proposed and used in this dissertation differs on a few important aspects. First of all, the category 'Conceptual innovations' is considered to be too close, or empirically difficult to separate from 'Innovative ideas'. This refers back to the discussion on the definition of innovations in sub-paragraph 2.1.1. Besides, once these conceptual innovations are put in practice, it is the way in which they are put in practice which are considered innovations under the other four categories. Secondly, as the observant reader might have noticed, the typology of De Vries et al. includes one reference to the successfulness of an innovation in order to deserve that title. Given, yet again, the discussion in sub-paragraph 2.1.1, that reference is omitted in the new typology. And thirdly, the idea is added that not only the implementation or addition of something new can be considered, but also the deletion or termination of something can be considered innovative. This goes back to what Kimberly (1976; 1981) coined as 'exnovation'. When one reconsiders the commonalities between definitions of innovation (newness, creativity, implementation, discontinuity), they all apply to the

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termination of things as well. In that light, the following typology (again: heavily drawn from De Vries et al.) is proposed for the research presented here:

- Product or service innovations – Creation of new public services or products, or the termination of public services or products.
- Process innovations – Related to the quality and efficiency of internal and external processes.
 - o Administrative – Creation of new organizational forms, the introduction of new management methods and techniques and new working methods, or the termination of such.
 - o Technological – Creation or use of new technologies, introduced in an organization to render services to users and citizens, or the termination of such.
- Governance innovations – Development of new forms and processes to address specific societal problems, or the termination of such.

This typology offers a framework to study both the literature, as well as the innovations investigated for this dissertation. Paragraph 2.4 will briefly discuss how the public sector innovation literature has developed over the past few decades..

2.4 Public sector innovation research

Arundel and Huber name Roessner (1977) as the first “*study to directly examine the concept of innovation in the public sector*” (2013, p. 147, italics added). That publication was published, however, well before its time. Although innovation as a research subject came to public sector research at about the same time as to service sector research, it took a lot longer to form a state of maturity (Djellal et al. 2013; Osborne & Brown, 2005).

From the start, until rather recently, public sector innovation research drew strongly from its counterparts in the public sector. Besides, it wasn't quite advanced in terms of methodology and research design (Arundel & Huber, 2013, p. 147). Arundel and Hollander (2011, p. 5, italics added) argue that

“research on public sector innovation has followed two streams. The first assumes that many of the factors and strategies that influence how firms innovate will also apply to the public sector. The second perspective assumes that there are significant differences in how innovation occurs in the public sector and consequently it is not possible to directly apply a model of private sector innovation to public agencies.”

Innovation as a focus of public management research only really took flight with the rise of NPM as a concept, and not before that? did it truly become a research strand in itself (Vigoda-Gadot et al., 2005). And even then, Hartly argues that until recently, *“much of the innovation theory and literature has derived from new product development”* (2008, p. 199, italics added). However, researchers have since taken greater care in adjusting the models, methods and concepts to better fit the public sector context (De Vries et al., 2016).

At first it was the ‘non-innovation’ in the public sector which was studied. In the late ‘80s and early ‘90s, during the well-known New Public Management debate, many arguments for privatization and making the public sector act more like the private sector revolved around how the proposed instruments would increase innovation. NPM was supposed to provide an answer to this ‘innovation deficit’ by using private sector methods such as contracting out, performance targeting, the creation of internal markets, etc. ‘Let managers manage’ was largely about giving them more freedom to experiment and innovate (Pollitt & Bouckaert, 2011; Laegreid et al., 2011). Until very recently, according to Potts and Kastle (2010), the public sector innovation literature was based on these same principles: that a) *“the public sector suffers an innovation deficit or challenge,”* and b) *“the model for innovation is the private or market sector”* (p. 127, italics added) (see also: Mulgan & Albury, 2003). One of the first innovation-related topics to get attention was thus, not surprisingly, ‘entrepreneurship’ in the public sector (Windrum, 2008; Roberts & King, 1996). One influential discussion on entrepreneurship in the public sector focused on who exactly where the entrepreneurs: politicians, managers, or street-level bureaucrats? Whereas some consider the role of politicians in innovation processes diminished by NPM reforms (Hartley, 2005), some still see them as an important source of innovations (Sørensen & Torfing, 2011). An influential paper by Sandford Borins (2000) pointed out that many of the innovative policy initiatives originated in rebellious public managers. Hence his view on

innovation as a bottom-up process. He later saw different roles for different groups of actors for different types of innovations (Borins, 2002, p. 467, italics added): “*Politically-led responses to crises, organizational turnarounds engineered by newly-appointed agency heads, and bottom-up innovations initiated by front-line public servants and middle managers.*”

The focus on how to transform the governmental agencies and ministries into innovative bureaucracies (Vigoda-Gadot et al., 2005), led to an emphasis on organizational and individual factors in explaining and promoting innovation (Osborne & Brown, 2011). Issues such as leadership and innovation champions (Borins, 2001; 2000; Crosby & Bryson, 2005; Moore, 1995), strategy (Berry, 1994) and capacity (Borins, 2001) were in the spotlight.

The focus on organizational and individual barriers and drivers of public sector innovation (or: internal antecedents), underappreciated the possible effect of the institutional context and the role of the wider environment the organization found itself in. Together with a shift from NPM to NPG in the broader public management literature, the focus of public sector innovation literature broadened with work which focused on horizontal cooperation, networks, and service users as partners and sources of innovation (Van Eijk & Steen, 2016; Voorberg et al., 2014; Sørensen & Torfing, 2011; Bommert, 2010; Nambisan, 2008; and Hartley et al., 2013). This research strand, broadly labelled as ‘collaborative innovation’, derives from “*central insights from recently developed private sector innovation theories that emphasize the importance of strategic alliances and public-private innovation systems.*” (Sørensen & Torfing, 2016, p. 2, italics added) In the words of Osborne and Brown (2011, p. 1343, italics added):

“this explicitly acknowledges the importance of organizational and institutional environmental sensitivity (Tether, 2003), the need to work across horizontal networks in services provision rather than maintain a closed organizational boundary (Ahuja, 2000; Brown & Duguid, 2000; Chesbrough, 2003), and the centrality of service users as a prime source of innovation (Alam, 2006; Von Hippel, 2007).”

Collaborative governance can play an important role in facilitating learning and enhancing public innovation (Ansell & Gash, 2008; Bland et al., 2010; Eggers & Singh, 2009; Considine et al., 2009).

A focus on innovation as a concept in itself is often lost, as it is replaced by research into its many subparts. Partly due to this compartmentalization, more than a decade after becoming a fully-fledged research branch, many important questions still remain unanswered and large parts of the phenomena we call ‘innovation’ remain *terrae incognitae*. Research agendas, as put forward by various academics in the field (e.g. De Vries et al. 2016; Osborne & Brown, 2011; Pollitt, 2011; Potts & Kastle, 2010) present a wide menu of options for starting researchers, of which this dissertation attempts to address one in particular: the sustainability of public sector innovations.

2.5 Conclusion

This chapter, in a brief 27 pages, discussed what is meant by the word innovation, how it is used in this dissertation, the development of the innovation research literature, the idiosyncrasies of the public sector and, connected to that, the idiosyncrasies of public sector innovation and the literature surrounding it.

Some agreement on specific facets of the definition of innovation in the literature does exist:

- Innovations does not equate with ideas, discoveries, inventions and R&D.
- Innovations should be new to the specific person or organization in question.
- Innovations should be more radical, intrusive or discontinuous than ‘incremental’

The overall picture of innovation research (or public sector innovation research for that matter), however, is one of little use of, let alone consensus on, the specific definition of innovation. This dissertation will therefore follow practitioners in determining what is and what is not innovation, by using award programmes as a selection methodology. Furthermore, it was laid out how the innovation research literature (founded by Schumpeter) developed from a focus on national economies to the organizational and personal level. In other words: developed from a strictly economic science to now include social sciences in its broadest form as well. The manufacturing literature (NPD) dominated innovation literature for a long time, and to some extent still does, but private service sector innovation and public sector innovation research have grown to be fully matured counterparts. A discussion on the essential differences between the public and private sector led to a subsequent discussion on the way in which private (service) sector innovation

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literature, its results and theories, can be used in public sector innovations research. The conclusion would be that this was in fact possible, although in a cautious manner, with a continuous focus on the reproduction of studies and testing of assumptions and hypotheses. Finally, based on the preceding discussions on the differences between the public and private sector, the discussion focused on different typologies for innovations. In the end the choice fell on an adapted typology for public sector innovations, first designed by De Vries et al. (2016). The termination of activities, policies, processes and the like as innovations was included, and 'conceptual innovations' was deleted from the original typology. Together, this provides the following typology:

- Product or service innovations
- Process innovations
 - o Administrative
 - o Technological
- Governance innovations

The discussion of the concept innovation itself, the research on innovation, and comparisons between the use of the same concept in research and practice in different sectors of the economy provides half of the basis for this dissertation. As the main research goal of this dissertation is to investigate what causes public sector innovations to remain sustainable, this chapter was only the first half of the overview chapters. The following chapter will, logically, focus on the definition and research findings surrounding the sustainability part of the research question.

Chapter 3 – Sustainability

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Innovation is an elusive concept, as the discussion in the previous chapter illustrated. Although sustainability is a more straightforward concept than innovation, it still needs some clarification and discussion. After having defined the concept for this dissertation in paragraph 3.1, the focus will shift towards factors that might explain sustainability in public sector innovations, based on research findings from adjacent literature. Literature on ICT project management, healthcare innovations, path dependency and policy termination will be discussed in sub-paragraph 3.2.1. Research findings from path dependency and policy termination literature are discussed in 3.2.2 and 3.2.3. The few studies which have up and till now been conducted on the sustainability of public sector innovations, besides this dissertation, are laid out in sub-paragraph 3.2.4. In the conclusion, a new model with theoretical potential in explaining public sector innovation sustainability will be introduced, based on the literature presented in paragraph 3.2, which will be further elaborated on in chapter 4.

3.1 Defining sustainability

What do we talk about, when we talk about sustainability? First of all it is important to note that there are many synonyms which are used to describe this topic. A random selection might include continuation, institutionalization, routinization, duration, maintenance, confirmation, resilience and persistence (Savaya & Spiro, 2012; Scheirer & Dearing, 2011; Gruen, et al., 2008). One can specify between five types of sustainability, as found in the literature, of which the last type encompasses the use of the word in this dissertation best:

- Ecological, economic and social sustainability
- Sustainability of effects
- Routinization/Institutionalization
- Sustainability as diffusion
- Program sustainability

In this dissertation, the focus will lie on sustainability as the continuation of innovations, named 'programme sustainability' in the list above. Innovations are thus sustainable if they still exist, or if they have existed until their predetermined lifetime/goal was reached.

The first and most popular use of the term 'sustainability' refers to "*a balanced assessment of social, environmental and economic dimensions to maintain competitiveness without compromising the ability of future generations to meet their own needs.*" (World Commission on Environment Development, 1987, in: Rahman, et al., 2015, p. 3, italics added) The notion of sustainable development is closely linked to this definition and interpretation. Where this definition has a clear temporal aspect to it (especially towards future generations), it is closely linked to the second type of definition for sustainability: one that focusses on the sustainability of effects. Sustainable development especially focuses on the effects policies and programmes have in the future. In the health care programme literature in particular, this view is often adopted as well. Scholars with this focus look at the continued effects of programmes and policies as the key factor in what 'sustainability' entails, rather than the continuation of the programmes themselves. Their research endeavours emphasize what happens to the target audience after the innovations have been eliminated. Do the effects last? Or is the situation returned to the status quo of before the innovation? (Friedman & Wicklund, 2006; Stefanini, 1995; McMichael, 2006, in:

Gruen et al. 2008). Shediac-Rizkallah and Bone, in their highly influential 1998 study, also focus on the effects of health care programmes, community capacity building and routinization/ institutionalization.

Routinization and institutionalization (henceforth referred to as ‘routinization’), the third possible interpretation of sustainability, are more similar to each other, and closer in relevance to this dissertation than the first two foci on sustainability. However, routinization is regarded here as a specific type of programme sustainability. Routinization has been defined as “*embedding a new set of activities into the normal operations of an organization*” (Scheirer, 2013, p. 73, italics added), or “*incorporation of a particular program into an organization’s business-as-usual*” (Goodman, et al., 1993, italics added). Signs of routinization, for example, are the innovation becoming a standard item on the budget, or being integrated into the standard operating procedures and regulations of the organization (Yin, 1981) A programme, however, can also continue to exist without becoming a routine.

Fourthly, innovation sustainability has been defined as the diffusion-rate it has in its respective sector (see for example Osborne & Brown, 2011; Buchanan, et al., 2005; Davies & Edwards, 2013). However, these studies don’t focus on the development of single innovations, but merely on how fast, in what way and to what extent they spread to other public organizations. Additionally, an innovation that spreads fast through the entire public sector, yet only lasts for a short amount of time per organization before it is cancelled can hardly be called sustainable.

This dissertation will not look at the effects (either in the sense of sustainable development or not), routinization or diffusion of the innovation as a function of sustainability. In fact, it looks at sustainability more broadly, and more straightforwardly. Similar to Scheirer and Dearing (2011) and Savaya and Spiro (2012), the focus here will be on the continuation of innovations in general. For the purpose of this dissertation, then, the definition we will use for sustainability of a public sector innovation is quite simple:

The continuing existence of an innovation, with or without minor changes, such as up-dates or adaptations, notwithstanding discontinuations due to predetermined end-dates or performance goals having been reached.

The latter half of the definition refers to innovations which had a predetermined end-date when they were initiated (e.g. a one-year contract with a peer organization to exchange best practices), or which were terminated because they reached their goal (e.g. creating 10.000 new broad-band connections in a rural area). Such innovations are still considered sustainable, since they remained as such until they reached their 'natural' end.

Furthermore, it might be tempting to link sustainability with success, and non-sustainability with failure. Although sustainability is a major goal for those involved in innovations (Altman et al., 1991), it would be incorrect to equate it with success. An innovation which is inherently underperforming can still be sustainable, for example because it is a politician's pet-project, or because it has a fixed duration of a long period of time. At the same time, cancelling a failing project could be called a success, in the sense that the organization successfully evaluated the project and took the right steps afterwards.

Secondly, although failure has a strong negative connotation, it could also be perceived as either a necessary evil, or even an asset. This goes back to the famous 1979 study done by Kahneman & Tversky. They argued that what 'loss' is really all a matter of framing. If failure/loss is framed as a learning opportunity, an organization or person could actually benefit from it. This is probably why the internet is flooded with blogs and semi-academic pieces on the 'necessity to fail' or why 'failure is the way to success'. These blogs are consistently focused on the private sector, and the image persists that the private sector might be better at innovation because they have a more open position towards risk and failure (see paragraph 2.2.2). However, several studies have found that learning from mistakes is not a given, also in the private sector (Potts, 2010; Garud & Van de Ven, 1992). Additionally, Eggers (2012) noted that a firm, which has experienced failure, tends to be more risk-averse in the future (indicating that learning happens, but not as one would hope or expect). Moreover, Das & Teng (1997) found that not all firms think the same way about risk in the first place. Whilst some fear possible future failure (as, stereotypically, public sector organization are expected to do), others might fear the possible future regret of the missed opportunity by backing out (Reb, 2008). There is, in short, no doubt that failure *could* be assets to organizations, as long as they are indeed perceived and treated as genuine learning opportunities.

To conclude: this dissertation will not make statements on success and/or failure. As the

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discussion above shows, this issue is too complex and subjective to treat fully in the current research design. Furthermore, it is not at the core of this dissertation. Not in the same way as innovation is at least, which has an equally subjective and fuzzy definition. The focus here lies on sustainability, not success. What causes this sustainability is what we turn to next.

3.2 Findings on the causes of sustainability

Much like the public sector innovation literature, private sector research has only focused on the phases leading up to innovation: how innovations are developed and introduced (un)successfully into the market. Service innovation literature and NPD literature is therefore no resource for research similar to this dissertation. Other strands of literature put more focus on the evolution of innovations after their initiation, including their sustainability. First of all, there is a long-standing tradition in programme evaluation research on the sustainability of innovative programmes. Information and Communication Technology (ICT) and Information System (IS) literature form a specific category in this regard, as that literature is more horizontal in focus, and spans multiple policy areas. Other research is focused on specific policy areas, the most elaborate of which will be discussed in 3.2.1 after the ICT/IS literature: healthcare, social and educational programme sustainability. Furthermore, path dependency, seemingly an obvious suspect for explaining sustainability in government and organizations, will be discussed. Fourthly, policy termination literature has been studying the causes of the end of policies since the mid 1970's. Then, finally, different examples in public sector literature which have, to different extents, (indirectly) touched upon the topic of this dissertation will be discussed. In the conclusion of this dissertation, comparisons will be drawn between the results found here, and those of others, including ICT/IS and healthcare literature. Some of these literature strands, however, are discussed in order to show why they are *not* helpful in providing a basis for explaining public sector innovation sustainability, even though they may seem appropriate at first.

3.2.1 Innovative programme sustainability

ICT/IS Project Management

Over the past 40 years, the literature on project management success and success factors has grown substantially. This literature seems very useable at first, but less so at a closer look. We shall shortly discuss this field, and zoom in a little closer on a specific sub-section: Information and Communication Technology and Information System (ICT/IS) literature. This last strand of research seems to apply even more to that of public sector innovation, considering its focus on the development and implementation of innovative technologies.

Jugdev and Müller (2005) follow the distinction made by the PMBOK® Guide between project life-cycles and product life-cycles (Project Management Institute, 2004, p. 24). “*Most project life cycles include phases of conceptualization, planning, execution and termination (Pinto & Presscott, 1990). [...] They do not typically address phases beyond termination, such as the product/service use phases.*” (Jugdev & Müller, 2005, p. 21, italics added). When they speak about ‘termination’, however, they mean the termination of the project, after the product has been introduced into the organization or market. The product only starts at that point, yet researchers seem to disregard these from thereon. The research presented in this dissertation is interested in the termination of whichever innovation is being introduced, not in the project leading up to its implementation as is this branch of research’s focus, however interesting this may be.

A related field of research, mentioned by Jugdev and Müller as one of the key sub-disciplines in the project management literature, is that of ICTS/IS literature (see Dwivedi et al. (2014) and Van Caeter (2016) for various examples). Much like the NPD literature, ICT/IS literature has a well-developed tradition of research on success and failure factors. Although most of this research is also focused on the development of innovations leading up to their start, the terms ‘abandonment’ and ‘de-escalation’ seem to consider their development past the initial implementation. However, much like project management literature, ‘abandonment’ and ‘de-escalation’ refer to the development of innovations prior to their implementation (Ewusi-Mensah, 1997; Pan et al., 2004). Abandonment refers to innovations which are either in the design or implementation phase, or afterwards in their further development (see for example Sauer, 1993). Which of these is chosen differs per author. Abandonment is inherently connected to the idea that a project is not meeting the

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goals that were formulated before the innovation had started. Abandoning projects, furthermore, is not always easy, even when they in fact do go awry. This is where the term (de-)escalation comes in. Often people and organizations hold on to projects, programmes and innovations, despite problems and/or disappointing results. In those cases there is the potential of 'escalating projects' (Goldfinch, 2007; Heng et al, 2003). In these cases, innovations can spin out of control. This may lead to surpassed budgets and deadlines. Causes for such escalating projects include groupthink, psychological safety, fear of repercussions, to name just three (Keil & Robey, 2001; Nelson & Ravichandran, 2004). Or, as Drummond calls it: 'persistent irrationality' (1995, p. 266). De-escalation then, is the attempt by managers and organizations to get the innovation back under control after it has escalated (see Pan et al. 2004 for an overview of the literature). Sandeep and Ravishankar (2014) and Andreassen et al. (2015) form two notable exceptions to this. They do, in fact, investigate the life of ICT/IS projects after their initiation, especially their continuation. Andreassen et al. find that a Norwegian ICT/IS innovation in the healthcare sector continues to exist, despite meagre results, because of the managerial function they have. "*Efforts to implement organisational control in the health care sector can partly be delegated to innovation projects.*" (p. 68, italics added) This benefit trumps other potential downsides to the project. Sandeep and Ravishankar (2014) study a public information and communications technology project in India. This project was characterized by a poor performance, caused by the "*employment of bureaucratic posturing – a manifestation of bureaucratic logic – as a tactic by high status groups.*" (p. 700, italics added) Nevertheless, two factors cause the ICT project to continue: policy-level continuity and operation-level continuity. The former embodies the strong support for the project in the institutional environment to continue, despite its poor performance, which to a large degree originated in a power-struggle behind the scenes. The latter describes the support for the project's continuation among the 'lower ranks'. "*They supported the project and facilitated its continuity at the operational level because they believed that the project could eventually lead to an upgrading of their status.*" (p. 708, italics added) This project thus has a lot of commonalities with the escalation-literature.

This research too however, focuses mostly on the innovation *before* it is implemented (despite the two discussed exceptions), and can hence say relatively little of relevance for

this dissertation. A systematic review of the literature on e-health project implementation concluded that the state of the literature was poor when it came down to methodology (Mair et al., 2012). Besides a singular focus on the phases before the implementation of innovations, the term ‘innovation’ is another problematic issue in this strand of the literature. The vast majority of literature treats ‘ICT projects’ almost synonymously with ‘innovation’. This makes it even harder to extrapolate findings, use it as inspiration, or to compare our research results with theirs.

Finally, the ICT/IS literature is less useful than expected because of its focus on catalogues of success-factors based on single case studies, instead of generalizable influential factors. Irving and Hall (2015, italics added) noted: “*it has been common practice to list project success factors*” whilst “*causal interactions between individual/groups of project success factors*” remain unexplored.

Healthcare literature

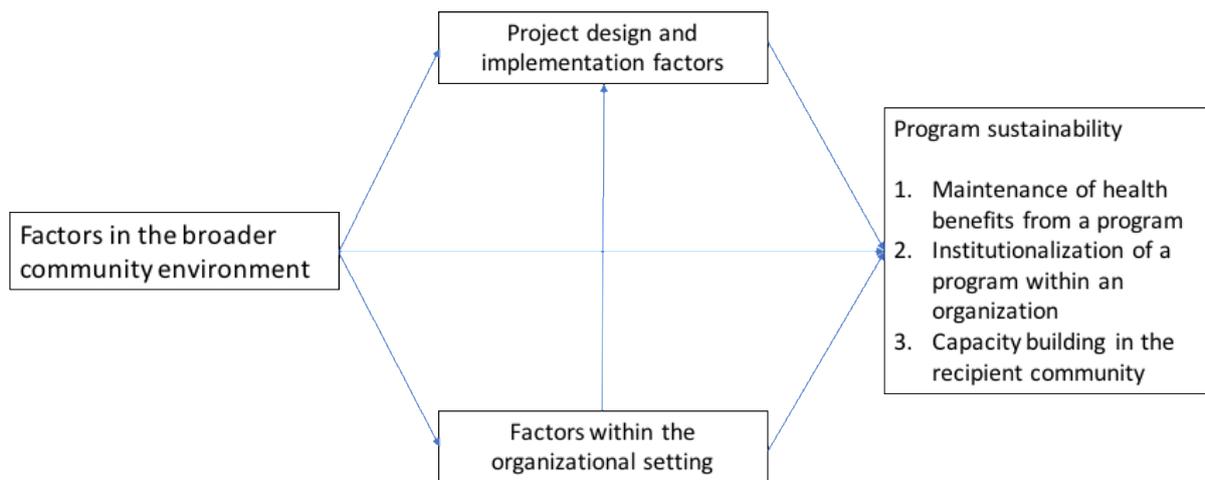
Public servants in healthcare programmes name sustainability as one of their main goals and priorities (Altman et al., 1991). Estimates range from 33% to 70% of innovations as not being sustained (Beer & Nohria, 2000; Daft & Noe, 2000). Not surprisingly the literature on healthcare programme effectiveness and healthcare innovations has over two decades of experience on this topic. Much like the ICT project literature, there have not been many links between this strand of literature and that of public sector innovation at large: a peculiar and problematic observation. Although the healthcare sector has its own idiosyncrasies, it also shares many characteristics with the larger public sector. Comparisons could therefore be highly interesting. Further, again like the ICT/IS literature, the terms, programme, projects and innovation are used interchangeably. For the remainder of this sub-paragraph the word ‘programme’ is used for all three.

The study of sustainability in healthcare programmes, for a large part, refers back to the pioneering work done by Yin in 1979 and 1981. He studied the way in which public sector innovations had become routines, or standard operating procedures. His work will be discussed more elaborately in sub-paragraph 3.4.5. Yin’s findings were the basis for the work of Shediak-Rizkallah and Bone, who in 1998 created a conceptual framework for research into healthcare programme sustainability. A framework that would largely guide the

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following progression of the field in the decades to follow. Shediac-Rizkallah and Bone notice that definitions of sustainability either emphasize the benefits of a particular programme, or focus on the institutionalization of the healthcare programmes (p. 92). Looking back at paragraph 3.1, this overlaps with the second and third type of sustainability that were discussed: the sustainability of effects, and institutionalization/routinization, respectively. Recognizing the importance of these two definitions, they therefore focus on both, and add a third: the building of capacity amongst the recipients. This latter definition overlaps with the second option mentioned in paragraph 3.1: the sustainability of effects, although with a specific focus on the effects it has on community capacity to carry on the work of the programme when funding stops. This brings forth another important aspect of this strand of literature: the focus it puts on the role of (initial) funding and potential de-funding of healthcare programmes, and the effect it has on sustainability (Scheirer & Dearing, 2011). Finally, Shediac-Rizkallah and Bone (1998, p. 98), in completing their framework, mostly look at the design phase of the programmes in determining which factors most influence programme sustainability (project design and implementation factors). These include the project negotiation process, project effectiveness, project duration, project financing, project type, and training. Second to that are factors derived from the organizational setting of the programmes (e.g. institutional strength, integration with existing programmes/services, and programme champion/leadership), and factors derived from the organizational environment (e.g. socioeconomic and political considerations, and community participation.). Shediac-Rizkallah and Bone, lastly, summarize this framework of causal factors, or predictors of sustainability, in the adapted figure 3. This conceptual framework formed the basis of almost two decades of further research.

Figure 3: Shediac-Rizkallah & Bone's conceptual framework



The findings of influential examples of overviews of the literature by Scheirer (2005), Gruen et al. (2008), Wiltsey Stirman et al. (2012), Schell et al. (2013) and Fleischer et al. (2015), greatly indebted to Shediac-Rizkallah and Bone's framework, will be discussed hereunder.

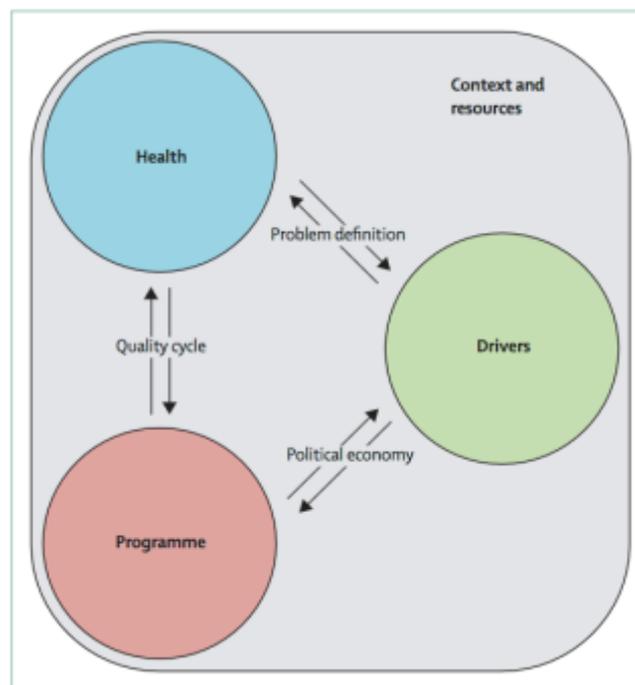
Scheirer's 2005 synthesis of 19 empirical studies, "examines the extent of sustainability achieved and summarizes factors contributing to greater sustainability." (p. 320, italics added) She largely follows the framework set out by Shediac-Rizkallah and Bone, and distinguishes the same three types of influential factors: project design and implementation, organizational setting and the community environment of the programmes. With regards to the project design, the findings indicate that the possibility to adjust programmes on a local level, the use of volunteers, other low cost ways of service delivery, and the use of evaluation data play a significant role in improving the chances of sustainability. These factors imply that the projects need to adapt themselves after their implementation (using evaluation data) to remain sustainable. This is an important deviation from Shediac-Rizkallah and Bone, who don't take adaptations after the programme's implementation into account, besides institutionalization efforts. Later, in 2011, Scheirer and Dearing add that sustainability on the basis of adaptation might only be predictable if they are "characterized by rational (evidence-based) decision-making and [don't] result from a broad range of political and opportunistic factors." (Scheirer & Dearing, 2011, p. 2064, italics added) With regards to the organizational settings, the most influential factors are the existence of a champion or leader, enough organizational capacity, a good fit within the existing organizational standards, and the perception of the programme as beneficial to both the staff and the

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clients. The community environment, finally, includes factors such as the support from other organizations which are active in the community, and whether or not the programme can find funding from other sources. The adoption of funding in this summation is important, as it is a novelty at this point, and remains an important focus of sustainability research up through the present day.

Gruen and colleagues (2008), three years later, present an impressive systematic review of the literature, and include 84 empirical studies, including many from low and middle income countries. They present the influential factors in determining programme sustainability in a different way than the predominant Shediac-Rizkallah and Bone framework. Their main goal is to integrate findings on what sustains the *benefits* of the programmes, with the findings on what sustains the *programmes themselves*. In order to do so, they create a framework of contextual and resource factors which influence sustainability, presented in figure 4.

Figure 4: A system for sustainable health programmes



Within this framework the programme strives for sustainability by balancing the demands from all three parts. In the end, the most influential factors in determining a programme's sustainability are the impact on health concerns, the design of the programme, influential actors (e.g. funders and leaders), the organizational and external context, and finally the

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available resources. These factors, in turn, depend on how well the three components mentioned in the figure above are met: the political economy, the quality cycle, and the problem definition.

Within the definition of the problem the programme is trying to confront, the focus should be on the documentation of the health concern, the recognition of concerns by the funders and drivers of the programme, create a clear perspective of the beneficiaries, and focus on the feedback on the effectiveness of the programme. The quality cycle concerns an evidence-based design, indicators to measure the health concern, effectiveness and experience as drivers of change and adaptation, a process to capture tacit knowledge, and the possibility to adapt the programme while it is operational. Finally, in managing the political economy of the health programme (alignment between programme and funders/drivers), the mapping of stakeholder influence, lobbying stakeholders for a majority to stay in favour of continuation, addressing negative drivers and informing drivers of the programme's effects, all affect the likelihood of continuation. However, it is important to know that balance, according to Gruen et al., is key: focus only on the quality cycle, and the funders get disinterested. Focus too much on the funders, and the effects will deteriorate. Finally, it is noteworthy that this is the first overview of the literature which places an explicit emphasize on the role of evaluation and adaptation during the operationalization of the programme.

The third review of the literature to be discussed here dates back to 2012, by Wiltsey Stirman and colleagues. An overview of their findings is shown in table 3. This outline of research results also differentiates from the Shediac-Rizkallah and Bone framework. The overview shows that many different influential factors exist, and that only a few stick out as more prominent.

Table 3: Summary of findings on predictors of sustainability

Predictors of Sustainability	Quantitative studies N = 30 studies	Qualitative studies N = 36 studies	Medical interventions N = 19	Total number of studies
Innovation characteristics	11	18	7	36
Fit	5	5	2	12
Ability to be modified	4	7	2	13
Effectiveness or benefit	4	5	3	12
Ability to maintain fidelity/integrity	2	0	0	2
Context	14	13	7	34
Climate	0	2	1	3
Culture	2	1	2	5
Leadership	5	12	3	20
Setting characteristics (policies; structure)	11	2	4	17
System/policy change	2	5	3	10
Capacity	15	23	11	49
Champions	5	6	4	15
Funding	5	8	3	16
Workforce	10	12	4	26
Resources	2	7	4	13
Community/stakeholder support/involvement	6	10	5	21
Processes and interactions	8	27	10	45
Engagement	2	7	0	9
Shared decision making	3	2	2	7
Adaptation/alignment	2	5	2	9
Integration of rules/policies	3	10	4	17
Evaluation and feedback	2	6	1	9
Training and education	4	8	3	15
Collaboration/partnership	1	11	3	15
Navigating competing demands	0	4	1	5
Ongoing support	4	11	4	19
Planning	0	1	0	1

The most notable factors are leadership, setting characteristics, workforce capacity, the integration of rules and policies (a.k.a. institutionalization/ routinization), collaboration and partnerships, and ongoing support for the programme. The authors, however, do not

go as far as to rank the factors in order of importance or influence, as it is difficult to compare the findings one on one, and the article misses a meta-analysis approach. They do note, however, that “*training and supervision, audit and feedback, building triggers into the process of care, checklists, or reminders, may be particularly important for the sustainment of interventions.*” (p. 9, italics added) On the other hand, and in contrast to the framework put forth by Gruen et al. (2008), evaluation and other quality-improvement processes were less well represented than the authors initially expected. Only nine studies were found to indicate that the evaluation and feedback on the effects of the innovation were influential in determining its sustainability.

Contrary to Wiltsey Stirman et al., Schell and colleagues (2013) do put evaluation more central in their concept mapping of influential factors. They note, like many others, that “*we have paid much less attention to what happens to programmes once they have been implemented.*” (p. 2, referring to Aarons et al., 2011, italics added). In order to try and help the field forward, they create (yet another) framework for further research, analysing the results and concepts used over the past 20 years in 85 studies (both peer-reviewed and grey literature). They find that the factors which improve the likelihood for creating a sustainable healthcare programme can be divided in nine categories: political support, funding stability, partnerships, organizational capacity, programme evaluation, programme adaptation, communications, public health impacts, and strategic planning. These, in turn, can be divided in two broader categories: internal and external factors.

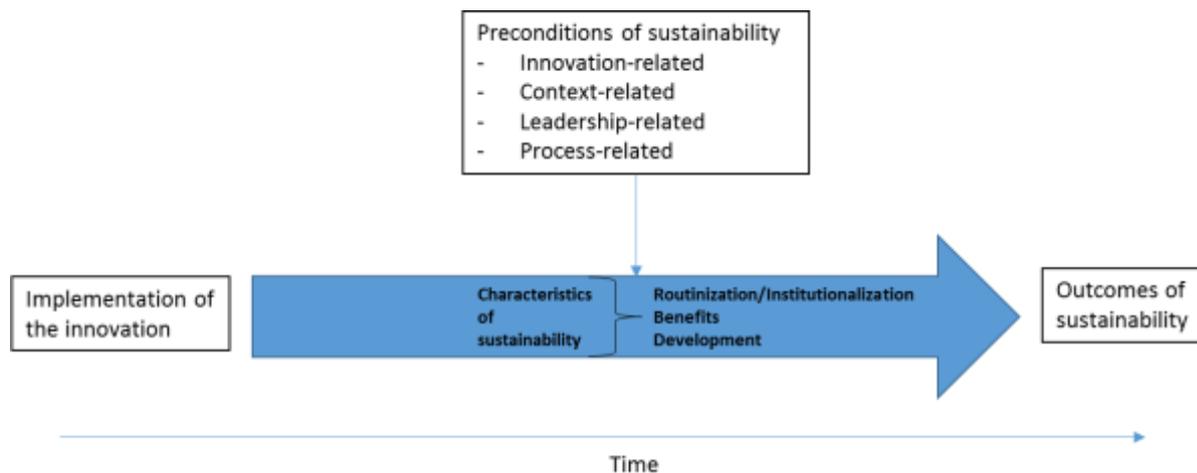
“Organizational capacity, program adaptation, program evaluation, communications, and strategic planning all involve activities that primarily occur or are managed within the program itself. Conversely, Public health impacts, funding stability, political support, and partnerships are influenced by factors external to the program.” (Schell, et al., p.6, italics added)

Finally, Fleiszer et al. (2015) provide the most recent review of the literature, who analyse the concept of sustainability in healthcare programme literature. They determine that the literature shows three types of sustainability characteristics (routinization, benefits, development), preconditioned by five factors (implementation-, innovation-, context-, leadership-, and process-related factors). This is summarized in figure 5, adapted from

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their paper. It is interesting to note that they put much more emphasize on the development and evolution of innovations after their implementation (seen as the category 'development' as a characteristic of sustainability). This concept focuses on sustainability as the evolution of a programme after its initiation, and after the implementation phase is over, defined as "*evolution of the innovation over time and/or adaptation of the context in which the innovation is embedded.*" (Greenhalgh et al. (2004); Damschroder et al. (2009), quoted on p. 1495, italics added)

Figure 5: Simplified graphical representation of concept analysis



The adaptation of the initially implemented innovation can be seen as innovation-related performance improvements (Buchanan et al., 2005), trying to adapt the initial innovation to evolving circumstances (Fixsen et al. 2005; Davies & Edwards, 2013). This process of continuous change is linked to both the performance of the innovation, and the fit of the innovation with its environment (within the organization and beyond). Many studies see a direct link between the ability of an innovation to adapt to the surroundings on the basis of evaluations on the one side, and the sustainability of the innovation on the other side (Chambers, et al., 2013; Sibthorpe et al., 2005; Trottier et al. 2007; Sarriot et al. 2004; Bowman et al. 2008).

However promising this field of research might seem for the topic of this dissertation, some critical observations need to be made as well. Shediak-Rizkallah and Bone's main goal was to create a clear conceptual framework, which would henceforth be used for all research endeavours, creating a more unified field in terms of definitions and focus. Wiltsey Stirman

et al. (2012) find in their review that, although Shediak-Rizkallah and Bone is the most referenced framework, far from all studies in fact, presented definitions of the term sustainability. An observation previously mentioned by Scheirer (2005). Much like the ICT/IS literature, words like 'projects', 'programmes' and 'innovations' are used interchangeably, which is a significant inaccuracy in the methodological tradition of this research field. Besides that, half of the studies investigated by Wiltsey Stirman and colleagues (2012) relied on self-reports instead of clear evaluation criteria, and "*very little research has examined the extent, nature, or impact of adaptations to the interventions or programs once implemented.*" (p. 1, italics added) So, they only regard the first and last moment of the programmes life, instead of recording its entire journey. In conclusion this means that a large amount of the sustainability related research is less relevant for the purpose of this research, but it is still possible to draw inspiration from the studies that do clearly define sustainability, especially the reviews of the literature.

Social programmes literature

The sustainability of social programmes and policies, furthermore, has been studied by a sizeable group of scholars (see Savaya, et al. (2008) and Savaya & Spiro (2012) for overviews). Social programmes include issues such as juvenile criminality, homelessness, child welfare and domestic violence. Although there is surely some overlap between social programmes and healthcare programmes, and there is quite some cross-referencing between both groups, they are presented here as separate streams of literature for heuristic purposes.

Savaya et al. (2008) provide a good overview of the influential variables in predicting programme sustainability. They base the subdivision of these variables on Shediak-Rizkallah & Bone (1998) and Patrizi et al. (2006). This gives four factors in total, encompassing many sub-factors within each one of them:

- Factors within the project design and implementation
- Factors within the organizational setting
- Factors in the broader community
- Factors with regards to the funding body

Mancini and Marek (2004) present their own seven factors, based on a survey amongst 243 human development and family life professionals:

- Leadership competence
- Effective collaboration
- Understanding the community
- Demonstrating programme results
- Strategic funding
- Staff involvement and integration
- Programme responsiveness

Gimmon & Spiro (2013) present interesting findings on their investigation into differences between social and private innovative initiatives. Such 'social ventures' are defined as *"disciplined, innovative, risk-tolerant entrepreneurial process[es] of opportunity recognition and resource assembly directed toward creating social value by changing underlying social and economic structures."* (Hill et al., 2010, p. 21, italics added) Their findings indicate that social venture sustainability is influenced by the survival expectation as predicted by the founder, and the number of external organizations (municipalities, government ministries, foundations, organizations, communities and others) that support and champion the programme. This means that gaining legitimacy and embeddedness in the context of the innovation is important (Delmar & Shane, 2004; Jack & Anderson, 2002). The diversity of funders is, surprisingly, not found to have a significant effect on the sustainability of social ventures.

Rather different variables were found as contributing to the establishment and continuity of social ventures by Sharir and Lerner (2006). They investigate 33 cases through surveys and interviews, and list the following eight factors as influential:

- Social network
- Dedication to success
- Capital base at the start of the venture
- Legitimacy of the idea behind the venture in public discourse
- Composition of the venturing team
- Long-term cooperation with public and non-profit organisations

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- Aligning service provision with clients' needs
- Previous managerial experience of the entrepreneur(s)

Furthermore, Mancini et al. (2009) find that the continuity of US 'Youth At Risk' programmes were largely dependent on community support, sufficient funding, and support from the mother organization in order to reach sustainability.

Finally, Savaya and Spiro's 2013 study constitutes a highly relevant example for the research which will be conducted in this dissertation. This investigation is probably the closest in design and purpose to the research presented here, and investigates the sustainability of 197 Israeli innovative service delivery programmes in the last 30 years. Savaya and Spiro find that 73.1% of the programmes were still continuing, whilst the other 26.9% had ceased to exist. The predictors of sustainability are grouped in five categories: Resources and fund raising strategies, project variables, auspice organization variables, community variables, and main initial funder variables. Their findings indicate that practically every variable they included in their survey was found to be positively linked to the continuation of the innovation. In terms of the magnitude of the effect of the separate variables on continuation of the programmes, they find that

“three variables stand out: diversity of funding sources, the commitment and support of the auspice organization management, and the involvement of the initial funder. These variables strongly predicted project continuation, institutionalization, and duration, and distinguished between projects that were continued and/or institutionalized and those that were not.” (p. 37, italics added)

Although they skip the evolution and development of the programmes, their findings on sustainability are especially relevant for the results presented later on in this dissertation. It is noteworthy, concluding, that they report the initial funding to be of no significant relevance for the continuation of the innovations, whereas the healthcare literature keeps finding that this is in fact an important influence.

Education

Finally, the topic of innovation sustainability has found its way into educational curriculum literature (Marsh, 2009; Giles & Hargreaves, 2006; Fullan, 2007; Boyd, 2012). Education is a

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specific public sub-sector with a large amount of new and innovative policies and programmes being implemented and abandoned constantly. Although there is a sense of what a 'real school', a 'real classroom' and a 'real lesson' looks like (often embedded in specific national and/or religious contexts and histories), there are a lot of innovations which make their way into schools, classrooms and curricula (Tyack & Cuban, 1995). At the same time, many of these innovations don't stand the test of time, and hardly ever become permanent fixtures (Cuban, 1988). The ones that do stick are the ones which appear to have a relative advantage over the past way of doing things, instead of just being fashionable (Vanterpool, 1990). This implies that evaluation of performance, efficiency and effectiveness plays an important role in the sustainability of these innovations. Yu et al. (2012) found that both characteristics of the innovation, as well as the characteristics of the environment played a role. On the side of the innovation, the proven advantage that the innovation brought forward, and the complexity of the innovation were important factors for sustainability. On the side of the environment, it was compatibility with the broader school and district priorities, as well as the support for the innovation amongst district leaders. Finally, organizational strength, strong leadership, programme championship and both the effectiveness of the innovation and possibility to modify the innovation were found to influence sustainability by Dijkman et al. (2015) in the implementation of a novel educational programme in Dutch primary schools. In the reasons for sustainability for innovations and programmes in the educational sector, we see some clear overlap to the reasons mentioned in healthcare and social work literature.

3.2.2 Path dependency

Besides the healthcare sector, the research focus of the past decades in public management and public administration research has been changing, even though many public sector organizations and policies are characterized by great sustainability (Pollitt, 2008). The most important and significant theoretical concept which has been presented in order to explain sustainability in organizational theory is that of path dependency. It makes sense to look at this concept, since explaining (un)sustainability is the key goal of this dissertation. Could path dependency explain the sustainability of public sector innovations? The most important factor in explaining path dependency is that of scale. Sunk costs is one of the most often named factors which determine if a path can be deviated from or not.

Infrastructure and IS/ICT system projects are good examples of this. The earlier mentioned escalation-literature relies heavily on the notion that it becomes too expensive to stop, even though the innovation might be dysfunctional. Related is the idea of the enormity of the consequences of change. These can be, but do not necessarily have to be monetary consequences. The NATO invasion of Afghanistan or the introduction of particular inter-generational pension systems come to mind. Radical stops to these can and will have immense consequences for current and future generations, which tie policy makers' and politicians' hands. Thirdly, socialization and cultural factors can play a role (Kay, 2005; Thelen, 2003). Identities of policy makers and/or politicians may be formed around certain policies or projects. The policies or project get a meaning beyond their net effect. These 'meanings' makes them stable, and hence path dependent. Changes thus become incredibly hard to establish.

The innovations looked at in this dissertation are, however, relatively small projects and programmes, due to the particular methodology which will be applied in this dissertation: that of innovation award programmes. Changing or terminating such smaller innovations will not have the same magnitude or consequences as, say, terminating a pension scheme. The sunk costs are not comparable with that of large-scale ICT- or infrastructure projects either. Identities will also be less strong, and on a much smaller scale. Hence it is not expected that path dependency will be able to significantly explain the sustainability of these particular innovations.

3.2.3 Policy termination

Where the sustainability of innovations have been a gap in the literature, the literature surrounding the sustainability of policies ('policy termination') in general dates back to the 1970s. A research field which had two heights of publications, in the 1970 and then again in the 1980s, but has never been able to mature into a fully-fledged research field. Research on this topic thus remains sporadic, but constant, from the 1980s until the present (Turnhout, 2009; deLeon, 2002). The most notable founding scholars of this stream of literatures are Bardach (1976), Behn (1976; 1977; 1978) and DeLeon (1978a; 1978b). The latter of which provided the most commonly used definition of policy termination: "*the deliberate conclusion or cessation of specific government functions, programs, policies or*

organizations.” (deLeon, 1978a, 280, italics added) He also introduced the typology of objects which could be terminated under this definition:

- Government functions: Services, identified as public goods, provided by the government to its citizens. It transcends organizations and policies. These are seen as core activities of the government, and are as such hardest to terminate.
- Government organizations: Groups of individuals that constitute what we call institutions, created to respond to specific needs.
- Government policies: Organizations select and implement policies that are general approaches or strategies directed toward solving particular problem.
- Government programmes: Programmes have the fewest political resources for protection and represent the smallest investment on the part of the organization. They are closest to the problem; therefore their impacts can be most directly observed, measured, and, if found lacking, criticized.

(Quoted and adapted from deLeon, 1978b, pp. 375-377)

As the typology by deLeon (1978b) above shows, sunk costs is a closely related topic to the issue of policy termination, and the question which has boggled the field from its inception: why is it so rare? The discussion on path dependency in sub-paragraph 3.2.3 already mentioned that this dissertation is mostly concerned with smaller internal and external government policies and programmes. This follows from the nature of the methodology chosen here to select innovation cases: the award programme methodology. The consequence of this is that, for the purpose of this dissertation, the findings and theories on the termination of government policies and programmes are most relevant.

Bardach, Behn and deLeon all focus on figuring out how it is possible that the termination of public policies is such a rare phenomenon. Bardach (1976) sees sunk costs, conflict avoidance, the disassociation of politicians from terminations and the appeasement of involved personnel as the main reasons for the unsuccessfulness of policy termination initiatives. Encouraging factors, on the other hand, include changes in government, changes in the ideological context, a period of ‘turbulence’ where society demands radical changes in government, softening the blow for affected personnel and sunset regulation (built-in end dates which pre-determine the end of policies when they are initiated). Behn (1978) adds evaluations, media attention to failures and the number of obstacles opposition groups

can create during the termination process to the list of influential variables for policy termination to occur. deLeon (1978a), to end the list of founding academics' first findings, sums up six influential factors: cognitive aversion, institutional longevity, dynamic conservatism, anti-termination coalitions, legal obstacles and high initiation costs. Some of these overlap with the earlier findings by Bardach and Behn. Bauer describes the remaining variables as follows:

“[C]ognitive aversion” refers to a supposed human resistance to tackle issues of “end” and “death” [...]. “Institutional longevity” points to the fact that most organisations and policies are actually created to last – and they are thus naturally difficult to dismantle [...]. “Dynamic conservatism” refers to a phenomenon studied in public administration and organisational sociology. Organisations usually attempt to acquire new jobs when demand for their traditional tasks declines.”
(2009, pp. 6-7, italics added)

A key publication from the second wave of policy termination literature is a paper by Hodgwood and Peters (1982). As Brewer already noted in 1978, *“termination is frequently only the replacement of one set of expectations, rules and practices with another.”* (p. 339, italics added) Termination is oftentimes just as much a new beginning as it is an end. Hodgwood and Peters reiterated this point, since, according to them at least, the termination literature treated termination too much as an isolated phenomenon, and did not consider what happened afterwards. The mid '80s also saw the publication of another seminal work, written by Kaufman (1985). In his *Time, Chance and Organizations*, Kaufman put the termination of organization in the life cycle of organizations: youthful vigour, maturity, old age, and death. Those organizations which die do so because they failed to adapt to new surroundings and changing demands stemming from their environment. He thus added a strong link with cybernetic theory, which will be further elaborated upon in chapter 4. The observant reader has noted that the above mentioned factors determining policy termination have a lot to do with rational actor behaviour, but little, or only indirectly, with rational policy-making. The use of evaluation plays a relatively small role in the research of policy termination scholars, especially in that of the founders. Kaufman's use of cybernetic theory in order to explain termination and survival draws the

most prominent link to measurement, evaluation and adaptation, although aimed at organization, instead of at the policy or programme level. deLeon (1978b), however, already noted that these latter two types of terminations might be most susceptible for the influence of evaluations, since these have the least sunk costs, the lowest number of people involved, and often (although not always) operate out of the limelight. It was not until the 1980s and onward that scholars started to investigate the role of evaluation in the termination of policies and programmes. The results on the impact of evaluations have varied. Some concluded that politics trumped evaluations (both in decisions about survival and termination), making it hard for evaluations to weigh on policy-making decisions (Dery, 1984; Ferry & Bachler, 2013; Krause, et al., 2016; deLeon & Hernández-Quezada, 2001). Others see a role for evaluation, but admit that issues such as politics play an important role as well (Behn, 1978; Gevay-May, 2004; Volden, 2016; Turnhout, 2009).

In conclusion: the literature on policy termination has a lot to offer for the purpose of this dissertation. Especially the causes of termination (or the obstacle to succeed in termination efforts) for policies and programmes are of interest, since they are most likely to align with the scale of the innovations identified through the award programme method used in this research. It should not be forgotten, however, that innovations differ in several important ways from regular policies and programmes, as presented in policy termination studies. It is therefore useful to scout out the research which has so far been conducted on the termination and sustainability of public sector innovations in particular. Sub-paragraph 3.2.4 turns to this issue next.

3.2.4 Public sector innovation literature

Although hardly any research is available which focuses on the evolution and development of public sector innovations after their implementation, there is some literature which focuses on neighbouring issues, or touch upon the issue. The research findings focusing on the sustainability and development of public sector innovations are discussed below. Peculiarly, the link between public sector innovation sustainability and the tradition of policy termination research, ICT/IS or healthcare programme sustainability has never been established. Finally, it is important to know that only one of the studies discussed below investigates the causal factors for the (un)sustainability of their respective population of innovations.

One of the most similar pieces of literature to this dissertation is that of Olivia Golden, dating back to 1990, later republished in 1997. She bases her notion of ‘groping along’ on work by Behn (1988). This notion suggests that projects and innovations are not implemented and managed by perfect, rational designs and preparation. Rather, they are swiftly introduced and implemented, after which they are fine-tuned whilst they are operational. This focus is clearly relevant for the research presented here, as it means that innovations do in fact change after their initiation. Both Behn and Golden, however, do not look at the termination of the innovations, as they do not follow the innovations through their entire life span.

Borins (1998) does look at the entire lifespan of innovations through a survey of Ford Foundation Kennedy School of Government Innovation in Government Award applicants. He asked respondents whether or not the then submitted innovation was still operative. About 10% of the innovations turned out to be terminated. This shows us that termination is in fact an occurring phenomenon, even under awarded innovations. Unfortunately there is no further information available from that particular survey on how these innovations developed, or why they were terminated. Farah & Spink (2008) find comparable results in their similar research on Brazilian innovations. Much like Borins’ work, however, their work on sustainability remains descriptive.

Besides work on the Ford Foundation Kennedy School of Government Innovation in Government Award, several others have researched the sustainability of innovations as well. Glor (2015) finds that 22% of innovations studies are terminated. Pollitt, Bouckaert and Löffler (2007) were unable to contact anyone from 68% of awarded public sector innovations after only 2 years of the reception of the award.

Another relevant example of research into what happens after the introduction of an innovation is the work done by Yin (1979, 1981), mentioned earlier as a building block for the healthcare programme sustainability literature. “[M]ost previous research has focused on earlier steps in the innovation process, such as adoption or implementation. Yet to develop a full theory of organizational innovation requires an understanding of the routinization process.” (1981, p. 21, italics added) He therefore investigated how six innovations were routinized and embedded within their organizations. He studied the life stories of these innovations, and found that several passages and cycles had to be gone through for an

innovation to be effectively routinized. Although this research might seem rather similar to that presented in this dissertation, Yin looked at how the organization adjusts itself to the innovation, instead of focusing on the changes that happen to the innovation itself. What causes the innovations to change, remains unknown.

On a slightly different note, the sustainability of public sector reforms have also been researched. At first sight it seems reasonable to see public sector reforms as innovations. Reforms are often ground breaking, and theorist arguing that true innovations needs to be radical and disruptive will certainly be satisfied. Reforms can be, furthermore, perfect examples of organizational (flattening organizations and flexible leadership), business model (NPM and NPG) and governance (semi-privatization and automatization) innovations.

Pollitt and Bouckaert (2011, p. 8) define public management reform as ‘deliberate changes to the structures and processes of public sector organizations with the objective of getting them (in some sense) to run better.’ These changes can be seen as radical, disruptive, and thus innovative. Research has shown that reforms can be (partly) undone, after their implementation (Bouckaert et al., 2010). Reform, however, is seen as a specific subset of innovation; one of the most large-scale and disruptive kinds. Therefore, the arguments made in the path dependency section come to the fore again: it is a matter of scale. Because of this difference, the factors and forces which underpin reform instigation and development can be assumed to differ starkly from the ones in this research. As was mentioned before, due to the particular method used to identify cases for this dissertation, the innovations investigated here will not be able to qualify as public organizational reforms. They are usually of a much smaller scale, and rarely involve true organizational reform.

3.3 Conclusion

Many different strands of literature have something to say about the sustainability of projects, programmes and/or innovations. The examples of public sector literature that take the sustainability of public sector innovations into account, for one, remains relatively descriptive. At the same time, ICTS/IS focuses on project management, much like health care, social work and education literature does, and a coherent framework is not suggested

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or provided, even with rather longstanding histories of research and strong traditions of literature reviews. Of the policy termination literature, finally, only a part (programme and policy termination) is relevant, and here too a common agreed upon basis of causal factors is lacking.

As mentioned before, this dissertation will look at smaller projects, programmes and policies, following the innovation award method which is applied here as a case selection method. This, first of all, has meant that path dependency and public sector reform literature is, to a large extent, not applicable to this research, as these deal with issues of a larger magnitude. On the other hand, only half (following the typology mentioned in subparagraph 3.2.4) of the policy termination literature is applicable. The literature on policy and programme termination does align with most of the ICT/IS, healthcare programmes, social programmes, educational programmes, and public sector innovation sustainability research, which has been discussed, at least in terms of scale. A common thread through all these branches of literature, highlighted throughout this chapter, is the role of evaluation and adaptation during an innovation or programme's lifetime. This dissertation will built on those findings in trying to explain the (un-)sustainability of public sector innovations. In order to do so, a new causal framework is introduced in chapter 4, based on a thorough literature review. Next, this review of the literature brings three factors to the fore, believed to be suited in explaining innovation sustainability, with connections to the literature exposited above: Feedback, Accountability and Learning. These will be further explained, including their long-standing research traditions, in the next chapter.

Chapter 4 – FAL

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“People always think more about how new ground can be broken, than they think about how existing institutions can be sustained, or how existing facilities can be maintained. It leads to a constant trap were we underinvest in old things, then old things disappoint us, than we feel the need for new things, then to satisfy that need we invest more in new thing and less in old things, and the cycle continues.”

- Larry Summers

Based on the literature discussed in chapter 3, it is assumed that there are three shared concepts that could influence the sustainability of public sector innovations: feedback, accountability and learning (FAL). The literature from different research disciplines and across policy areas, discussed in chapter 3, found that adaptation, accountability and evaluation can increase the sustainability of innovations and programmes. Feedback, accountability and learning (FAL) are seen as an integrated model in which these factors come together, and potentially play a role in providing opportunities for fine-tuning and improvement, hence increasing the sustainability of innovations. This chapter will discuss these three concepts in depth. At the end of each paragraph a link is drawn between the respective concept and sustainable innovations. The interfaces between feedback, accountability and learning will be discussed in paragraph 4.4, and the mechanism of the FAL-model will be presented and discussed in 4.5.

4.1 Feedback²

The discussion here focusses on four central concepts in the study of change and feedback mechanisms: open versus closed systems, cybernetics, contingency theory and autopoiesis. This paragraph will shortly discuss the foundations and central argument of these concepts. Afterwards the focus will shift to how feedback mechanisms might function in a more practical sense, and discuss types of feedback sources.

Feedback mechanisms, in this dissertation, are described as the instruments through

² Parts of this chapter are adapted from Frees, W., Van Acker, W. & Bouckaert, G. (2015). *The role of Feedback, Accountability and Learning in Organizational Change and Innovation: A theoretical framework*. LIPSE Working Paper no. 5. Available at: <http://www.lipse.org/upload/publications/LIPSE%20Working%20opapaer%205%20Frees%20et%20al..pdf> (22/04/2016).

which information on the functioning and fit of the innovation is gathered vis-à-vis the organization, target audience and wider environment, as well as the fora in which the information is discussed.

4.1.1 Open vs. closed systems

The improvement and sustainability of products, programmes, innovations, etcetera, is dependent on interaction with the environment, and dependent on letting information from the environment enter the organization. This requires a so-called 'open system'. The idea of open and closed systems was mentioned by Ludwig Von Bertalanffy as early as 1950. He first described these two systems and their relationship with external information in "An outline of general system theory".

"We call a system closed when no materials enter or leave it. It is open if there is inflow and outflow, and therefore change of the component materials." (von Bertalanffy, 1950, p. 155, italics added)

Closed systems (organizations, groups, cells, etc.) are fixed. They are in a state of stability, meaning that the way they are set up, and the components which constitute them, do not change over time. Quite to the contrary, an open system can attain a stable state (or equilibrium), but only if certain conditions are met. The system appears to be constant, but this state is maintained by a continuous exchange of materials with the environment (von Bertalanffy, 1950). In more traditional management and organizational theories, relatively little attention was given to the environment. Organizations were predominantly viewed and treated as closed mechanical systems. The environment was assumed to be stable and predictable and not to interfere with the functioning of the system. Attention was focused on principles of internal design with a focus on effectiveness and efficiency (Katz & Kahn, 1978; Daft, 1995; Morgan, 2006a). In this dissertation it is assumed that public sector organizations are examples of open systems.

In the open systems approach much attention is devoted to the relationship between the organization and its environment. A dominant principle is that organizations have to adapt themselves to their environments if they are to survive. Organizations have to align with their environments to remain competitive and innovative. It can be argued that

organizational adaptation is the essence of strategic management. When it comes to dealing with changes occurring in the environment, Fiol & Lyles (1985) stress that this should be the key focus, and that it involves the continuous process of making strategic choices.

Open systems share a number of characteristics: negative entropy, feedback, homeostasis, requisite variety and equifinality. (1) Closed systems are entropic. This means that they have an irreversible tendency to degenerate and decay. Open systems, on the other hand, try to counter these entropic tendencies by importing energy from their environments. The law of negative entropy posits that systems survive and maintain their steady states as long as they import more energy from the environment than they consume (Katz & Kahn, 1978; Morgan, 2006a). (2) The feedback principle has to do with information input, which consists of a signal to the system about environmental conditions and about the functioning of the system in relation to its environment. Such feedback information enables the system to correct for its own errors or observe changes in the environment, in order to maintain a steady state or homeostasis. (3) The concept of homeostasis refers to the self-regulating processes through which the inflow and outflow of materials and energy in organic systems is kept in balance. In other words, it refers to the ability to maintain a steady state (the ability to maintain life and form). These processes operate on the basis of negative feedback, implying that deviations from a certain standard initiate corrective actions aimed at reducing the deviation (Morgan, 2006a; von Bertalanffy, 1950; Katz & Kahn, 1978). (4) The principle of requisite variety asserts that – in order to be adequate and appropriate – the internal regulatory mechanisms of a system must be as complex and diverse as the environment with which it has to deal (Morgan, 2006a, 2006b). (5) The principle of equifinality builds on the idea that an open system can arrive at the same end state from different initial conditions, with different resources, and by different paths of development (Morgan, 2006a; Katz & Kahn, 1978). In other words: there is no one universally applicable way in which feedback can lead to stability.

In conclusion: negative entropy, feedback, homeostasis, requisite variety and equifinality all put a organization in a position where it can sensibly adapt to changing circumstances and/or (self-inflicted) errors. In other words: they create the possibility for organizations to improve their innovations and thus increase their sustainability.

4.1.2 Cybernetics

Given a certain degree of openness of the system, making it possible for information from the outside of the organization to flow in, the question remains how the received information is eventually used by the respective organizations. The term 'cybernetics' is used to refer to a processes of information exchange in this respect.

"The basic concept behind cybernetics is self-regulation – biological, social, or technological systems that can identify problems, do something about them, and then receive feedback to adjust themselves automatically." (Shafritz, et al., 2011, p. 242, italics added)

According to this process, it is the feedback information that enables systems (such as machines, organizations and organisms) to regulate/control their behaviour (Wiener, 1948; Ahsby, 1956; Kickert, 1993). The concept of feedback is closely related to the detection and correction of errors: when a system measures certain mistakes, faults or inefficiencies through the negative feedback information it receives, it will initiate counteractive action to steer the specific machine, organization or organism to a desired outcome (Morgan, 2006b). This is why 'cybernetic systems' are often also called 'self-regulated systems'.

Most cybernetic models of self-regulation are driven by a dual process system which involves a mechanism that monitors and controls the lower order mechanisms. We can illustrate this by referring to the functioning of a thermostat. The thermostat monitors the temperature in a room and is programmed to initiate a heating mechanism (the lower order mechanism) if and when the temperature drops below a set lower limit, and to stop the heating mechanism if and when the temperature rises above a set upper limit (Wang & Mukhopadhyay, 2012). According to Morgan (2006b), any cybernetic system is based on four key principles:

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1. The capacity to monitor significant aspects of the environment
2. The ability to relate this information to the operating norms/standards/reference values
3. The ability to detect significant discrepancies between the current state and the norm
4. The ability to initiate corrective action in order to reduce the discrepancies

Similarly, Porter, et al. (1975) (in Katz & Kahn, 1978) specify four basic elements as critical:

1. Standards or specified objectives
2. Monitoring devices to measure current performance
3. Comparing devices to compare actual performance with stated objectives
4. Action devices to reduce possible discrepancies between objectives and actual performance

The most simple cybernetic systems, such as house thermostats, can only correct deviations from the operating norms. They are unable to question the appropriateness of the operating norms themselves. More complex cybernetic systems are able to detect and correct errors in the operating norms (Is it necessary to heat a living room to 20 °C when everyone is at work?). In other words, they are able to influence the standards that guide their behaviour (Morgan, 2006b). It is this kind of self-questioning ability that constitutes the fundamental distinction between single-loop and double-loop learning:

- Single-loop learning: the ability to detect and correct error in relation to a given set of operating norms (such as the thermostat)
- Double-loop learning: the ability to question the relevance and appropriateness of the operating norms

Both are necessary for the sustainability of organizations and individual innovations. In language the readers will know from policy evaluation literature: single loop learning asks whether an organization or innovation is doing things right. Double loop learning asks whether the organization or innovation is doing the right things. These functions are necessary, it can be hypothesized, for an innovation to adapt when it's not functioning up to standards, or when the innovation is providing something which is not necessary or

relevant. In order to remain sustainable, measuring through cybernetic feedback mechanisms can certainly help in this regard. Paragraph 4.3 will go deeper into the topics of single and double loop learning, as it discusses how *exactly* this information is used by the system receiving it.

4.1.3 Contingency theory

Based on the ideas originating from cybernetics and open systems – the notion that the environment influences organizations, and the possibility to measure the way in which the environment forces the organization to change – contingency theory states that there is, consequently no one single way in which organizations should be organized. This idea of equifinality was introduced before in sub-paragraph 3.1.1., when it was stated that there was no one universally applicable way in which feedback can lead to stability.

Contingency theory argues that the most suitable structure for an organization is the one that best fits the relevant contingencies, such as the nature of the task or the direct organizational environment. Consequently, contingency theory is preoccupied with investigating the links between the nature of the task, the environment, structures and organizational performance (Lam, 2006; Morgan, 2006a.).

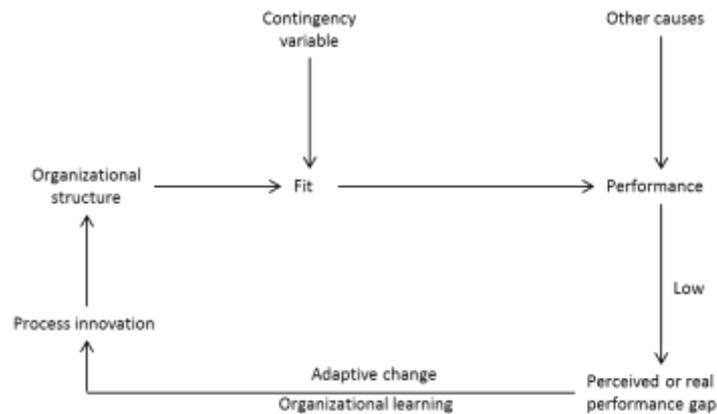
A seminal study in the field of contingency theory by Burns and Stalker (1961) found that firms could be categorized in two main types: ‘mechanistic’ and ‘organic’ organizations. Mechanistic organizations are typically rigid and hierarchical. They are characterized by task specialization, functionally differentiated duties, precise definition of rights and obligations, a hierarchical structure of control, authority and communication, concentration of knowledge at the top of the organization. Burns and Stalker found that this type of organization is well suited to stable and predictable conditions. Organic organizations, on the other hand, are typically more fluid in their structures and procedures. They are characterized by continual adjustment and redefinition of individual tasks and duties, a network structure of control, authority and communication, and knowledge may be located anywhere in the network. This type of organization is said to be better suited for environments characterized by rapid change and high complexity (Burns & Stalker, 1961; Lam, 2006).

At the centre of contingency theory lies the notion of ‘fit’. The theory asserts that an

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appropriate fit between organizational structure and key contingencies will lead to higher performance. Innovation may assist at achieving this fit by adapting structures to new circumstances. Figure 6 shows Donaldson's (2001) 'structural adaptation to regain fit' model, edited by Walker (2013) to include innovation.

Figure 6: 'Structural adaptation to regain fit'-model



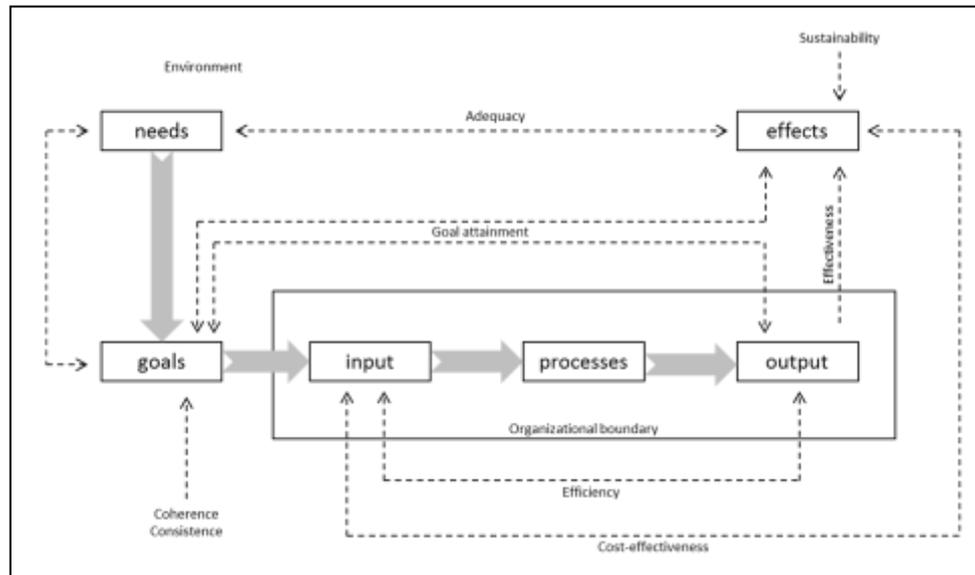
In accordance with structural contingency theory, the figure suggests that the fit or misfit between organizational structure and contingency influences the level of performance. When key contingencies change while the organizational structure remains unchanged, this will result in misfit, which may lead to reduced levels of performance. In order to restore performance back to acceptable levels, the organization has to adapt: it has to change its structure in order to accommodate the changed contingencies and to bring the organization back into fit (Walker, 2013). Just as an innovation can help an organization to regain its fit, so does an innovation have to fit its organization on the one side, and its outer environment on the other side. Organizational fit, or internal fit, is linked to the efficiency of the innovation. Environmental fit, or external fit, is linked to its effectiveness. For an innovation to be sustainable, a fit between the innovation and both its environment and its organization is necessary. The better the fit, the better its survival chances and sustainability.

Feedback about the internal design of the organization is preoccupied with techniques and making techniques more efficient. Relevant questions are: Could we do what we are currently doing in more productive ways, do it cheaper, use alternative methods or approaches for the same objectives? External feedback is more concerned with the functioning of the system in relation to its (changing) environment. Attention will be

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focused on the societal needs and the societal effects of policies (Katz & Kahn, 1978; De Peuter, 2011). Figure 7 shows these different streams of feedback information and their relationship towards the organization in questions.

Figure 7: Management and policy cycle as an open system model



4.1.4 Autopoiesis

The idea of an organization as either a closed or an open system was challenged by the theory of autopoiesis, which basically flipped the idea of cybernetics up-side-down. “An ‘autopoietic’ organization [...] is self-referentially closed. [...] The usual relationship between organization and environment apparently is radically reversed in the autopoietic perspective.” (Kickert, 1993, p. 262, italics added) The term ‘autopoiesis’ was introduced by two biologists, Humberto Maturana and Francisco Varela (Arnoldi, 2006). Their definition of autopoietic systems reads:

“A network of productions of components which (i) participate recursively in the same network which produced them and (ii) realize the network of productions as a unity” (Varela et al. 1974, pp. 188, italics added)

After the German sociologist Luhman (1986) brought the idea into the realm of the social sciences, Morgan (1986) brought it even closer to the topic of this dissertation: in the realm of organization sciences. Autopoiesis claims that all living systems are, at their cored, closed, and make reference only to themselves (Morgan, 2006c). More specifically, their

default position is to be closed off. They disregard the environment, and insulate themselves from external signals. Although the introducing scholars doubt whether their theory can be applied to the social world (Varela, 1981), their work has had a remarkable influence on social and organizational studies (Kickert, 1993).

Key in a large portion of the literature about organizations, especially surrounding autopoiesis, is the idea of organizational boundaries. These boundaries can be either easily or less easily penetrable. The more easily they are penetrable, the more receptive and open and organization is towards signals from the environment. Vice versa for less easily penetrable boundaries (De Bruijn & Ten Heuvelhof, 1991). The boundaries of organizations can function as filters, and each organization has a management or perception filter that receives and filters signals from the environment. Open systems have a rather thin filter, allowing many external signals to enter the organization, while closed or autopoietic systems have a very thick filter, allowing only a limited amount of external signals to penetrate into the organization. Autopoietic systems (closed) are not oriented towards their environments, they are oriented inwards. They respond only to impulses which are consistent with their own frames of reference (de Bruijn & ten Heuvelhof, 1991; Kickert, 1993). One could label this as 'organizational cognitive dissonance'. Autopoiesis, however, is not a dichotomy (Varela, 1981; Jantsch, 1981). An organization can be at least somewhat autopoietic, and filter the external information accordingly. Thus, organizations have their own filters and coding systems that determine the amount and types of information they receive from their environment, and the way the information will be perceived. The stronger the filter, the more the information perception will differ from reality, and the more inaccurate the information gets. One can assume that inaccurate information will lead to worse decisions, or to no decisions at all where they are in fact required, with negative consequences for an organization's performance and survival chances. The same goes for innovations. If only the feedback information is used that reinforces the current state of the innovation's affairs, important chances for change and improvement might be missed.

However, as de Bruijn & ten Heuvelhof (1991) indicate, relative closedness can have advantages as well. Being in a state of relative closedness allows an organization to shield itself from excessive turbulence and complexity from its environment, and to reduce the insecurity associated with it. Without this kind of shielding, the organization would react

to every single impulse. The resulting overload could cause the organization to drift or even to disintegrate (de Bruijn & ten Heuvelhof, 1991). Similarly, unrestricted communication between the subsystems of an organization may produce noise and overload in the system. An organized state of affairs may require the introduction of constraints and restrictions to reduce random and diffuse communication between subsystems (Katz & Kahn, 1978). Thelen summarizes Ashby (1952) to make this point:

“Stability of the suprasystem would take infinitely long to achieve if there were ‘full and rich communication’ among the subsystems [...]. If communication among subsystems is restricted or if they are temporarily isolated, then each subsystem achieves its own stability with minimum interference by the changing environment of other systems seeking their stability.” (quoted in Katz & Kahn, 1978, p. 430-431, italics added)

Autopoiesis thus puts a certain membrane around an otherwise open system. This puts, to a greater or lesser extent, a barrier between the available information and possible opportunities for improvement.

4.1.5 Source of feedback information

After having discussed four theoretical approaches to feedback, this sub-paragraph takes a more practical turn. The feedback information on an organization’s performance can come from many different sources, all with their particular strengths and weaknesses, and better or worse fit with specific feedback mechanisms. A number of these sources will be discussed here: an organization’s staff members, its customers, monitoring and performance measurement systems, policy evaluation, ombudsmen reports and audits.

The staff of the organization

There are many ways the staff of an organization can provide feedback information to the management of the organization. Staff members may be required to report to their managers about what they have done, what their co-workers have done, about the problems they encounter and those of their unit in running the innovation, and about what they think needs to be done to overcome these problems. However, since this kind of information is

often utilized for review purposes, there are great constraints on the free flow of upward communication. Staff members do not tend to give information to their managers that might put themselves or their co-workers in a bad light. They will only tell the boss what they want the boss to know (Borins, 2002; Lonti & Verma, 2003; Torugsa & Arundel, 2014).

The customers of the organization

For public sector organizations, market share or the number of provided services is not a good indicator for the performance of the organization. A better indicator is the customer's satisfaction with and appreciating of the provided service. Customer satisfaction surveys may provide this type of feedback information. Complaint management systems may also provide insight into the areas of satisfaction and dissatisfaction of the customers. They constitute sources of the feedback information needed to optimize public sector services and innovations (Mikhaylov et al., 2016; Kim, 2001).

Monitoring systems and performance measurement

Performance measurement or monitoring refers to the collecting of information about selected aspects or factors in the context of policy and management. The process of monitoring has a systematic and continuous character. Information is systematically gathered by means of periodic measurements of for example output, costs of (wo)man-hours, effects, etcetera. Thus, monitoring the performance of public sector innovations can be a permanent source of information for managers and policy makers. However, it offers only descriptive information. Monitoring systems can report how well the current innovation may be functioning, but it cannot explain the reasons for the success or failure (De Peuter, 2011). It is thus a 'simple' cybernetic instrument.

A separate type of feedback information, but with a great deal of overlap with evaluations (discussed hereafter), is that of performance information. Performance measurement/monitoring was defined as "*the bundle of activities aimed at quantifying performance – defining a measurement object, formulating indicators, collecting, analysing and reporting data.*" (Van Dooren et al. 2010, p. 25, italics added) The research tradition on this issue is a lot younger than that on evaluation impact, as performance information and performance measurement is strongly connected to the NPM-movement, and is thus only about thirty

years old (Bouckaert & Halligan, 2008). Evaluation research, on the other hand, dates back to the 1960s.

Performance data can be used in different forms, and have different effects. Behn (2003), sums up eight types of usage:

- Evaluate activities
- Control
- Budget
- Motivate staff; contractors; citizens; ...
- External promotion of organization
- Celebration of successes
- Learn
- Improvement

Learning and improvements can be seen, at least theoretically, as two of the primary goals of performance measurement and performance information, next to accountability. In reviewing the performance data an organization can revise and change an innovation in order to improve it. This could increase its sustainability. The factors driving the usage of data is most recently and most extensively investigated by Kroll (2015), whose systematic review of 25 studies revealed several important variables. Six in total were found to convincingly drive data use: the maturity of the measurement system, stakeholder involvement, leadership support, support capacity, innovative culture, and goal clarity. Six more were found to be 'promising', in that they were found to be influential in a smaller number of studies: the existence of learning forums and routines, positive attitudes towards performance measurement, prosocial or public service motivation, networking behaviour, general political support, and a fragmented environment. This give a vast and wide array of factors, which influence the way in which this type of feedback information is used in order improve policies, programmes, projects, and innovations.

Policy evaluation

Two evident types of feedback information are evaluations. Unlike monitoring, evaluation is capable of answering how and why questions and of finding relations and giving

explanations. It possesses specific techniques and approaches to answer these kinds of questions (De Peuter, 2011). The usage and impact of evaluations on policy, programme and project changes is extensive and long-standing. As defined by the OECD (2010, p. 21), evaluation is “the systematic and objective assessment of an on-going or completed project, programme or policy, its design, implementation and results.”

Before discussing the factors which could improve the likelihood of the evaluations impacting on decision-making, it is worth elaborating on the types of influence an evaluation can have, and the ways in which it can be used. Several typologies of usage and influence have been put forth. Patton (1975) distinguished three types: 1) the use of evaluation to render judgements (guided by accountability motives), 2) to facilitate improvements in order to develop the particular policy, programme or project (guided by functional values), and 3) to generate knowledge in general (guided by academic values). Weiss (1999), in turn, divides the usage of evaluation in three different types: 1) direct usage of the information in the decision-making process, 2) indirect usage, where the evaluation doesn't immediately results in changes, but does contribute to the understanding of the problem, and 3) symbolic use, which refers to the usage of results to simply comply with regulations, or for internal or external political motives. The FAL-model assumes that the evaluation information on the innovations is used directly (following Weiss), and in order to facilitate improvements (following Patton). Indirect usage and/or with the goal of generating knowledge might certainly be useful in the long run, but most likely not for the short term sustainability of the innovation. If, finally, evaluations are only used symbolically, or only to justify the existence of the innovation (Bekkers et al., 2004), the feedback is unlikely to contribute to the improvement and sustainability of the innovation. This refers back to the idea of organizational cognitive dissonance mentioned earlier on in sub-paragraph 4.1.4.

Which factors, then, influence the functional usage and influence of innovations on policy change and improvement? There is no clear-cut answer to this question, and as Jüngen notes in her review of development aid evaluation (2013), the most prominent factors in evaluation usage research are not necessarily the most important predictors. They are, however, the ones on which most of the research is focused. Reviews of the literature are therefore first and foremost state-of-the-art studies, instead of meta-analyses.

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Nonetheless, they do provide useful insights. Jüngen finds that the most common factors that *negatively* influence evaluation usage are a lack of institutionalization of evaluations, a lack of priority given to evaluations, a lack of evaluation capacity, and low quality of the evaluations and dissemination. *Positively* correlated with evaluation impact were the content, quality and credibility of the evaluation, the type of users, the user orientation and, most notably, the interaction with stakeholders in the evaluation process. Johnson et al. (2009), find that the most commonly found characteristics of the evaluation (process) to influence the usage of evaluation are communication quality, timing of the evaluation, personal characteristic of the (intended) user, the receptiveness of the users to the evaluation, and finally the involvement of evaluation stakeholders in the process. Both Jüngen and Johnson et al. mention various other factors as well, which have also been found (although less frequently) to be influential.

Ombudsmen reports and (performance) audits

Just like policy evaluations and monitoring and performance information, ombudsmen reports and performance audits can provide public sector organizations with feedback information about important performance dimensions. However, there are important differences between policy evaluation on the one hand and ombudsmen and audit offices on the other.

Desomer et al. (2013) and D'hoedt and Bouckaert (2011) address these differences. First and foremost, policy evaluations are generally performed in a client-contractor relationship. This has important consequences for the independence of the evaluator. Since most policy evaluations are executed at the request of the client (often the government or the administration), the evaluator's independence is often limited by the *terms of reference* (scope of the research, research questions, norms and standards, etc.) formulated by the client. Even more so if the evaluator is part of the internal structure of the organization, or done by the directly involved employees. Furthermore, it may be harder for the evaluator to obtain access to sensitive documents in a client role. Since the client is the owner of the evaluation report, it can therefore decide not to make the report accessible to the public (D'hoedt & Bouckaert, 2011; Desomer et al., 2013). Ombudsmen and audit offices, on the other hand, perform their activities in a context of public accountability. More precisely,

ombudsmen and audit offices are often entrusted by a political principal (parliament or the government) to exercise some sort of oversight over an agent (the government or the administration). They are supporting mechanisms to aid political principals (e.g. parliament) to oversee their administrative agents (Bovens, 2005a; Bovens, 2005b). The mandates of ombudsmen and audit offices are therefore based on the premise of independence. Their investigations are performed according to their own frames of reference (scope, research questions, norms and standards, etc.), and without the organization under scrutiny asking for it. Moreover, their reports are always made public (D'hoedt & Bouckaert, 2011; Desomer et al., 2013). These factors make ombudsman and audit reports very valuable for administrations as sources of outside feedback on the performance of their organization and innovations.

Several factors play a role in how well of a feedback mechanism audit offices and ombudsmen can be, and how strongly this source of feedback information might be connected to sustainable innovations. First of all, it is argued that a public accountability arrangement, if organized in an appropriate way, confronts public managers on a regular basis with feedback information about their own organization, and stimulates both 'accountors' and 'accountees' to reflect upon and debate about the successes and failures of past policies, both separately and in dialogue with one another (Bovens, 2005b, 47; Bovens et al., 2008, 233). On the basis of the feedback information about the outcomes and effectiveness of its actions, a policy actor can correct its errors and improve its overall functioning (Van der Knaap, 1995). Secondly, together with their respective forum (e.g. parliament), audit offices and ombudsmen can create an in-depth debate between the actors about past performances and the goals set by the actors (Bovens et al., 2008). This debate is yet another opportunity for the actor to learn from its performance, provided by the feedback mechanism working through accountability actors. Thirdly, by providing a potential dissonant voice, the forum might break the possible conformist patterns of thought and autopoietic tendencies within the organization under scrutiny (D'hoedt & Bouckaert, 2011). Indeed, organizations tend to persist in what they do because the members of an organization often share the same set of beliefs and values, and because it is rare to question the existing ways of doing things. Sources from outside the organization are often thought to be in a better position to challenge existing perspectives and paradigms, and to

question long-held assumptions and behaviours (Salge & Vera, 2012). Finally, however, the effectiveness for the sustainability of innovations is dependent on *what* the audit office or ombudsman reports about. Some accountability arrangements may focus on legal compliance, while others may focus on financial audits. These will not be very relevant when it comes to the debate on an innovations' performance and/or fit with current societal or organizational needs. Other accountability arrangements, however do indeed focus on the efficiency and effectiveness of the policy or innovation. These reports would be more helpful for an organization in finding performance data (Bovens, 2005b).

4.1.7 Linking feedback mechanisms to sustainable innovations

It is assumed in this dissertation that public sector organizations are at least semi open, not completely autopoietic systems with at least some cybernetic single- and double-loop mechanisms. Hypothetically, these are strengthened, the better they would be suited to provide for sustainable innovations. They receive information from plenty of external sources (open system), filter them only slightly (as little autopoietic as possible) and constantly measure the performance of their innovations (cybernetic feedback mechanisms). As contingent organizations they can consequently change in order to create a better fit between the organization and the environment. The combination of these mechanisms would be the foundation for the constant fine-tuning and optimization of public sector innovations, laying the groundworks for a long and sustainable future. In creating sustainable innovations, the feedback information received by organizations through feedback mechanisms is thus essential. However, this is not enough on its own to ensure sustainability. The data alone will not lead to the necessary change in order to improve the innovation. For this to happen, accountability and learning are crucial as well.

4.2 Accountability

Accountability can serve two goals. First, it can form the reason why an organization will start to look for feedback information in the first place. Second, it is a (potentially) valuable source of feedback information itself, as was discussed in sub-paragraph 4.1.5. In these two capacities, accountability can form a force for sustainable innovations. First the nature of the concept will be explained, after which the several forms it can take on will be discussed. Finally, in sub-paragraph 4.2.2, the discussion will lead to the point made before, that

accountability can serve a second purpose besides as a source of feedback information: namely, earlier on in the process, as a kick starter for the gathering of feedback information.

4.2.1 What is accountability?

According to Schillemans & Bovens (2011), accountability can be two things: it can be a formal mechanism or relationship, or it can be a norm or virtue. Accountability used in the sense of norm or virtue is a normative concept. It refers to a set of standards used to evaluate the behaviour of (public) actors. 'Being accountable' or 'acting in an accountable way' is seen as a positive characteristic of public officials and organizations. It is a similar virtue as being responsive, responsible, and being willing to act in a transparent and fair way. These norms can be embedded in an organization in different ways and to different degrees. The sense of responsibility among employees for their organization's performance can change, as can the culture of transparency about their performance towards external stakeholders differ. Accountability defined as a social relationship or mechanism, on the other hand, refers to 'being held accountable' and involves an obligation of an actor to explain and justify its conduct to a significant other (Schillemans & Bovens, 2011). In a general sense (broader than just a political and administrative context) accountability can be defined as a relationship between an actor (who can be either an individual person or an organization) and a forum (which can be either an individual person, an organization or a virtual entity (e.g. a God)). Within this relationship, the actor has or feels an obligation (which can be either formal, informal or even self-imposed) to explain and justify his or her conduct to the forum, and in which the forum can pose additional questions and pass judgment, after which the actor may face consequences (Bovens et al., 2008; Bovens, 2005a). To paraphrase Lindberg (2013), the basic idea of accountability is this: when decision-making power is delegated from a principal to an agent, there must be a mechanism in place to hold the agent accountable for its decisions and if necessary to sanction the agent. Thus, at a basic level, accountability is closely associated with authority. An actor who is merely executing orders without any discretionary power, cannot be a legitimate object of accountability (Lindberg, 2013).

As Bovens (2005a) indicates, there are at least three elements of an account giving relationship: information, debate and judgment. The element of information implies that the actor has or feels an obligation to inform the forum about his or her behaviour or

performance. When a failure or an incident has occurred, the provision of information is often not sufficient, and has to be supplemented with explanation and justification for the failure. In response, the forum may initiate a debate with the actor, by discussing and questioning the quality and adequacy of the information, and the appropriateness and legitimacy of the agent's behaviour. Finally, the forum can render judgment on the behaviour or performance of the actor. A negative verdict by the forum may result in some sort of sanction (Bovens, 2005a).

There are many ways to classify types of accountability. Some of the ways in which Bovens (2005b), Radin & Romzek (1996) and Lindberg (2013) classify them are discussed below.

Bovens (2005b) focuses, inter alia, on the 'to whom' question when making a distinction between types of fora. He distinguishes between (1) political accountability: account giving along the chain of political principal-agent relationships, towards ministers, elected representatives, and, ultimately, towards voters; (2) legal accountability: account giving towards civil or administrative courts; (3) administrative accountability: account giving towards auditors, ombudsmen, inspectors and controllers; (4) professional accountability: account giving towards (associations of) professional peers; and (5) societal accountability: account giving towards citizens, interest groups, the media (Bovens, 2005a, 2005b). In our discussion on accountability, we mainly focus on political or hierarchical accountability on the one hand, and administrative or diagonal accountability on the other, although all five are connected to one another.

Radin & Romzek (1996) and Lindberg (2013) add two more dimensions to this classification table. A first dimension relates to the source of the accountability relationship. The accountability holder (or principal) can be internal or external to the agent being held accountable. For example, when a manager or an internal auditor of an agency asks his or her subordinates to justify their behaviour, the source of the accountability relationship is internal. In this way, the relationship may be more closely related to the concept of feedback, discussed in paragraph one of this chapter. On the other hand, when for example audit offices or ombudsmen hold public sector organizations to account, the source of the accountability relationship can be labelled as external. The second dimension which they differentiate, is the degree of control exercised by the forum over the actor. This may vary

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from extremely detailed control and close scrutiny based on specific rules and regulations, to highly diffuse control and minimal scrutiny (Lindberg, 2013; Koppell, 2005).

4.2.2 Accountability as a kick starter for information gathering

Many organizations don't start looking for feedback information by themselves. A necessary condition for the conversion of feedback information into new practices is the willingness of public sector organizations to improve. Accountability can function as a kick starter for public organizations to start gathering feedback information about their performance and learn from these data in order to improve. There are two reasons for accountability to have this effect on public organizations: firstly, the public nature of accountability in the public sector, and secondly the possibility of sanctions when performance turns out to be dissatisfactory after an audit or complaints by users or their representatives.

The public nature of the account giving – Earlier the 'publicness' of the public sector was discussed in sub-paragraph 2.2.2., which poses a specific condition on the nature of innovation in the public sector (Hartley, 2013). The lack of competition between public sector organizations is often mentioned as a major barrier to innovation and excellence in the public sector. Organizations in a competitive environment can only survive if they are able to create new products, new services, more efficient production methods, better and more efficient ways of delivering services, and so on (Bekkers et al., 2011). A similar pressure could be created in the public sector through public accountability.

Several arrangements have been developed that make the quality and outcomes of public services more transparent. As a consequence, the performances of public sector entities are increasingly subject to comparison, both within the public sector and between the public and the private sector. Obvious examples of such arrangements are benchmarking systems and league tables, for both financial and non-financial performance measures (Bekkers et al., 2013; Collier, 2008). However, public accountability arrangements such as ombudsmen and audit offices may also provide such transparency. Indeed, the account giving is done in public, meaning that it is open or at least accessible to citizens (Bovens, 2005a). The fact that the quality and outcomes of public services and policies are made transparent and public, may act as an incentive for service improvements, as they would strive to prevent gaining a bad reputation through negative public evaluations (Bekkers et al., 2013; Skelcher,

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2008). This effect is strengthened by several other factors, increasing the (quasi-)competitive elements in the public sector. Firstly, the trend of increasing market-like competition in the public sector through privatization and liberalization. Secondly, Bekkers et al. (2013) indicate that regions and cities are increasingly competing with each other in terms attracting citizens, tourists, etc. The quality of services is an important source of competitive advantage in this contest. Finally, due to the decline of the importance of ideology, voters have become increasingly footloose, pushing political parties to attract voters with the promise and proof of good governance (Bekkers et al., 2013). In other words, the improvement of the quality and performance of public organizations has increasingly become more important (Hartley & Skelcher, 2008). The results from public accountability processes (for example through public audits or ombudsman reports) are increasingly stimulants for organizations to invest in gathering feedback information and learning processes on the basis of these.

The possibility of sanctions – Not only may the public nature of the account giving constitute an incentive for public managers to do better. The possibility of getting sanctioned for errors or shortcomings may also motivate public authorities to re-evaluate their products and processes pro-actively, and to search for more efficient and/or effective manners of organizing them (Bovens et al., 2008). Managerial autonomy provides public managers with the possibility and the latitude to experiment, to innovate, and to manage. At the same time, result control provides public managers with the pressure and the incentive to do so. Holding agencies accountable for their performance and linking result-achievement with sanctions and rewards stimulates or even forces managers to pursue higher levels of performance, quality and efficiency. This pressure may result in an (intensified) search for innovative ways to deliver services and to organize processes (Wynen et al., 2014).

On the basis of these two factors it is believed that accountability mechanisms (be they higher authorities, internal/external audit offices or ombudsmen) have the potential for kick starting organizations into finding feedback information, and learning from the data they find. However, accountability has also been linked to the stifling of innovation and

change in the public sector. Although this position is not taken in this dissertation, it is useful to lay out the main arguments of this stream of thought.

- Formalism and goal displacement. An accountability regime which is too rigorous, may turn public institutions into formalistic bureaucracies, which are obsessed with conformity with rules and procedures. Instead of a means to provide insight in, and reflection about performances and processes, the account giving may become a goal in itself (Bovens & 't Hart, 2005).
- Perverted behaviour and window dressing. An accountability regime which is too rigorous, may encourage perverted behaviour. Public managers may get very good at fulfilling the requirements imposed by their accountability forums, although this does not necessarily mean that the actual performance of these public organizations in terms of policy-making and public service delivery will improve as well. Managers may create a façade of plans, procedures and goals to satisfy the forum, while behind the façade, everything continues as before (Van Loocke & Put, 2010; Bovens, et al., 2008).
- Tunnel vision and sub-optimization. Accountability forums may systematically focus on certain aspects, while ignoring others. For example, focusing on performance, but ignoring legality; focusing on technical aspects, but ignoring human aspects. Furthermore, a scope which is too limited, may lead to sub-optimization. For example, the improvement of a sub-system at the expense of the organization as a whole (Van Loocke & Put, 2010).
- Rigidity and paralysis. An accountability regime which is too rigorous and focuses too harshly on finding mistakes and handing out penalties, may discourage entrepreneurship, risk-taking, initiative and creativity (Hartley, 2008). Mistakes and failures are part of any learning process. Innovation can be seen as a journey which is not linear and rational, but which leads often, besides to success, to dead-ends, mistakes, setbacks, and obstacles. When an accountability mechanism focuses too harshly on sanctions for making 'mistakes' or for not realizing immediate results, public managers will learn to avoid risk-taking, and to shield themselves against potential mistakes and criticism (Van Loocke & Put, 2010; Bovens, 2005a; Behn, 2001; Bekkers et al., 2013; Hartley, 2005).

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- Conflicting expectations. Actors may be confronted with different accountability forums, each with its own set of evaluation criteria, themselves differing from expectations formulated by for example parliament or powerful interest groups. These sets might be partially overlapping, but also partially diverging, and perhaps even mutually contradictory. It may be difficult to combine these different expectations or to prioritize between them. As a consequence, organizations trying to meet conflicting expectations are likely to end up in a state of dysfunctional paralysis. They tend to oscillate between behaviours which are consistent with conflicting notions of accountability (Schillemans & Bovens, 2011; Koppell, 2005; Bovens, et al., 2008).

4.2.3 *Linking accountability to sustainable innovations*

Properly organized accountability, in short, can lead to awareness. Awareness about their own performance and conduct, and awareness that judgement and punishment is always around the corner. This in turn would make the organization look for feedback information, and the processing of that information to prevent possible sanctions or public exposure over mistakes and problems. With that information the innovation can be improved, updated and adjusted, further strengthening its performance and survival chances for the future. Hence the assumption that well organized accountability will lead to more sustainable public sector innovations.

4.3 Learning

Earlier on it was mentioned that accountability might lead to (the gathering of) feedback information, and that feedback information is necessary to evaluate the performance and fit of innovations. However, the information and pressure in and of itself are not enough to constitute change, improvement or adaptation of innovations. The information needs to be processed through learning processes in order to get meaning, and to ignite the necessary changes. It transitions data to information, and information to knowledge.

First, the previously mentioned concepts of single and double loop learning will be further elaborated upon. Secondly the focus will shift to the social aspects of learning, and the debate on whether organizations are able to learn or not. Finally, the emphasis will be put on exploitation versus exploration of knowledge, and tacit versus explicit knowledge.

4.3.1 Cybernetic system learning: single and double loops

Many authors have looked at learning from a systemic perspective. In his description of cybernetic system learning Van der Knaap (1995) refers to, among others, Deutsch (1966), Argyris & Schön (1978), Senge (1992), Ashby (1952), and Fiol & Lyles (1985). According to these authors, a cybernetic system has a specific purpose (e.g. the provision of water). To perform its function, a system needs inputs (e.g. spring water) from its environment, which it subsequently processes into certain outputs (e.g. drinking water and waste). The main principle guiding the cybernetic system perspective, however, is this: the self-steering part of a system is able to detect and correct errors; if a system is capable of obtaining feedback information about the outcomes and effectiveness of its actions, it is capable of correcting its errors and improving its overall functioning (Van der Knaap, 1995).

Thus, from the perspective of cybernetic systems, learning refers to the detection and correction of errors. At least two levels of learning can be distinguished. Many authors have made this distinction, using different labels. However, the labels used by Argyris and Schön are probably the most influential. They differentiate between single-loop and double-loop learning (Argyris & Schön, 1978).

Upon the detection of an error, most people and organizations look for another operational strategy that will work within the same goal-structure and rule-boundaries. This is called single-loop learning. Single-loop learning occurs on the basis of goal-seeking or confirmatory feedback. This kind of feedback does not challenge the purpose of the system: goals, beliefs, values and conceptual frameworks ('the governing values') are taken for granted without critical reflection. The emphasis is on 'techniques and making techniques more efficient' (Usher and Bryant, 1989, p. 87 – in Smith, 2013). Questions that may be asked are: Could we do what we are currently doing in more productive ways, doing it cheaper, using alternative methods or approaches for the same objectives? If an action yields results that are different to what were expected, through single-loop learning, an organization will observe the results, take in this feedback, and try a different approach. This kind of learning may lead to the gradual improvement of existing, well-known policies. It solves problems but ignores the question of why the problem arose in the first place (Fiol & Lyles, 1985; Argyris & Schön, 1978).

If we look deeper, however, we may find that what went wrong, did so because of the way the system is designed. Consequently, if we change the system's underlying norms and assumptions, we may be able to prevent the error from happening again. An alternative and more sophisticated response, therefore, is to question the governing variables themselves, to subject them to critical reflection. This is described by Argyris and Schön as double-loop learning. Double-loop learning occurs on the basis of goal-changing or innovative feedback. It pertains to the detection and correction of errors in ways that involve the modification of an organization's underlying norms, assumptions, policies and objectives. It may lead to discontinuous change and innovation, as opposed to the incremental changes within the standing norms from single loop learning (Fiol & Lyles, 1985; Argyris & Schön, 1978).

One might, however, reflect even further, and reflect about what prevented an organization from seeing that the system needed changing, before something went wrong. Argyris and Schön call this third level of learning 'deutero learning'. It entails an institutionalized capacity to learn (Argyris & Schön, 1978; Bovens, Schillemans & 't Hart, 2008), reflecting on the learning process itself: learning about learning.

4.3.2 Organizational learning

The notion of organizational learning has received ample scholarly attention over the last couple of decades. However, no theory or model of organizational learning has gained widespread acceptance (Fiol & Lyles, 1985; Mariotti, 2012; Broekema et al., 2017). The term 'organizational learning' is defined in any number of ways, widely differing in scope and focus. Whilst some definitions focus on the learning of individuals in the organizational context, others on the opposite side of the spectrum instead focus on an organization-level process that is distinct from individual learning. In the case of the latter, organizational learning is directly linked to the institutionalization of such concepts as organizational culture, processes and procedures (Knight, 2002; Huysman, 1999).

Some scholars argue that organizations cannot learn; only individuals can learn. For example, Weick (1991, p. 119 – in Mariotti, 2012, p. 216, italics added) states that "*organizations are not built to learn. Instead, they are patterns of means-ends relations deliberately designed to make the same routine response to different stimuli, a pattern which is antithetical to learning in a traditional sense.*" Simon (1991, p. 125 – in Knight, 2002, p. 432,

italics added) states that “*all learning takes place inside individual human heads.*” Nevertheless, Simon argues that

“*what an individual learns in an organization is very much dependent on what is already known to (or believed by) other members of the organization and what kinds of information are present in the organizational environment. [...] human learning in the context of an organization is very much influenced by the organization, has consequences for the organization and produces phenomena at the organizational level that go beyond anything we could infer simply by observing learning processes in isolated individuals*” (Simon, 1991, p. 125-126, in Mariotti, 2012, p. 216, italics added).

In other words, Simon, and other scholars sharing this view, believe that the notion of organizational learning deserves scholarly attention. However, they do not see organizational learning as the learning of organizations per se. They interpret it as the learning of individuals in an organizational context (Crossan et al., 1995). In this view, organizational learning is perceived as the sum of the learning of individual members of the organization (Mariotti, 2012; Knight, 2002).

Other scholars, however, consider organizational learning to be more than the sum of the learning of individuals that constitute the organization. They argue that not only individuals can learn, but organizations as well. For example, Knight (2002, p. 436, italics added) argues “*that learning is a notion that can be usefully applied at different levels, provided we accept that the detailed conceptualization of learning and associated constructs, such as memory, are not identical across the levels.*” One might, for example, make the following comparison: Individuals develop mental models that they use as frames of reference to perceive and understand situations to decide on which courses of action to take. Similarly, organizations develop shared mental models which have an influence on the decisions made by the management, and which guide the problem-solving activities and patterns of interaction among co-workers (Lam, 2006). Hedberg (1981, p. 6, italics added) draws another parallel: “*Organizations do not have brains, but they have cognitive systems and memories.*” Lam (2006) defines the collective memory of an organization as “*the accumulated knowledge of the organization, stored in its rules, procedures, routines, and*

shared norms.” (Lam, 2006, p. 124, italics added)

In this view, organizational learning does not only comprise individuals learning in an organizational context, but also the organization learning through intra-organizational interaction. Identifying organizational learning, however, is complicated. One tool which enables us to see if organization learning has taken place, is analysing whether cognitive structures and behavioural patterns remain despite personnel turnover (Knight, 2002). Hedberg (1981, p. 6, italics added) puts it this way: “*Members come and go, and leadership changes, but organizations’ memories preserve certain behaviors, mental maps, norms, and values over time.*”

Although organizational learning is a popular research topic, there is no scientific agreement on what constitutes organizational learning. In particular, the topic seems to suffer from two ailments: disagreement about the appropriate unit of analysis, and definitional confusion between the locus of the learning processes and its proper context.

4.3.3 Learning as a social affair

Continuing on the discussion above, organizational learning can be regarded as a social accomplishment, emergent from the interactions of organizational actors. Organizational learning takes place in networks of relationships between individuals, groups, and organizational actors. It is a collective accomplishment (Mariotti, 2012). According to this view, organizational learning is situated in the relational activities of actors: social processes are crucial in the formation of collective cognition and knowledge structures; social interactions and group dynamics within organizations are decisive factors in the shaping of collective intelligence, learning, and knowledge generation. Organizations are seen as consisting of groups of individuals that collectively try to make sense of a complex reality in their daily work activities (Brown & Duguid, 1991).

The development of mental models and cognitive schemata, learning for short, by individuals does not occur in a social vacuum. The individual’s cognitive development is influenced by its social environment. Studied from a social perspective, learning depends on communication. On the basis of shared linguistic notions, people can exchange knowledge and beliefs. When communication is durable, a dialogue or a debate may arise. In a dialectic connection, opinions may be tested and verified, alternative viewpoints may be confronted, and mutual efforts of persuasion and argumentation may be made. In this

way, the individuals participating in the dialectic connection are stimulated to reflect on their existing cognitive schemata, which may lead to learning and change (Van der Knaap, 1995). More still, the confrontation of viewpoints may lead to new viewpoints, transcending the opposition and previously held perspectives. Indeed, the confrontation of competing theses may result in a dialectical process through which a synthesis may be reached on a new, higher level (Bekkers et al., 2011).

However, the possibilities of communication, dialogue, confrontation of viewpoints, and learning may be compromised by what Argyris (Argyris, 1987 – in Van der Knaap, 1995) has called ‘defensive routines’. In order to prevent the experience of embarrassment or threat, people tend to take refuge in defensive routines, which are concealing practices to obstruct the confrontation of viewpoints (Van der Knaap, 1995). When people feel threatened or vulnerable, they often engage in these kinds of defensive routines to protect themselves and their colleagues from losing face (Morgan, 2006b).

4.3.4 Exploration and exploitation of knowledge

Scholars in the research area of organizational learning have also examined how shared interpretative schemes affect the adaptive potential of organizations. According to Lam (2006), some scholars have claimed that collective mental models (filters or membranes in autopoietic terms) facilitate an organization’s capacity to process and interpret and share information in a coherent and purposeful manner. In this manner, shared mental models are expected to aid learning and joint problem solving and, hence, to enhance the adaptiveness of organizations.

However, as Lam indicates, other scholars have argued that shared mental models can create “blind spots” in organizational decision making and impede organizational change. They argue that organizations tend to persist in what they do because everyone in the organization has the same set of beliefs and values, and because it occurs to no one to question the existing ways of doing things. As a consequence, organizations may find it difficult to *unlearn* these deeply rooted practices and to explore alternative ways of doing things (Lam, 2006). Therefore, these authors suggest that there should be a sound balance between the exploitation of existing knowledge and competences, on the one hand, and the exploration of new ideas, knowledge, expertise and competences from outside the organization, on the other.

Exploitation, according to Holmqvist (2003, p. 99) refers to the refinement of existing organizational knowledge and capabilities. Exploitation is about creating reliability in experience. It means productivity, refinement, routinisation, production, and elaboration of existing experiences (Choi & Chandler, 2015). The exploitation of existing knowledge and competences may enable organizations to recombine existing knowledge and generate new applications from its existing knowledge base (Gupta et al., 2006; Lavie et al., 2010). This will most likely result in cumulative learning, which is continuous but incremental, and refers back to the mechanistic organizations mentioned in sub-paragraph 4.1.3 (Burns & Stalker, 1961). At the same time, however, these learning processes can also result in a “*simple-mindedness and a concomitant inability to explore new opportunities*” (Holmqvist, 2003, p. 99, italics added). These drawbacks, caused by exploitation, will need counteraction. Organizations will need to create variety in their experiences as well, by experimenting, innovating and taking risks. This is the so-called process of exploration (Holmqvist, 2003), which refers back to the organic organizations from sub-paragraph 4.1.3 (Burns & Stalker, 1961). The inflow of new knowledge and ideas may enable organizations to generate radically new products and processes. Sources from outside the organization are often thought to be in a better position to challenge existing perspectives and paradigms (Lam, 2006). In addition, Foldy (2004) argues that diversity in an organization’s workforce enhances organizational performance and exploratory learning. Indeed, alternative and new ideas and perspectives can be generated by heterogeneous groups, who contribute to functional diversity.

In the literature, a binary divide is made between intra-organizational learning processes on the one hand, and inter-organizational learning processes on the other. Where the former process favours exploitation, the latter favours exploration. The reason for this division may be found in the presence or absence of a dominant group. Intra-organizational learning is typically controlled by a dominant group, which has the power to select, promote, demote and dismiss organizational members with similar or divergent ideas. This situation tends to result in a rigid status quo of organizational worldviews, norms, traditions, and rules (Holmqvist, 2003).

Inter-organizational learning, on the other hand, has been claimed to be of a highly innovative and explorative character, because this type of learning has the potential to share

different experiences between the learning entities (Holmqvist, 2003). Inter-organizational collaborations may enable formal organizations “*to increase their store of knowledge not previously available within the organization*” (Huber, 1991, p. 97 – in Holmqvist, 2003, p. 104, italics added). They provide “*a shortcut to radical change, by-passing organizational vicious circles and deadlocks*” (Ciborra, 1991, p. 59 – in Holmqvist, 2003, p. 104, italics added).

4.3.5 Tacit and explicit knowledge

Knowledge management lies somewhat outside the field of organizational learning itself, but is closely connected and critical for how organizational learning can operate. Knowledge management is the set of processes and practices in organizations by which knowledge is recognized, acquired, captured, codified, recorded, stored, aggregated, communicated, shared, transferred, converted, retrieved and reassessed (Rashman et al., 2005; Gilson, Dunleavy & Tinkler, 2009; Levitt & March, 1988).

Before we can elaborate on this, we need to discuss the conceptual distinction made, among others, by Polanyi (1966) and Nonaka (1994) between tacit and explicit knowledge (Hartley & Allison, 2002; Rashman et al., 2005). Explicit knowledge can be articulated, codified and transmitted using formal systems (e.g. language and mathematics) and captured in language-based records (such as those in libraries, archives and databases). Tacit knowledge is personal, contextual, and often embedded in practice (concrete know-how, crafts and skills that apply to specific contexts), making it difficult to articulate and harder to share through formal language systems. The transfer of knowledge is dependent on close social interaction (Hartley & Allison, 2002; Rashman et al., 2005).

Hartley & Allison (2002) provide four modes of knowledge conversion through which tacit and explicit knowledge can be created and transferred between individuals and groups:

- Socialization: “*a process of sharing experiences and thereby sharing tacit knowledge such as shared mental models and technical skills. It includes the processes of observation and imitation.*” (p. 105, italics added)
- Externalization: “*the process of articulating tacit knowledge into explicit concept and ideas.*” (p. 105, italics added)

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- **Combination:** *“the process of systematizing concepts into a knowledge system and it occurs through combining and converting different forms of explicit knowledge.”* (p. 106, italics added)
- **Internalization:** *“the process of converting explicit to tacit knowledge and this tends to be achieved through practice, by ‘having a go’. Manuals and other documentation can help to embed tacit knowledge but the ‘embodiment’ of knowledge through action is critical.”* (p. 106, italics added)

Both tacit and explicit knowledge are crucial for the functioning of an organization. Routine-based conceptions of learning presume that practical knowledge, whether in implicit form or in formal rules, is recorded, maintained and accumulated in an organizational memory through rules, procedures, routines, and shared norms. The biggest obstacles for this documentation to happen efficiently and effectively are the turnover of personnel, and the passage of time (Levitt & March, 1988). Unfortunately, the conversion of tacit knowledge known by one person or group to tacit knowledge held by another person or group (socialization) is often resource-intensive, slow and individualized. Fast-changing environments further problematize such a pace of learning in organizations (Gilson, Dunleavy & Tinkler, 2009; Hartley & Allison, 2002). Consequently, the question of how knowledge can be more formally collected and stored in retrievable ways by and within organizations has attracted considerable attention.

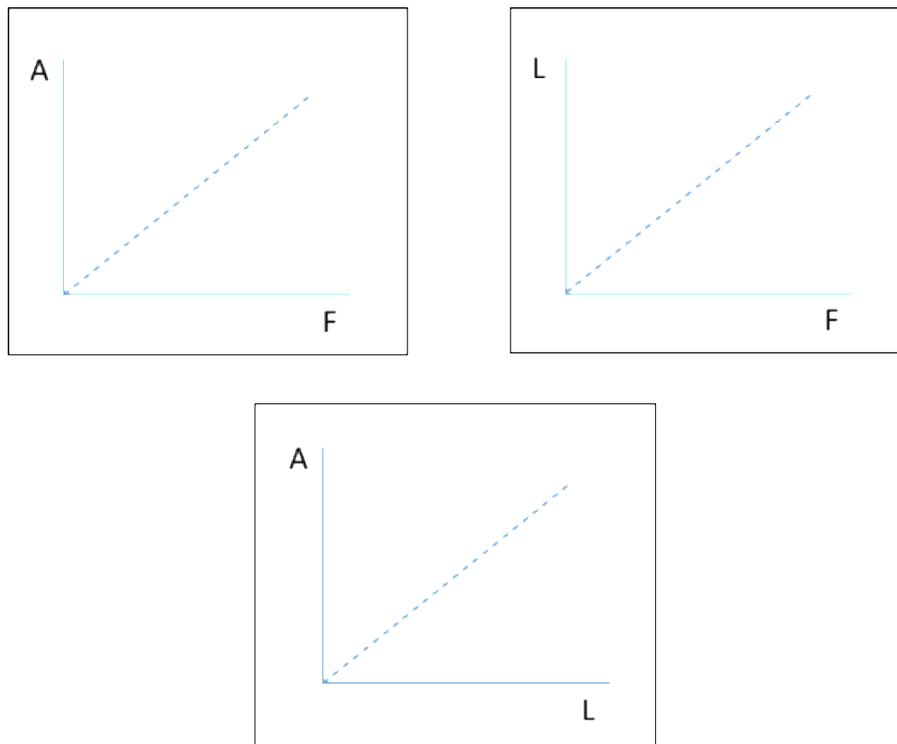
4.3.7 Linking learning to sustainable innovations

Given the information provided by feedback instruments on the one hand, and accountability creating an incentive to excel and change, learning is the last ingredient for organizations to improve the functioning of their innovation. Provided with the information from feedback instruments, and the pressure from accountability, learning interprets the information and draws consequences from it, leading to concrete action. In this way it is assumed that learning will contribute to the sustainability of innovations. When learning takes place during the existence of the innovation, there will be the possibility for adaptation and improvement, hence improving its survival chances.

4.4 Interfaces of the FAL model

It is important to note that the three dimensions are conceptually distinct, but are likely to interact in practice. It can be conceived that they are necessary conditions for each other, or that they at least enhance the need for one another. In this sense, FAL forms three separate relations between the three dimensions. This mutually reinforcing effect can be illustrated in two-dimensional models as follows:

Figure 8: Two-dimensional conceptual FAL model



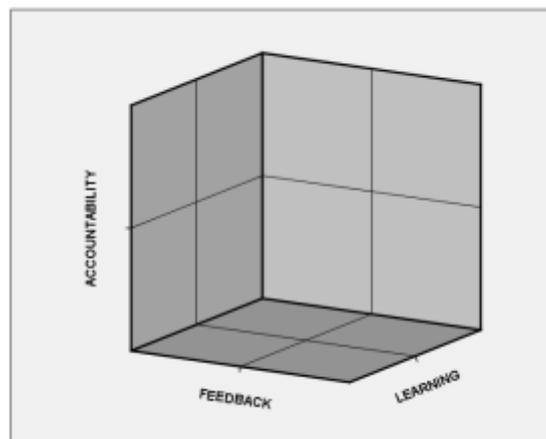
Some authors suggest that accountability mechanisms may help to encourage and promote learning in pursuit of continuous improvement in public governance and public management (Schillemans et al., 2013; Aucoin & Heintzman, 2000; Bovens, 2005a; Bovens et al., 2008). It creates a clear incentive for organizations to learn and improve their functioning, especially considering the public nature of most accountability mechanisms in the public sector. In the accountability literature, it is argued that a public accountability arrangement, if organized in an appropriate way, confronts public managers on a regular basis with feedback information about their own organization and stimulates both ‘accountors’ and ‘accountees’ to reflect upon and to debate about the successes and failures

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of past policies, both separately and in dialogue with one another (Bovens, 2005b, 47; Bovens et al., 2008, 233). Accountability also stimulates organizations to find feedback information on its own (in order to prevent negative accountability reports), and not merely rely on the feedback information they gather from accountability mechanisms themselves. Finally, learning and feedback interact as well. In a nutshell: feedback information (in whichever form and from whichever source) could start a learning curve by pointing out possible improvements, which would otherwise not have existed. At the same time, if a learning culture is embedded in the organization, a need for feedback information will exist as a consequence of it, followed by actions to obtain this data.

These three interfaces of feedback, accountability and learning can be merged to form a comprehensive conceptual model. Together, so it is assumed, this model could provide an explanation for the fine-tuning, adaptation, evaluation and, eventually, the sustainability of public sector innovations. This, in turn, can be illustrated as a three-dimensional model:

Figure 9: Three-dimensional conceptual FAL-model



Both the bilateral and the three-dimensional relationships will need to be tested in the empirical part of this dissertation. Only after the conceptual relevance of the model has been established can the investigation continue to investigate the causality between FAL and the sustainability of public sector innovations. To this latter point, paragraph 4.5 turns next.

4.5 Causality of the FAL model

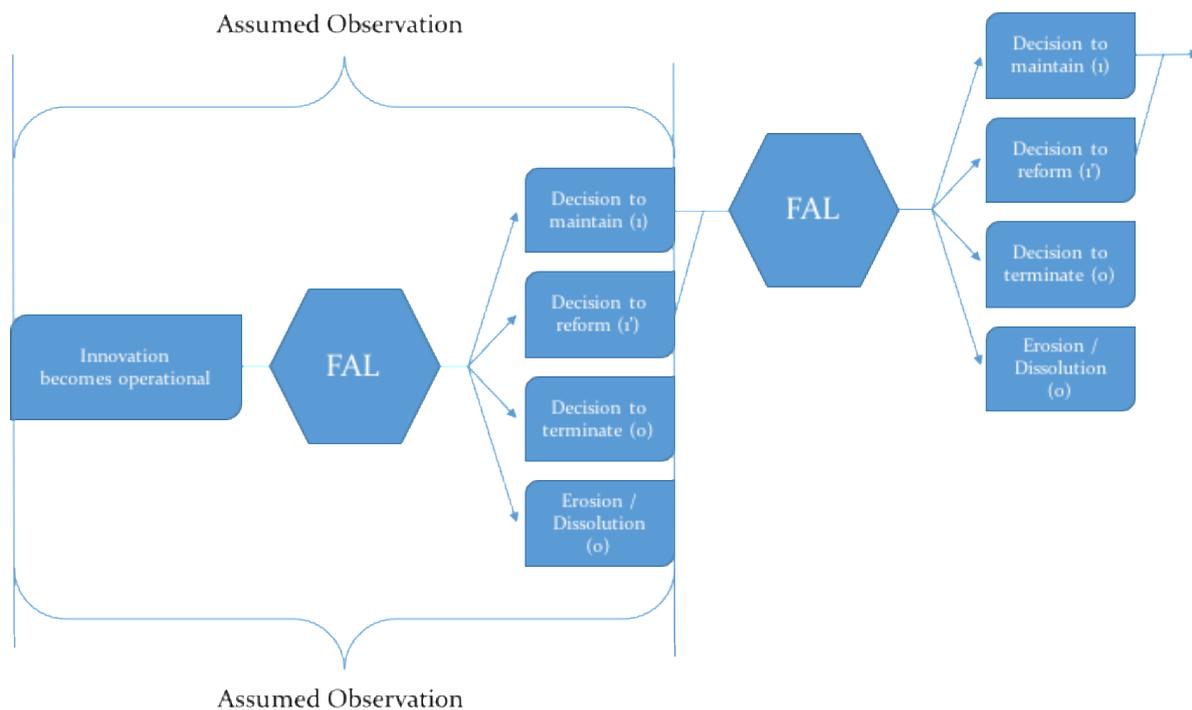
In paragraph 4.4 the conceptual nature of the FAL model was discussed. In this paragraph the causal nature of the model derived from the literature study will be introduced. The model will be explained, and the hypothesized causality between FAL and the sustainability of innovations will be discussed. Finally, as will become apparent in the discussion on the FAL-model, there are some seeming overlaps between the model and the idea of continuous improvement. This will be discussed in sub-paragraph 4.5.2.

4.5.1 Introducing the causal model

As explained above, FAL is a concept made up out of three separate but interlinked concepts: feedback, accountability and learning. It integrates findings discussed in chapter 3 from various longstanding strands of research on the sustainability of healthcare programmes, ICT/IS projects, policy termination, etcetera. It is hypothesized here, based on the results of decades of research, that combined, FAL forms a model which can influence and explain the sustainability of public sector innovations.

The main question in this dissertation is thus how FAL influences the development of innovations *after* their initiation. This development is seen as a cyclical process of returning feedback information (self-sought or externally provided), followed by learning and (in)decisions on whether to continue, alter or stop the innovation. In this sense, it connects to depictions of the evaluation process as linear and cyclical processes (Jann & Wegrich, 2007; Radaelli, 1995). This process is depicted in figure 10:

Figure 10: Heuristic causal FAL-model



After an innovation (i) has become operational, the FAL-dimensions will lead, so it is hypothesized, to an explicit decision about its future (maintain/reform (i') terminate(o)), or, in the case of very low FAL-scores, the innovation will be forgotten and wither away (o). It is expected that organizations with strong feedback loops, strong accountability mechanisms and strong learning cultures will produce more sustainable innovations.

The more feedback loops, accountability mechanisms and learning cultures are embedded in an organization, the higher the likelihood of innovations within that organization to be sustainable.

The organizations with a high embeddedness of FAL will receive relevant information from both inside and outside the organization. They will strive to be successful and sustainable because of the accountability mechanism to which they are subject. They will translate the feedback information into adjusting action if needed, because of the strong learning culture which operates in the organization. After a decision about its future has been made, the innovation can either be changed (i'), terminated (o) or left operating in its current form (i). When changed or left the same (i & i'), the FAL-dimensions will *again* influence its future, as they are factors which constantly and permanently influence the processes,

products and services of the organization. The process depicted above is therefore, theoretically, never ending. Much like the innovation life-cycle as described by Van de Ven and Poole (1995). At the same time, it is expected that there is a direct and causal connection between FAL and the sustainability of the innovations, not ‘just’ a co-variance or mediating effect. The main goal of this dissertation is to find out exactly *if* the above explained causal link between FAL and sustainability of innovations in fact exists, and *how* this link works.

The process discussed above is an ideal type process. It is rationalistic, and depicts a perfectly linear process. It has been argued, however, that the evaluation process is not this linear (Klijn, 2008; Kingdon, 2011). The evaluation process in these works is depicted as chaotic, with unpredictable points of influence of many different actors, with different agendas, resulting in a non-linear process. Notwithstanding the quality of those works, this dissertation assumes a linear process.

4.5.2 Comparing FAL with continuous improvement

The FAL-model introduced in this chapter is initially based on a common thread found throughout the literature discussed in chapter 3; the idea that innovations might have a higher chance of sustainability when they are able to adapt on the basis of evaluation information about its performance, under the pressure of accountability mechanisms, and through learning cultures enabling them to take the right decisions, at the right moment, based on the right information. This would, hypothetically, lead to a streak of incremental improvements to the innovation, in order to increase its sustainability and survival chances.

The observant leader might have picked up on the fact that together, feedback, accountability and learning look similar to the notion of continuous improvement. Fryer et al. (2007, p. 498, italics added) define continuous improvement as occurring “*when all members of the organization work together on an ongoing basis improving processes and reducing errors to improve overall performance for the customer.*” It is seen as a way in which a programme, project, process, or, in the case of this dissertation, innovation will develop through planned and incremental altering of existing ways of working. Continuous improvement has become an integral part of many management toolkits focusing on quality control and improvement (TQM, Lean, Six Sigma, Benchmarking, EFQM Business Excellence model etc. (Fryer & Ogden, 2014)). The concept is also closely related to that of a learning organization (Bessant et al. 2001; Senge, 1990). One could imagine that

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innovations which fall under a continuous improvement scheme have a greater chance of survival, as they are constantly improved to better fit with the goals of efficiency, effectiveness and others. However, FAL differs on two important facts from continuous improvement. One, continuous improvement does not seem to have a foundation in theory (Savolainen, 1998; Bhuiyan & Baghel, 2005). FAL on the other hand, as the previous pages hopefully show, is situated in a vast field of literature dating back over 50 years ago. In this way, FAL might be an improvement on the notion of continuous improvement. Secondly, although accountability is mentioned as an important reason for the diffusion of continuous improvement initiatives (Fryer et al., 2007), the concept of accountability is not integrated in continuous improvement toolkits. FAL, on the other hand, sees accountability as an integral part of the way in which organizations can constantly improve their practices and innovations. Especially since accountability can provide the organization with unique feedback information and learning opportunities, and does not only form the reason why organizations look for feedback and start learning in the first place. So, in conclusion, the literature on continuous improvement is obviously relevant to compare the results of this dissertation, but they can't be simply equated with one another.

4.6 Conclusion

This chapter introduced and discussed the main causal factor of this dissertation: the FAL-model. Feedback, accountability and learning were derived from earlier research findings in research areas such as ICT/IS and healthcare innovation sustainability and policy termination, presented in chapter 3. Organizations are assumed to be at least semi open, non-autopoietic systems with at least some cybernetic single- and double-loop mechanisms. Feedback mechanisms were described as the instruments through which information on the functioning of the innovation is gathered, stemming from several sources. However, for these organizations to in fact go out and find this information, there needs to be an incentive. Accountability mechanisms could provide such incentives. The reports from accountability actors can make organizations aware of the opportunities for improvements that exist surrounding their particular innovation. The possibility of public reporting and sanctions provide a constant pressure to excel, and to search for performance information for the innovation in order to achieve this. The information gathered through feedback and accountability mechanisms, however, are useless, unless lessons are learned

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from it. Learning is the last link between feedback, accountability, and sustainability. Learning interprets the feedback information and draws consequences from it, leading to concrete action, in turn improving the survival chances and sustainability of the innovation. Figure 10 shows this process in a heuristic model. Additionally, it is important to note that these three do not function independently. They are intertwined on many levels, as is discussed in paragraph 4.4. To see exactly how intertwined or independent they are, and if all three can be measured independently, will have to be part of the analysis in the chapters presenting the empirical work of this dissertation. Furthermore, the idea behind the FAL-model, of constant incremental improvement, draws comparisons to the continuous improvement literature. However, the latter does not have a thorough theoretical grounding, which this model can provide and contribute. It further adds accountability to this particular niche of public management research.

To conclude, this chapter introduced two versions of the FAL model. The conceptual model, and the causal model. This implies that two things need to be tested. On the one hand, it is important to test the relations between the different dimensions, and investigate if they are indeed conceptually different, and/or linked empirically. Secondly, there is a need to test the causality between the model and the sustainability of public sector innovations. This again emphasizes the exploratory nature of this research, wherein a new topic is investigated, a new model is tested and, as will be further explored in the next chapter, an innovative methodology is applied.

Chapter 5 – Research Design and INUS-condition

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Chapter 4 described and introduced the FAL-model which is thought to be relevant in explaining the sustainability of public sector innovations. This chapter turns to the discussion of how the FAL-model could be investigated for its explanatory power. The separate empirical chapters (6 and 7) will go into the details of the applied methodology, whereas this chapter will lay out the broader research design of which the used methodologies are an extension. The start of this chapter will focus on the central research questions which are abstracted from the hypotheses mentioned brought forth in chapter 4. Afterwards, paragraph 5.2 seeks to answer the question of how these research questions will be investigated. In short: through what Lieberman (2005) coined as a nested analysis, with

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a quantitative research design, followed by a qualitative research design. The manner in which the cases are selected for this dissertation will be discussed in sub-paragraph 5.2.2. The question that then remains in which manner the empirical data will be structured in order to investigate a causal relation between FAL and the sustainability of innovations. This framework, the INUS-condition, will be introduced in paragraph 5.3, which will include discussions on the consequences of the approach for the ontology, epistemology and research design of this dissertation. The chapter will be closed off with a discussion on the optimal and realistic empirical investigation following the chose research design and INUS-condition.

5.1 Research questions

Chapter 4 discussed the FAL-model in detail, and put forth the following hypothesis:

The more feedback loops, accountability mechanisms and learning cultures are embedded in an organization, the higher the likelihood of innovations within that organization to be sustainable.

Hence, the following research questions and sub-questions are formulated (answers on which are needed in order to answer the main research questions):

RQ1: To what extent can feedback, accountability and learning explain the sustainability of awarded public sector innovations?

RQ1a: To what extent are feedback, accountability and learning present in the organizations of the investigated innovations?

RQ1b: How sustainable are the investigated innovations?

RQ1c: Is there a correlation, and what is the nature of the correlation between the embeddedness of feedback, accountability and learning in an organization and the sustainability of the innovation?

Whereas the first research question has a more exploratory nature, the second and third research questions takes a more causal approach:

RQ2: How do feedback, accountability and learning explain the sustainability of public sector innovations?

RQ2a: What is the process narrative of sustainable and unsustainable public sector innovations?

An answer for the first research question (RQ1) will have to be sought with a quantitative approach, whereas the second research question, into the nitty-gritty of the causal relation, will be tackled with a qualitative research design. Together, the answers to both research questions will be able to either adopt or reject the stated hypothesis. The question at this point is: how are these questions going to be answered? What methodology is most appropriate to do this?

5.2 Research design

In order to find answers to the research questions (RQ1 and RQ2) mentioned before, and to test our hypothesis that FAL can (at least to a certain extent) explain public sector innovation sustainability, we need to

- a) measure the presence of FAL in our selected cases (RQ1a);
- b) measure the sustainability of public sector cases in our selected cases (RQ1b);
- c) establish the existence of a correlation between FAL and the sustainability of public sector innovations (RQ1c);
- d) and investigate the way in which the link between FAL and sustainability operates at a more causal level (RQ2a).

The first two steps (RQ1a and 1b) are descriptive, and show whether the two most important components of our research questions and hypotheses are present. '1c' entails the exploration of a relationship between the two factors, for which quantitative research is best suited (Gerring, 2007). '1a' and '1b', consequently, should also be measured in a quantitative way. The first three points will be dealt with in chapter 6. This quantitative chapter should also focus on investigating the validity of the concept of FAL. Through a factor analysis it is possible to investigate whether or not it was possible to measure the concept at all, or if it is found in other forms in practice. Task 'd' (RQ2a), then, focusses on a better understanding of the mechanisms which underpin the found relationships in 'C', for which qualitative methods are a better match (Schott, 2015). This combination of quantitative and qualitative

methods constitutes a mixed-method approach. Creswell (2015, p. 2, italics added) defines this approach as follows:

“An approach to research in the social, behavioural, and health sciences in which the investigator gathers both quantitative (closed-ended) and qualitative (open-ended) data, integrates the two, and then draws interpretations based on the combined strengths of both sets of data to understand research problems.”

Where a multiple method design would use different methods to ‘simply’ double-check the results, as Creswell points out above, a mixed methods approach hopes to not just check, but refine and elaborate on the results found from the quantitative studies by engaging in additional qualitative research. In this way the research design follows what Lieberman (2005) coined as a ‘Nested Analysis’. In such an analysis one starts out with a large-N analysis (most likely through a survey) in order to assess the robustness of a hypothesis. On the basis of the results one then moves to a qualitative study of the relationship under investigation, either to further refine and test the model, or to build a new one if the large-N results were unsatisfactory. For this dissertation, this means that a large-N analysis of the relationship between FAL and the sustainability of public sector innovations will be conducted, followed by a qualitative study of this relationship, either to further refine and test the model, or to build a new one if the large-N results were unsatisfactory. This will then lead to an agenda for further research, which makes the nested analysis into a cyclical approach.

Measuring and exploring the relationship between FAL and sustainability will be done through a survey, covering award winning public sector innovations. The qualitative leg of this research focuses on three deliberately chosen cases from this survey. Semi-structured interviews and focus groups are used to further investigate the links that are found in the quantitative data, and especially focus on the issues of causality, necessity and sufficiency, for which quantitative methods are less well equipped (Most & Starr, 2003). The operationalisation of this research design will be discussed in paragraph 5.4, after it has become clear what type of cases and data are required in order to sufficiently answer the research questions of this dissertation. The details of the survey and the interview techniques are discussed further in chapter 6. Before turning to the issues of causality,

necessity and sufficiency, the choice of countries and case selection method will be discussed. In paragraph 5.3, next, the use of the INUS framework is discussed as a means to structure the findings from the quantitative and qualitative legs of this dissertation, as well as attending to a methodological gap in the public sector innovation literature.

5.3 INUS-conditions

Having gathered and analysed both the qualitative and the quantitative data, one needs a framework in which to determine the causality of her/his results. One way to order the results is the use of the INUS-condition. First, in sub-paragraph 5.3.1, the underlying principles of the INUS-condition are explained. Later on the ontological and epistemological consequences of this approach are discussed in 5.3.2. Sub-paragraph 5.3.3 discusses how causality, necessity and sufficiency ought to be investigated in social scientific research. These issues, taken together with the research design as discussed before, are then translated into an ideal type research design in 5.3.4, including a discussion on a more realistic research design, and exactly how and why this differs from the ideal type.

5.3.1 Sufficiency, necessity and the INUS-condition

From the start, it is clear that FAL will not be able to explain the entirety of variation in public sector innovation sustainability. The functioning of innovations is dependent on many situational and contextual elements in practice (Fuglsang & Ronning, 2014a & 2014b). Without the situational and contextual factors, in its most simple terms, the effect of FAL on the sustainability of innovations could be formulated as follows:

FAL → Sustainable Innovations

This formula says two things about necessity and sufficiency. If W (FAL) is necessary for Z (sustainability) to occur, one should state that ‘only if W, then Z’. Any occasion at any time and in any context, without W, will never produce Z. Sufficiency, on the other hand, sticks to the former: ‘if W, then Z’. However, sufficiency says nothing about circumstances where W is not present (Goertz, 2003b; Most & Starr, 2003). A simplified example: free and fair elections (W) are necessary for a democracy (Z). Without them, a democracy can never be observed. However, they are not sufficient. A free press and freedom of assembly, to name but two, are also necessary in order to speak of a democracy. At the same time,

constitutional monarchies, as a governing systems, might be sufficient for a democracy, but it is not necessary. Presidential systems are equally sufficient and unnecessary to form a democracy. The difference between necessity and sufficiency is important here, and often misunderstood (Goertz & Starr, 2003; Marini & Singer, 1988). Some examples from the social sciences (taken from Goertz, 2003, pp. 70-71) are:

“[States] will adopt a given policy alternative if, and only if, they have both the ‘willingness’ and the ‘opportunity’ to do so.” (Most & Starr, 1984, p. 393, italics added)

“Communication leads to knowledge if and only if: 1) the speaker is persuasive, 2) only the speaker initially possesses the knowledge that the speaker needs, and 3) common interests or external forces induce the speaker to reveal what he knows.” (Lupia & McCubbins, 1998, p. 69, italics added)

Most research shows how *“multiple causal factors combine together to produce particular outcomes. The individual causal factors are neither necessary nor sufficient; rather, they are part of an overall combination that is sufficient for the outcome.”* (Mahoney, et al. 2009, p. 124, italics added; see also Marini & Singer, 1988; and Einhorn & Hogarth, 1986) Van de Walle & Bouckaert (2003) add that:

“[i]t may be clear that in our field of research there are only few situations where we can find a counterfactual conditional relation: if X then Y. Instead we find situations where “if X, then Y” is valid as well as “if not X, then also Y” or “if X, then not necessarily Y”, and where this information does not allow us to conclude that a relation is absent.” (p. 893)

FAL is assumed to be an ‘INUS cause’, as it is likely neither individually sufficient nor necessary to explain the sustainability of public sector innovations. It would be foolish to think that FAL is the only factor in explaining the existence of sustainable and non-sustainable innovations. Social reality is never that simple. Although many researchers discuss their findings in terms of sufficiency and necessity (see Goertz (2003a) for many examples), very few use the INUS-framework in order to thoroughly structure their

findings. The INUS-framework used in this dissertation is therefore a test and expansion of the public sector innovation research field, a methodological gap in the literature, just as the topic is. To the best of the author's knowledge, there has been no attempt yet to apply this framework in public sector innovation research, although some have used it in the wider public management literature (e.g. Van de Walle & Bouckaert (2003) and Troupin (2012)). An important part of the conclusion will therefore focus on the appropriateness of the INUS-condition for public sector innovation research.

5.3.2 INUS-condition principles

In this dissertation the INUS-condition framework is used in order to structure its findings, and analyse the causality between the independent and dependent variable. The abbreviation INUS stands for "An *insufficient* but *necessary* part of an condition which is itself *unnecessary* but *sufficient* for the results." (Mackie, 1965, p. 246)

An INUS-condition is, in short, a way to structure these different variables and the particular roles they play in determining the value of a dependent variable. In a metaphor, the principle of an INUS-condition can be explained as follows: A short circuit (W), is necessary to burn a house down (the outcome: Z), but only in combination with (Insufficient) the presence of flammable materials directly surrounding the wires (X). However, the burning of that house could also have been caused by a flash in the pan (Y), with which the short circuit and flammable materials surrounding the short circuit had nothing to do. This can be written down in a formula as follows:

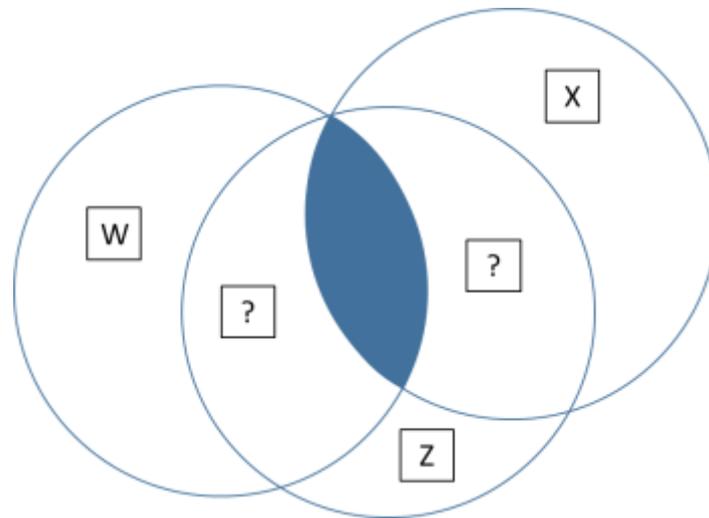
$$(W \& X) \text{ or } Y \rightarrow Z$$

In the research presented in this dissertation it is assumed that FAL is a necessary part in explaining the sustainability of public sector innovations (W), but it is insufficient in itself to explain the variation of 'Z'. For this, it needs another factor (X). Note that 'X' can be an umbrella symbol for multiple INUS causes. However, each INUS cause which is grouped under 'X', should be linked with FAL (W). If the INUS cause is unrelated to 'W', but does explain the variance in 'Z', it is a 'Y' factor, for which FAL (W) is unnecessary to explain the variance (Brady, 2008; Denise, 1984). This means that only when 'X' and 'W' overlap, they can cause 'Z', keeping Y constant. Mahoney and his colleagues visualize this through Figure

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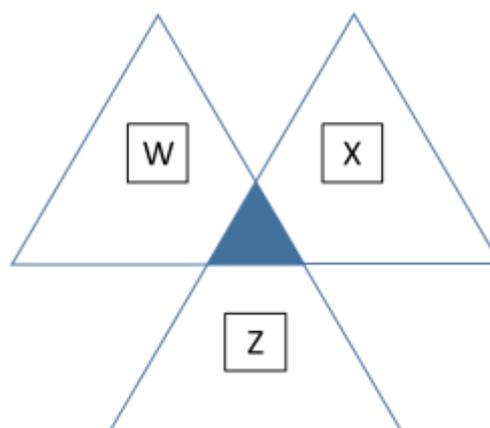
11. Where W and X overlap, Z occurs. Not all of Z is placed inside of this overlap, however since W and X are not necessary causes. The cases of Z outside of the overlap can be explained by Y.

Figure 11: Venn-diagram of an INUS condition



However, Mahoney et al.'s diagram has two areas, which logically cannot exist in an INUS-condition: the overlapping parts noted with a question-mark. These parts would indicate instances where W or X are individually sufficient for Z to occur, the exact opposite of what an INUS-condition is attempting to formulate. In order to better represent the nature of an INUS-conditions (emphasizing the necessity *and* insufficiency), this diagram is changed in this dissertation with the use of triangles instead of circles: a more accurate portrayal of an INUS-condition and INUS-causes:

Figure 12: Diagram general INUS-condition

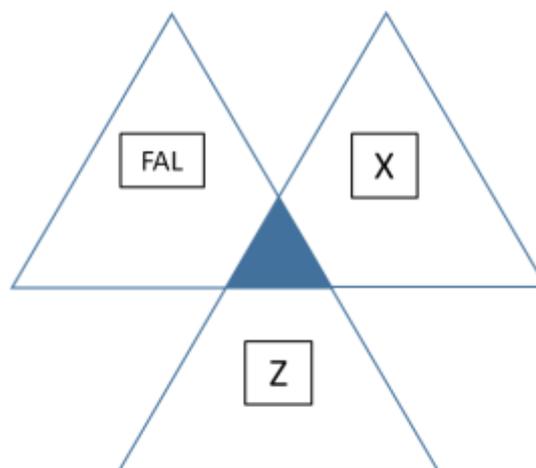


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In this figure there is no overlap between 'Z' and 'W' or 'X' individually, since neither of them are supposed to be sufficient to explain 'Z'. However, where 'W' and 'X' do overlap, 'Z' will occur. Together they are, hence, sufficient for 'Z', but insufficient by themselves. Nevertheless, there are occurrences of 'Z' which fall outside this overlap, since 'W' and 'X' are not necessary to explain Z's manifestation. Finally, this diagram is also able to show how important 'X' and 'W' are in explaining 'Z': the larger the overlap with 'Z', the closer they are in explaining the occurrence of 'Z' all by themselves. If we translate this to the research topic and research question of this dissertation, we can depict and formulate this as follows:

$$(FAL \ \& \ X) \ \text{or} \ Y \rightarrow Z$$

Figure 13: Diagram FAL INUS-condition



5.3.3 X, Y and contextual factors

The last question we have to answer before finalizing the INUS-condition is what 'X' and 'Y' could entail. Both are umbrella terms, making it hard to pin-point what they are exactly. 'X' are factors which are connected with FAL, and can together explain 'Z'. Y, basically, is everything else which can explain 'Z', independent of both FAL and 'X'. Examples of 'X' could potentially be leadership and information quality. The data which is provided through feedback mechanisms might be irrelevant, or of low quality. The evaluation usage and evaluation impact literature showed that this could be of great significance (Jüngen, 2013; Johnsen et al., 2009). 'Y' factors, not connected with FAL or X, could potentially be socio-political dynamics (Gould-Williams, 2004), external pressures (Berry & Berry, 1999; Boyne et al., 2005), or a change in political administration or executive. We stress the word

‘potentially’, since this dissertation concerns exploratory research. It will be an important part of answering the second research question to find out which factors X and Y could entail.

‘X’ and ‘Y’, in other words, could be named ‘context factors’. Often used as an umbrella-term, and taken light heartedly, ‘context’ is actually a very complex concept. It is defined here as “factors influencing events and actions”, in order to discriminate it from more ontological and epistemological interpretations of the concept ‘context’ (Pollitt, 2013a, p. 93). Pawson (2013, in Pollitt, 2013b, p. 213) further shows that contextual factors can be distinguished with regards to the layer at which they are present:

- The individual level (background, characteristics and capacities of actors)
- The interpersonal relations (between actors)
- Institutional settings (its rules and cultural norms)
- And the infrastructure (wider social, economic, political and cultural setting of the object)

The issue of context is not often dealt with directly, or with much insight and delicacy. This is especially the case with regards to the methods used to investigate it (Bamberger, 2008). It is seen and approached as something “out there”, rather than as a set of distinct variables, with consequential attempts at operationalization and investigation (Proeller, 2013). Most research deals with context inductively, as it goes along (Pollitt, 2013c). This study will also investigate the context in which FAL influences the sustainability of innovations in an inductive fashion. As mentioned before, the qualitative part of this study will be the most appropriate part to do this. The case studies in this study will shed a light on the context in which FAL has a potential effect on influencing the sustainability of the particular innovations of those cases, and which specific contextual factors had a limiting or enhancing influence on that effect. Although it remains a black box for now, there is a strategy for dealing with context as an influencing factor: the INUS-condition. The factors we find to be influential in the qualitative part of this study, will be analysed in that framework, and categorized under either ‘X’ or ‘Y’. This provides a good starting point for further research, in order to test the robustness of the qualitative findings, and the generalizability of these contextual factors’ effect of the sustainability of public sector

innovations. In this way, this dissertation tries to deal with contextual factors in a structured and substantiated way.

Before turning to the ontological and epistemological implications of choosing for the INUS-model in order to structure the dissertation’s findings, it is important to stress that the INUS-model is an ideal type structuring of research results. It is a model which comes forth from the philosophy of science realm, and is primarily discussed in books and works on epistemology and ontology. Whether or not the translation of the INUS-model from that area into empirical public sector innovation research is possible, will be an important part of this dissertation’s conclusion. For now, the discussion of the ontology and epistemology, in the following sub-paragraph 5.3.2, will frame the way in which the research presented in this dissertation ought to take place. This will then be discussed in 5.3.3.

5.3.4 Ontological and epistemological implications

There are broadly three streams in the ontological and epistemological assumptions which determine which methods are most appropriate in answering the research questions: positivism, constructivism, and critical realism (Pollitt & Bouckaert, 2009). Oomsels (2016) adapted a summary of methodological positions which Pollitt and Bouckaert expounded. This summary is copied in table 4.

Table 4: Summary of ontological and epistemological varieties.

	Positivist methodology	Critical realism	Constructivist methodology
Ontology	Realist	Reality is both objectively and subjectively constructed (Reed, 2001)	Social constructivist
Epistemology	Objective	Assumption of objectivity in research can expand knowledge, but knowledge cannot be separated from subjective worldviews and theories held by respondents and researchers.	Phenomenological, intersubjective
Main activity	Deductively testing causal hypotheses derived from general theories	Looking for explanations of how key processes operate within specified contexts to produce particular outputs	Inductively exploring multiple, socially constructed meanings
Typical methods	(Statistical) testing of relationships between dependent and independent variables	Thick descriptions, but disciplined within broad theoretical or conceptual frameworks	Interpretations of language and texts. Egalitarian and participative research processes
Ambitions	Generalizations about stable, cause- and effect relationships between variables	Small and medium-sized generalizations applicable across a limited number of clearly specified contexts	Local understandings, sometimes arriving at intersubjective, consensual interpretations through participative discussion

This shows the most important distinctions between the three 'schools' of ontology and epistemology. Positivists assume that reality is independent of the observers dispositions, and that reality can be objectively measured through different tools. Constructivists, on the other hand, contest this notion, and assume that the reality perceived by the observer is formed because of her/his held dispositions. 'Reality' as such is not measurable objectively, as it differs per person, per situation and per context (Haverland & Yanow, 2012; Oomsels, 2016). Critical realism, as a middle ground of sorts, agrees that the reality can be measured and understood through positivist tools, "*but it cannot be separated from subjective worldviews and [...] theories held by the participants, or the researchers.*" (Oomsels, 2016, p. 111, italics added)

Firstly, if, as is the case in this dissertation, one wants to empirically identify causal relations in terms of necessity and sufficiency, the constructivist viewpoint is not an option. Secondly, INUS condition frameworks require the use of variables, which is linked to the positivist approach. Thirdly, it is important to note that this dissertation adopts both an inductive and deductive reasoning. A clearly stated hypothesis will be tested (deductive), but the X and Y of the INUS-condition will be investigated inductively. In this light, this dissertations will opt for a positivist approach. With regards to the measurability of both the variables and their relationship, this dissertation thus maintains the position that both are in fact measurable and observable through positivist research tools. It is important to note that a mixed methods approach, such as this research design, should not be a mix of ontological & epistemological assumptions. This entails that positivist research tools are used and accepted throughout the dissertation, in order to investigate and measure reality. Although the inductive nature of the second part of this dissertation (leaning towards the thick descriptions from the critical realism school) is slightly at odds with this positivist approach, it does not deviate too far off from the modeled research design in order to be truly problematic. Especially since a positivist approach is conducted in this inductive investigation.

5.3.5 Measuring causality, necessity and sufficiency

First off, it is essential to note that a set-theoretic approach such as INUS-conditions is deterministic in nature, and not probabilistic (Goertz, 2003; Ragin, 2003). You are either in,

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or out of the set. Variables (such as FAL) are either present, or absent. The hypothesis introduced earlier has a probabilistic character, however.

The more feedback loops, accountability mechanisms and learning cultures are embedded in an organization, the higher the likelihood of innovations within that organization to be sustainable.

This is appropriate for the use of the quantitative part of the research (exploring the existence of a relationship and testing the validity of the concepts). The case-study method, however, used to further investigate the causal relationship between FAL and sustainable innovations should have a different hypothesis, since this is the part of the dissertation where the INUS-methodology is fully applied.

Organizations with strong feedback loops, accountability mechanisms and learning cultures, embedded in the organization, will have sustainable innovations, ceteris paribus.

The key difference is that the word 'likelihood' has been omitted, and that organizations now either have, or don't have a strong FAL-model embedded in their organization. 'Ceteris paribus' in this hypothesis refers to the 'Y' in the INUS-condition. When that factor is kept constant, the hypothesis above is believed to hold.

Whereas the hypothesis of set-theory-based research ought to be phrased in deterministic words, the variables themselves don't have to be rigid yes/no questions (Ragin, 2003). Ragin shows that for certain concepts it is difficult to know whether it is present or not in a specific case. When is one definitely protestant? When is a country rich? When is FAL exactly embedded in an organization? To determine this, it is important to have in-depth knowledge of the cases. The determination following this knowledge has to be firmly rooted in theoretical knowledge. When those preconditions have been satisfied, it is possible to use scales (such as the embeddedness of FAL) in set-theoretic research.

Having established how the key variables will be measured, the focus can now shift to the question of how this future data will lead to statements about causality, necessity and sufficiency in this dissertation. A question which many research overlooks, although often

key in a thorough research design (Goertz & Starr, 2003). The three issues will be dealt with in this order.

Causality

The main issue in investigating the causality between one factor and another, is how one can be certain that causality has been actually observed at all. A rather fundamental point. This becomes especially pertinent when, as in social sciences, the cause, effect, or both, are difficult to pinpoint exactly. How can one speak of causality when the cause is intangible? When exactly have we measured feedback, accountability or learning? Brady (2008) notes four types of research approaches to investigate causality, which an ideal-type research design would combine:

- 1) Neo-Humean regularity
- 2) Counterfactual
- 3) Manipulation
- 4) Mechanisms and capacities

The first approach is based on observing the same relationship over and over again. This has a strong connection to statistical research. Causality, in this sense, can be established if there are repeated observations of the same occurrence and the same cause, the former of which is always supposed to be temporally preceded by the latter. This approach takes safety from numbers. It is therefore strongly linked with the idea of correlations and regression analysis. Translated to the theme of this dissertation, a measurement of the survival of the innovation and their respective FAL scores could be a good basis. A logistic regression would then provide answers which would shed a light on the neo-humean causality between the two. Turning back to the question of how one can observe such intangible issues as this dissertation is concerned with; this issue is less of a problem in statistical and regression analysis. What is more important here, is that certain cases have *more* feedback mechanisms than the other, for example, rather than one case having feedback, and the other not. It is important to note that this approach has a probabilistic nature. A deterministic hypothesis cannot be proven or disproven with these means. They can, however, serve as supporting evidence.

The second, counterfactual approach, puts more emphasis on experimentation methods: finding out which factor is causal by removing that very factor. One way to do this in social scientific research is by comparing cases which differ from each other on the variable of theoretical importance (Lijphart, 1971; Mill, 1888). Here it is possible to investigate the seemingly simple statement: if 'a' occurs, so does 'b', and if 'a' does not occur, neither does 'b'. Cases could be chosen which differ on the occurrence of b, after which the occurrence of a could be investigated, or vice versa. In the context of this dissertation, cases could be investigated which have both sustainable and unsustainable innovations. The question then is whether there is a difference in the way in which the FAL-model operated in these cases, and if this is connected to the (non-)termination of the innovation. In order to rightfully use this method, with its deterministic characteristics, it is necessary to establish whether FAL operates in an organization, yes or no. As discussed before, determining the existence of intangible factors can be a challenge.

Thirdly, manipulation refers to the realm of natural (exact) sciences and quasi-experiments (mainly in medicine and psychology), where (almost) everything but the effect of the manipulation can be held constant. “[R]esearchers try to minimize error in the estimation of causal effects by introducing some kind of variation that comes from outside the model.” (Jilke et al., 2016, p. 69, italics added) Such experimentation is very difficult to design and conduct in the social sciences. Quasi experiments have a more pragmatic approach, and try to create an environment which there can be controlled for as many factors as possible, in order to investigate a causal effect. The most well-known and most often used examples of this are trials in the medical sciences and college-student experiments by psychologists and the like. Public administration and public management have recently started to incorporate more experimental studies (see for example the special issue for PAR, edited by Jilke et al. (2016)). Quasi experiments are certainly possible in this discipline, but for the specific topic discussed here it is hard to envision a design which would comply with the necessary standards for good experimental research.

Finally, a focus on mechanisms and capacities enters the realm of process tracing, a specific type of case study analysis, for which comparisons are not an option (although there is discussion on this issue within the literature) (Bennet & George, 2005; Beach & Pederson, 2013). ‘Mechanisms’ in this approach are “*entities and activities organized such that they are*

productive of regular changes from start or set-up to finish or termination conditions.” (Machamber et al., 2003, p. 3, italics added) Mechanisms are thus made up of different parts, or pieces. How these parts are related to each other is based on causal laws. Together they form a causal mechanism. As has become clear from the hypotheses in this dissertation, the focus here is not on one specific cases, but on a larger set of cases. It is thus necessary to compare cases, as will become even more clear in the following discussions on necessity and sufficiency. Secondly, the amount of data and the number of interviewees which is necessary to conduct a proper process tracing study is significant. It is not expected that this dissertation could live up to that standard, for reasons which will be further explained in chapter 7.

As mentioned, this research will only be able to adopt two of these four approaches: the neo-humean regularity approach, and the counterfactual approach. Quasi-experiments are not deemed possible in the context of this dissertation topic, and a mechanistic approach defeats the purpose of finding generalizable causes of sustainable public sector innovations. Hence, the results will form non-perfect evidence of causality, but nonetheless acceptable and well within the parameters of diligent and conscientious research. Using the neo-humean regularity approach means that the sample-size and the strengths of the relation which is (hypothesized to be) found are important elements in determining whether there can be talk of causality or not. In the counterfactual approach the comparison between cases becomes important. In what ways are the cases comparable? The more comparable they are, the more the counterfactual can function as a quasi-experiment. Evaluating the comparability of the cases will thus be important in determining how strong the causal claims can be, based on the results of this dissertation. As the observant reader will have noted, the combination of the neo-humean regularity approach with the counterfactual approach is the same as a large-n research design preceding a small-n research design. In other words: it resembles the nested analysis as it was proposed in sub-paragraph 5.2.

Necessity & Sufficiency

The second issue, after that of causality, is that of necessity and sufficiency. Most and Starr (2003) show that case selection is of the utmost importance in being able to say anything about both issues. They give the following hypothetical cases, where ‘¬’ indicates the non-

occurrence of the independent or dependent variable, and where the analyst has focused purely on the occurrence of the independent variable:

Table 5: Hypothetical occurrence of independent variables

Pattern 1		
Case 1	X	Y
Case 2	X	Y
Case 3	X	Y
Pattern 2		
Case 1	X	Y
Case 2	X	¬Y
Case 3	X	¬Y
Possible pattern in omitted cases 3		
Case 1	¬X	Y
Case 2	¬X	Y
Case 3	¬X	Y

“If X was invariably followed by Y [...], the investigator will have some reason to conclude that the evidence is consistent with the proposition that X was indeed a sufficient condition for Y.” (pp. 28-29, italics added) However, both pattern 1 and 2 are not suitable strategies to make claims about the necessity of X for Y to occur. For this to be possible one would have to investigate whether the non-occurrence of X also coincides with the non-occurrence of Y, but this is omitted. The researchers have focused solely on the occurrence of the independent variables, causing possible cases in pattern 3 to be systematically neglected. In other words, to investigate the necessity of X to cause Y, it is important to investigate ¬X as well, and thus to actively seek variety on the independent variable. In the research presented here this means that nothing can be said about the necessity of FAL if only cases with a high or only cases with a low FAL score are investigated. For example, it would theoretically still be possible for low FAL scores to show sustainable innovations, even though all the observed cases are high FAL scores connected to sustainable innovations. The importance is to get the former option out of the realm of speculation by actually looking for cases with different FAL scores, and different outcomes.

The same goes for the importance of variety on the dependent variable. Most and Starr

(2003, p. 31) give another example, displayed in table 6, where the researchers have focused purely on the occurrence of the dependent variable.

Table 6: Hypothetical occurrence of dependent variables

Pattern 1		
Case 1	X	Y
Case 2	X	Y
Case 3	X	Y
Pattern 2		
Case 1	$\neg X$	Y
Case 2	$\neg X$	Y
Case 3	X	Y
Possible pattern in omitted cases 3		
Case 1	X	$\neg Y$
Case 2	X	$\neg Y$
Case 3	X	$\neg Y$

Here, “[i]n excluding those cases in which Y did not occur, the analyst cannot be certain that the sample has not also excluded cases in which X did appear but was not followed by Y.” (p. 30, italics added) Hence the analyst cannot make statements about the sufficiency of X causing Y. Contrary to the patterns in table 6 (no variety on independent variable), “[a] focus on the full universe of cases in which Y as a dependent variable has occurred is appropriate for assessing the possible necessary conditions of Y.” (p. 30, italics added) Again, this shows the importance of looking at both innovation which were terminated, and innovations which remained sustainable, in order to make any kind of argument about sufficiency and/or necessity.

As a final note: the inductive nature of such case studies makes it impossible to be absolutely certain one has found all possible combinations ‘out there’. This means that patterns 1 and 2 in table 5 and 6 can never lead one to make definitive statements about sufficiency. In the same way, one could argue that case studies can never add up to a certainty. That white raven might always be out there. Nonetheless, selecting on the dependent side is an essential step in investigating statements of sufficiency and necessity (Landman, 2008). As Goertz (2003a, p. 69, italics added) refers to George and Bennet (2005): “one can construct typological theories using various case studies as means of generating the

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various causal paths. The case studies are the “building blocks” that illustrate and describe the various means of arriving at [the outcome].”

In its most rudimentary form, this means that we can find the following cases, or building blocks, of which those highlighted would support the hypothesis in this dissertation, and the non-highlighted cases would speak against it (keeping Y constant at 0 (no Y observed)).

Table 7: Possible case-findings.

Case	FAL	X	Sustainability
1	+	+	1
2	+	+	0
3	+	-	1
4	+	-	0
5	-	+	1
6	-	+	0
7	-	-	1
8	-	-	0

That is to say, in case 2, 3, 5 and 7, FAL and X are found to be neither sufficient nor necessary for sustainable public sector innovations to occur. Here, a Y would potentially be able to explain the occurrence or non-occurrence of sustainability, or the hypothesis of this dissertation turns out to be mistaken. With regards to Y it has to be mentioned that when this is in fact observed (1), the sustainability can flip to 1 or 0, regardless of the values under FAL and X. This means that there are actually sixteen instead of eight possibilities for table 6: eight for Y(1) and eight for Y(0). It is up to the researcher to investigate what this Y might be.

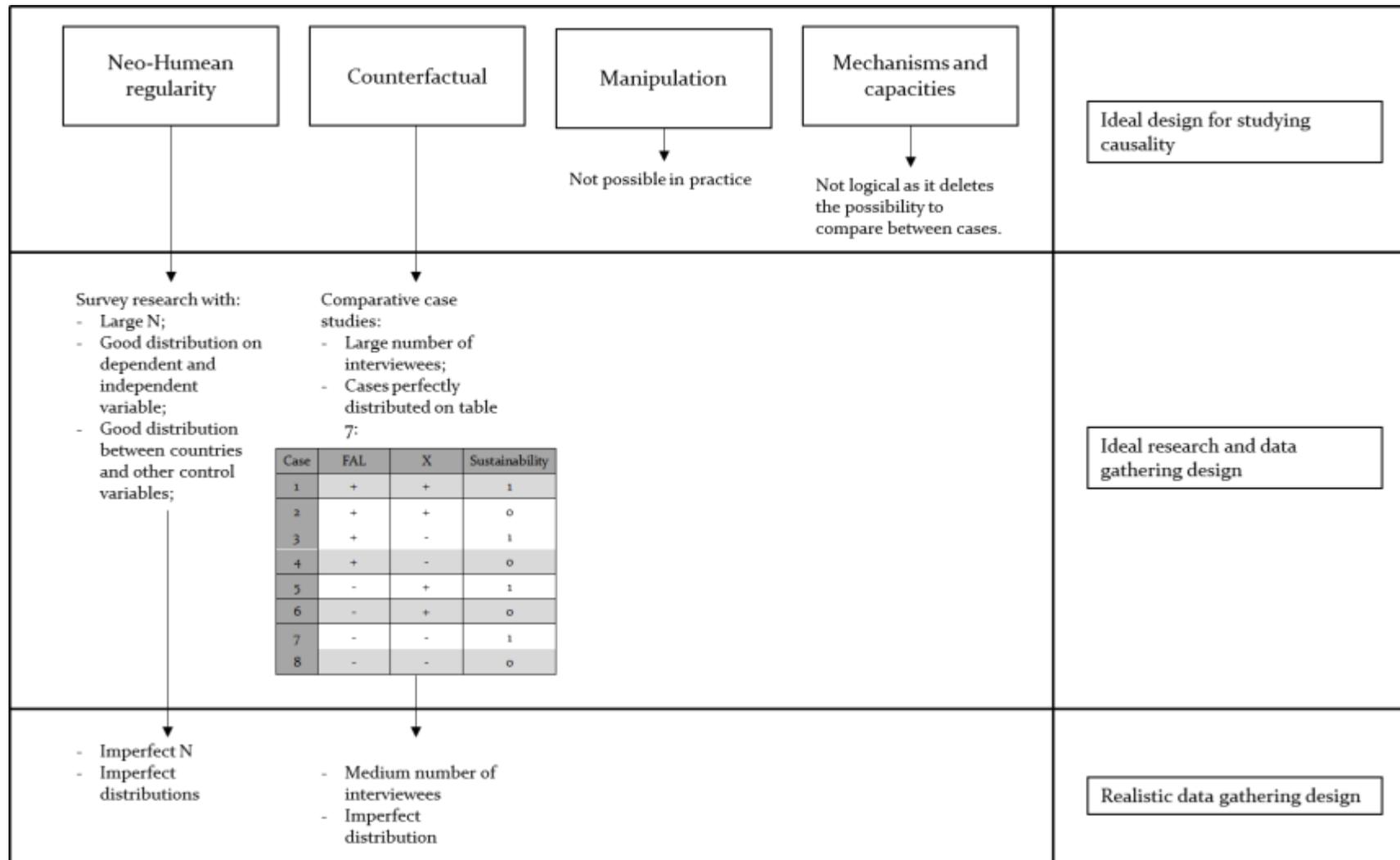
If the conclusions of this dissertation want to touch upon the necessity *and* sufficiency of FAL and X, it is important to include as many of the highlighted cases in the analysis. Ideally all four, but at least two types: with the occurrence (case 1), and with the non-occurrence of sustainability (case 4, 6 or 8) (Dion, 2003). The conclusion will need to be clear about its explanatory power, considering the difficulties surrounding measuring sufficiency, necessity and selecting on the dependent outcome (Landman, 2008))

5.3.6 Consequences for research practice

The research design in this dissertation is, in short, based on a quantitative leg to explore the concept of, and the relationship between FAL and sustainability, a qualitative leg in order to further investigate the nature of this relationship, and the framework of an INUS-condition to order and analyse the results. Consequently, causality, sufficiency and necessity play major roles in this dissertation. This, in turn, has consequences with regards to how the data ought to be evaluated, and which cases ought to be analysed. This leads to the following exposition of the ideal research design and the connected research methods.

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Figure 14: Ideal and practical research design in studying INUS-conditions in public sector innovation research.



Having cast-off the manipulation and mechanism approach as possibilities in paragraph 5.3.3, the first two approaches are left to investigate the causality between FAL and sustainable innovations in an INUS-framework. The neo-humean approach is best carried out with a large-n research design, for which, in turn, a survey is most suitable. In quantitative research, as a rule of thumb, the ideal data set has a large number of cases (how many is sufficient depends predominantly on the number of independent variables one wants to include), with a good distribution on both the independent and dependent variables. This increases the number of statistical analysis one can carry out, and likewise the quality of the results stemming from those analyses. Secondly, the counterfactual approach is better suited for a qualitative approach, investigating a few cases in-depth and comparing them. Here the ideal dataset consists of as many interviewees or data-points per case as possible, with cases which are as perfectly as possible distributed among table 7. However, every research has its limits and flaws, and hence, it is more realistic that this dissertation could end up with the dataset summed up in the lower part of figure 14. Problems in receiving filled in surveys, finding suitable cases and mundane issues such as time, money or language can form important barriers in achieving the ideal dataset. Chapter 6, discussing the quantitative methodology and including the quantitative data analysis will go in more detail on how close our data gathering came to the one visualized in figure 14. The same goes for chapter 7, albeit for the qualitative leg of the research. The conclusion of this dissertation will further review and reflect how appropriate and reasonable the research design proposed here is for research such as that presented here.

5.4 Available data³

Sub-paragraph 5.3.6 presented the ideal research design and data needed to investigate the hypothesis and research questions of this dissertation. In this paragraph the operationalisation of the research design will be discussed. The more detailed discussion on

³ Parts of this paragraph are adapted from Van Acker, W. & Bouckaert, G. (2018). What makes public sector innovations survive? An exploratory study of the influence of feedback, accountability and learning. *International Review of Administrative Sciences*, 84:2, as well as Van Acker, W. & Bouckaert, G. (2015). What makes public sector innovations survive? An exploratory study to feedback, feedback, accountability and learning as explanatory factors. EGPA Conference Proceedings, Toulouse, 26-28 August.

the methods used in this research will be laid out in chapter 6 and 7. Here the focus will be on the case selection method, and the countries included in the research.

Starting off with the case selection, it has already been mentioned before in the discussion surrounding the definition of the concept innovation, that the usage of innovation award programmes might be a good solution to side-step the conceptual, academic discussion, and let practitioners speak. Several researchers have done so in the past, and have used award winners and nominees as proxies for innovations (Borins, 2000, 2001a, 2008; Glor, 1998; Rangarajan, 2008; Golden, 1990; Bernier et al., 2014). The award method has several advantages over 'simply' asking respondents whether they innovate or not. First of all, it moves the focus from just the organization to include the innovation itself. Secondly, a quality check on the cases is carried out by the award assessors in the jury. Thirdly, the project-description and contact information included in the award fiches, provide a good starting point for further in-depth research. Finally, using this method implies that this dissertation uses a broad, practice-based definition of innovation. Innovations could be replicated from others, but implemented in a different, challenging environment, it could concern the upscaling of an innovation, as well as the introduction of something completely new.

However, by using award winning or nominated innovations, there arise several issues which should be addressed. This method has been criticized in the past (Lynn (1997); Borins (2001b) and Overman & Boyd (1994) in Borins 2008). The main points of critique on 'best practice research' are summed up as follows by Borins (2008):

- a) Lack of follow-up on the self-proclaimed innovations;
- b) Organizations which succeed today may fail tomorrow;
- c) The focus rests on successful organizations alone, instead of comparing them with mediocre and failing ones.

Regarding point a), this does not have to be problematic as long as the organization of an award programme takes it into account in their processes. The award programmes used in this dissertation use on-site visits and other checks to analyse if the applications do in fact constitute genuine innovations. The second point (b) is exactly what the purpose of this dissertation is: the longevity and sustainability of the innovations. Point c), then, is

connected to the notion of selection on the dependent variable, so that variation on that variable is limited or non-existent. This part of the criticism cannot be denied, but, as discussed in sub-paragraph 5.3.5., it is necessary for the purpose of this dissertation. In using the award method, there are four categories of cases:

- Non-submitted innovation
- Submitted innovations
- Of those: the nominated innovations
- Of those: the winning innovations

The award method only looks at the first two categories. Finding and reaching cases belonging to the third and fourth category becomes exceedingly difficult. At the same time, awarded and nominated organizations can be expected to be excellent organizations, with a high probability that their innovations are sustainable. When interpreting the findings, and analysing the conclusions, this sample characteristic should always be kept in mind. This dissertation does try to broaden the sample with non-nominated applicants for innovation awards, but, as will become clear in chapter 6, this was no easy enterprise.

Furthermore, time plays an important role here. One could expect that more recent innovations will be more likely to exist than those initiated earlier on. At the same time, it is more difficult to find existing cases from more than a decade ago using the award method. Reasons could be the imperfect administration of the award scheme itself, the fading memories of participants or a loss of knowledge about the award and/or the innovation through personnel turnover. This creates a skewness in the sample towards more recent innovations, which ought to be considered when analysing the data and drawing consequent conclusions.

The sample in this dissertation consists of innovation awards from Belgium, France, the Netherlands, Slovakia, Romania and the United Kingdom. This resulted in the sources of 'best practices' listed in table 8. The award schemes used in this dissertation, summed up in table 8, all consist of a jury determining which cases are actually innovative, and thus suitable to be nominated for the award, and which are not. Although the awards are different in their focus (innovation, quality, good practices), they all share the fact that innovation is a central criterion in the selection of nominees. Likewise, all awards are open

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for all types of public sector organizations. This makes the respective cases coming forth from these awards comparable for the purposes of this research.

Table 8: Good practice sources

<p>International sources: European Public Sector Awards CAF Good Practices Database Quality Conferences for Public Administrations in the EU United Nationals Public Service Awards RegioStars Awards</p>	
<p>Belgian sources:</p> <ul style="list-style-type: none"> - Quality Conferences for Public Administrations in Belgium - Belgian eGovernment Awards 	<p>French sources:</p> <ul style="list-style-type: none"> - Victoire acteurs publics prix - Paroles d'élus - Interconnectes France
<p>Dutch sources:</p> <ul style="list-style-type: none"> - Innovatie Top 10 - KING Best Gejat Prijs - Pink Roccade - Innovatieprijs Bedrijfsvoering 	<p>Romanian sources:</p> <ul style="list-style-type: none"> - National Agency of Civil Servants Conference - National Association of Public Sector IT Specialists - Romanian Prize for Quality – J.M. Juran Foundation - Parliamentary Committee for IT and Communications
<p>Slovakian sources:</p> <ul style="list-style-type: none"> - Slovak National Quality Prize 	<p>UK sources:</p> <ul style="list-style-type: none"> - Public Sector Sustainability Awards - APSE Service Awards - Improvement & Efficiency Awards

Finally, the above mentioned countries did not come about by accident. The research on which this dissertation builds, is based on an FP-7 project called LIPSE⁴, funded by the European Commission. This meant that the nature of the research would be cross-country. In the case of the working package which included this research, the countries Belgium, France, the Netherlands, Slovakia, Romania and the United Kingdom were included. This provided both obstacles and opportunities in the data gathering (see chapter 6) and the data analysis (see chapter 6 also). Both the obstacles and opportunities came together in

⁴ See www.lipse.org for more information

the comparisons of the data originating from the separate countries. It was a unique opportunity to compare the innovations from countries with different administrative regimes and innovation cultures. More on this issue will be discussed in chapter 6, where the different countries are examined as part of the control variables, including the manners in which the different countries will be compared.

The discussion above shows that the available data comes from five countries, and 22 award programmes. As the method and sample descriptions in chapters 6 and 7 will show, these case sources delivered less than perfect information. The above introduced ideal research design will thus be adapted throughout the dissertation on the basis of the characteristics and nature of the data that were able to be gathered. A certain degree of pragmatism is required to adapt the research methods and research design to the reality of imperfect data. The conclusions should, and will be written down with this shortcoming in mind.

5.5 Conclusion

This chapter described the research design of this dissertation; the manner in which the empirical investigation into the proposed hypothesis takes form. First, the research questions were introduced which will have to be answered in order to gather the appropriate data and carry out the appropriate analyses to form a statement on the hypothesis. These research questions are the following:

RQ1: To what extent can feedback, accountability and learning explain the temporal sustainability of awarded public sector innovations?

RQ1a: To what extent are feedback, accountability and learning present in the organizations of the investigated innovations?

RQ1b: How sustainable are the investigated innovations?

RQ1c: Is there a, and what is the, nature of the correlation between the embeddedness of feedback, accountability and learning in an organization and the sustainability of the innovation?

RQ2a: What is the process narrative of sustainable and unsustainable public sector innovations?

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RQ2: How do feedback, accountability and learning explain the sustainability of public sector innovations?

The innovations will be selected through the use of innovation award programmes, a method with some minor, though important flaws, but which provides an opportunity to pin-point innovations in the public sector with relatively low transaction costs, and which results in a sample of innovations of which practitioners agree that it is worthy of that name. FAL will first be measured through a survey, in a quantitative research design. Statistical analysis will need to determine if there is a connection between FAL and the sustainability of the innovations. A qualitative research design will then further analyse the nature of the connection between FAL and the sustainability of the innovations. The results of these analyses will be outlined as INUS-conditions. In this framework FAL is seen as an insufficient but necessary part of a condition which is in itself sufficient but unnecessary to explain the (non-) occurrence of sustainability in the innovation under investigation. Finally, the importance of purposeful case-selection was discussed in order to be able to talk about issues such as causality, necessity and sufficiency. The conclusion will need to thoroughly reflect on these issues, and determine the consequences of the difference between the ideal data and cases, and the ones which were in fact found. The specific methods which will be used to put this research design in practice will be the topic of the following chapters.

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Chapter 6 – Quantitative results

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This chapter will display the methods used in, and results of the quantitative leg of this dissertation. As stated in earlier chapters, this survey-based investigation into the relationship between FAL and the sustainability of public sector innovations serves two purposes: 1) it provides an opportunity to test the validity of the concepts which are attempted to be measured, and 2) the relationship between FAL and sustainability can be explored (Does it exist at all? What does it look like? Are there differences between organizations/countries/etc.?). The first research question and its three sub-questions will hence be the focus of this chapter:

RQ1: To what extent can feedback, accountability and learning explain the temporal sustainability of awarded public sector innovations?

RQ1a: To what extent are feedback, accountability and learning present in the organizations of the investigated innovations?

RQ1b: How sustainable are the investigated innovations?

RQ1c: Is there a correlation, and what is the nature of the correlation between the embeddedness of feedback, accountability and learning in an organization and the sustainability of the innovation?

This chapter forms the first half of the strategy to uncover the causality within the proposed INUS-condition surrounding FAL and sustainability: the Neo-Humean approach explained in more detail in 5.3.5.

Paragraph 6.1 exposit the methods used in order to measure FAL and sustainability. Both the design of the survey and the data collecting process will be discussed in detail. The data analysis will take place in paragraph 6.2, which will be divided in two parts. The first part (sub-paragraphs 6.1.1 and 6.1.2) introduces the reader to the sample, and show the results from the first, preliminary tests (some on pilot samples). The second part (sub-paragraph 6.1.3 and 6.1.4) will display the actual statistical analysis in order to test the hypothesis. First a factor analysis will be conducted in order to test the validity of the concept FAL, and then a logistic regression will have to determine what kind of relationship there is between the independent and dependent variable.

6.1 Methods

As discussed in chapter 5, this quantitative leg of the dissertation will be able to tell us if FAL is a valid concept in reality, and if there is a correlation between FAL and sustainability. If so, the qualitative part of the research (chapter 7) will be able to shed a light on this link more up-close, and hopefully reveal the workings of the relationships found in this chapter. First, the manner in which FAL and the control variables can be measured will be discussed, after which this will be translated into a survey. Later on the discussion will turn to the data collection process and a discussion of the pros and cons of the chosen research method.

6.1.1 How to measure FAL

The goal in measuring FAL is to create a score on each of its three dimensions; feedback, accountability, and learning. The survey would thus create comparable scores between organisations, and continuous independent variables. Several questions (mostly with Likert-scales) were designed per dimension in order to do so. The scores on these questions will subsequently be added up per dimension, and divided by the highest obtainable score. A score of 1 would indicate a near-perfect culture on one of the three concepts (5 points on every question), whereas 0,2 would indicate a lack of any culture surrounding feedback, accountability and/or learning (1 point on every question). The hypothesis, as discussed in chapter 5, is that higher scores would lead to a higher chance of sustainable innovations. Combined with the INUS-condition, this would look as followed:

$$((F=1; A=1; L=1, X) \text{ or } (Y)) \rightarrow \text{Sustainable Innovations (1)}$$

$$((F=0; A=0; L=0, X) \text{ or } (Y)) \rightarrow \text{Sustainable Innovations (0)}$$

Finally, the average scores of all three dimension would constitute a fourth one: the average total FAL-score. With this data and the information on the sustainability of the respective innovation's sustainability, it would be possible to investigate if any relationship existed between the two. This would create the following INUS conditions:

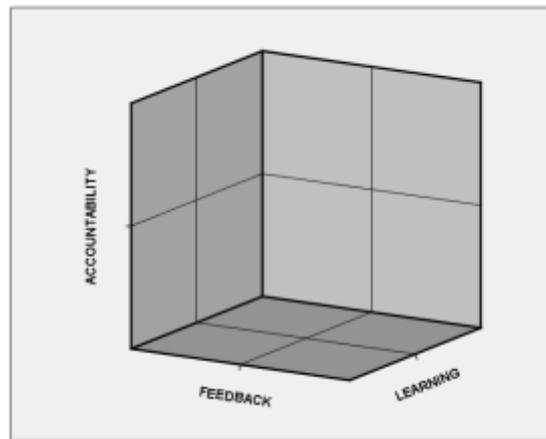
$$((FAL=1, X) \text{ or } (Y)) \rightarrow \text{Sustainable Innovations (1)}$$

$$((FAL=0, X) \text{ or } (Y)) \rightarrow \text{Sustainable Innovations (0)}$$

As discussed in chapter 5, it is not just with a score of 1 (in the top corner of figure 15) that FAL will lead to sustainable innovations, and not just with a score of 0 that a lack FAL will lead to non-sustainable innovations. Most organization will fall somewhere in between. The hypothesis is therefore not a deterministic, but a probabilistic one in this part of the dissertation.

This method would result in a score per organisation, per dimension, between zero and one. The three scores combined could be seen as coordinates, placing each organisation within the following 3-dimensional space:

Figure 15: 3-dimensional FAL-space



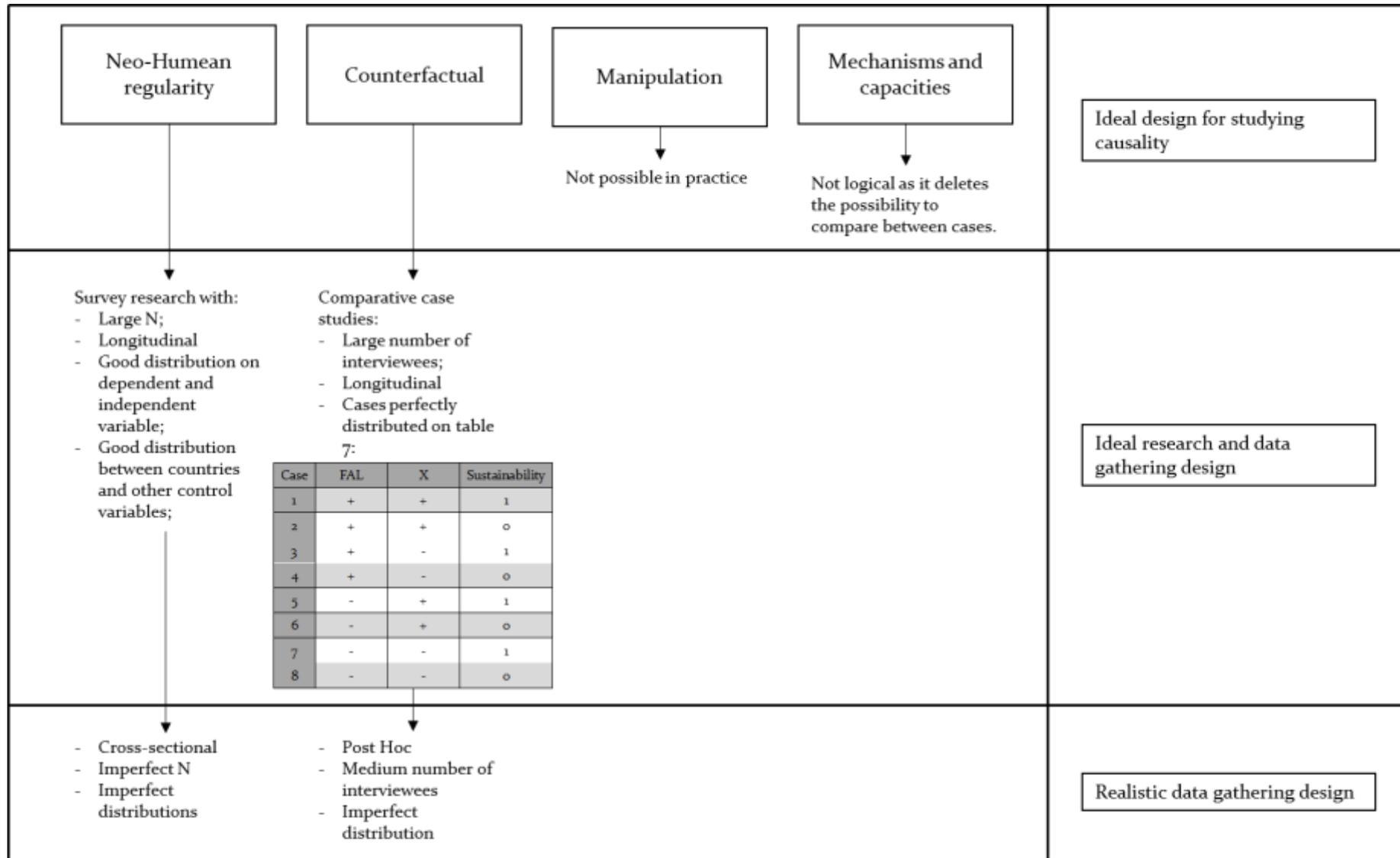
The question now put front and centre is how all this can be measured? The heuristic model introduced in the previous chapter (p. 95) showed FAL as influential throughout the organization, throughout the lifetime of the innovation. One can imagine that such a factor can change through time. An organization could, hypothetically, have a high FAL-score at first, but slide down to a mediocre (or worse) FAL-score a number of years later. This would mean that a longitudinal research design is best suited for the investigation of FAL and its effect on an innovation. For this dissertation, however, FAL will be measured at one instance: at the time of the survey. The time between the award or nomination of the innovation and the survey is thus treated as one FAL-cycle ('Assumed Observation' in figure 10, p. 95), although it could have passed through several of such cycles. The FAL-score at the time of the survey is assumed to have stayed constant since the initiation of the innovation. The results of the analysis should be interpreted in the light of these limitations. However, considering the exploratory nature of this research as well as the practical difficulty of designing longitudinal innovation research in the public sector, it is believed to be a useful point of departure to investigate its influence on the survival of innovations. This does create a degree of distance between the ideal research design, and the realistic design. The quantitative part of this dissertation will thus have a cross-sectional design. The post hoc nature of the qualitative case studies in chapter 7 is also not as perfect as a real-time longitudinal research design, but at least it can add a longitudinal picture of the development of FAL through time while the innovation was functioning. Figure 14 from

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chapter 5, describing the ideal and practical research designs, will thus have to be adapted into figure 14, depicted at page 119.

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Figure 16: Ideal and practical research design in studying INUS-conditions in public sector innovation research.



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A cross-sectional design is imperfect, but sufficient for the exploratory nature and goal of this particular part of the research presented in this dissertation. As mentioned: a more longitudinal (albeit post hoc) approach will be adopted in chapter 7. In order to measure FAL with a cross-sectional design, inspiration was taken from Garvin et al. (2008), who try to measure whether an organization is a learning organization or not. Questions on feedback and accountability were mostly distilled from the literature laid out in chapter 4, and framed in a similar fashion to the questions surrounding learning organizations.

Feedback, accountability and learning are, as discussed in chapter 4, multi-faceted dimensions of FAL. They each consists of many layers and sub-parts. The survey was designed to reflect that. Table 9 shows which issues are measured through the survey. As Pollitt notes: *“Finding valid measures for sophisticated concepts is frequently difficult.”* (2013d, p. 408, italics added) It was indeed a difficult exercise in this instance, especially since a comprehensive survey covering every aspect of these encompassing concepts would make the survey far too long. Table 9 thus shows the reader which specific parts of these concepts were measured, which will seem familiar after chapter 4. The sum and diversity of these sub-topics under each concept is hoped to strengthen the validity of the measurement.

Table 9: Sub-topics of Learning, Feedback and Accountability

Feedback	
Active search for and processing of feedback information	From staff
	From customers
	From ombudsmen
	From internal audit
	From external audit
	From evaluations
Systems to monitor performance	
Evaluations of goals and objectives	
Quality management systems for continuous improvement	

Accountability
Information and reporting
Debate, explanation and justification
Possibility of sanctions
Responsibility for performance
Transparency about performance
Subject to ombudsman review
Subject to external audit
Focus of external audit

Learning	
Impact of received feedback information	From staff members
	From customers
	From ombudsmen
	From internal audit
	From external audit
	From evaluations
Psychological safety, transparency, culture of adversarial debate, and openness for alternative perspectives	
Tolerance for errors, risk-taking and experimentation	
Time for reflection – slack learning	
Diversity of staff	
Systematic knowledge management	
Deliberate measurement practices & Disciplined analysis and interpretation to identify and solve problems	

Testing the validity of these concept-constructs is essential, and the results of these tests will be discussed in sub-paragraph 6.2.3. The answers from respondents on these issues, are believed to capture the essence of FAL, although there are always other, additional issues which could be measured. The specific questions and order of the survey will be discussed next.

6.1.2 Survey structure and questions

The full survey in English can be found in Annex I. The survey questions have also been organized per sub-theme of the three FAL-dimensions. These can be found in annex II.

The opening segment of the survey focussed on the fate of the innovation itself. Respondents were made aware to which specific innovation the survey was aimed, after which they were first and foremost asked what had happened to the innovation since its initiation:

What is the current status of the project or the practice in your organisation?

Please select one option. In the follow-up questions you will have the opportunity to further explain and refine your answer.

The answer options are derived from Hogwood and Peters' work on policy termination (1982):

- The innovation is still operational, in its original form.
- The innovation is still operational, but has been transformed.
 - o Expanded (in scope, budget, geographical span etc.)
 - o Reduced (in scope, budget, geographical span etc.)
- The innovation is not operational anymore.
 - o Terminated by an explicit decision and replaced by something new
 - o Terminated by an explicit decision, not replaced by something new
 - o Terminated without an explicit decision (faded away)

Depending on the answer given, the respondents were then asked to further elaborate on the reason why the innovation was terminated, in what way it was expanded, or with what the innovation was replaced. In part two, the survey focused on two control variables which have been found to influence 'success' in the creation of innovations: size and age of the

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organization. The third part of the survey focused on the measurement of FAL. The full list of questions of lists is too extensive to place here. Annex II(question per sub-theme) provides the best overview of the different questions.

Furthermore, the addition of control variables is of equal importance. The controls for the survey are discussed in the next sub-paragraph. Considering the exploratory nature of this research, the results and lessons-learned with regards to the robustness and validity of the survey are seen as equally important for future research as the actual empirical findings.

Finally, the discussions about necessity and sufficiency in the previous chapter seems familiar to those acquainted with Qualitative Comparative Analysis (QCA). It would be logical to use QCA in analysing the survey results. In Annex III the reader can find the (unsuccessful) endeavours by the author in doing so. Traditional statistical analysis turned out to be more suitable for the data which were recovered for this research.

6.1.3 Control variables

As there is little research on the sustainability of innovations, it is not possible to draw on earlier studies to find relevant control variables for this study. The analysis here controls for several factors found to be influential in the adoption and implementation of innovations, at the organizational, innovation and country level. Many variables could potentially be interesting to control for, but considering the modest final sample size (see sub-paragraph 6.2.1), it is necessary to be conservative in the number of variables to add to the analysis (Hosmer & Lemeshow, 2000). The control variables are: country of origin, Hofstede's cultural dimensions, GDP per capita, organization size, organizational policy area, specialization of the organization, governmental level of the organization, the policy area of the innovation, the age of the innovation, and the type of innovation. These will be introduced and discussed next.

Country of origin

National innovation culture could have a significant impact on what happens to public sector innovations after their initiation. However, little is known about the innovative culture of national public sectors. It is furthermore often assumed that the administrative tradition of a country could determine its openness to innovations, although this has not been exhaustively researched (Bonsón et al., 2012). The sample of countries in this studies is

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therefore of great importance. Belgium and France are considered Napoleonic administrative traditions, the UK an Anglo-Saxon tradition, and the Netherlands a Germanic tradition (Kickert, 1997). Romania and Slovakia are added to this as former Soviet-nations, with still developing administrative cultures.

The nature of the countries in this sample make it a Most Different System Design (MDS). The goal of an MDS is to compare cases which are different on many fronts (history, language, governmental systems, administrative regimes, economic development, legal systems, etc.), but have one factor in common (Dogan & Pelassy, 1990; Landman, 2008). Within this dissertation, that one combining factor is the FAL-score of the organizations which are surveyed, and the sustainability of the respective innovations. Controlling for the country of origin of the innovation will determine if the FAL-scores are different between countries. If so, one of the differences between the countries might be the cause of differences in FAL scores or sustainability rates. Finally, although research on a selected few countries cannot directly lead to general theories, the results may form the grounds of one later on (Dogan & Pelassy, 1990).

The national level

At the national level there will be controls for two variables: innovation culture, and GDP per capita.

As mentioned above, administrative regimes have been linked to innovativeness. This implies that there might exist something like a national public sector innovation culture, which in turn could influence the sustainability of innovations. One factor in which this might come to the fore was investigated by Steen and Weske (2016). They show that the values and attitudes of top civil servants (such as risk-taking or entrepreneurial potential) might differ rather starkly between countries, which in turn might have an impact on the value and emphasis which is put on innovation in the organizations they lead.

How, then, could such a national innovation culture be measured? The characteristics and values of individual persons have often been used in order to form aggregate measures of national innovations culture at large. Hofstede, most notably, measures cultures through individual surveys on a number of dimensions, which have expanded over the years. The four initial dimensions were power distance, individualism, masculinity and uncertainty avoidance (Hofstede, 2001). These were later on accompanied by two new dimensions: long

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term orientation and indulgence (Hofstede et al., 2010). Together, these dimensions are supposed to capture a national culture. Although this approach has been critiqued (see for example Venaik & Brewer, 2016; Baskerville, 2003), it has grown to be very influential. The link between the original four dimensions and innovation has been investigated in the past (e.g. Shane, 1993; Waarts & Van Everdingen, 2005; Rinne et al., 2012; Kasaa, 2013). Both individual dimensions, as well as combinations of dimensions have been found to influence the innovation performance of countries and firms, although contradictory results have also been found. It would thus be interesting to control for the influence on these factors or the sustainability of innovations. Problematic however, is how to retrieve this data. A large part of the critiques on Hofstede's approach is that he targets IBM employees to fill out the survey. Despite having some great pragmatic pro's, this sample also has some important disadvantages with regards to the generalizability of the outcomes. Others, such as Kasaa (2013) use more generalizable samples through for example the World Value Survey. This only includes the initial four dimensions, however. Of the other two, less recent, less complete, and less quality data exists for all of the countries in the sample. For the investigation in this dissertation, it is possible to use Kasaa's data, and apply it to the sample used here. The scores for long term orientation and indulgence were taken from Hofstede et al. (2010).

Kasaa (2013) finds a positive link between the four dimensions and national innovation rates. It should be noted, however, that Kasaa's findings are based on private sector innovation indicators (R&D investment, patents, etc.). The respondents of the survey also constitute a general sample of the population, and is hence not limited to public sector employees. Kasaa's findings can therefore only serve as a remote indicator for the innovation culture in the public sector of the six countries. Given the theoretical relevance of the concept of innovation cultures, however, it seems appropriate to include the scores, notwithstanding the mentioned limitations.

Lastly, it was decided to add national GDP per capita as a final national control variable. GDP has repeatedly been found as an important factor in innovation research (Arundel et al., 2015). This variable is based on data from Eurostat (2016), and uses the average GDP per capita for the period 2003-2014.

The organization level

There will be controlled for several factors at the organizational level: size of the organization, governmental level, policy area, and whether it is a general or specialized organization.

The evidence on the relationship between organizational size and the adoption of innovation is conflicting. Where some find there is a positive relationship (Damanpour, 1992), others find a negative one (Ettlie & Rubenstein, 1987). However, larger organizations are expected to have more resources in order to sustain their innovations (Rogers, 1983). This latter finding has more relevance for the specific research questions of this dissertation. Hence, it is expected that larger organizations have more sustainable innovations than smaller ones.

It is further expected that the idiosyncrasies of organizations and innovations will differ between their respected policy areas. In the literature overview of programme termination (see sub-paragraph 3.1.3 on page 54 and onwards) it was found that some differences existed between policy fields. These particularities have also been found by others in the public sector innovation research field (De Vries et al., 2016; Arundel et al., 2015). The organizations' policy area will thus be controlled for in order to see if there are in fact differences between them.

Furthermore, organizational specialization (general administration vs. specific policy areas) has been found to influence the innovation processes in public organizations (Arundel et al., 2015). Arundel and colleagues distinguish here between 'general government agencies' and 'specialized agencies'. This can be done by comparing the general administrative organizations (such as municipalities) with the ones attached to a specific policy area (such as a tax collecting agency or a ministry). At the same time it follows from the literature review in chapter 3 that the investigation of differences between policy areas might point towards the streams of literature that would be of greatest relevance to the research presented here. This dissertation will specify between the following policy areas:

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- Agriculture
- Economic affairs
- Education
- Environment
- Finance
- Foreign policy and development cooperation
- General administration
- Justice
- Public health
- Infrastructure
- Social policy

Added to this, a control will be built in for the level of government the organization finds itself on. This can be either at the local, provincial/regional, or federal/national level.

The innovation level

Finally, at the innovation level there will be a control for the type of innovation that has been awarded or nominated (De Vries et al., 2016; Damanpour et al. 2009).

The age of the innovation will be calculated by subtracting the year of the survey from the year of the award or nomination. The year of the award year is thus seen as the initiation date of the innovation. Unfortunately, as can be read later on in 6.1.5, it was not possible to discover the dates of the termination for all non-sustainable innovations.

The typology of innovations (previously discussed in chapter 2) will be based on, and adapted from, De Vries et al.'s systematic review of the literature (2016), differentiating between service/product, administrative, technological, and governance innovations.

Finally, the innovation will be classified on the basis of their policy areas, following the same list as mentioned before in describing the policy areas of the organizations they sprung from. As an example, a municipality would be classified as a general administration. However, its innovation, focusing on local schooling programmes, would be classified as education.

6.1.4 Statistical tests

Before continuing with the data collection process in 6.1.5, it is worth laying out the different tests which will be carried out to test the model and control variables. Figure 17 displays this in a more schematic style.

The tests are divided into four phases. At first, the data was explored for its key characteristics. How many cases are there per category for the control variables? How are the data distributed on the key concepts feedback, accountability, learning, and the aggregate FAL-score? Are there important correlations between these concepts? This description should be able to provide a good overview of the data, before turning to the actual analysis of the relationship under investigation in this dissertation.

During the second phase, preliminary tests were carried out. The differences were investigated between the separate survey questions and sustainable and non-sustainable cases, as well as for the aggregate scores for feedback, accountability, learning, and the FAL-score as a whole. This was done by making use of Mann-Whitney U Tests (MWU tests). Because of the strong a-symmetry between the number of cases which were terminated and those which were sustainable (a difference of almost a factor ten), and because the independent variables are measured on an ordinal scale, a Mann-Whitney U test was found to be the best suited method for this part of the analysis. However, this method does not investigate causality: it compares the mean ranks of two groups (terminated vs. surviving innovations). At the same time, this method does not control for the effect of any of the control variables. Hence, however interesting the results may be, there can be no link to, or a discussion of causality. Secondly, the method of truth tables was used to investigate the distribution of high, medium and low scores among the surviving and non-surviving cases. Again, the results of these tests cannot lead to any conclusions on the effect of FAL, or its underlying dimensions and survey-items on the sustainability of the innovations, but they do provide a glimpse of the data in the earliest stage of the research. Sub-paragraph 6.2.2 displays the results of these tests. The tests for this dissertation were carried out in both Stata and SPSS, depending on the availability of the tests and graph design per software package.

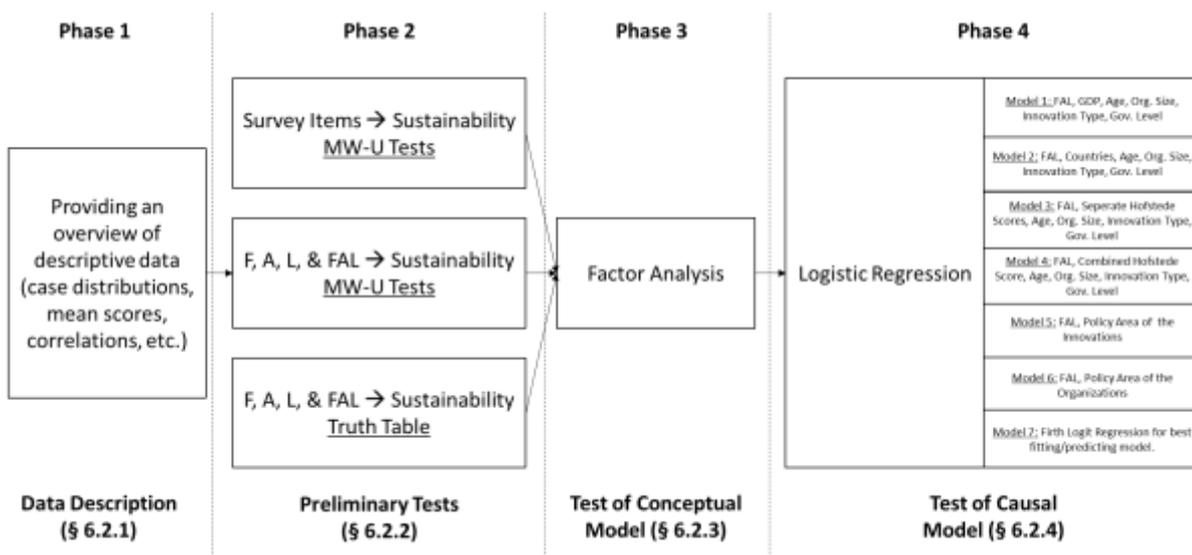
In phase three, the validity of the conceptual model was tested. In other words: did the survey indeed measure the FAL model, or not? In order to investigate this a Factor Analysis was conducted. The specifics of this analysis, as well as the results, will be discussed in sub-paragraph 6.2.3. Only after the conceptual model has been tested is it possible to test the causal model.

Finally, does the validated conceptual model indeed influence the sustainability of public sector innovations? A logistic regression will help to determine this hypothesized causality.

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As will be seen in sub-paragraph 6.2.4, both a ‘regular’ logistic regression and a Firth penalized likelihood will be used to investigate this link. It is also here where the control variables discussed in 6.1.3 come into play. Since the sample size is moderate (220 cases), it is not possible to include all control variables at once. It is thus necessary to investigate several models. The age of the innovation, as well as the FAL score will be kept in all models. The other models will include different control variables, as can be seen in figure 17. Model 7 entails a Firth Logit Regression for the best fitting model. The reasons for this test will become apparent in the following pages.

Figure 17: Sequence of statistical tests



6.1.5 Data Collection

Originally, the survey was designed in English. With the survey afterwards translated by the affiliate LIPSE partners into Dutch, French, Slovakian and Romanian, it was finally ready for launch. However, words can describe certain concepts differently in different languages and countries. Pollitt (2013c) points this out with regards to research conducted by Klijn et al. (2013), in which a survey was translated into three languages: Dutch, Spanish and Mandarin. In this research, four languages are added to the initial English form: Dutch, French, Slovakian and Romanian. However, using solely native and fluent speakers, all of them public management scholars, aware of these issues, instead of for example a translation bureau, it is hoped to have avoided at least most of the possible pitfalls in the translations. In this regard, the length of the survey and the larger number of questions asked per concept actually helps. This way a translation mistake in one questions will have a minimal impact

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upon the overall score. Before sending the survey to the respondents, feedback on the questionnaire was asked from several colleagues.

As discussed in chapter 5, a research method of case selection based on innovation awards was opted for in this dissertation. One of the main advantages of such an approach is that these award schemes can provide the researcher with a selection of actual innovations, accompanied by descriptions of the innovation and contact information of involved personnel. This seems like a straightforward way to get in touch with qualified respondents. However, as the research done by Pollitt, Bouckaert and Löffler (2007) shows, getting in touch with these individuals is not an easy task. This paragraph discusses this process in length, to highlight the problems encountered in trying to retrieve the information from relevant respondents. After having selected the awards mentioned earlier in table 8 (p. 123), the award organizations were contacted, if their nominees' information wasn't publicly available already. At this point, two problems were encountered. Firstly, the innovation award case sheets (comprising the accompanying information on the nominated innovations) differed greatly between award schemes. Some were very detailed, but others only included the name of the innovation, the category for which it was nominated, and the name of the organizations. Retrieving information on these specific innovations would be more difficult going forward. Secondly, some of the databases holding the fiches of past editions had been lost by the award scheme organizations. It was then up to the research teams to find and regroup this information. Thirdly, not all identified awards were willing to share this information with us, even though one of the purposes of these awards is to diffuse good practices by putting the best ones in the limelight.

Having put together the eligible and identifiable cases, the organizations were contacted to try and find a knowledgeable person involved with the innovation, and to convince her/him to respond to the survey. Many, if not most of the contacts mentioned on the case sheets no longer worked in the same organization. They had either retired, had moved to different jobs in other organizations, or, in some cases, had passed away. Finding respondents other than the ones mentioned on the case sheets required much calling, e-mailing, and time. The fact that the innovation had sometimes been awarded close to ten years ago did not make this process easier. Although it was possible to maximize the response rate by calling and sending reminder-emails for some of the countries in the sample, this was less successful in others due to limits on the available resources.

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Unfortunately there is no information on the total number of nominated innovations with which the research teams started out, before verifying the information. Pollitt, Bouckaert and Löffler (2007) showed that in 68% of their cases, verification was impossible, which says a lot about the decay of institutional knowledge about awarded innovations. Eventually, a total of 845 cases with eligible contact persons were identified and were consequently sent a questionnaire. Maximum efforts were put into increasing the number of responses, leading to the following response rates per country shown in table 10:

Table 10: Overview of responses

	BE	FR	NL	RO	SK	UK	Total
Identified awarded innovations	97	470	34	53	28	163	845
Responses	72	79	23	19	13	14	220
Percentage	74%	17%	68%	36%	46%	9%	26%

The final tally counted 220 cases for analysis. More details on the nature of these cases will be discussed in sub-paragraph 3.2.1.

6.1.5 Limitations of the used methods

First of all: the cross-sectional nature of a survey. The respondents were asked to assess the feedback, accountability and learning dimensions of their organizations. However, some of the innovations were awarded ten years previous to the survey. As discussed before, their FAL-score could have changed in the meantime. Although it is assumed that the factors underlying FAL will not change rapidly or easily, this is an important remark to make. In this respect, longitudinal research (in real time) would be more appropriate. Figure 10 in paragraph 4.5.1 (Heuristic causal FAL-model) shows how FAL is assumed to be influential in determining the sustainability of innovations. A longitudinal research design would be especially suited as it could focus on several consecutive cycles as portrayed in the figure. However, this was not possible due to the historic approach of this research, which looked for cases retrospectively. Hence, it is necessary to assume that the FAL-score given to us by the respondents is representative for the entire life of the innovation, and that the span from the initiation to the present/termination constitutes one cycle of the process-model. This is indeed an important limitation in this research, albeit one which could not be avoided. The qualitative part of this dissertation, however, will remedy this to a certain extent. Here it is possible to focus on the FAL-dimensions *during* the innovations, and hopefully track their

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development during the lifetime of the innovation through the testimonies of the respondents. However, due to the innovation award case selection method, this will be inherently post-hoc.

Self-reporting is a second limitation of this research design. A risk in using this method is the potential for socially desirable answers, making the results seem overly positive. On the other hand, if the respondent in question has a negative (but not representative) view of the organization, s/he may paint an overly negative picture. Asking one person to assess organizations with sometimes thousands of employees thus has its downsides (Podsakoff & Organ, 1986; Donaldson & Grant-Vallone, 2002).

Thirdly, the sample size is relatively small ($N = 220$) to conduct statistical analysis. With a larger sample size, the chance of sample errors will be lower, and the confidence in the results will be higher as the chance of having a representative sample for the entire population will be bigger. However, “*in conducting an initial test of a tentative hypothesis you might be willing to tolerate more error.*” (Carlson & Hyde, 2003, p. 214, italics added) As the latter is precisely the goal of this research, a sample size of 220 was found to be acceptable for now.

A fourth and final limitation was discussed at the beginning of the elaboration on the research design. By using awards as a selection method, the sample is potentially skewed towards ‘better’ innovations in potentially ‘better’ organizations. This potentially affects the generalizability of the results.

6.2 Data analysis

This paragraph describes the quantitative data, tests and results. First, a description will be given of the final data set. Afterwards the three remaining phases, described in subparagraph 6.1.4, will be discussed in 6.2.2 to 6.2.4. The results will be summarized in the conclusion.

6.2.1 Sample description

The basic characteristics and distributions of the cases will be discussed here along a few important lines. Starting with the most basic of characteristic: how many cases were there per county, and how many of them were non-sustainable cases? Table 11 provides the answers to these questions. The row titled “Responses” expresses the total number of responses which were received. The row titled “Validated responses” expresses the number

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of responses after the data were cleaned for missing values, and incomplete or invalid responses. The number of surviving and non-surviving cases are derived from the pool of validated responses.

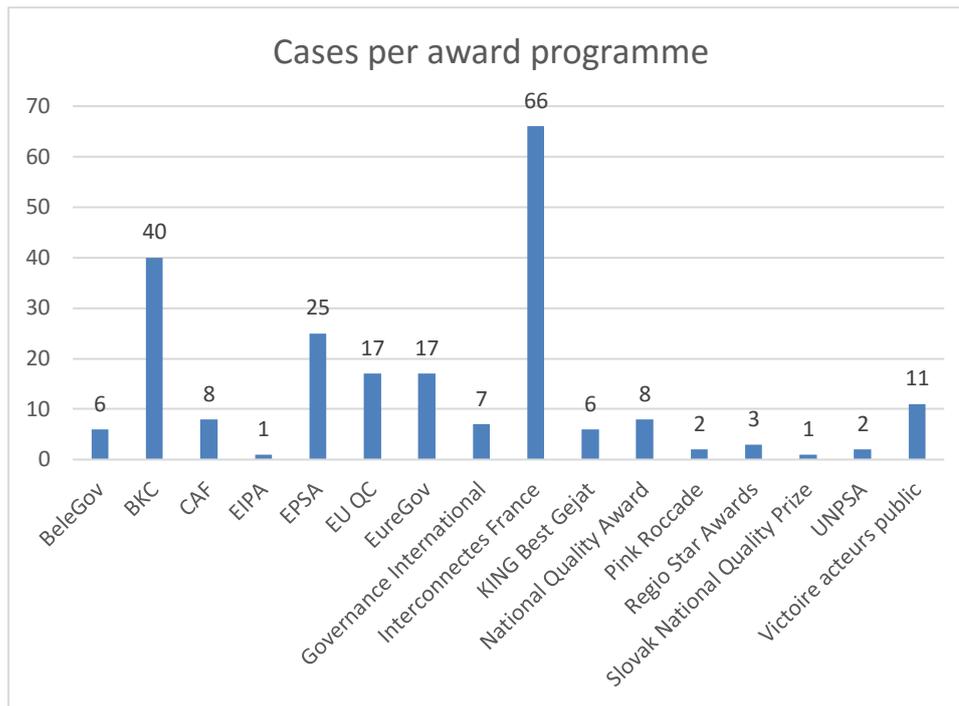
Table 11: Survey response rates

	BE	FR	NL	RO	SK	UK	Total
Identified awarded innovations	97	470	34	53	28	163	845
Responses	82 (85%)	99 (21%)	28 (82%)	31 (58%)	17 (61%)	16 (10%)	273 (32%)
Validated Responses	72	79	23	19	13	14	220
Sustainable cases	63	73	23	16	12	13	200
Non-sustainable cases	9	6	0	3	1	1	20

As is clear from table 11, there are large differences between three groups: the number of awarded innovations per country, the response rates per country, and the difference between the number of sustainable and non-sustainable cases in general.

First, the differences between the number of awarded innovations per country is largely due to two factors: the number of award programmes that were identified and willing to share their information, and the number of nominees they had per award. ‘Interconnectes France’, for example, has many nominees each year, whilst most other awards work with about four or five nominees each edition, as is reflected in figure 18. This caused France, the UK and Belgium to ‘outperform’ the other countries with regards to the number of potential innovations which could respond to the survey.

Figure 18: Distribution of cases per award programme



The difference in response rates is probably more of an organizational issue on the side of the researchers. As mentioned in sub-paragraph 6.1.5 on the data collection process, finding (the right) respondents can be a labour intensive process. Each country had a specific budget for the finding of the awards, identifying the cases, and locating the right, suitable contact persons. However, the contact information of the cases provided by the award programmes, was however often not up-to-date. The budgets which were available for the maximization of the response rate in these cases differed significantly between the teams, which could explain the difference in response rate. For Belgium and the Netherlands, it was possible to identify as many respondents as possible. In the other teams there was less room for calling and e-mailing around to find the right person to respond to the survey when, for example, the contact person from the award fiche no longer worked at the respective organization.

Finally, the divergence between the number of surviving and non-surviving cases is unfortunate for two reasons. First, it will make statistical analysis more difficult. Second, it will make it more difficult to qualitatively investigate non-surviving cases in order to fully establish the INUS-condition (see paragraph 5.3.5). A reason for this divergence, could be the fact that the focus in this dissertation lies on nominated and awarded innovation, leading to an overrepresentation of 'better' innovations which are more likely to be

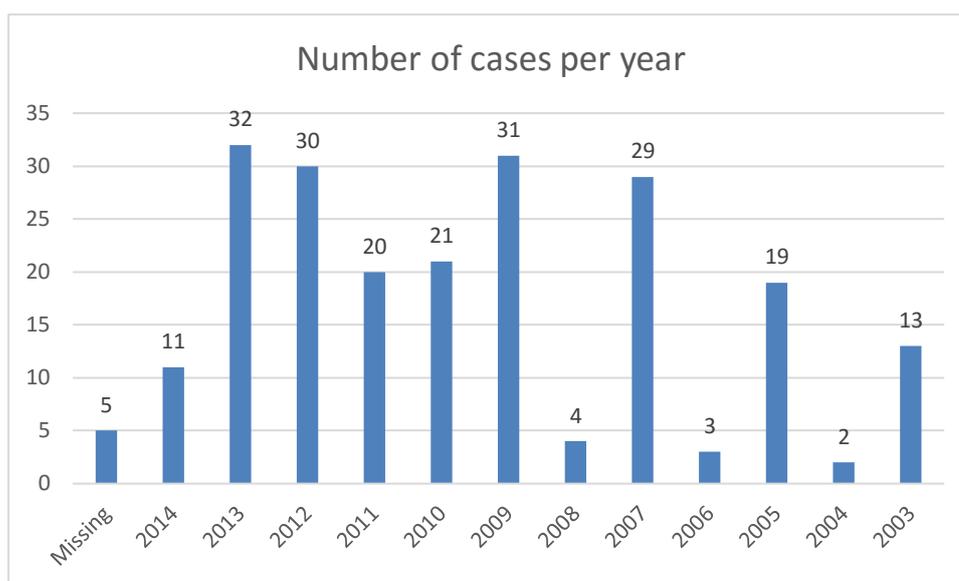
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sustainable, something which has earlier been discussed in paragraph 5.4. The 1:10 ratio which is found through the survey here largely resembles that of earlier research done by both Borins (1998), and Farah and Spink (2008). One remedy for this problem could be to not only investigate the nominated and awarded cases, but also the non-nominated cases. When the first results of the survey were analysed, the team in Belgium decided to try out this course of action. An exploratory probe into doing so is described in paragraph 6.2.5.

Despite the remarks made above, there was no reason to change course, or radically alter the research approach. The survey identified enough non-sustainable cases to make statistical tests feasible, the overall number of cases is moderate to good, and whether or not the differences in the number of cases between countries is an issue will become clear in the statistical analysis.

In a study about survival, the issue of time is obviously of great importance. Figure 19 therefore lays out the number of cases among the responses, per year of the award. One would intuitively expect that more recently awarded innovations will be more likely to exist than those initiated earlier on. At the same time, the sample is likely to be skewed towards more recent innovations since it is difficult to find innovations which have been awarded over, say, five years ago. Figure 2, however, shows that this skewedness is not present in our sample, mostly due to a large number of Belgian BKC cases in 2003, 2005 and 2007. During the years 2004, 2006 and 2007 the BKC award programme was not held, as it was a biannual event. Controlling for the issue of age in the analysis will determine what the effect of it is on the survival chances of innovations.

Figure 19: Distribution of cases per award year



The following tables display the distribution of the cases over several of the control variables, including a split between sustainable and non-sustainable cases per category. Most of them have a decent distribution over the different categories. It is noteworthy, however, that with regards to the governmental level, the data is somewhat skewed towards national and federal cases (55%; table 12).

Table 12: Distribution of (non-)sustainable cases per governmental level

SURVIVAL	NATIONAL /FEDERAL	PROVINCIAL /REGIONAL	LOCAL	TOTAL
0	12	3	5	20
1	108	40	49	197
TOTAL	120 (55%)	43 (20%)	54 (25%)	217 (100%)

At the same time most of the *organizations* (49%; table 12) can be found to be general administrations, as opposed to those being linked to specific policy areas. With 26% (table 13) there is also a significant number of *innovations* that are focused on a general administrative task, as opposed to a specific policy area.

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Table 13: Distribution of (non-)sustainable cases per organizational and innovation policy area

POLICY AREA ORGANIZATION	0	1	TOTAL	POLICY AREA INNOVATION	0	1	TOTAL
AGRICULTURE	1	6	7 (3%)	AGRICULTURE	1	4	5 (2%)
ECONOMIC AFFAIRS	1	13	14 (6%)	ECONOMIC AFFAIRS	3	24	27 (12%)
EDUCATION	2	20	22 (10%)	EDUCATION	4	28	32 (15%)
ENVIRONMENT	0	1	1 (0.5%)	ENVIRONMENT	2	9	11 (5%)
FINANCE	0	3	3 (1.5%)	FINANCE	0	3	3 (1.5%)
FOREIGN POLICY	0	0	0 (0%)	FOREIGN POLICY	0	3	3 (1.5%)
GENERAL ADMINISTRATION	11	97	108 (49%)	GENERAL ADMINISTRATION	4	54	58 (26%)
JUSTICE	2	7	9 (4%)	JUSTICE	3	8	11 (5%)
PUBLIC HEALTH	1	29	30 (14%)	PUBLIC HEALTH	0	23	23 (11%)
INFRASTRUCTURE	1	7	8 (4%)	INFRASTRUCTURE	1	20	21 (10%)
SOCIAL POLICY	1	17	18 (8%)	SOCIAL POLICY	2	23	25 (11%)
TOTAL	20	200	220 (100%)	TOTAL	20	199	219 (100%)

Added together, however, organizations tasked with a specific policy area account for more or less the same amount of cases. This has been summarized in table 14.

Table 14: Distribution of (non-)sustainable cases per type of administration

SURVIVAL	GENERAL ADMINISTRATION	SPECIFIC ADMINISTRATION	TOTAL
0	11	9	20
1	97	103	200
TOTAL	108 (49%)	112 (51%)	220 (100%)

Table 15 and 16 show the distribution of cases among the types of innovations they represent, and the size of the organization they originate from.

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Table 15: Distribution of (non-)sustainable cases per innovation type

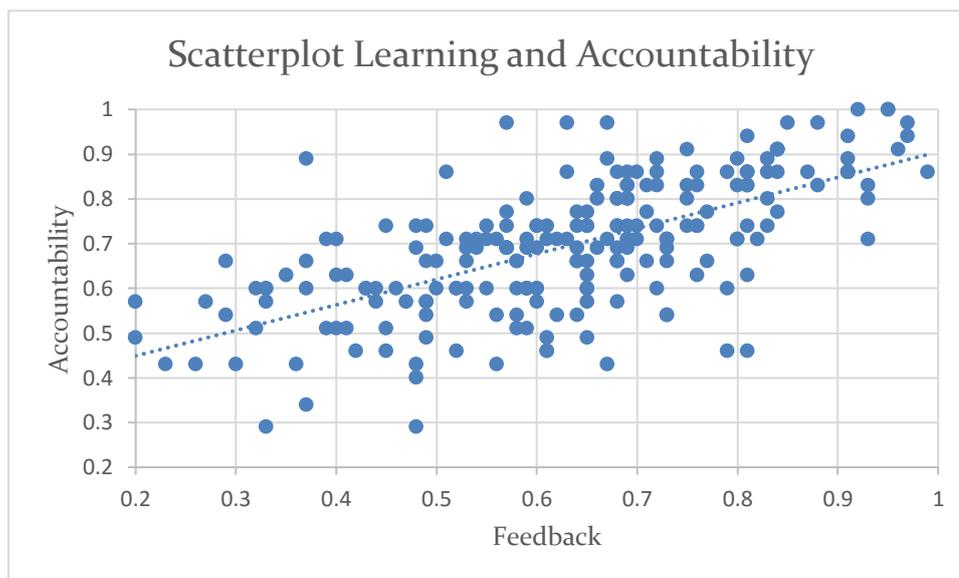
SURVIVAL	SERVICE/ PRODUCT	ADMINISTRATIVE	TECHNOLOGY	GOVERNANCE	TOTAL
0	4	8	6	2	20
1	48	64	55	31	198
TOTAL	52 (24%)	72 (33%)	61 (28%)	33 (15%)	218 (100%)

Table 16: Distribution of (non-)sustainable cases per organizational size

SURVIVAL	< 25 FTE	25 – 100 FTE	100 – 250 FTE	250 – 500 FTE	> 500 FTE	TOTAL
0	4	3	2	1	10	20
1	55	33	27	22	62	199
TOTAL	59 (27%)	36 (16%)	29 (13%)	23 (11%)	72 (33%)	219 (100%)

After having gained an insight in the distribution of the cases on some of the control variables, it is time to dive deeper into the characteristics of the key independent variables: feedback, accountability, learning, and the aggregate FAL-score. Figures 20, 21 and 22 show scatterplots of the correlations between the separate FAL-dimensions. A clear pattern quickly becomes clear.

Figure 20: Scatterplot Accountability and Feedback



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Figure 21: Scatterplot Learning and Feedback

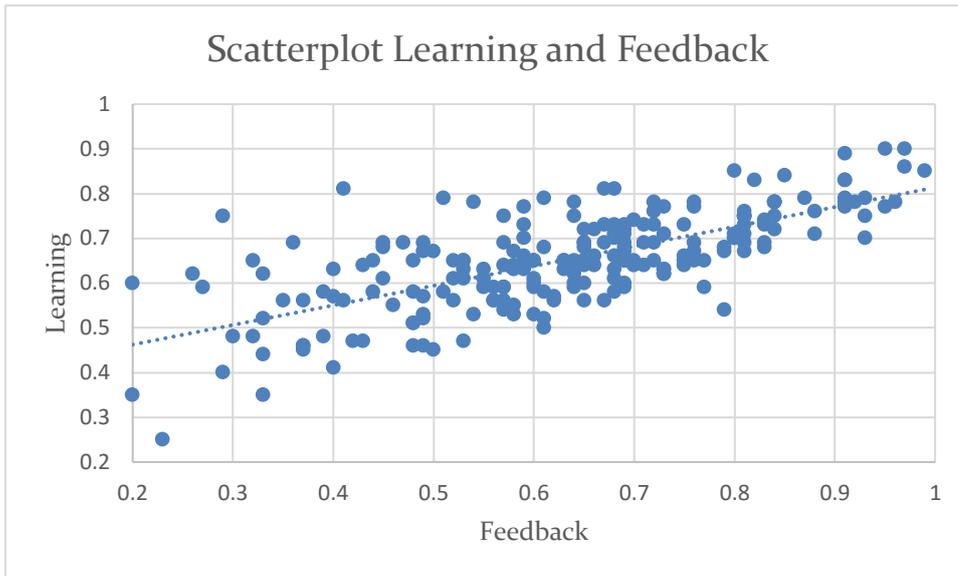
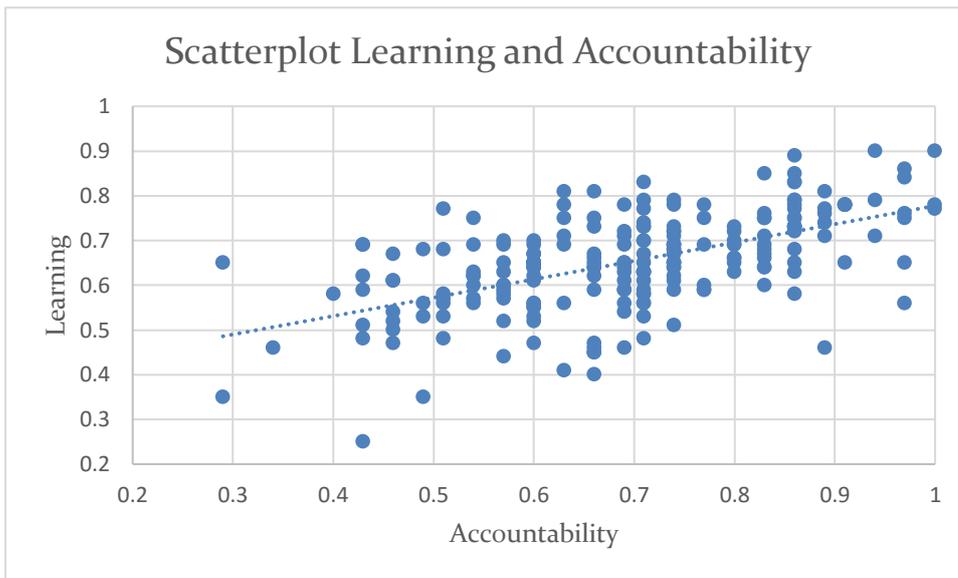


Figure 22: Scatterplot Learning and Accountability



A Spearman correlation test showed that all three dimensions were indeed moderately to strongly correlated to each other. Considering the conceptual interfaces between the three dimensions, discussed in paragraph 4.4, this is not that much of a surprise. Table 17 shows the findings from this test.

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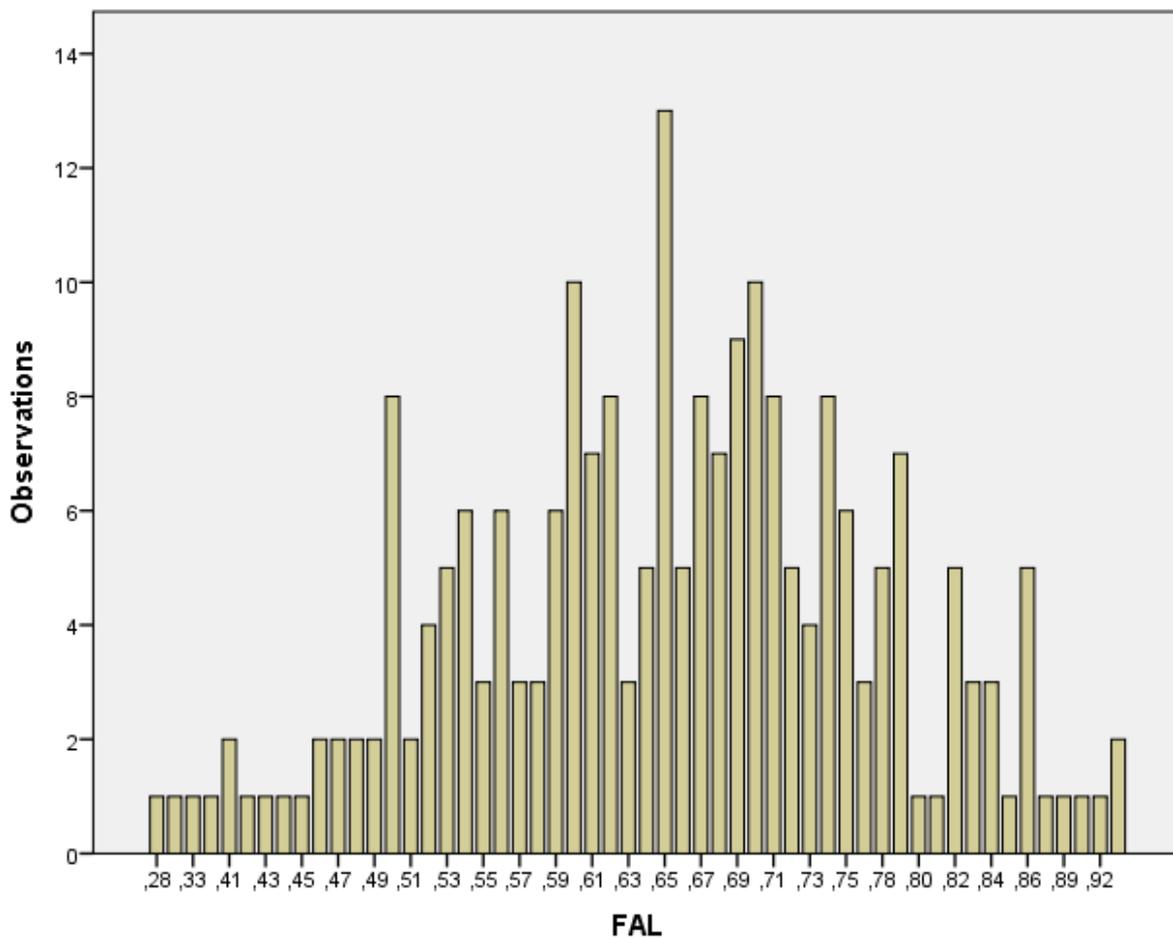
Table 17: Correlations between Feedback, Accountability, and Learning

	FEEDBACK	ACCOUNTABILITY	LEARNING
FEEDBACK	1.000		
ACCOUNTABILITY	.666**	1.000	
LEARNING	.682**	.569**	1.000

p ≤ 0.050 = *
 p ≤ 0.010 = **
 p ≤ 0.001 = ***

Finally, figure 23 shows the distribution of the FAL aggregate scores over the 220 cases in the sample. A close to normal distribution becomes apparent.

Figure 23: Distribution FAL-scores



Finally, a table with the mean scores and standard deviations on feedback, accountability, learning and FAL-scores per variable and category can be found in Annex IV. As a reminder, the minimal score for each item or dimension is 0.2, so the mean score always seems a bit

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shifted towards the upper echelons. For now, it suffices to report these scores for the whole sample in table 18:

Table 18: Mean scores and standard deviations F, A, L and FAL

	F	A	L	FAL
WHOLE SAMPLE	.63 (.17)	.70 (.14)	.65 (.11)	.65 (.12)

6.2.2 Phase 1: Preliminary tests

After most of the surveys had been collected, a number of preliminary tests were conducted in order to probe the results. First, a truth table was drawn up for the Belgian and Dutch sample, as soon as the collection of surveys was completed, and for the preliminary samples for the other countries. The FAL-score for each organization was calculated and the cases were divided between the sustainability of the respective innovations. The FAL-scores were divided into three groups: high, middle and low scores. The low scores were those from zero to one standard deviation under the mean. The middle scores were those in between one standard deviation under and above the mean. The high scores were those remaining scores higher than one standard deviation from the mean. This is illustrated in figure 24. The truth table is depicted in table 19.

Figure 24: Truth table classification of results

$$\begin{aligned}
 L &= 0 \rightarrow (\bar{\chi} - 1\sigma) \\
 M &= (\bar{\chi} - 1\sigma) \rightarrow (\bar{\chi} + 1\sigma) \\
 H &= (\bar{\chi} + 1\sigma) \rightarrow 1
 \end{aligned}$$

Table 19: Truth table initial results

BELGIUM & THE NETHERLANDS			PRELIMINARY SAMPLE FOR SIX COUNTRIES		
FAL	1	0	FAL	1	0
H	31%	0%	H	29%	19%
M	47%	55%	M	46%	44%
L	22%	45%	L	25%	46%

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The preliminary results of the truth table showed a strongly simplified overview of the results, and gave an indication of the relationship between FAL and sustainability which was hoped to be found. Obviously this is only true at face value. More sophisticated tests are necessary to more firmly establish this link.

The next step was an MWU Test. This method compares the mean ranks of two groups. It can hence test if there are different scores between sustainable and non-sustainable innovations on certain issues. As mentioned before, this test is not able to control for the influence of other variables, making it impossible to talk of causality when discussing the results. The MWU test was carried out first on each of the individual survey items. This led to ten items which were found to be significantly related to sustainable innovations. In other words: sustainable innovations scored higher on the survey items listed in table 20, than non-sustainable innovations.

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Table 20: Mann Whitney U Test results survey items.

<i>Item</i>	<i>FAL dimension</i>	<i>Mean rank 'non-sustainable'</i>	<i>Mean rank 'sustainable'</i>	<i>Difference</i>
My organization is characterized by a culture of <u>adversarial debate</u> and openness for constructive criticism.	Learning	82.61	112.07	29.46*
My organization is characterized by a tendency to <u>avoid risks</u> . ⁵	Learning	82.83	112.73	29.90*
My organization encourages <u>experimentation</u> and alternative ways of getting work done.	Learning	74.18	114.13	39.95**
If a creative attempt to solve a problem fails, the responsible <u>staff members are penalized</u> . ⁶	Learning	81.78	111.23	29.45*
In general, the <u>people</u> of my organisation <u>feel responsible</u> for the performance of the organization.	Accountability	77.80	112.70	34.90**
Towards external stakeholders, my organisation is <u>very transparent about its results</u> .	Accountability	78.85	112.60	33.75*
My organisation <u>encourages staff members to express their concerns</u> , ideas and suggestions about the functioning of the organisation.	Feedback	74.63	113.56	38.93**
The <u>feedback information from staff members has great impact</u> on the strategic decisions made by the organisation.	Learning	78.65	112.08	33.43*
<u>The feedback information from customers has great impact</u> on the strategic decisions made by the organisation.	Learning	76.65	110.15	33.50*
The <u>reports and recommendations from this ombudsman institution have great impact</u> on the strategic decisions made by the organisation.	Learning	14.75	35.38	20.63**

* Significant at the 0.05 level

** Significant at the 0.01 level

*** Significant at the 0.001 level

The same type of analysis was done for the overall FAL-score, and the individual scores for feedback, accountability and learning. This led to the results summed up in table 21.

⁵ The answers to this question were reversed before the analysis.

⁶ The answers to this question were reversed before the analysis.

Table 21: Mann Whitney U Test results aggregate scores

ITEM	MEAN RANK		DIFFERENCE
	'NON-SUSTAINABLE'	'SUSTAINABLE'	
FAL	78.45	113.71	35.26*
F	86.98	112.85	25.87
A	84.73	113.08	28.35
L	72.23	114.33	42.10**

* Significant at the 0.05 level
 ** Significant at the 0.01 level
 *** Significant at the 0.001 level

From this analysis one can see that sustainable cases have a significantly higher score on both learning and the aggregate FAL score. There does not seem to be a higher score for feedback and accountability. This makes at least a certain amount of sense when taken into account the results from the individual survey items. Seven out of ten significant items there stemmed from the learning dimension of FAL. The fact that the aggregate of FAL was significantly connected to sustainable innovations was a cause for modest optimism in advancing the analysis further. With the MWU tests the second phase of the statistical analysis, as illustrated in figure 17, can be concluded. The next step is a factor analysis, testing the validity of the survey instrument in measuring the concepts feedback, accountability, and learning.

6.2.3 Phase 2: Factor analysis

After the preliminary tests showed that there did seem to be at least some sort of a relationship between FAL and the survival of public sector innovations, the next step was to test the validity of the conceptual model. This was done through an exploratory factor analysis. A factor analysis tests the underlying structure of the answers respondents have given. It can thus be used to test if the survey indeed measured three independent variables: feedback, accountability and learning.

Many questions in the survey were dependent on having either an internal audit office, external audit office or ombudsman assigned to the respective organizations. For example: Are their reports assessed and influential in decision making processes? What do these reports focus on? As can be seen in table 22, this means that certain cases with none, or only one of these institutions assigned to them, subsequently had a lot of missing values on the following items.

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Table 22: External Audit Offices, Internal Audit Offices, and Ombudsman Offices

	YES	NO	MISSING	TOTAL
INTERNAL AUDIT OFFICE	119	100	1	220
EXTERNAL AUDIT OFFICE	117	94	9	220
OMBUDSMAN OFFICE	73	125	22	220

This caused problems for the factor analysis because pairwise exclusion was used for missing values. Pairwise exclusion was used since the missing values were not random: they were linked to the answer of the question asking if they did or did not have one of the accountability organizations assigned to them. This caused the deleting of many cases from our sample, ending with a sample far too small for a factor analysis. It was therefore decided to delete the most 'damaging' items from analysis: items focusing on the impact of audit and ombudsman institutions (questions 26a; 26b; 26c; 21a; 21b; 23a; 23b; 23c; 24a; 24b, 27a; and 27b).

Afterwards, the KMO-value was found to be .855, exceeding the recommended value of .6 (Kaiser, 1974). Bartlett's Sphericity Test was significant at the 1 percent level. The exploratory factor analysis, with maximum likelihood as extraction method and promax rotation, revealed the presence of ten factors with eigenvalues over 1, distributed over 38 variables. Loadings under a score of .5 were deleted from the respective factors. The first factor explained 27% of the variance, with a drop to 8% for the second factor. Considering the fact that the third factor (6.2% of variance explained) contained items spanning different parts of the survey, it was decided to continue with both the first and the third factor in the further analysis. These two were thought to be of most intellectual interest, even though the third factor had a rather low percentage of explained variance. The results for these two factors from the factor analysis are presented in table 23. A closer look at the variables grouped together revealed that these contained cultural variables in feedback, accountability and learning on the one side, and internal instrument variables (procedures, systems, etc.) on the other side. The Cronbach Alpha of the culture factor was 0.859. The instrument factor had a score of 0.659.

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Table 23: Exploratory Factor Analysis Results

FAL DIMENSION	QUESTION	FACTOR: CULTURE	FACTOR: INSTRUMENTS
LEARNING	Within my organisation, people are usually comfortable talking about problems, disagreements and differences in opinion.	.827	
FEEDBACK	My organisation encourages staff members to express their concerns, ideas and suggestions about the functioning of the organisation.	.767	
LEARNING	My organization is characterized by a culture of adversarial debate and openness for constructive criticism.	.687	
LEARNING	If a creative attempt to solve a problem fails, the responsible staff members are penalized.	.632	
LEARNING	My organisation encourages productive conflict and debate during internal discussions.	.631	
LEARNING	My organization encourages experimentation and alternative ways of getting work done.	.617	
LEARNING	The feedback information from staff members has great impact on the strategic decisions made by the organisation.	.599	
LEARNING	My organization is characterized by a tendency to avoid risks.	.540	
ACCOUNTABILITY	Towards external stakeholders, my organisation is very transparent about its results.	.524	
ACCOUNTABILITY	In general, the people of my organisation feel responsible for the performance of the organisation.	.506	
FEEDBACK	My organisation has monitoring systems that allow it to monitor a wide spectrum of performances and to compare those performances with the stated goals and objectives.		.822
FEEDBACK	My organisation has a quality management system that systematically strives for continuous improvements throughout the entire organisation.		.694
FEEDBACK	Does your organisation have an internal audit office?		.548
LEARNING	If discrepancies between performances and goals are detected, my organisation will take action in order to reduce these discrepancies.		.542
LEARNING	My organisation has formal procedures to ensure that lessons learned in the course of a project are passed along to others doing similar tasks.		.519

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Where it was hoped and expected to find three factors (feedback, accountability and learning), in fact there turned out to be two major factors reaching across all three FAL dimensions: a culture of FAL and instruments of FAL (C_{FAL} and I_{FAL} for short). They are, in other words, two different ways in which feedback, accountability and learning are expressed in an organization.

The names for these two factors, culture and instruments of FAL, are used as heuristic labels. It is in this light that the two were labeled 'culture' and 'instruments'. It should be clear, however, that these concepts were found inductively, and have not been rationally designed as such. Further research would have to indicate what such a culture exactly entails, and which instruments actually belong to this factor. Until that becomes clear, the labels here should be interpreted, as said before, as heuristic tools, closely, but perhaps not perfectly, resembling their nature. Especially the term 'culture' is notoriously vague, and could be added to Pollitt and Hupe's list of magic concepts (2011), right under 'innovation'. Dogan and Pelassy (1990, p. 69) warn for the use of culture "*as an easy cover for lazy explanations*". Culture, in their view, "*has proven at the same time imprecise and advantageous, risky and useful, full of pitfalls but deserving of more attention than disregard.*" (p. 69, italics added) It is thus a term that should not be handed out easily, especially when it comes to the measurement of a particular type of culture. However, the survey items making up the first factor are considered to be theoretically related. It concerns intangible issues, concerning the environment in which the respondents work. This becomes especially clear in contrast to the second concept, which consists of much more concrete entities: internal audit offices, procedures, and mechanisms. In other words: instruments used to create and process (performance) information about the innovation. With the exception of one, however: "If discrepancies between performances and goals are detected, my organisation will take action in order to reduce these discrepancies." This item seems out of place in the instruments, as it does not refer to a concrete instrument, but to an action that might be better suited in the culture factor, if it weren't for its particular factor loading. It was therefore decided to drop this item from the factor, as it significantly weakened the concept validity of the instrument factor. In the rest of the text, when mentioning the instruments factor, the other effect of the four other items are referred to: internal audit offices, monitoring systems, quality management systems, and formal procedures for lesson learning.

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Finally, the observant reader might have noticed that the factor instruments of FAL only covers items from the feedback and learning dimensions. Shouldn't it be called 'Instruments of FL', then? It is argued here that this is not the case, and that the FAL-model holds, for four reasons. First, the separate FAL dimensions correlate significantly, and these correlations are moderate to strong, as shown in table 17 (p. 152). The items in the factor I_{FAL} are therefore always related to the accountability dimension as well. Secondly, this is in line with the interfaces between the dimensions which were discussed in chapter 4. The dimensions influence each other: accountability mechanisms deliver feedback information, learning cultures look for feedback information, as do accountability mechanisms, etc. Thirdly, a logical explanation for the fact that no accountability-items found their way into the instrument factor, is that there simply were less accountability items than there were for learning and feedback. Finally, some of the items are partly overlapping. Monitoring systems and quality management systems can also serve as accountability instruments. It would therefore be unjust to state that accountability is less important than learning and feedback because there are less, or no items present in the factors. These four arguments combined create the basis for the continuous use of the instruments factor as 'instruments of FAL'.

Further analysis will be focused on the effect these two factors have on the sustainability of public sector innovations. In order to further analyze the cultural and instrumental dimensions of FAL, an aggregate score for both was calculated per case, in the same fashion as was done for FAL: adding the answered scores, then dividing the aggregate by the highest possible score. The scores on FAL culture and FAL instruments (using Spearman's correlation method) are correlated to each other with a medium-low coefficient of .31, significant at the .01 level.

This constitutes a significant alteration in the course of the research. It means that the hypotheses, the research questions and the wording of the heuristic causal model have to be changed. In short: where it used to read "FAL", this should now be read as "FAL culture and FAL instruments". In order to be precise and comprehensive, the research questions, hypotheses and the heuristic model are reformulated hereunder.

Research questions:

RQ1: To what extent can cultures and instruments of feedback, accountability and learning explain the temporal sustainability of awarded and nominated public sector innovations?

RQ1a: To what extent are cultures and instruments of feedback, accountability and learning present in the organizations of the investigated innovations?

RQ1b: How sustainable are the investigated innovations?

RQ1c: Is there a correlation, and what is the nature of the correlation between the embeddedness of cultures and instruments of feedback, accountability and learning in an organization and the sustainability of the investigated innovations?

RQ2: How do cultures and instruments of feedback, accountability and learning explain the sustainability of public sector innovations?

RQ2a: What is the process narrative of sustainable and unsustainable public sector innovations?

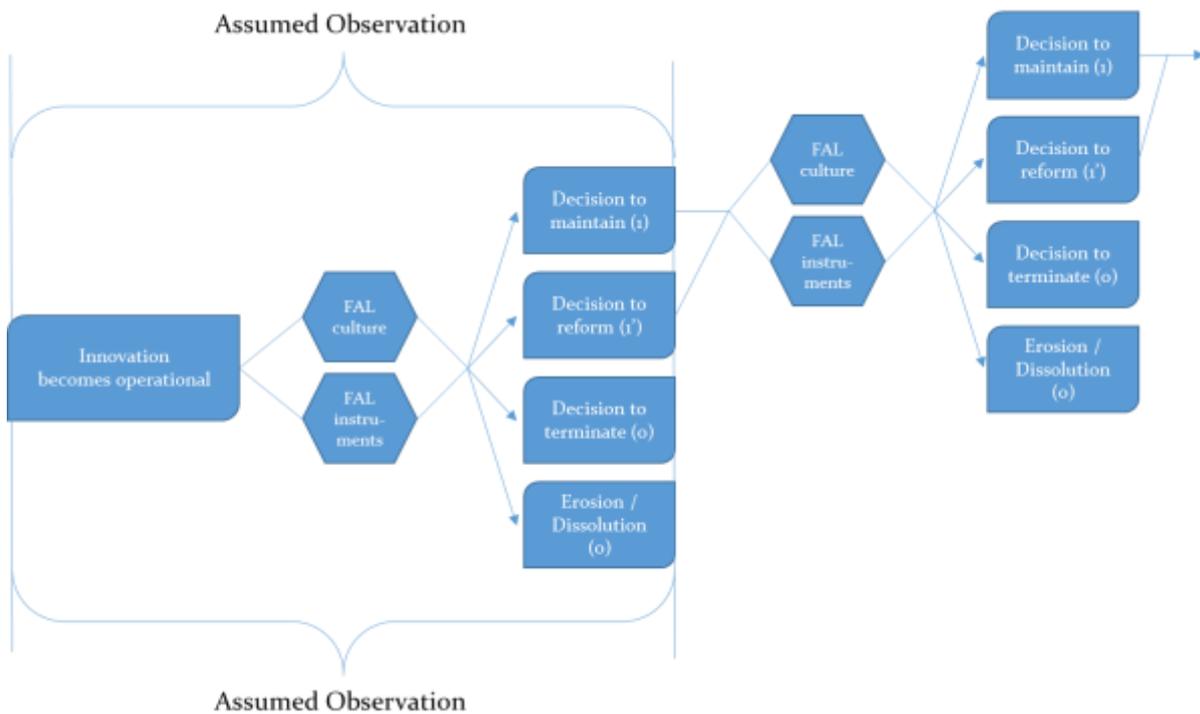
Hypotheses:

The more cultures and instruments of feedback, accountability and learning are embedded in an organization, the higher the likelihood of innovations within that organization to be sustainable.

Organizations with strong cultures and instruments of feedback, accountability and learning, embedded in the organization, will have sustainable innovations, ceteris paribus.

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Figure 25: Heuristic causal CFAL and IFAL model



These results also imply that the proposed INUS-condition formulation has to be updated. Whereas the previous formulation read:

$$((FAL, X) \text{ or } (Y)) \rightarrow \text{Sustainable Innovations}$$

The new formulation reads as follows:

$$(((C_{FAL} \& I_{FAL}), X) \text{ or } (Y)) \rightarrow \text{Sustainable Innovations}$$

Given that two new concepts were constructed through the factor analysis, it is useful to again present some descriptive data. Plotted against the number of observations for each score, the FAL culture and FAL instrument scores can be illustrated as follows:

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Figure 26: Distribution of FAL culture scores

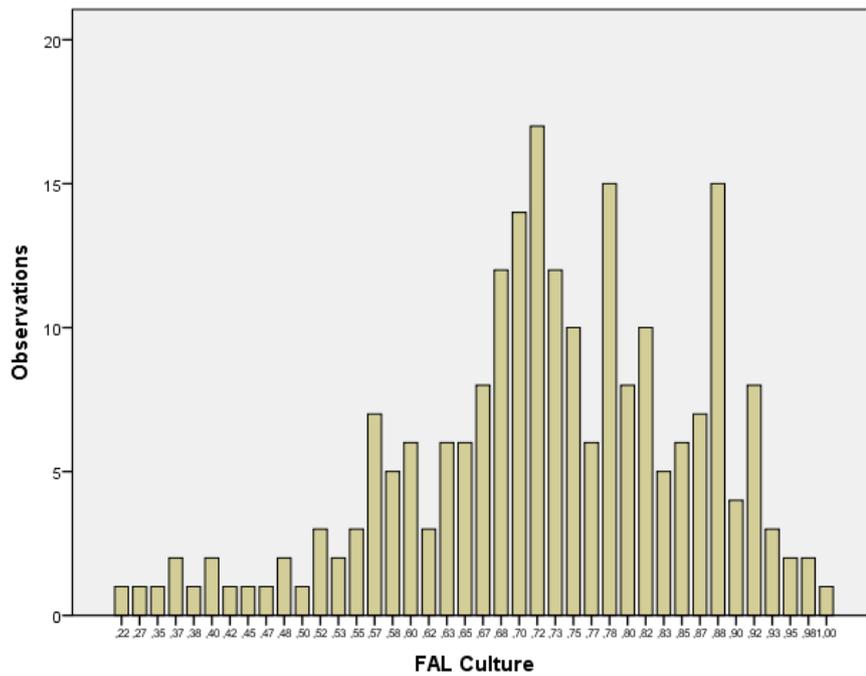
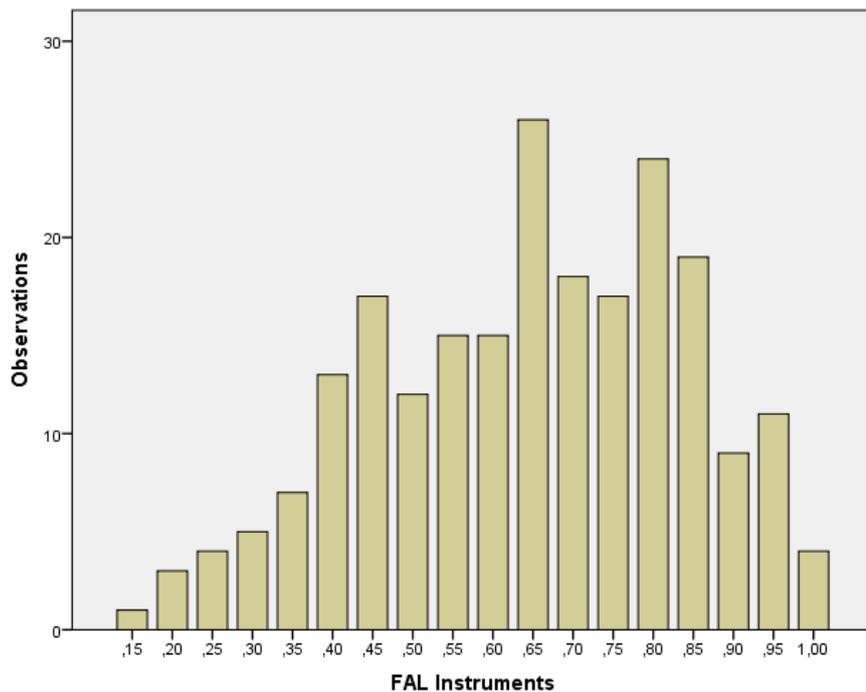


Figure 27: Distribution of FAL instruments score

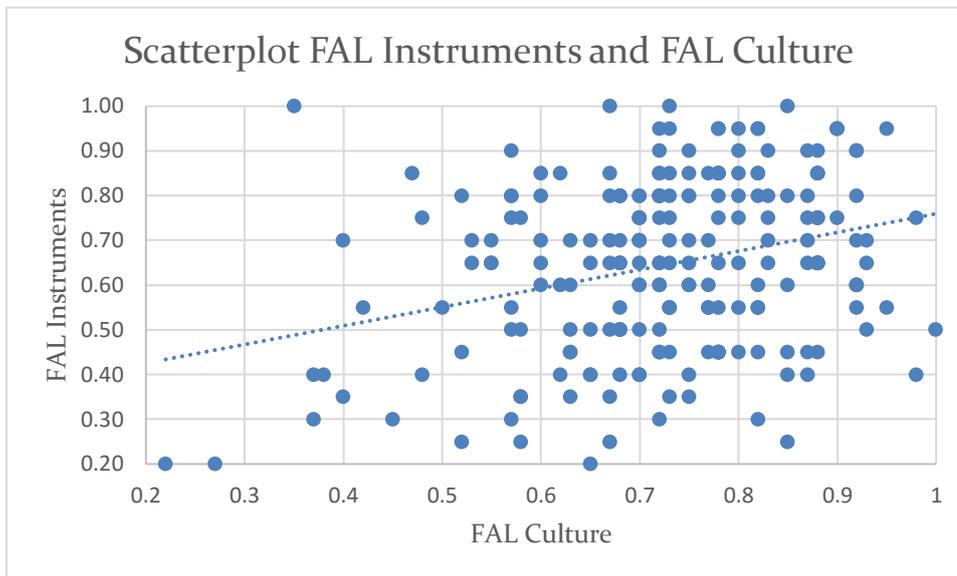


At the same time, much like the individual FAL dimensions, FAL culture and FAL instruments are significantly correlated. Figure 28 depicts their correlation visually, which seems rather minor. The Spearman test showed a correlation of 0.255 between the two

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concepts at a 0.010 significance level. This means that the two have a low to medium correlation, which should not lead to any problems in the further analysis. Annex V contains the mean scores and standard deviations of the several categories of case on C_{FAL} and I_{FAL} .

Figure 28: Scatterplot of FAL culture and FAL instruments



6.2.4 Phase 3: Logistic regression

Based on the newly found concepts of FAL culture and FAL instruments, a logistic regression was carried out in order to test their causal impact on the sustainability of the innovations. Here, the most relevant outcomes are included in full, in table 25. The outcomes of the other models can be found in Annex VI. Before turning to the results, it is worth mentioning why no use was made of the Cox Proportional Hazard Model. This model is designed to explore the critical factors in determining what differs between surviving and non-surviving cases. However, for this to work, one needs the exact beginning and end-date of the innovations. This turned out to be a rather difficult task for the respondents, and not all end-dates were retraced. Considering the already small number of non-sustainable cases, the analysis could not afford to lose any more of them by focusing only on the ones for which an end-date was found. It was thus not possible to use this model, although its use would be a very relevant opportunity for further research to strengthen its research design.

First of all, multicollinearity has to be ruled out in order to be able to conduct a logistic regression. The correlations (Spearman correlation test) between the independent and control variables (Annex VII) show that there do not seem to be problems regarding possible

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multicollinearity. Since two scores are minor causes for concern (GDP / Country (-.575**) and Policy Area Innovation / Policy Area Organization (.596**), bolded font in Annex VII), these variables will be investigated in different models. This means that, in this regard at least, there are no limits on the possible combinations of factors in a model, and that the logistic regression can be conducted as planned.

As mentioned before, it was necessary to test the effect of the independent and control variables on innovation sustainability in different models. The modest number of cases made it impossible to include all variables in one test. However, the more control variables in the same model, the stronger the model becomes. It was therefore tried to combine as many variables as possible. The variables for GDP, Hofstede (both the combined Hofstede and the separate scores) and countries would, at first glance, not violate any rule with regards to the number of variables included in the test. This includes some of the problematic correlations found in Annex VII. However, these variables perfectly match with one another (e.g. each Belgian innovation has the exact same score on all these variables). This forces one to regard these four variables in four separate logistic regressions. This means that the number of control variables is brought down from 12, to a maximum of 9 per model. Seeing as only one of these four control variables can be added per model, it is possible to add six more: C_{FAL} , I_{FAL} and age (which are included in all models), together with organizational size, type of innovation and governmental level, adding to a total of seven variables. Adding policy area to these models would be too much, as this variable consists of way too many categories. Model 5 and 6 therefore separately control for policy area (of the innovation and organization, respectively). This also solves the possible problems with multicollinearity, as the correlation between innovation and organizational policy area was the final remaining problematic correlation score, as the others were dealt with in separating the national scores. Table 24 shows which variables are included in which model.

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Table 24: Regression Models

VARIABLES	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
C _{FAL}	X	X	X	X	X	X	X
I _{FAL}	X	X	X	X	X	X	X
COMBINED HOFSTEDE				X	X	X	X
SEPARATED HOFSTEDE			X				
GDP	X						
COUNTRIES		X					
AGE	X	X	X	X	X	X	X
ORG. SIZE	X	X	X	X			X
INNOVATION TYPE	X	X	X	X			X
GOVERNMENTAL LEVEL	X	X	X	X			X
POLICY AREA INNOVATION					X		
POLICY AREA ORGANIZATION						X	

Model 1, including GDP, was significant as a whole, but the explanatory power of the factor GDP was approximately 0.000. C_{FAL} and Age were also significant in this model. Model 2, including the countries of origin as a nominal variable, was not significant, with a p-value of obtaining a Chi-square statistic given that the null-hypothesis is true of 0.077. Model 3, with the separated Hofstede scores was significant, but the control variables were not. Only C_{FAL} was significant in this model. Model 4, saw a significance of the entire model, as well as C_{FAL}, the combined Hofstede score, and the age of the innovation. Model 5 and 6, including the two policy area factors, were both significant as a whole, but the control variables themselves were not. Finally, a reversal of the dependent variable labeling did not influence the outcomes of the logistic regression. Following these results, it was decided that model 4 was the most appropriate to continue with. The outcomes of the logistic regression for model 4 can be found in table 25.

Table 25: Regression results model 4

Survival	Coefficient	Std. Err.	Z	Sign.	[95% conf. interval]	
FAL Culture	5.596	2.026	2.76	0.006	1.624	9.568
FAL Instruments	0.0821	1.649	0.50	0.619	-2.412	4.053
Combined Hofstede	2.370	0.757	3.13	0.002	0.888	3.853
Age	-0.255	0.098	-2.59	0.010	-0.447	-0.062
Organizational size⁷						
25 – 100 fte	0.979	1.089	0.90	0.368	-1.155	3.113
100 – 250 fte	0.843	1.136	0.74	0.458	-1.382	3.070
250 – 500 fte	1.372	1.429	0.96	0.337	-1.429	4.173
> 500 fte	0.036	0.826	0.04	0.966	-1.584	1.655
Innovation type⁸						
Administrative	-0.450	0.834	-0.54	0.589	-2.085	1.185
Technological	-0.152	0.810	-0.19	0.851	-1.739	1.435
Governance	0.693	1.082	0.64	0.522	-1.428	2.814
Governmental level⁹						
Regional / Provincial	1.139	0.879	1.30	0.195	-0.584	2.862
Local	0.859	0.756	1.14	0.256	-0.623	2.340
Constant	-2.159	1.531	-1.41	0.159	-5.161	0.842

Number of observations = 211
 LR chiz (9) = 33.13
 Prob > chiz = 0.0016
 Pseudo R2 = 0.251
 Log likelihood = -49.576

As table 25 shows, the only significant independent factors in Model 4 (containing the combined Hofstede score) are C_{FAL} , together with the score for age, and the Hofstede score itself. For both C_{FAL} and the Hofstede score we expect an increase in these scores to be followed by an increase in the respective innovation’s sustainability, *ceteris paribus*. Likewise, for an increase the numbers of years since the award or nomination, we expect a decrease in the odds of the innovation’s sustainability.

The effects found in this logistic regression are most likely exaggerated due to the unbalanced dataset, with one terminated case for every ten sustainable cases. This problem could, potentially, be somewhat solved by using the Firth Penalized Likelihood Logistic Regression (Firth Regression for short) (Firth, 1993). This method is designed to deal with an imbalance in the distribution of the dependent variable. In this case, a ration of 1:10 on the dependent side warrants the use of such a method. The results of the Firth Regression, Model 7 using the same variables as used in Model 4 can be found in Annex VI. Although the results are largely comparable to those of Model 4 (with indeed slightly lower, and thus

⁷ Reference category: < 25 FTE

⁸ Reference category: Product / Service

⁹ Reference category: Federal / National

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less exaggerated coefficients), the model as a whole is not significant, with a with a p-value of obtaining a Chi-square statistic given that the null-hypothesis is true of 0.0709.

Notwithstanding these issues, the results show that a culture surrounding feedback, accountability and learning seems to have a significant impact on an innovations' sustainability. Although the age of the innovation and the Hofstede score also play a significant role, these effects are a lot smaller than the effect of the FAL culture score. Highly interesting is the finding that FAL instruments do not seem to be directly linked to the sustainability of public sector innovations. This could also explain why feedback and accountability were not linked to sustainability in the initial non-parametric tests. Feedback and accountability contain far more instrumental items: about performance measurement, procedures, etc. Learning, contain less tangible items, such as the ones found in the factor C_{FAL} . It is furthermore noteworthy that the probability of sustainability for public sector innovations is the same across countries, governmental levels, organization sizes, innovation types, and national economic development. The finding that the Hofstede score is linked to the survival of innovations ought to be analysed with caution. As mentioned before, the Hofstede score is only a remote indicator for innovation culture. It is most of all an important sign that the impact of national innovation cultures on public sector innovations (in combination with administrative regimes) warrants further investigation.

6.2.5 Exploring non-nominated cases

As mentioned before in the discussion on the award-methodology, there is a possibility that the sample used here consists of high achieving innovations and organizations. It was therefore deemed pertinent to test the results found above on a sample of non-nominated cases. In other words: do the results hold up when the focus is moved towards innovations which applied to awards, but neither awarded nor nominated? Before turning to the data collection and analysis, it should be noted that looking into non-nominated cases gives up one of the most important advantages of the award method: the jury process. The fact that nominated and awarded cases have been reviewed by a jury functions as a safeguard to exclude non-innovations from the sample. The cases in the non-nominated category might therefore not necessarily be innovations. However, there are other factors that could lead to non-nomination: a lower quality of the application, a lower quality of the innovation itself, or political reasons (especially in the case of the Belgian BKC programme where there had

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to be a balance between Flemish and Walloon cases). Cases dropped for these reasons might still be innovations, and thus useful for further analysis.

The process of finding these cases proved to be even more difficult than finding respondents from nominated and awarded innovations. The only award programme found which had some information on the applicants instead of just the nominated and awarded cases, was the Belgian BKC award programme, and only for the years 2001, 2003, 2006 and 2009. In contrast to the previous sample, it was decided to extend the sample to before 2003, in order to find as many cases as possible. After a large time investment, a mere 17 cases were retrieved from these datasets. The same issues played a role in potentially explaining this low return on investment as with the nominated awarded cases, only more strongly. Memories had faded further and careers had changed more because the time frame had been extended. Shame, furthermore, might play a stronger role here due to the fact that these cases weren't nominated.

It was decided to use these 17 cases in order to compare them with the other Belgian cases from the previous survey. The main goal was thus not to expand the original sample, but to contrast the findings between the two groups. Could the group of non-nominated innovations indeed have lower FAL scores? Probing the new data provided the following data:

Table 26: Mean scores and standard deviations for non-nominated sample

	F	A	L	FAL	CFAL	IFAL
NOT NOMINATED (N=17)	.63 (.19)	.69 (.15)	.68 (.11)	.67 (.14)	.72 (.14)	.59 (.24)
NOMINATED OR AWARDED (N=72)	.71 (.12)	.74 (.14)	.69 (.11)	.69 (.11)	.71 (.12)	.70 (.17)

Table 27: Mann Witney U test results for non-nominated innovations

ITEM	MEAN RANK NOT NOMINATED	MEAN RANK NOMINATED OR AWARDED	DIFFERENCE
FEEDBACK	40.29	46.11	5.82
ACCOUNTABILITY	34.56	47.47	12.91
LEARNING	49.18	44.01	-5.17
FAL	44.71	45.07	0.36
FAL CULTURE	49.53	43.93	-5.60
FAL INSTRUMENTS	36.59	46.99	10.40

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This data shows that there are no significant differences between the two groups. Although this sample is by far too small to make any definitive conclusions, it is interesting to note that very few differences were found. The argument that the award method automatically looks at higher performing innovations and organizations *might* thus be overstated. Otherwise significant differences between the scores of non-nominated and nominated/awarded organizations would have been found. Nonetheless, further research on the basis of a more comprehensive sample will have to be conducted in order to be able to make more substantiated claims. Considering the small sample size and other complicating factors, the decision was made to not include this new sample in any of the other analyses.

6.3 Conclusion

In the conclusion of this chapter the research questions will be answered. This can simultaneously function as a summary of the work presented above. The main findings, the influence of C_{FAL} , age and the Hofstede score will be discussed more elaborately in chapter 8 of this dissertation, in the context of the qualitative findings from chapter 7.

This chapter focused on answering the first research question, through step by step answering the three underlying sub-questions. In order to answer the first two sub-questions a survey was designed and carried out, as is further discussed in sub-paragraphs 6.1.1 and 6.1.2. This measured the embeddedness of the organizations feedback loops, accountability mechanisms and learning cultures through several items (see Annex I and II for the full survey, as well as a grouping of survey questions per theoretical concept). A number of control variables were introduced for the final analysis: type of innovation, governmental level, policy area of the organization, policy area of the innovation, age of the innovation, GDP, country, national Hofstede score and size of the organization.

RQ1a: To what extent are cultures and instruments of feedback, accountability and learning present in the organizations of the investigated innovations?

RQ1b: How sustainable are the investigated innovations?

The final sample consisted of 220 innovations. After a number of preliminary tests indicated that there might indeed be merit to investigating the effect of FAL on the sustainability of public sector innovations, a factor analysis showed that two concepts (instead of the three

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aimed for: feedback, accountability and learning) came to the fore through the survey: a culture of FAL and instruments of FAL. After it was decided to continue investigating the effect of these two concepts the heuristic model and the research questions were subsequently changed in accordance.

The survey measured the scores for the whole sample of C_{FAL} and I_{FAL} . This answers the first sub-question (RQ1a). Furthermore, out of a sample of 220 innovations, 20 were found to be non-sustainable, whereas 200 were still sustainable, following the definition for sustainability from page 37. This answers the second sub-question (RQ1b). The skewedness of the sample caused some problems for the further analysis, but was comparable to the results of other, similar research projects. The third sub-question read as follows:

RQ1c: Is there a correlation, and what is the nature of the correlation between the embeddedness of cultures and instruments of feedback, accountability and learning in an organization and the sustainability of the innovation?

The logistic regression which was conducted in order to investigate the correlation between C_{FAL} and I_{FAL} showed that the former indeed had a statistically significant effect on the sustainability of the innovations. A stronger embeddedness of C_{FAL} thus seems to cause more sustainable innovations. Seven models were tested in order to include all control variables. It was not possible to include all control variables in the same model due to the modest sample size.

RQ1: To what extent can cultures and instruments of feedback, accountability and learning explain the temporal sustainability of awarded public sector innovations?

Besides the embeddedness of a culture of FAL, other factors were found to influence the sustainability of innovations as well. The age of the innovation (older innovations have a higher chance of being terminated) and the national Hofstede score (higher scores indicate a higher chance of sustainability) were also found to be significant. Their influence, however, was found to be much less strong than that of C_{FAL} . The over exaggerated influence of C_{FAL} in the model presented in this chapter can be attributed to the skewed nature in the distribution on the dependent variable. A culture of FAL is thus expected to have a strong influence on the sustainability of public sector innovations, albeit less strong than the

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regression results suggest, and at the same time stronger than the other variables included in this analysis. The final conclusion of this chapter, however, cannot be as strongly formulated as they have been to this point. Throughout the different discussions in this dissertation it has been noted on multiple occasion that the conclusions need to be read as exploratory conclusions. Added to this are several instances where the reader is to keep certain shortcomings into account when reading the conclusions. The effect of these on the conclusions here will be further discussed in chapter 8, together with a discussion on relevant other literature, as well as the pros and cons of the methodology which was used throughout the dissertation.

Finally, an exploration into the characteristics of non-nominated innovations led to the finding that non-nominated cases did not *seem* to significantly differ from nominated and awarded cases on feedback, accountability, learning, FAL, C_{FAL}, and I_{FAL}.

Having established that C_{FAL} seems to have a causal relationship with the sustainability of public sector innovation, it is necessary to investigate what this relationship looks like up close. As mentioned before, qualitative research is more appropriate for this type of research goal. At the same time, it bring the research in the realm of necessity, sufficiency, and the INUS-conditions. The next chapter turns to the qualitative investigation of this relationship between C_{FAL} and sustainability.

Chapter 7 – Qualitative Results

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In the previous chapter a link was found between a culture of FAL on the one hand, and the sustainability of innovations on the other. However, this remains based on statistical methods (correlational at its core). To investigate and test this correlation for causality, qualitative research will be more appropriate. In order to do so, a deterministic hypothesis, was drawn up for this second part of the empirical investigation, in contrast to the probabilistic hypothesis for chapter 6:

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Organizations with strong cultures and instruments of feedback, accountability and learning, embedded in the organization, will have sustainable innovations, ceteris paribus.

A case study approach provides a better opportunity to investigate the link between instruments and cultures of FAL in more detail, since the main advantages of small-n, in-depth research are the ability to draw causal inferences, the possibility to take account of unexpected factors, weighing causal factors separately, and a greater eye for detail (Gerring, 2007). Turning back to chapter 5, laying out the research design for this dissertation, this chapter thus turns to the second half of the investigation into the causality between FAL and the sustainability of innovations. Whereas chapter 6 took on the neo-humean approach, this chapter will take on the counterfactual approach to causality. In consciously picking the right cases, and in-depth analysis of the manner in which the innovations were initiated, developed and terminated, it will be possible to make better comparisons between cases' key factors influencing the innovations' sustainability. Furthermore, it is also in this chapter that the INUS-condition will take up a more prominent place. As described in the previous chapter, it is now formulated as follows:

$$(((C_{FAL} \& I_{FAL}), X) \text{ or } (Y)) \rightarrow \text{Sustainable Innovations}$$

The research questions for this part of the dissertation reflect this change in view from correlation to causality. Adapted for the findings in chapter 6, they read:

RQ2: How do cultures and instruments of feedback, accountability and learning explain the sustainability of public sector innovations?

RQ2a: What is the process narrative of sustainable and unsustainable innovations public sector innovations?

One might wonder why instruments of FAL has returned as a variable in this question, even though the statistical analysis found no link between I_{FAL} and the sustainability of innovations. It is again incorporated here because it still makes theoretical sense to do so, if only as a double check on the preceding findings. Although there was no correlation found between I_{FAL} and the sustainability of innovations, it is not possible yet to draw any conclusions on how exactly I_{FAL} operates vis-à-vis innovations and C_{FAL} . The results from one survey are hardly sufficient to draw final conclusions, especially in an exploratory

investigation. The influence of FAL instruments will therefore be investigated once more, this time through a qualitative and in-depth research design. This will be done through the three case studies laid out in this chapter.

This chapter will have roughly the same structure as the previous one. First the methodology will be discussed. The process narrative approach will be introduced first, in sub-paragraph 7.1.1, after which the case selection, interview, and focus group process will be discussed in 7.2.2 and 7.2.3. Then, the focus will lie on the specific methods that were used as measuring instruments: semi-structured interviews and a focus group. 7.1.6 will delve deeper into the question how the key factors (C_{FAL} & I_{FAL}) will be observed and determined in this qualitative approach. An evaluation of the pros and cons of this method can be found in sub-paragraph 7.1.7. Finally, paragraph 7.2 will discuss the results from both the interviews and the focus groups, integrated into one paragraph, and analyze the data in function of the research questions and hypothesis.

7.1 Methods

This paragraph describes the manner in which the two remaining research questions of this dissertation are investigated. First the case selection and interviewee selection procedures are discussed. Afterwards the method of interviewing and the focus group method are explained. Finally, sub-paragraph 7.1.5 explains the manner in which the data recovered through these methods will be analysed, followed by a discussion on the strengths and weaknesses of the methods in sub-paragraph 7.1.6.

7.1.1 Creating process narratives

This chapter deals with two research questions:

RQ2a: What is the process narrative of sustainable and unsustainable public sector innovations?

RQ2: How do cultures and instruments of feedback, accountability and learning explain the sustainability of public sector innovations?

In order to answer RQ2, it is essential to answer RQ2a first. It is necessary to find out what the lives of these innovations looked like, what the process of their development was between the initial idea and their termination. So what is looked for specifically: moments and stories that reveal how C_{FAL} and I_{FAL} have triggered certain events. Only then can the

search for answers for RQ2 start.

‘Process narrative’ is a term adapted from Poole et al. (2000), who describe ‘process analysis’ or ‘process studies’ in order to investigate organizational change and innovation processes in the private sector.

“In this research strategy, investigators gather data that indicate how the process unfolds over time. Some data could be quantitative measurements, other data would consist of detailed descriptions of the events. Based on these descriptions, researchers construct a timeline of events that were significant in the development and change process.” (p. 12, italics added)

This *“definition of process takes a historical developmental perspective and focuses on the sequences of incidents, activities or stages that unfold over the duration of a central subject’s existence.”* (ibid., p. 19, italics added) In this research this will result in the creation of three narratives, each of which will allow the researcher to investigate if and how C_{FAL} and I_{FAL} have changed over time, and the effect this had on the innovation. Due to the fact that a process narrative takes into account the entire process under investigation (the entire life of the innovation in this case), it partly compensates for the cross-sectional nature of the survey used earlier on. It is true, as stated before, that issues such as a culture of FAL or instruments of FAL can change during the lifetime of the innovation, and that longitudinal research would be best suited to investigate this process. Process narratives will be able to shed a light on this development, albeit retrospectively.

Equally important: such narratives step out of the realm of correlation, and into that of causality. In writing up the narrative of an innovation, temporality gains more prominence. It can show in greater detail, nuance and clarity whether a certain change is indeed preceded in time, and is caused, by A or B. This is even more important in the light of the INUS-condition. Whereas the survey has shown the relevance of cultures of FAL for the sustainability of innovations, these process narratives can make claims (of varying strength), about its necessity and sufficiency to explain the (non-)sustainability of innovations.

Furthermore, due to the fact that case studies and qualitative methodologies are better equipped to investigate context, and have more flexibility in looking for unexpected influences, these narratives will be able to shed a better light on the ‘X’ and ‘Y’ factors in the INUS-condition. Due to the dearth of research on the sustainability of public sector

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innovations, there is again little to navigate on in determining possible ways to fill in X and Y. These two will thus be investigated inductively. Again, something qualitative case studies and process narratives are best suited for (Gerring, 2007). 'X' constitutes factors which explain the sustainability of innovations *in combination* with C_{FAL} and I_{FAL} , but are at the same time insufficient on their own to explain the complete variation on this dependent variable. 'X' is thus inherently connected with C_{FAL} and I_{FAL} . An example here might be 'information quality'. This factor is separate from C_{FAL} and I_{FAL} . Information is gathered regardless of its quality, but the functioning and effectiveness of especially I_{FAL} is strongly dependent on it. Together, these three factors might explain the sustainability of innovations. Y, are all other factors which explain the outcome, but are not connected to C_{FAL} and I_{FAL} . An example here could be the change of a law or regulation or a change in policy at a higher level of government, which makes the innovation unable to continue. C_{FAL} and I_{FAL} could still be perfectly intact, but decision from above could make the innovation obsolete or legally sustainable.

7.1.2 Selection of cases

Only a small number of non-sustainable innovations were encountered through the survey. For financial reasons it was only possible to look at innovations in Belgium and The Netherlands, in which five eligible cases for further research were found. During the process of interviewing involved civil servants two of the initial five cases were discarded because of a lack of respondents. It was therefore decided to focus on two of the *unsustainable* innovations which were found in the quantitative part of the research, and one *sustainable* innovation.

Although selecting cases on the basis of their outcome variable has been criticized in the past (Geddes, 1990; Brady & Collier, 2004), chapter 5 lays out in detail why it is warranted to do so in this dissertation. Selecting on the outcome variable is necessary in order to ensure that there are both occurrences and non-occurrences present in the sample. Without investigating at least one sustainable case, one can never be sure, or as sure as possible in social sciences, about the sufficiency and necessity of C_{FAL} and I_{FAL} . If the first part of the INUS conditions ((C_{FAL} & I_{FAL}) & (X)) is zoomed in on, keeping 'Y' constant at 0 (no observation), there are 16 possible outcomes. The highlighted ones in table 28 are in accordance with the hypotheses of this dissertation:

Table 28: Possible causal paths

C_{FAL}	I_{FAL}	X	Hypothesized outcome	C_{FAL}	I_{FAL}	X	Hypothesized outcome
+	+	+	Non-Sustainable	+	+	+	Sustainable
+	+	-	Non-Sustainable	+	+	-	Sustainable
+	-	+	Non-Sustainable	+	-	+	Sustainable
+	-	-	Non-Sustainable	+	-	-	Sustainable
-	+	+	Non-Sustainable	-	+	+	Sustainable
-	+	-	Non-Sustainable	-	+	-	Sustainable
-	-	+	Non-Sustainable	-	-	+	Sustainable
-	-	-	Non-Sustainable	-	-	-	Sustainable

In the evaluation of this chapter’s results (in chapter 8) a key issue will be the discussion of the manner in which it is possible to make claims about the necessity or sufficiency on the basis of the case distribution in table 28.

As stated before, it was possible to locate three cases from the survey results, two of which with a non-sustainable innovation, and one with a sustainable innovation (terminated after it had reached its goal), which were at the same time practically feasible to investigate. The first opportunity for contact was the person who filled out the initial survey. In all the original five instances s/he was willing to cooperate with an interview, to discuss the innovation and its life story more in-depth. For one case it turned out that there were no other possible respondents to be interviewed, after which it was decided to terminate this as a possible case for this study. In a second case, a dead end was reached after two interviews, still considered to be too little for a decent case study. Hence, the final sample consists of three cases. This entails that, at maximum, three of the pathways in table 28 can be investigated.

The lack of choice in cases with non-sustainable innovations, and limits with regards to the available means, meant that there was not a range of options in terms of scope conditions and comparative contexts. This means the final cases selection included three rather different organizations:

Table 29: Description of case studies

	Start & termination	Organization:	Type of innovation:	Description of innovation:
Case 1	1996 / 2013	Federal police force, Belgium. 5 respondents	Administrative innovation	Improving pre-admission test training for potential employees. Goal was to attract and employ more staff with an immigration background.
Case 2	2008 / 2012	Municipality, the Netherlands. 5 respondents	Governance innovation	Creating a digital forum for citizens to comment on standard letters from the municipality. Goal was to create a clearer form of communication with less jargon.
Case 3	2003 / ?	Local social- and healthcare provider, Belgium. 6 respondents	Administrative innovation	Getting feedback from staff members on the working environment by using a new survey methodology and follow-up pro-gram. Goal was to improve the organization's quality.

The characteristics and nature of the organizations, in combination with the nature and characteristics of the innovations itself, changes significantly between cases. Furthermore, case three required hardly any investment, whereas the first innovation required around 200.000 euro on a yearly basis. Administrative and governance innovations were compared. Large and small organizations. Autonomous and more constrained administrations. A most different method of case selection was thus adopted, albeit without choice. The differences between the cases will (hopefully) make a stronger theoretical argument for the universal application of C_{FAL} and I_{FAL} in explaining innovation sustainability (Blatter & Haverland, 2012). This means that C_{FAL} and I_{FAL} might have the same impact in all organizations, regardless of the factors on which the cases differ (e.g. governmental level, invested resources, etc.).

Finally, it is important to note that, despite the survey data discussed in chapter 6, this research is still exploratory in nature. This means that the case descriptions in and of themselves will be useful, as they shed a light on a phenomenon hitherto kept in the dark: the development of innovations after their initiation and implementation. In other words: their life stories.

7.1.3 Selection of interviewees

The respondents were looked for and found through the snowballing method. The respondent, in discussing the innovation life story, would mention certain actors which were involved in the innovation. These persons of interest were then contacted and asked if they

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wanted to cooperate. They would tell their version of the story, naming more/other actors, and so on. In all three cases there were ‘proponents’ and ‘opponents’ of the innovation, or of at least concerning specific parts of the innovation. Special attention was given to include both sides in the sample of interviewees. As can be seen in table 30, the final sample of interviewees totals to seventeen respondents. All seventeen had close knowledge about the innovation. Due to retirement, leave, absence, or changes in careers, not all of the interviewees had witnessed the design, implementation *and* the termination of the innovation. However, it was ensured that for each of these stages at least two interviewees had witnessed them first-hand. Although all of the interviewees were involved with the innovation, their degree involvement and the directness of their involvement differed. Their decision-power differed as well. Table 30 gives an overview of these issues. Those indicated with an asterix were also part of the focus group. The titles of the function have been translated in such a way that their hierarchical place becomes more clear.

Table 30: Overview of interviewees

	FUNCTION	INVOLVEMENT
CASE 1 (FEDERAL POLICE)		
RESPONDENT 1.1 *	HRM/Diversity advisor	Medium involvement
RESPONDENT 1.2	Budget comptroller	Medium involvement
RESPONDENT 1.3	Assistant officer	Limited involvement
RESPONDENT 1.4	Project manager	Extensive involvement
RESPONDENT 1.5	Project manager	Extensive involvement
CASE 2 (DUTCH MUNICIPALITY)		
RESPONDENT 2.1	Project manager	Extensive involvement
RESPONDENT 2.2	Communication advisor	Medium involvement
RESPONDENT 2.3	Head of department	Extensive involvement
RESPONDENT 2.4	Communication advisor	Medium involvement
RESPONDENT 2.5 *	Interim manager	Extensive involvement
RESPONDENT 2.6	External web designer	Extensive involvement
CASE 3 (OCMW)		
RESPONDENT 3.1 *	Quality coordinator	Limited involvement
RESPONDENT 3.2	Head of department	Medium involvement
RESPONDENT 3.3	Head of department	Medium involvement
RESPONDENT 3.4 *	Secretary general	Extensive involvement
RESPONDENT 3.5	Quality coordinator	Extensive involvement
RESPONDENT 3.6	President	Extensive involvement

7.1.4 Semi-structured interviews

The interviews were conducted in a semi-structured fashion, with a list of topics to be covered, but no strict order of questions. An interview technique was used which Spradley (1979) has named the 'grand tour question' (in Leech, 2002, p. 667). These grand tour questions ask respondents to give a verbal tour of something with which they have a close affiliation, and have detailed knowledge of. In this case it would be something similar to: "So, this innovation, tell me about it. How did it start, get implemented, change, etcetera?" Essentially, the interviewer lets the respondent talk as much and as detailed as s/he wants, assuming that the respondent will reach the most important factors and events automatically. The interviewer will intervene as little as possible. The researcher did, however, have a list of topics at hand, to make sure that all items of interest were covered, the so-called 'shopping list'. The outline of this list of topics (in Dutch), as well as the interview protocol can be found in Annex VIII. Respondents were not directly asked to describe the FAL culture of instruments at the time of the innovation, for two reasons. One, these concepts were most likely not known to the respondents, and there was no opportunity to explain these sufficiently. Secondly, the researcher wanted to prevent questions to lead the respondents to a certain answer. The interview method would gain in validity if the culture and instruments of FAL would become apparent from a general discussion on the life story of the innovation. In order to achieve this, considerable attention was given to the feedback mechanisms and accountability actors, and the environment/manner in which the information these provided was handled. During the interviews the researcher tried to create an atmosphere of openness and equality between interviewer and interviewee, without losing control of the conversation (Leech, 2002; Rathburn, 2008). 14 interviews were carried out face-to-face in the offices of the respondents. Of the three remaining interviews one was conducted via Skype, one via telephone, and one in the office of the researcher. Although it is unfortunate that these three interviews were conducted in a different fashion and setting than the others, there does not seem to be a valid reason to value the data they provided differently.

7.1.5 Focus group

Focus groups are defined as "*using a semi structured group session, moderated by a group leader, held in an informal setting, with the purpose of collecting information on a designated*

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topic.” (Carey, 1994, p. 226; cited by McLafferty, 2004, italics added) Op de Beeck (2016) stresses the use of focus groups in order to “*look for a range of feelings, ideas and opinions about certain topics.*” (p. 108, italics added) In this case this would be the circumstances in which innovations were developed, implemented, and terminated. These conversations are used in order to get a further, richer, in-depth view into the processes within the organizations (Krueger & Casey, 2009).

The focus group that was organized consisted of four persons: one individual from case 1, one from case 2 and two from case 3. All four had been interviewed before as part of the qualitative research of this dissertation. The participants were gathered in Leuven, as part of a LIPSE seminar on innovation in the public sector. The goal of this focus group was to get feedback on the analysis and narratives written down in a conference paper (Van Acker & Bouckaert, 2016). Additionally, the participants were asked further questions, deepening the investigation of in particular the influence of C_{FAL} on the sustainability of the innovation. The participants were also asked to fill out a writing exercise, the responses of which were analyzed in the light of this research as well. The focus group guide, as well as the writing exercise for the participants (based on Greenbaum, 2000), can be found in Annex IX.

7.1.6 Measuring C_{FAL} and I_{FAL} qualitatively

The factor analysis showed two factors which have been labelled ‘culture’ and ‘instruments’ of FAL. The items of which these factors are comprised have been summed up in table 23 on p. 158. Based on these factors, instruments and cultures of FAL are defined here as follows:

Instruments of FAL: Structural arrangements, in the form of tools, procedures, systems or discussion fora, which measure, analyse and/or discuss the performance of innovations.

Culture of FAL: An open work environment in which the analysis, assessment and discussion of innovation’s performance data can take place, with room for adversarial, impactful debate, and further experimentation, with the potential for corrective measures, at all layers of the organization.

Instead of a narrow focus on the items from the survey, the definitions above provide an opportunity to allow for more nuance and variation in the particular cases and contexts of these three case studies. I_{FAL} and C_{FAL} will thus be assumed to be present when they, in the

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form of the definitions above, have been observed beyond a reasonable doubt. It is thus seen as a yes/no question whether or not I_{FAL} and C_{FAL} are present, in line with the requirements attached to the use of the INUS-condition, and the set-theoretic logic it is based on.

7.1.7 Strengths and limitations of the chosen methods

Although there are several downsides to this particular set of methods, it was concluded that they are either compensated for by its advantages, or can be taken care of altogether. First off, it is true that memories fade, and that the human mind is particularly flawed in remembering ‘failures’ (as some might call these unsustainable innovations) from the past. The triangulation between the respondents should, however, take care of this particular issue, especially since both proponents and opponents are included. Secondly, the small sample size ($N = 3$) is something that cannot be denied, and means that the conclusions can only be preliminary and conservative at best. The small-N focus of this research has obvious consequences for the generalization of the results. However, combined with the previously conducted large-N study in chapter 6, this argument is somewhat attenuated. Furthermore, the number of interviewees remained limited. Due to the small scale of the innovations under investigation, there were essentially just a few people directly involved. However, for all cases a near 100% of the potential interviews were in fact conducted, making the investigation reaching its maximum number of the available observations and perspectives. Additionally, it is important to be conservative in the way the data provided by interviewees is dealt with. Source criticism is the cornerstone of any research endeavor which bases itself on interviews and/or focus groups like this one. Kipping et al. (2014) note three important hesitations in the use of historic data:

“First, sources are not direct observations and certainly do not provide comprehensive or controlled evidence on the subject under consideration. Second, sources typically are fragments or incomplete accounts. Third, sources from the past may have been produced in cultural and social contexts very different from our own.” (p. 312, italics added)

Furthermore, it is vital to realize that, even though these events took place in the past, interviewees might still have agenda’s they might be trying to push during the interviews (Banister, 2005). As a matter of fact, this was indeed observed in two of the three cases. It

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was already mentioned before that there are often opponents and proponents with regards to these innovations. Triangulation thus becomes ever more important. Through triangulation “*objectivity [...] means that the source was not produced with a self-conscious purpose, or one that can be read in a way that effectively ignores the creator’s purpose.*” (Liparto 2014, p. 290, italics added) Beside triangulation, however, objective interpretation of the data is important as well. The interviewee might say X, but what does X mean for that particular interviewee?

“To fail to interpret the meaning of sources from the actor’s point of view and in their contexts risks imposing categories and methods of thought from the present onto the past that distort our understanding of the event or action.” (Kipping et al., 2014, p. 320, italics added)

As most of the cited works are focused on historical research with a longer view than the 10-15 years in the cases of this study, their objections and warnings are less severe for the endeavors undertaken here. Culture and context differ between organizations and locations, yes, but obviously not to the degree as half a century or half a millennium ago. Nevertheless, these are important hesitations, which will have to be taken into account during the analysis of the results, as well as the conclusions and discussion.

7.2 Results

Having discussed the methods used for the qualitative leg of the dissertation, this paragraph now turns to the empirical analysis itself. The three cases studies will be presented in the order of table 29. ‘Case 1’ represents the federal Belgian case, ‘case 2’ represents the Dutch municipality, and ‘case 3’ represents the Belgian local social- and healthcare provider (OCMW). After a brief introduction the process narrative, based on the interview findings and the focus group, will be sketched out. Afterwards the existence and impact of C_{FAL} and I_{FAL} will be discussed separately, after which X and Y will be analyzed. Sub-paragraph 7.2.4 will provide a conclusion and a critical discussion of the findings in the light of the INUS-condition.

7.2.1 Case 1

Start & termination	Organization:	Type of innovation:	Description of innovation:
1996 / 2013	Federal police force, Belgium. 5 respondents	Administrative innovation	Improving pre-admission test training for potential employees. Goal was to attract and employ more staff with an immigration background.

Description

Although the awarded innovation started in 1996, this innovation finds its origins in 1991. In this year, the municipality of ‘Vorst’ was the stage of several days of intense rioting and clashes between the local population and police forces. The rioters consisted of youths with varying, but consistent, migration backgrounds. During the evaluation, after the unrest had settled, the police decided that one of its main problems was too narrow a focus on ‘military’ solutions to problems. In order to prevent and better deal with situations such as the ones in Vorst, the local police deemed it essential to improve the relationship with this particular segment of the population. There was a need to establish a relationship of trust between the police force and the local population.

“We needed to deviate from the purely military approach to societal problems. We needed to go to, what we would later call, community focused policing.”
(Respondent 1.1)

In order to improve this relationship it was decided to focus on creating a police force that better reflected the population it served. Very few of the police officers were from migration backgrounds themselves, or were well-versed in the cultural, religious and linguistic backgrounds of the population.

“[The leading officer] thought the gendarmerie – and that was revolutionary at the time – ought to mirror the society it served as a public organization. [...] It is important to include members into your own organization with different ethnic or cultural background, who view problems and issues from a different perspective.”
(Respondent 1.3)

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It was quickly discovered that one of the main obstacles in achieving the goal of creating a more diverse police force, was the fact that many applicants with migration backgrounds did not pass the language tests they had to take in order to be admitted to the police academy. The problem thus posited itself in the application and selection process. One possible solution for this could be pre-admission training in language, and other tested skills such as deductive reasoning. A not-for-profit organization working on language training was approached, and agreed to design a course in order to better prepare potential recruits for the official admission test. This project started in 1994, and was open to all and everyone who was interested in improving her or his chances to be admitted to the academy.

The first round of applicants who took the pre-admission training resulted in a total of zero new cadets with a migration background. An evaluation of the training and test showed that there was a significant gap between the skills that were trained and the skills that were tested during the selection process. In other words: the training focused on issues which were not included in the admission tests. After this disconnect was resolved and the pre-admission training was reformed to better fit the tested skills, the results of the project improved significantly.

This all took place at the local level in the Brussels police force, but the innovation would be federalized around 1997. This organisational change deserves some attention. In 1996 a unit for multiculturalism and equal opportunity was then set up in the national gendarmerie, as part of the ministry of the interior. In 1997 this unit adopted the innovation. The project at the Brussels level was thus elevated to the federal level, and applied to the national gendarmerie. It was this federal project (further named 'the innovation') which received the award. It is thus this federal project that will form the case study here.

The funding for this project was gathered through external funding. This fund, managed by the ministry of the interior, concentrated on projects which focussed on multicultural and integration policies. This funding had to be approved each consecutive year, after the results of the year before had been reported and evaluated. After a massive reorganization of the Belgian federal police force in 2002, the unit assigned with the innovation was moved from the ministry of the interior, to the federal police itself. Within this new institutional context the innovation was integrated into a more broadly defined diversity policy. This wider policy also included, for example, recruiting more female cadets, or persons with disabilities. In a broader sense, this policy took a move away from affirmative action, on

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which the innovation was inspired (although the pre-admission training was open to everyone), and focused primarily on creating a more inclusive work-environment. Although the innovation remained operational, and was renewed for a number of extra years, the methods of the innovation slowly got out of fashion.

After 2007 the external funding rapidly declined from around 230.000 euro a year, to about 143.000 euro. This money had always been directed towards the same non-profit organization allotted with the implementation of the project. Directing this money to the non-profit created a large administrative burden.

“That was a serious assignment for the accounting department. Each year there needed to be a new royal decree in order to receive the subsidies.” (Respondent 1.1)

In 2012 a newly appointed financial auditor at the ministry of the interior, still manager of the fund from which the innovation was financed, told the organizers that the assignment for this project had to be subcontracted through an open process of public tenders.

“[The process of public procurement] was the law, so until 2013 we had technically worked unlawfully. But it had always been approved by several financial inspectors. [...] But the last one was a little dogmatic, and he told us: “No, that’s not lawful. You’ll have to follow the ordinary market procedure.” We then launched the market procedure, and the offers we received were very high with regards to the available resources.” (Respondent 1.2)

The accounts differ on what happened after the process of public procurement, but it is a key event in the process narrative of the termination of the innovation. In its essence there are two important factors which coincide. The first one, unanimously agreed upon, was that the results had been meagre from the start, and at the end, the investment was no longer justifiable. Few extra people were admitted through the programme, and many who did left the force shortly afterwards. The second factor, however, differs between accounts. One account claims that the tenders through this market procedure were simply too high. In 2012, constraints on the federal budget were high, cuts in spending were paramount in all ministries, and there was no room for an increase in funds in order to meet the offers derived

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through the procurement procedure. This subsequently led to the decision to terminate the innovation. Another account claims that the offer made by the initial non-profit organization was met positively. Although the ministry of the interior was supportive of this tender, it was the financial auditor who persuaded the ministry of the budget to block the programme from continuation. Yet another account finds that it was personnel changes that caused the eventual termination of the innovation. With the rapid renewal of personnel closely linked and identified with the innovation around 2012, both institutional memory and passion about the innovation was lost, and an earlier mentioned change in culture and vision on diversity policies had accelerated in the HRM department of the federal police due to these retirements. Pro-active or affirmative action policies, such as those of the innovation, were no longer seen as appropriate measures. What is certain, however, is that the innovation came to its official end in 2013.

C_{FAL} & I_{FAL}

The funding for the innovation in case 1 had to be approved of each consecutive year. This immediately put a structural form of evaluation in place. Each year, evaluations had to be made and clear figures of the performance of the innovation would have to be shown. As this was done each consecutive year, so I_{FAL} was most certainly present during the entire lifetime of the innovation. Monitoring systems measured the effectiveness of the innovation, and an institutionalized accountability forum had to be reported to. Hence, the instruments were there: continuous evaluations and performance measurement.

However, these evaluations and measurements showed that the innovation had disappointing results from the get-go, and were not meaningfully improved in the years afterwards, nor was the approach or functioning of the innovation altered or adjusted in any significant way. Lessons, so it seems, were not drawn from the disappointing results, and the impact of the evaluations was, subsequently, low.

“The results, let’s say the output... It was very little, and they had to be compared to the used resourced.” (Respondent 1.2)

“There were very meagre results, and very serious costs.” (Respondent 1.1)

In other words: the external funders, the most important accountability mechanism in this case, apparently did not add pressure on the organization, and accountability remained

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limited. There was little need to change the innovation based on the negative feedback information from the evaluations, as the organization was not under strong pressure to perform. The funding was thus renewed each consecutive year, despite the ongoing disappointing results.

Respondents point towards both the societal discourse surrounding the active and direct nature of policies and interventions regarding multiculturalism at the start of the innovation, as well as to the fact that the external funders and political appointees strongly favored such an approach. Both the societal discourse and the views of the funders and appointees were strongly in favor of affirmative action at the time the innovation had started, and well into its implementation and operationalization. The effect of this view on policies regarding multiculturalism and diversity seems to have cancelled out the effect of I_{FAL} . The strong conviction that affirmative action was the right way to go, and that the innovation was the right tool to achieve the goal of a more diversified police force, strongly influenced the way in which the instruments' performance information was used and processed by the evaluators and project managers. There was, in other words, no possibility for adversarial debate, nor productive conflict, as the organization was locked in their convictions. A culture of FAL was thus lacking.

At the same time, one critical item which was previously eliminated from the FAL instruments factor was obviously lacking: "If discrepancies between performances and goals are detected, my organisation will take action in order to reduce these discrepancies." This draws a strong link to the manner in which the feedback information was processed, namely in an environment where the core idea of the innovation could not be questioned. In a sense, the lack of C_{FAL} and a lack of consequences to discrepancies between performance and goals, prolonged the innovation's life, and created sustainability.

However, the culture of FAL changed quite dramatically over the years. As the financial crisis unfolded, budget constraints followed. Consequently, the available funds diminished significantly.

"So why did we stop? Well, if I put it bluntly, because of financial reasons."

(Respondent 1.2)

Subsequently, the programme itself came under fire. Was the innovation worth the annual investment it received? Suddenly, a debate on the innovation was possible, and the

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evaluation reports *were* analysed critically. A culture of FAL thus emerged through the pressure of budget cuts and austerity. The accountability which was only present pro forma before, now became much more stringent. Since the evidence was not there to provide a good case for maintaining the innovation, pressure to terminate it grew substantially. In a sense, the innovation had escalated, and was deemed beyond repair (Pan et al., 2004). There was neither the budget, nor the support (as will become clear hereunder), nor the evidence from times past, to reduce the discrepancies between performance and goals by adapting the innovation.

“Those negative evaluations were in any case very influential. Plus the fact that the newcomers, with a new vision on diversity, no longer believe in actively attracting people through for example language courses.” (Respondent 1.1)

Even if there had been time or the opportunity to reduce these discrepancies, the underlying principles of this innovation to attain its goal had come under fire as well. This will be discussed next.

X & Y

Just like the culture of FAL changed through time, so did the societal discourse, and so did the views of those in charge of diversity policies in the federal police department. This was especially the case concerning the appropriateness of the innovation. Affirmative action was no longer seen as a suitable solution for the problem the innovation was trying to fix. The innovation was seen as taking too much of a pro-active approach to ‘force’ diversity into the police corps. Creating a more open and inclusive work environment for *all* employees was seen as a better and more nuanced way to create an inclusive workforce.

“A general diversity policy, less focused on specific target groups, but more focused on creating a certain work environment within the gendarmerie.”
(Respondent 1.1)

Up and till now the operational and policy level had been in fierce agreement on the appropriateness of the innovation. This was the main cause for its sustainability. This is a very similar picture as was painted by Ravishankar (2014), mentioned in sub-paragraph 3.1.1 on the (de-)escalation of ICT/IS projects. A rapid renewal of personnel involved in and

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responsible for the innovation around 2012 accelerated this change in attitude towards the innovation and the type of HRM policies it embodied. At the same time, both the institutional memory and passion about the innovation was lost with the turnover in personnel.

“People within the diversity unit itself started to question the innovation. The folks from the former multicultural unit in the ministry of the interior started to leave the organization through retirements.” (Respondent 1.1)

Together with the previously mentioned budget constraints, the personnel turnover created more room for open debate and questioning the basis and performance of the innovation, as did the change in attitude towards affirmative action.

Most directly, resource constraints and changes of convictions and ideas led to the termination of this innovation. However, the lack of open discussions and adversarial debate, and the lack of consequences when discrepancies between goals and performance were detected, led to a situation where the innovation was defenceless against increased scrutiny. The effect of this difference in vision about a ‘modern’ HRM and diversity policy has on the effects and appropriateness of the innovation, is shown through the following interaction between interviewer and respondent 1.1:

“(I) And those [evaluation] were rather negative, or very negative?”

“(R) Well, that’s my assessment. Ask [anonymized], who still works in the unit multiculturalism, she’s going to view those numbers differently. She sees them... well I just have a completely different view on diversity and a completely different discourse than she does.”

In other words: a different view on the discourse and vision on diversity, creates a different evaluation of the same numbers. This thus shows how essential the change in vision was for the culture of FAL to change. Equally, it shows how important the change in personnel was. Had the initiators, the ‘mothers of the innovation’ stayed on, the vision might not have changed in such a dramatic way as to affect the innovation.

The resource constraints and changes in convictions about the appropriateness of the

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innovation’s basis, led to a change in the culture of FAL, which led to its demise. Resource constraints and changes of ideas leading to termination *regardless* of C_{FAL} and I_{FAL} , would be considered ‘Y’ variables. However, the two are, in this case at least, linked to both C_{FAL} and I_{FAL} . For that reason, it is more appropriate to label them as ‘X’ variables in the INUS-condition. The same goes for the personnel turnover of the innovation champions, as this significantly altered the way in which the evidence of the innovation was analysed and treated (C_{FAL}).

Case summary

The four factors combined, as found in this paragraph, are a sufficient cause for an innovation to be unsustainable. Without the resource restrictions or change in ideas, however, the innovation would have stayed alive. Had the culture and instruments of FAL always been functional, one can assume, the innovation would have been able to make a better case for continuation, as the results will most likely have been better and able to prove its worth. In other words: all four are insufficient on their own, but a necessary part of a sufficient combination. Finally, a Y-factor was not found in this case.

Table 31: Case summary 1

Case summary 1					
(((C_{FAL} & I_{FAL}) & X) or (Y)) → Sustainable Innovations					
<ul style="list-style-type: none"> - C_{FAL}: Evaluations where purely formal tools. Feedback information was not used to improve the innovation. Strong belief in the underlying concept of the innovation disqualified negative feedback. - I_{FAL}: Yearly request for funding, accompanied with evaluation of the innovation’s results. - X: A change in view on the innovation’s appropriateness and effectiveness, together with a change in key personnel members (innovation champions). - Y: There were no indications that variables falling under ‘Y’ played a role in the termination of the innovations. 					
Type of case:					
C_{FAL}	I_{FAL}	Appropriateness	Champion	Y	Hypothesized outcome
-	+	-	-	o	Non-sustainable

7.2.2 Case 2

Start & termination	Organization:	Type of innovation:	Description of innovation:
2008 / 2012	Municipality, the Netherlands. 5 respondents	Governance innovation	Creating a digital forum for citizens to comment on standard letters from the municipality. Goal was to create a clearer form of communication with less jargon.

Description

The case of the Dutch municipality's innovation finds its origins in 2008. As part of a larger nation-wide agenda led by the ministry of the interior, the municipality in question had set itself the goal to increase customer-service and customer-friendliness. It was in this context that an interim manager at the department of 'permits and enforcement' found that the standard letters of this department were filled with too much jargon. More specifically, she wanted to include citizens in improving these letters, instead of hiring a communication bureau. This was part of yet another agenda within the municipality, which tried to change the modus operandi into a more interactive, demand driven style, contrasting the current supply driven style of public service.

The letters, a great number considering the nature of the department, were unclear or downright confusing for the citizens who received them.

"Within permits, that team where [anonymized] was interim manager, they had mastered the art of writing and sending letters which no one understood."

(Respondent 2.6)

When trying to persuade the employees to make their language more customer-friendly, she encountered a great deal of resistance. The civil servants responsible for writing and sending out the letters containing decisions made by the mayor, aldermen, or otherwise entitled decision-makers, were not used to see their letters as genuine communication-tools, and believed the language used was necessary in order for the decisions in the letters to be of a legal nature. Any decision which was to be communicated through mail (either in paper form or digitally) was able to be disputed or contested in court. In order for the decision to

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be upheld in court, the language needed to be legally sound and unwavering. Or so it was believed.

“This immediately brought up questions: “Yes, but what if we have to appear in front of a judge and I didn’t use all these fancy words? What will that judge say about that?” So it really triggered something.” (Respondent 2.3)

A more customer-friendly approach to the language in which the decisions were communicated, and especially including citizens in the process (most often not law school graduates), was seen a possible threat to the legal quality of the letters, and thus leading to a less strong position for the municipality, were the decision to be contested in court. This caused tension around the appropriateness of the innovation. Besides the legal argument, many civil servants felt threatened by the involvement of citizens in something they considered their specialty. However, the innovation was always supported by the middle and upper echelons of the organization.

“But that really was quite something. An outsider commenting on your work. You, the civil servant, who knows it all and studied for it. And that person has been doing that job for years. So that’s where we started the change: “Yes, but you know, maybe the legal code is not always the right way to start your work and reasoning?”” (Respondent 2.3)

Later on, as the employees remained hesitant to rewrite their letters, or change the manner of communication, the interim manager got inspired at a conference on crowdsourcing. The conference got her a practically feasible idea to involve the citizens of the municipality in improving the letters. Before this conference, the idea to involve citizens in improving the letters had been theoretical, and had not taken form in terms of practical implementation. The resistance in the department notwithstanding, the interim manager (backed by her superiors) went through with the plan. Besides improving the letters, this project was supposed to show to the entire organization, rather than just the respective department in which it would be implemented, that the relationship between citizens and the government could be reversed. Making citizens weigh in on how their governments provides services for them, and for employees to think through the minds of citizens, to stand in their shoes when they make or carry out policies.

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“The goal was obviously to improve those letters, but my other goal was to make employees see that if you engage with your customers, you can actually create a very good line of communication.” (Respondent 2,5)

Overcoming the hesitant and negative attitudes amongst the public servants towards incorporating citizens into the core processes of the organization was thus a main goal as well.

In general terms, the innovation functioned as follows. Citizens who had an ongoing application for a permit, or had in the past had applied for a permit from that department would be asked to critique the standard letters which were currently send out. Their comments and grading of the letters would be kept track of systematically through an online tool. This tool and format was subsequently first tested on members of the citizen-council, a group of citizen volunteers, which gathered periodically to provide general input on the municipality’s policies at large. After this pilot turned out to be a success, the website went live. Visitors could read several actual decision letters used by the department of permits and enforcement. They could then leave notes, and give between 1 and 5 stars for each letter. Every four weeks the number of site-visits, reactions and grades were evaluated. Using the reactions to improve the letters, new versions were put on the website for further comments by the citizens. This process was repeated three times. After this process was evaluated as successful, the letters of two other departments were adjusted using this principle as well, albeit in different formats, and with less focus on the online tool. The letters of the HRM department (regarding salary, sick days, etc.) were evaluated in focus groups, so without the online tool, among the civil servants themselves. The department of management of public space (BOR) did use the tool, but reached out to the citizenry at large, instead of people who had been in contact with the respective department, such as was the case with the department of permits and enforcement.

In the meantime, the project and those involved were held accountable to the director of the customer-service programme, who in turn reported to the municipal secretary¹⁰. Political interference was almost absent. The innovation was labelled an organic and bottom-up process as very much.

¹⁰ In the Netherlands this is the highest civil servant in a municipal organization.

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In asking citizens' reactions to the group of letters from the BOR department, it became clear that people were getting weary of being asked to comment on letters repeatedly.

"I do think we had to work harder to get enough comments the second round. [...]

You can't keep asking citizens to come up with input over and over again."

(Respondent 2.1)

"We were thinking: "Okay, but can you keep bothering the same people all the

time?" (Respondent 2.3)

The number of site visits and reactions dropped. Next to the fact that the municipality had gathered a lot of knowledge through the application on how it could improve its letters, and had thus reached one of its two main goals, this was the second sign that perhaps the innovation had peaked, and it was time to move on. The second main goal was reached as well: showing that citizens can be valuable partners in public service design and delivery.

"It was all carried out under the label of 'improve our letters', but what it was really about was... we mostly have people whose starting point is the legal code. But why don't you start from the perspective for those who you work for? And that is many times more important than that application or that letter which is finally produced through that." (Respondent 2.3)

Both of the main goals of the innovations had thus been reached, and the innovation had subsequently lost a large part, if not all of its necessity. Two other connected factors played a role in the diminishing stature of the innovation. Firstly, the interim-manager who started the innovation, labeled 'the mother of the innovation', left the organization after a major reorganization. She was, indeed, only interim. This means that the innovation lost its main champion. However, respondents argue that the innovation had been detached from the personality and name of the interim-manager, making it more resistant to changes in the project leaders' position.

Secondly, costs played a minor role as well. At the start, the municipality had the possibility to use the tool and the maintenance services from the web designers company for free. After one year, however, they had to pay around 1,500 euro a year. Although this might not be a large sum in the grander scheme of things, it did create an additional pressure

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to think about the use and necessity of keeping the innovation on.

It was eventually decided to try and embed the findings of the innovation into the organization more broadly, by creating an organization-wide style guide. After this tool was developed, the innovation was perceived as unnecessary, and consequently terminated.

C_{FAL} & I_{FAL}

Although the innovation from case 2 was terminated, it is still deemed sustainable following the definition put forth in chapter 2: *“The continuing existence of an innovation, with or without minor changes, such as up-dates or adaptations, notwithstanding discontinuations due to predetermined end-dates or performance goals having been reached.”* It is thus hypothesized, considering the dependent variable’s value, that C_{FAL} and I_{FAL} are supposed to be present in this case, and that they form a necessary but insufficient cause for the sustainability of the innovation.

First off, instruments of FAL were present in this case through a constant cycle of evaluation of the digital traffic and the improvement of the product: the letters containing the municipality’s decisions.

“So per round we could see how the letters were graded, how many people read the letters, how many reactions there had been. Those were numbers which were absolutely discussed.” (Respondent 2.6)

“The project manager, occasionally, once every four weeks, had a meeting with me, on the basis of a kind of a balanced score card. A conversation like: How are things progressing? Which problems are you encountering? How are the finances?”
(Respondent 2.3)

The results from the innovation, as well as the traffic, were systematically and cyclically discussed with the project team, the head of the public service department, the municipality secretary and the politically responsible alderman as part of the larger public service improvement programme. In other words: performance measurement and monitoring systems were in place, and played a significant role in the life of the innovation after its implementation. Finally, the fact that after the innovation was terminated, its findings were put into an organization broad style guide shows that there was indeed a system in place to make sure that lessons learned are distributed throughout the rest of the organization.

What matters in C_{FAL} , is how the information gathered through the instruments is dealt with. More specifically, the atmosphere and culture of the organization, and surrounding the innovation. In short: feedback was dealt with openly and constructively. The status quo of the innovation and the letters was constantly questioned, including the existence of the innovation itself. Furthermore, in the continual cycle of evaluation, there was great transparency with regards to the successes and failures of the innovation, experimentation was encouraged, and mistakes were not penalized. The following interaction between two of the respondents shows this:

Respondent 2.1: *"[The focus on innovation] has become stronger. It hasn't changed as such, but it has gotten stronger. And you can tell that people who like that can flourish in this organization."*

Respondent 2.2: *"They get the space to do that, but they're also trusted. It's not like: Go and try it out, and if you fail: goodbye."*

Respondent 2.1 *"You're allowed to make mistakes."*

Finally, the relative non-involvement of politicians created a sense of ownership and responsibility amongst staff members.

In a sense, this case constitutes a rather straight forward case: C_{FAL} and I_{FAL} are present, and neither of them change over time. What is remarkable, however, is that it is the instruments of FAL, as well as the openness of the culture of FAL, which lead the project team and the rest of the organization to opt for its termination. It is worthy of reiteration, however, that FAL is not hypothesized to influence termination in its most narrow sense, but rather 'sustainability', with a broader definition. In this case, a strong culture of FAL and strongly embedded instruments of FAL created a situation in which the innovation was constantly monitored, discussed, adjusted and improved. This contributed to the innovation reaching its full potential and its stated goals.

X & Y

The innovation was initiated with two goals in mind, and was thus perceived as necessary in two ways: to improve letters, and to introduce a new, collaborative and demand-driven way of working. In this way the innovation was at first seen as not appropriate by the

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employees most directly affected by it, although it was always supported by the mid and upper levels of the organization. However, as can be seen in the case description, the integration of a collaborative and demand-driven way of working was eventually established, proving that the innovation was finally perceived as appropriate by all. Secondly, during the innovation’s lifetime, before it became obsolete because it had achieved all its goals, there was an active, vocal and influential innovation champion. She created a sense of urgency amongst the staff and leadership that the innovation was necessary and appropriate for the organization, until the innovation had been integrated into the organization. Finally, again, a Y-factor was not found in this case.

Case summary

Table 32: Case summary 2

<p style="text-align: center;">Case summary 2 (((C_{FAL} & I_{FAL}) & X) or (Y)) → Sustainable Innovations</p>					
<p>- C_{FAL} : Feedback information was used constantly to adapt and improve the innovation. Adversarial and productive discussions were the standard.</p> <p>- I_{FAL}: Nature of the innovation caused an incessant stream of feedback information. Google statistics were used to complement this. Both were discussed regularly on multiple levels.</p> <p>- X: During the lifetime of the innovation it was seen as appropriate by (at least) the top of the organization, and an innovation champion fought and pleaded for its continuation.</p> <p>- Y: There were no indications that variables falling under ‘Y’ played a role in the termination of the innovations.</p> <p>Type of case:</p>					
C_{FAL}	I_{FAL}	Appropriateness	Champion	Y	Hypothesized outcome
+	+	+	+	o	Sustainable

7.2.3 Case 3

Start & termination	Organization:	Type of innovation:	Description of innovation:
2003 / ?	Local social- and healthcare provider, Belgium. 6 respondents	Administrative innovation	Getting feedback from staff members on the working environment by using a new survey methodology and follow-up programme. Goal was to improve the organization's quality.

Description

The local social- and healthcare provider (named 'the organization' henceforth), which sets the stage for case number three, carried out its second CAF self-evaluation in 2003. Through this measurement, it was found that the organization had stagnated in its quality scores, and had deteriorated on several others. One of these was the quality of the workplace, and the quality of the organization towards its own employees. After the organization's quality-coordinator reported these findings to the management, it was decided to broaden the input from the staff as to what could be improved to the organization, and to create a new sense of enthusiasm amongst employees to think and work around quality.

The tool that was designed was meant to take a more positive approach, and instead of focussing on the things that are going wrong, to focus on things that could be done better. Hence, every staff member was asked to imagine their perfect organization, and to write down what it would take, according to them, to get there.

The quality-coordinator and the head of personnel were very much the champions of this project, which was first introduced during an internal quality conference, where the management team and other key policy level positions in the organization were present. The question of the perfect organization was later asked to all employees, through a publication in the personnel magazine. The management team and political officials of the organization would then comment on these suggestions.

"The answers were divided into three categories: this is a good idea but not feasible this is a good idea and we will carry it out, and this is actually not that great of an idea." (Respondent 3.4)

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The suggestions that made the cut and were going to be implemented, were then put into seven different projects. These projects were carried out by different teams. Every three or four months a team of key civil servants would get together and evaluate the progress of each project. Besides these regular evaluations, there was one grand evaluation about halfway through the project, and another one near what later turned out to be the end of the innovation.

However. Parallel to the implementation of the innovation, there was a shift in the local political balance, and the organization was introduced to a new political executive. This change radically altered the dynamics within the organization. Whereas before, the administration enjoyed a large degree of freedom and independence in its work, this was now strongly curtailed by the new executives. Especially concerning internal matters, of which internal quality management could be labelled as one, this contrast was stark.

Besides a different view on the independence or subordination of the administration vis-à-vis the political executive, the administration and the executives also clashed over the way in which the organization was supposed to run. Right before the change in the political executive, the organization had initiated a programme of modernization, following a nationwide trend. The organization was confronted with several innovations originating at the Flemish level (such as quality control scripts and multiannual planning) which had to be implemented. The person who was president at that particular moment, described as innovation-minded and dynamic, wanted to go beyond the required quality initiatives. The new political executives, with the president as the most profound voice, wanted to only focus on quality policies minimally: following the law, but nothing beyond that point. In other words: whereas the administration advocated a more 'modern' approach (with an extensive internal quality policy), the executives leaned towards a 'traditional' approach (focused on key tasks and public services only). It was felt that the responsible civil servants leading these quality focused endeavours were too far ahead of the rest of the organization.

“We did reach our limits. If I look at it now, and this is only a small selection, then I really think to myself ‘we were crazy back then’. In the sense that we wanted to do too much too fast. And that they, some, were not ready for that yet.” (Respondent 3.6)

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“They were both very academically educated men. They took on a lot of reading and literature. They were busy with a lot of projects, [...], with which they were ahead of an organization of our size.” (Respondent 3.2)

In the view of the executives, the innovation was too ‘high-in-the-sky’, together with all other quality initiatives that went beyond what was legally required. Consequently, the executive tried to block the administration from carrying out this innovation, as well as other initiatives.

“We couldn’t evolve any further. We were trying all kinds of things, but if the executives don’t give you a mandate to reach a higher level of maturity then you can’t live up to that.” (Respondent 3.6)

Although the president of the political executives was replaced in 2004, whilst the innovation had been implemented, the tensions and differences remained largely the same. In the words of one of the respondents:

“It was always a fight to be allowed to do something. There was an enormous amount of distrust.” (Respondent 3.4)

Moreover, besides having differences of opinion on whether or not the administration was on the right track with this innovation, and how independent it could operate, there was a sense among both the political and on the administrative side that the innovation had been carried out badly. The implementation of the innovation had lacked in explanation, coordination and accompaniment for the participating employees. With a large number of unschooled or poorly educated employees in the organization, many had been given false hopes in the exercise of imagining the perfect organization.

“In such an organization, there were about 320 people, there is a significant segment of uneducated staff members. And that story was still presented a little too complicated. [...] It was conceived, by some people in the executive and some of the employees, as a theoretic story.” (Respondent 3.4)

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“Two thirds of our personnel is always uneducated, and you can only sell something if you do it very plainly. In itself, with regards to the innovation... I can see the idea behind it. [...] But you should supervise something like that better. You don't just say: 'Dream softly tonight and tell us with which question you are going to make the organization better tomorrow.' Very dangerous.” (Respondent 3.6)

Many ended up holding a grudge towards the political leadership after many of their 'dreams' were turned down. The executive officials also felt unfairly pressured. The questions, according to them, had been formulated in a suggestive fashion. Many times they had to say 'no', due to lack of funds or because the ideas were simply too utopian. The executive felt as if the administration had created expectations which could never have been met, and passing the buck on telling the personnel the bad news.

As an additional factor, the tensions and atmosphere of animosity in the organization reached a peak level.

“There was an atmosphere with a lot of stress, a lot of fear. When I got here, I've said it before, there were a lot of different clans.” (Respondent 3.6)

Although the innovation was perhaps not the most important cause of this, it was a clear symptom of the underlying differences with regards to the content of the work and the contested independence of the administration. This situation and atmosphere finally led many key civil servants involved in the innovation to leave. With the top of the management and the leaders of the innovation replaced, and an executive which held course, the position of the innovation had gotten untenable. Together with the fact that this project had become synonymous with the 'rebellious' administration, it was eventually discontinued. However, the innovation was not terminated by a formal decision. Rather, it faded away, or died out. Although some parts of the projects that came out of the innovation were maintained, and some results were accomplished, these were strictly disconnected from even the name of the innovation, as it had become completely toxic. Those involved with the innovation were seen as tainted:

“Since they were part of the innovation, they were condemned for a while. We weren't allowed to speak about the idea. And it is only later on that it came back up for discussion.” (Respondent 3.3)

C_{FAL} & I_{FAL}

The instruments of FAL were in place. With the progress evaluation of the separate evaluation each quarter, and two large-scale evaluations of the entirety (one halfway, one near the end), there were plenty of instruments in place to measure and monitor the performance of the innovation. However, this factor collapsed as well, as soon as the champions (driving the organizations of evaluations and discussions) left the organizations, and the remaining employees felt they were not allowed to even discuss the innovation.

The question is whether this information was used or not. In the context of this innovation, some of the projects were in fact carried out, and improvements to the organization's workplace did occur. But was the functioning of the innovation adjusted? This did not happen. As mentioned before, the innovation became toxic. The information about its functioning could therefore not be discussed in an open and friendly environment. As one of the respondents already mentioned, there was a culture of fear and distrust. There was no room for experimentation or trying out new things. And above all: there was no possible way for the innovation to be adjusted or improved. In order to do this, and the consensus seems to be that there was possible improvement in the implementation of the innovation, the question to imagine the perfect organization would have to be re-asked. Considering the toxicity of the programme, the symbolic status the innovation had acquired, a new introduction would have been out of the question. A culture of FAL, in short, was thus not present in the organization.

X & Y

Much like case 1, there was an important difference in the appropriateness of the innovation, on two levels. First there is the implementation of the innovation itself. According to several respondents, this was handled rather poorly. On the other hand, there is the difference in opinion about what the organization should be focusing on. The political executives thought the administration was doing too much work on quality assurance, and thought they ought to put more emphasis on day-to-day policy making at the operational level. This influenced the manner in which the information derived from the instruments of FAL was treated. The innovation had no chance to improve itself, for example by asking the employees the same question again, only now with better supervision and accompaniment of the lower echelons of the organization. This means that the appropriateness of the innovation can be

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categorized as an X-factor. A second X-factor is the departure of the entire upper management of the organization, amongst whom the main innovation champions. This occurrence created a collapse in I_{FAL} , and sealed the deal for the innovation. With the last defenders of the innovation gone, it had become defenceless. Finally, as in the other cases, a Y-factor was not found in this case.

Case summary

Table 33: Case summary 3

Case summary 3					
(((C_{FAL} & I_{FAL}) & X) or (Y)) → Sustainable Innovations					
<p>- C_{FAL}: Lack of open discussion of the results, tendency to avoid risks and no encouragement for alternative ways of doing things.</p> <p>- I_{FAL}: Regular meetings between the involved staff on the progress and functioning of the innovation.</p> <p>- X: Appropriateness of the innovation was not seen by the political executives, diminishing the chances of C_{FAL} to lead to adjustments and improvements. The personnel turnover of the main proponents of the innovations led to a scaling down of I_{FAL}.</p> <p>- Y: There were no indications that variables falling under 'Y' played a role in the termination of the innovations.</p> <p>Type of case:</p>					
C_{FAL}	I_{FAL}	Appropriateness	Champion	Y	Hypothesized outcome
-	+	-	-	o	Unsustainable

7.2.4 Discussion

As can the case summaries from the previous sub-paragraphs describe, two types of cases were discovered, keeping Y constant at o:

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Table 34: Case study findings

	C _{FAL}	I _{FAL}	Champion	Appropriateness	Hypothesized outcome	C _{FAL}	I _{FAL}	Champion	Appropriateness	Hypothesized outcome
Case 2	+	+	+	+	Non-Sustainable	+	+	+	+	Sustainable
	+	+	+	-	Non-Sustainable	+	+	+	-	Sustainable
	+	+	-	+	Non-Sustainable	+	+	-	+	Sustainable
	+	-	+	+	Non-Sustainable	+	-	+	+	Sustainable
	+	+	-	-	Non-Sustainable	+	+	-	-	Sustainable
	+	-	+	-	Non-Sustainable	+	-	+	-	Sustainable
	+	-	-	+	Non-Sustainable	+	-	-	+	Sustainable
	+	-	-	-	Non-Sustainable	+	-	-	-	Sustainable
	-	+	+	+	Non-Sustainable	-	+	+	+	Sustainable
	-	+	+	-	Non-Sustainable	-	+	+	-	Sustainable
	-	+	-	+	Non-Sustainable	-	+	-	+	Sustainable
	-	-	+	+	Non-Sustainable	-	-	+	+	Sustainable
Case 1 & 3	-	+	-	-	Non-Sustainable	-	+	-	-	Sustainable
	-	-	+	-	Non-Sustainable	-	-	+	-	Sustainable
	-	-	-	+	Non-Sustainable	-	-	-	+	Sustainable
	-	-	-	-	Non-Sustainable	-	-	-	-	Sustainable

The good news is that both are in line with the hypothesis:

Organizations with strong cultures and instruments of feedback, accountability and learning, embedded in the organization, will have sustainable innovations, ceteris paribus.

The bad news is that only two paths which follow from the hypothesis were found. This means that the conclusions which will be drawn in the following chapter will have to be modest in this respect. Especially with regards to the terms necessity and sufficiency in connection to C_{FAL} and I_{FAL}.

The cases indeed provided a more close-up look into the causal effect that FAL culture and FAL instruments have on the sustainability of innovations, and which other factors are relevant and necessary for a full explanation.

First off, case 1 and 3 show that I_{FAL} alone is insufficient. Instruments without a concomitant culture of FAL seems useless for the survival chances of the innovation. In the

same fashion, C_{FAL} seems to be a necessary factor in determining the sustainability of innovations. Beyond that, and with the earlier mentioned reservations in mind, the cases form robust evidence that both C_{FAL} and I_{FAL} are influential factors in explaining the sustainability of innovations.

Secondly, in all three cases personnel turnover was an important factor. The importance of innovation champions has been found in research on the initiation of innovations in the public sector as well (Borins, 2001a; Barlett & Dibben, 2002; Bankins, et al., 2016). Their importance, however, remains for the entire life-span of the innovation, as this study shows. In all three innovations, the champions were named by other interviewees as ‘mothers’ and ‘fathers’ of the innovation, and were almost synonymous with the project. As soon as they left, however, a sense of urgency was lost, as well as the emotional connection to the innovation. Here the idea of socialization in path dependency may play a role, as previously briefly discussed in chapter 3 on sustainability (Kay, 2005; Thelen, 2003). It is after the departure of these innovation champions that the importance of the innovation decreases, together with the a decrease in importance of the feedback information which comes from it. The departure of innovation champions was either seen as the beginning of the end, or as the final push. With their departure, key proponents left, the balance of clashing ideas shifted, or an emotional connection to the innovation was lost. Although innovations and FAL instruments might survive the departure of innovation champions, and continue to function for some time, the information they produce becomes less relevant, and loses its impact: the FAL culture decreases. Eventually, this also leads to a decrease in the importance and relevance of the products of I_{FAL} , as the monitoring becomes a pointless exercise. Ultimately, this in turn leads to the halting of the FAL instruments as well. Innovation champions, in other words, constitute a potential X-factor in innovation sustainability, with a direct link to both C_{FAL} and I_{FAL} .

Thirdly, the appropriateness of the innovation was seen as an influential factor in the way in which I_{FAL} and C_{FAL} functioned within the organizations. The appropriateness took roughly two shapes: conceptual appropriateness on the one hand, and what is labelled here as functional appropriateness on the other hand. This distinction can be seen as an extension of March and Olsen’s differentiation between the Logic of Appropriateness (confusingly) and the Logic of Consequentiality (2011). The former forms the basis of decisions where these decisions seem to be in accordance of rules, norms, and cultural factors. The logic of

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consequentiality bases decisions on the efficiency and effectiveness that follows from the decision. In case 2, the innovation was found out to have served its purpose. Continuation would have thus meant an extra investment which was not deemed to be necessary. In this case, the innovation was no longer deemed to be functionally appropriate, as it would be a waste of money. As long as it was seen to be functionally appropriate, measured through I_{FAL} and discussed through C_{FAL} , it was kept sustainable. In the other two cases, the innovations were seen as conceptually inappropriate. In both organizations there were significant differences of opinion on the manner in which the innovation was implemented, and whether it was a good innovation at all. In the case of the federal police force, the innovation was deemed too pro-active in its approach towards minority groups. In the local social- and healthcare provider, the political executives didn't see the benefit of the quality measurement and related activities. Whereas the implementation problems could be resolved through I_{FAL} and C_{FAL} , the principal disagreement on the appropriateness cannot be solved through these factors. Especially C_{FAL} would suffer under these strains, as the information from the instruments of FAL would not be able to be truly valued on the basis of their merit. This influence on C_{FAL} thus puts appropriateness in the 'X' category.

7.4 Conclusion

This chapter closely investigated the lives of three innovations: one in the federal police force of Belgium, one in a municipality in the Netherlands, and one in a local social- and healthcare provider in Belgium. Through semi-structured interviews and a focus group with those closely involved with the awarded innovation, it was possible to describe the initiation, development and termination of the three innovations. The research question which was formulated in this regard, in order to later on investigate the role of C_{FAL} and I_{FAL} in the lives of these innovations, reads:

RQ2a: What is the process narrative of sustainable and unsustainable public sector innovations?

The process narratives found through the three case studies can best be summarized via the following case summaries:

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Table 35: Combined Case Summaries

Case summary 1					
(((C_{FAL} & I_{FAL}) & X) or (Y)) → Sustainable Innovations					
<p>- C_{FAL}: Evaluations where purely formal tools. Feedback information was not used to improve the innovation. Strong belief in the underlying concept of the innovation disqualified negative feedback.</p> <p>- I_{FAL}: Yearly request for funding, accompanied with evaluation of the innovation's results.</p> <p>- X: A change in view on the innovation's appropriateness and effectiveness, together with a change in key personnel members (innovation champions).</p> <p>- Y: There were no indications that variables falling under 'Y' played a role in the termination of the innovations.</p> <p>Type of case:</p>					
C _{FAL}	I _{FAL}	Appropriateness	Champion	Y	Hypothesized outcome
-	+	-	-	o	Non-sustainable
Case summary 2					
(((C_{FAL} & I_{FAL}) & X) or (Y)) → Sustainable Innovations					
<p>- C_{FAL}: Feedback information was used constantly to adapt and improve the innovation. Adversarial and productive discussions were the standard.</p> <p>- I_{FAL}: Nature of the innovation caused an incessant stream of feedback information. Google statistics were used to complement this. Both were discussed regularly on multiple levels.</p> <p>- X: During the lifetime of the innovation it was seen as appropriate by (at least) the top of the organization, and an innovation champion fought and pleaded for its continuation.</p> <p>- Y: There were no indications that variables falling under 'Y' played a role in the termination of the innovations.</p> <p>Type of case:</p>					
C _{FAL}	I _{FAL}	Appropriateness	Champion	Y	Hypothesized outcome
+	+	+	+	o	Sustainable

Case summary 3 (((C_{FAL} & I_{FAL}) & X) or (Y)) → Sustainable Innovations					
- C _{FAL} : Lack of open discussion of the results, tendency to avoid risks and no encouragement for alternative ways of doing things. - I _{FAL} : Regular meetings between the involved staff on the progress and functioning of the innovation. - X: Appropriateness of the innovation was not seen by the political executives, creating a diminishing the chances of C _{FAL} to lead to adjustments and improvements. The personnel turnover of the main proponents of the innovations led to a scaling down of I _{FAL} . - Y: here were no indications that variables falling under 'Y' played a role in the termination of the innovations.					
Type of case:					
C _{FAL}	I _{FAL}	Appropriateness	Champion	Y	Hypothesized outcome
-	+	-	-	o	Unsustainable

RQ2: How do cultures and instruments of feedback, accountability and learning explain the sustainability of public sector innovations?

As we have seen in the discussion, it is not possible to give a *definitive* answer to this question, since not all possible combinations of culture and instruments of FAL have been studied. Both seem to be necessary in order to have any shot at sustainability, besides several different X-factors.

The appropriateness of the innovation and the presence of innovation champions are important X-factors. Is the innovation seen as a correct and suitable solution to the problem it is trying to solve? If it is not found to be appropriate, this will deteriorate C_{FAL} and I_{FAL}, and hence diminish the sustainability of the innovation. Is the problem the innovation was trying to solve still present and salient? If not, the same will happen as when the innovation isn't found to be appropriate. Does the innovation have a key proponent? Is the main champion influential in decision-making? If not, the products from I_{FAL} will lose its power, as C_{FAL} deteriorates.

Taken together, C_{FAL} and I_{FAL}, the appropriateness of the innovation, and the presence of innovation champions, seem to form a sufficient explanation for the sustainability of the innovation.

Chapter 8 – Conclusion

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This chapter will serve four purposes: summarize, evaluate, discuss and look ahead. The results and research process will be summarized in sub-paragraph 9.2.1 (quantitative) and 9.3.1 (qualitative). The second sub-paragraph of these two paragraphs will evaluate the methods which were used, their strengths and weaknesses, and how this affects the manner in which the findings ought to be analysed. Thirdly, paragraph 8.3 will evaluate how appropriate the research design was, and to what extent the INUS-condition is a suitable vehicle in understanding public sector innovations, given the evaluation of the methods and results. Has the design delivered on its promise? Sub-paragraph 8.3.4 will specifically look at the methodological lessons learned in this dissertation. Although the research design (chapter 5) preceded the empirical chapters (6 and 7) of this dissertation, it felt more appropriate to discuss the latter first. Only after evaluating the results and methods, can one speak about the appropriateness, strengths and weaknesses of the research design as a whole.

Then, the results from this dissertation will be placed in the broader literature in paragraph 8.4, where the theoretical implication will be discussed. Afterwards, in paragraph 8.5 it is time to look beyond this dissertation, and discuss further research opportunities. Then, finally, the discussion is extended beyond the academic, with paragraph 8.6 discussing the implications these results have for practice.

8.1 Quantitative methodology & results

Although it is tried to summarize without repeating too much from the previous chapter, this is of course not completely avoidable. Only the most relevant tables, graphs and figures are shown in paragraph 8.2 and 8.3, the rest is referred to with (sub-)paragraph and page numbers. The validity and reliability of the results are discussed in the second sub-paragraph, whereas the theoretical implications of the results are discussed in paragraph 8.4.

8.1.1 Summary of the results and research process

Chapter 6 covered the quantitative leg of this study: a survey of 220 nominated or awarded public sector innovations. This chapter was supposed to answer the following research question:

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RQ1: To what extent can cultures and instruments of feedback, accountability and learning explain the temporal sustainability of awarded public sector innovations?

The survey tried to measure the extent to which feedback, accountability and learning were embedded in the organizations under investigation. The survey instrument is introduced and discussed in sub-paragraph 6.1.1 and 6.1.2 (pp. 129 and onwards). This instrument was necessary to answer the first two sub-questions:

RQ1a: To what extent are cultures and instruments of feedback, accountability and learning present in the organizations of the investigated innovations?

RQ1b: How sustainable are the investigated innovations?

In the current sub-paragraph the results are summarized from the various (non-parametric and parametric) statistical tests which were conducted. It shows which decisions and steps were taken in altering the approach, based on the results that were found along the way. Much like the innovation that were investigated, the design was not perfect, and many alterations had to be made *en route*.

After a brief exploration of the results through exercises with truth tables, a series of non-parametric Mann-Whitney U-tests (MWU-test) were used (sub-paragraph 6.2.1 and 6.2.2, p. 144 and onwards). The results from these tests were insightful as part of an exploratory investigation. They showed a divergence between feedback and accountability on the one side (not significantly related to sustainability), and learning and the combined FAL-score on the other (significantly related to sustainability). At the same time, some interesting results were found in terms of individual items connected to sustainable innovations. However, since these tests don't control for other effects, the results are not very robust. It is therefore not possible to draw any conclusions from these results. Nonetheless, it was used as a sounding board for the currently discussed research: it showed that there might just be something there. Finally, these results can serve as inspiration for further research endeavours.

The next step in the analysis was the conduction of an exploratory factor analysis (sub-paragraph 6.2.3, p. 156)). This factor analysis was in its essence a test to see if the items designed to measure feedback, accountability and learning indeed stuck together in the results, in line with their theoretical links. Ideally, the factor analysis would have showed these three FAL dimensions as three distinct factor loadings. However, it turned out that

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instead, the factor analysis came up with multiple clusters of items, none of them strongly corresponding to the three initial dimensions. The first and strongest of these factors was later named 'culture of FAL' (C_{FAL} for short). A second one, much less influential, but nevertheless highly theoretically interesting, was named 'instruments of FAL' (I_{FAL} for short). It should be reiterated that these factors are named as such based on the items found to stick together from the factor analysis. Inductively, so to speak. C_{FAL} covers more intangible issues of FAL, and I_{FAL} covers the more tangible elements. The names are used heuristically, and not with the use of a strict definition of these terms. Future research will have to reveal, using more strict definitions, and with measurement instruments more embedded within culture literature, whether we can indeed speak about a *culture* of FAL in the full sense of the word. In one case of repetition, but deemed necessary for the sake of clarity, the items in each factors are summed up in table 36 below.

It had to be concluded from the factor analysis, that FAL was not measured as was intended. Either the instrument was not suited for the measurement, or these three issues as constructed through a literature review don't exist in the way they were imagined. In any case, it was decided to continue the investigation with these two newfound factors, as they were both relevant in an empirical and theoretical sense. Consequently, the research questions, hypotheses and heuristic model had to be rephrased in order to reflect this altered approach.

Table 36: Factor Items

FAL Culture	FAL Instruments
Within my organisation, people are usually comfortable talking about problems, disagreements and differences in opinion.	My organisation has monitoring systems that allow it to monitor a wide spectrum of performances and to compare those performances with the stated goals and objectives.
My organisation encourages staff members to express their concerns, ideas and suggestions about the functioning of the organisation.	My organisation has a quality management system that systematically strives for continuous improvements throughout the entire organisation.
My organization is characterized by a culture of adversarial debate and openness for constructive criticism.	Does your organisation have an internal audit office?
If a creative attempt to solve a problem fails, the responsible staff members are penalized. ¹¹	If discrepancies between performances and goals are detected, my organisation will take action in order to reduce these discrepancies. ¹²
My organisation encourages productive conflict and debate during internal discussions.	My organisation has formal procedures to ensure that lessons learned in the course of a project are passed along to others doing similar tasks.
My organization encourages experimentation and alternative ways of getting work done.	
The feedback information from staff members has great impact on the strategic decisions made by the organisation.	
My organization is characterized by a tendency to avoid risks. ¹³	
Towards external stakeholders, my organisation is very transparent about its results.	
In general, the people of my organisation feel responsible for the performance of the organisation.	

The third step, using parametric regression analysis, was necessary to answer the third sub-question of chapter 6:

RQ1c: Is there a correlation, and what is the nature of the correlation between the embeddedness of cultures and instruments of feedback, accountability and learning in an organization and the sustainability of the innovation?

This proved to be somewhat problematic (sub-paragraph 6.2.4, p. 164 and onwards). Because of the distribution of the dependent variable values (1:10), and the non-normal distribution of the vast majority of survey items and both C_{FAL} and I_{FAL}, a regular logit regression would

¹¹ This is a 'negative' statement. Before the analysis of the data the scores for this item were reversed.

¹² This item was eliminated from this factor, as it conceptually diverted too far from the others.

¹³ This is a 'negative' statement. Before the analysis of the data the scores for this item were reversed.

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result in overly amplified results. The result found here have to be read and interpreted in this light, as the effect of the key variables on the survival chances of an innovation will be smaller in reality than they appear in the regression results. This analysis nonetheless resulted in the cornerstone results of chapter 6, and of the following qualitative research endeavours as well. It is therefore deemed appropriate to repeat the results of the most important model hereunder. The other models, including several combinations of control variables, were not found to be significant in predicting the sustainability of the innovations.

Table 37: Regression results model 4

Survival	Coefficient	Std. Err.	Z	Sign.	[95% conf. interval]	
FAL Culture	5.596	2.026	2.76	0.006	1.624	9.568
FAL Instruments	0.0821	1.649	0.50	0.619	-2.412	4.053
Combined Hofstede	2.370	0.757	3.13	0.002	0.888	3.853
Age	-0.255	0.098	-2.59	0.010	-0.447	-0.062
Organizational size¹⁴						
25 – 100 fte	0.979	1.089	0.90	0.368	-1.155	3.113
100 – 250 fte	0.843	1.136	0.74	0.458	-1.382	3.070
250 – 500 fte	1.372	1.429	0.96	0.337	-1.429	4.173
> 500 fte	0.036	0.826	0.04	0.966	-1.584	1.655
Innovation type¹⁵						
Administrative	-0.450	0.834	-0.54	0.589	-2.085	1.185
Technological	-0.152	0.810	-0.19	0.851	-1.739	1.435
Governance	0.693	1.082	0.64	0.522	-1.428	2.814
Governmental level¹⁶						
Regional / Provincial	1.139	0.879	1.30	0.195	-0.584	2.862
Local	0.859	0.756	1.14	0.256	-0.623	2.340
Constant	-2.159	1.531	-1.41	0.159	-5.161	0.842

Number of observations	=	211
LR chi2 (9)	=	33.13
Prob > chi2	=	0.0016
Pseudo R2	=	0.251
Log likelihood	=	-49.576

The results from the regression show that three factors are found to be significantly connected to the sustainability of the innovations: FAL culture (stronger culture → more sustainable), Hofstede score (higher score → more sustainable), and age (older → less sustainable). Of the factors which were not found to be significant, I_{FAL} is the most notable. These results seem to hold for differences in organization size, government level, policy field, innovation type, national GDP and country. They are discussed in more detail in sub-

¹⁴ Reference category: < 25 FTE

¹⁵ Reference category: Product / Service

¹⁶ Reference category: Federal / National

paragraph 6.2.4 (p. 164 and onwards)

These findings were found to deliver a satisfactory, yet imperfect answer to the research question of this chapter:

RQ1: To what extent can cultures and instruments of feedback, accountability and learning explain the temporal sustainability of public sector innovations?

Based on the results presented above, instruments of feedback, accountability and learning do not explain the temporal sustainability of awarded public sector innovations. Cultures of feedback, accountability and learning, together with the age of the innovation and the respective national Hofstede score, can explain the temporal sustainability of nominated and awarded public sector innovations. The *extent* to which they can explain the temporal sustainability is difficult to pinpoint, given the exaggerated results following from the 1:10 ration in non-sustainable/sustainable innovations in the sample. But it seems likely for C_{FAL} to have a fairly strong impact in comparison to the Hofstede score, and especially in comparison to the age of the innovation. The probabilistic hypothesis is therefore half confirmed and half debunked.

The probabilistic hypothesis: *The more cultures and instruments of feedback, accountability and learning are embedded in an organization, the higher the likelihood of innovations within that organization to be sustainable.*

It seems true that the more cultures of feedback, accountability and learning are embedded in the organizations, the higher the likelihood of innovations to be sustainable. However, no such evidence was found with regards to instruments of feedback, accountability and learning.

8.1.2 Evaluation of methods and lessons learned

The main criticism on the quantitative methodology would focus on the use of a cross-sectional survey instrument, for a longitudinal model. This means that the cycles described in figure 25 (p. 162) were simplified to one cycle, and that the independent variables were measured at one single point in time: the time of the survey. This score was then used as a score for the entire life-cycle of the innovation. First and foremost, this shortcoming is

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important, and should be taken into account in determining the power of the conclusions. Secondly, the design and execution of longitudinal research in the public sector is extremely difficult, especially when the subject, innovation in the case of this dissertation, is not easy to pinpoint. It is very hard to find innovations in their early stages, ideally pre-implementation. And even then, it is unknown at the start if the innovation will survive or not. It would thus be possible to be following innovations which will all end up being sustainable, making it impossible to study non-sustainability. The results of the survey as they stand, gathered through a, admittedly, imperfect research design, are still valuable in the sense that they provide an important first glance of how a culture of FAL can have an impact on the sustainability of innovations. However, there have been examples of large scale longitudinal innovation studies. The Minnesota Studies, carried out by Andrew Van de Ven and colleagues (2000) is a great example of this. In this study, a great number of innovation are being followed in real time during their development, implementation, and later life. Although designing such a study in the public sector has its own particular set of hurdles to be overcome, it would be a fascinating aspect to the study of public sector innovation. A study of which the contribution is hard to overstate. Thirdly, the cross-sectional nature and the issues that brought with it, were attempted to be redressed somewhat through the qualitative research design. In case studies, using historical narratives of the innovations, we were able to show how especially culture of FAL can change over the course of an innovation's life. In this sense, aside from all the 'normal', inherent strengths of qualitative research vis-à-vis quantitative research, the qualitative leg is an invaluable addition to, and directly linked with the quantitative leg of our research.

Secondly, and somewhat related to the ideal of longitudinal analysis, it was difficult to find even rough estimates (month or year) of the beginning and ending of the innovations. It was therefore necessary to use the award or nomination year as a proxy for the innovation's age. An end-date was unknown for a large part of the non-sustainable innovations. Considering the low number of non-sustainable innovations that were found, it was not possible to further shrink this sample to the ones which did know the end-date. This fact made it impossible to conduct Cox's proportional hazard model to determine the effects of the factors of interest on survival.

Thirdly, besides the design of the survey methodology leading to cross-sectional data, the final sample was characterized by a lack of terminated innovations. As mentioned before,

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the ratio of 10:1 in sustainable and non-sustainable innovations was also found by others (Borins, 1998; Farah & Spink, 2008). It is therefore feasible, then, it's simply the reality that about 10% of award nominated or award winners are terminated. Another possibility is that the other (non-observed) terminated cases are among the non-respondents. Respondents might feel a sense of shame because their innovation didn't last, or feel that their answers won't be helpful for the research if their innovation no longer exists. A third option could be related to personnel turnover. This was often found to be a severe problem in finding qualified respondents, and might even be a stronger problem in investigating terminated innovation, where the knowledge transfer after a change in personnel is seen as less important, or not important at all. Perhaps the cases where the researchers and the organization were not able to locate a suitable respondent thus indicate terminated innovations. The same goes for cases where no one had heard of the innovation, and hence no suitable respondent was found either. This, however, remains speculation. Lastly, the 1:10 ratio also highlights another shortcoming of our research: the lack of a non-respondent survey. With a more systematic follow-up of who *did not* participate in the survey, we might have been able to draw some conclusions about our sample, and our non-sample.

Fourthly, the nature of the questions of the survey resulted in some unexpected turns in the analysis. Due to the fact that many questions were dependent on answers given to previous questions (whether or not an ombudsman, internal audit office or external audit office was assigned to the organization), it was not possible to use all questions for the factor analysis, and for all subsequent analyses afterwards. This meant a) a loss of information, and b) a particular loss in questions for the FAL accountability dimension, which already consisted of fewer questions than feedback and learning. This makes that dimension further underrepresented in the total amount of questions, even though it is not possible to determine whether or not it is less important in determining the sustainability of innovations.

Finally: the measurement of FAL. Based on a thorough review of the literature, the theoretical basis of the model is not under dispute here. However, as the factor analysis showed, it turned out to be unable to translate the theory in a valid measuring instrument. Future research endeavours should focus more strongly on the operationalization of the concepts, in order to strengthen the methodological and conceptual basis for innovation research, as well as research on feedback, accountability and learning. At the same time, the

factors instruments and culture of FAL were only names as such heuristically. Future research should thus try to fine-tune these two concepts, including strengthening the experience in operationalizing them, and embedding them more in previous research on these issues.

8.2 Qualitative methodology and results

The research from chapter 7 was, to a large extent, a reaction to the quantitative findings in chapter 6. The major change, besides the methodological approach, was the different wording of the research question. Instead of searching for a correlation, as was the case in the quantitative chapter, chapter 7 searched for an understanding of the causality of the correlation that was found. It was thus phrased as follows:

RQ2: How do cultures and instruments of feedback, accountability and learning explain the sustainability of public sector innovations?

The key independent factors, culture and instruments of FAL, were defined as follows:

Instruments of FAL: Structural arrangements, in the form of procedures, systems or discussion fora, which measure, analyse and/or discuss the performance of innovations.

Culture of FAL: A work environment in which the analysis and discussion of innovation's performance can take place in a rational manner, with room for disagreement, influential debate, and experimentation, at all layers of the organization.

8.2.1 Summary of the results and research process

The reasons for choosing the final three cases in the qualitative leg of the dissertation were partly based on their value on the dependent variable (two non-sustainable cases and one sustainable case), and partly due to practical issues (distance and language). Through semi-structured interviews it was tried to reconstruct the life stories, or narratives, of the innovations. This would provide three answers on the first research question:

RQ2a: What is the process narrative of sustainable and unsustainable innovations?

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An answer on this question is necessary in answering the final question RQ2. By retrieving the narratives of these innovations' lives, it is possible to inductively analyse if, and more importantly *how* cultures and instruments of FAL have played a role in determining the non-survival of innovations.

It was possible to draw up near complete pictures of the lives and developments of the innovations, up and until their termination. Through these interviews it was possible to get a more in-depth view on how FAL culture and instruments play a role in the decisions made about innovations, and there has thus been added a more causal mechanistic view to the survey. It was found that the role of C_{FAL} was important and consistent. I_{FAL} 's role was less clear, but seemed to be more important than the quantitative results suggested.

Case 1 did have instruments of FAL, but did not show signs of C_{FAL} , because the appropriateness of the innovation was held on to tightly by those involved at the start of the innovation. The means were almost more important than the goal, in this respect. When there was a shift in the societal discourse around this topic, together with a shift in the project management, with the innovation champions retiring, the majority opinion on the appropriateness of the innovation changed radically. This produced serious strains on its possibilities for the innovation to remain sustainable. The added budgetary constraints added even more pressure for the need to show results.

In case 2 C_{FAL} and I_{FAL} were found to be working as one would hope. There was little political involvement, and the differences of opinion about the appropriateness of involving citizens in policy improvement were resolved early on in the process. Here, however, it were C_{FAL} and I_{FAL} which ironically led to the termination, since they showed that the innovation had outlived its use. This shows that the perception of the innovation's necessity is an equally important actor in explaining the termination of innovations. Since the innovation was terminated because it had reached its goals, this innovation was defined as sustainable, instead of non-sustainable. This case thus provided evidence that well-functioning C_{FAL} and I_{FAL} , together with a consensus on the appropriateness and the presence of an innovation champion, can lead to sustainable innovations.

Case 3, then, saw both appropriateness and politics at play. The politics played out between the administration on the one hand, and the political executives on the other hand. The power struggle between these two factions arose from friction between different beliefs about the role and independence of the administration, and about the role that 'modern'

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management (focusing on issues such as quality) should play a role in daily routines. Both these tensions created different views on the appropriateness of the innovations. This constant struggle led to a deterioration of the culture of FAL, as open discussion was no longer possible, even though instruments of FAL stayed in place. The innovation even became a symbol for the administration, and viewed as ‘toxic’ by other members of the administration. When the innovation lost its key champions due to personnel turnover, its fate was sealed, unless the innovation was routinized or fully integrated.

Concluding, the following type of cases were found, all in line with the hypotheses:

Table 38: Case study findings

	C _{FAL}	I _{FAL}	Champion	Appropriateness	Hypothesized outcome	C _{FAL}	I _{FAL}	Champion	Appropriateness	Hypothesized outcome
Case 2	+	+	+	+	Non-Sustainable	+	+	+	+	Sustainable
	+	+	+	-	Non-Sustainable	+	+	+	-	Sustainable
	+	+	-	+	Non-Sustainable	+	+	-	+	Sustainable
	+	-	+	+	Non-Sustainable	+	-	+	+	Sustainable
	+	+	-	-	Non-Sustainable	+	+	-	-	Sustainable
	+	-	+	-	Non-Sustainable	+	-	+	-	Sustainable
	+	-	-	+	Non-Sustainable	+	-	-	+	Sustainable
	+	-	-	-	Non-Sustainable	+	-	-	-	Sustainable
	-	+	+	+	Non-Sustainable	-	+	+	+	Sustainable
	-	+	+	-	Non-Sustainable	-	+	+	-	Sustainable
	-	+	-	+	Non-Sustainable	-	+	-	+	Sustainable
	-	-	+	+	Non-Sustainable	-	-	+	+	Sustainable
Case 1 & 3	-	+	-	-	Non-Sustainable	-	+	-	-	Sustainable
	-	-	+	-	Non-Sustainable	-	-	+	-	Sustainable
	-	-	-	+	Non-Sustainable	-	-	-	+	Sustainable
	-	-	-	-	Non-Sustainable	-	-	-	-	Sustainable

Consequently, keeping in mind the flaws and imperfections of this research, it can be concluded that the hypothesis seems to be at least partially confirmed. It should be amended, however, to include the conceptual appropriateness of the innovation and the presence of innovation champions.

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The deterministic hypothesis: *Organizations with strong cultures and instruments of feedback, accountability and learning, embedded in the organization, together with a consensus on the conceptual appropriateness of the innovation, and the presence of an innovation champion, will have sustainable innovations, ceteris paribus.*

Ideally there would have been cases in which examples of Y were identified, in order to investigate the different forms this could assume, and in particular its influence on C_{FAL} , I_{FAL} and X. Unfortunately, this was not the case in this dissertation. Preferably, for example, there would have been a case in which C_{FAL} , I_{FAL} , and both X's were present, with a particular Y-value intervening, making the innovation unsustainable after all. It was not possible to pick out case for which Y was known beforehand, and the number of cases to be investigated in-depth was limited due to practical reasons. Further research is necessary to investigate the possible forms Y can take on.

8.2.2 Evaluation of methods and lessons learned

Many of the comments made under this heading are reiterations of comments made before in chapter 5 and 6 on the research design and the methods used for the qualitative research respectively. The main critiques are: 1) selection on the dependent variable, 2) a small sample of interviewees, and 3) great differences between the organizations that formed the cases.

As mentioned before, three cases were investigated based on what was found through the survey from chapter 6. This means that the cases were selected on their value of the dependent variable. However, this constitutes less of a problem if the case selection takes place *after* an exploratory survey as is the case here. The link between C_{FAL} and sustainability has already been revealed, so finding out exactly how this works causally requires picking out cases on the basis of their dependent value. Furthermore, the investigation of the process in the context of the INUS-condition requires selection on the dependent variable. Being able to speak on necessity and sufficiency require one to look at both occurrences and non-occurrences, of which one can only be certain by selection hereon.

Furthermore, as the innovations turned out to be smaller projects, the number of interviewees was limited. On a positive note: this means that in the process the interview options for each of the three cases were (almost) exhausted, so a near perfect picture of the

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innovation could be drawn up. On the other hand: the number of observations remains limited by the nature of the cases. In retrospect, the number of potential interviewees should have been taken into account when selecting cases. Nonetheless, it was possible to triangulate findings, stories and statements through the different interviews. Although not perfect the findings from these interviews, and the narratives we were able to construct from the different stories told, are assessed as valid and reliable. The participants in the focus group, furthermore, were able to show important similarities between the cases, as well as important differences. This further strengthened the conclusions. Where especially case 3 (being a relative success) differed greatly from case 1 and 2 (being relatively unsuccessful, the focus group was able to provide additional answers to explain for these differences. This improved the validity and reliability of the results, and provide assurance for the conclusions that were drawn.

Finally, there was only a small sample of cases available (considering the 1:10 ratio of non-sustainable to sustainable cases), and this was made even smaller due to issues of distance and language of the interviewees. Finally, the lack of choice in cases with non-sustainable innovations meant that there was no range of options in terms of scope conditions and comparative contexts, and the research thus ended up with three rather different cases. The nature of their organization differed (size, governmental level, etc.), as did the budget, innovativeness and type of the innovations. Besides the issue of budget and innovativeness, however, we found in the survey that these are not related to the survival chances of innovations. The possible influence of innovativeness and budget, or the impact an innovation has on an organization (perhaps linked to the issue of sunk costs and path dependency), is food for further research, and ought to be taken into account in the conclusion of this dissertation.

8.3 Filling in the blanks: the INUS-condition

After the summaries of the empirical findings from chapter 6 and 7, the question now turns to the INUS-condition. How can these two chapters be combined, and how strong is the proof for the different elements within the INUS-condition? With the risk of unduly repetition, this INUS-condition was hypothesized to look as follows:

$$(((C_{\text{FAL}} \& I_{\text{FAL}}), X) \text{ or } (Y)) \rightarrow \text{Sustainable Innovations}$$

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A culture of FAL and Instruments of FAL were hypothesized to be interlinked necessary but insufficient causes for sustainable innovations, *ceteris paribus*. X, then was unknown, but presented (an)other factor(s) in connection to C_{FAL} & I_{FAL} , which made the condition sufficient, yet still unnecessary in explaining the sustainability of public sector innovations.

So what does the evidence suggest? First and foremost, the quantitative evidence shows that there does indeed seem to be a link between a culture of FAL and the sustainability of innovations, together with the age of the innovation and the national Hofstede score. This implies that these three factors might have a place in the INUS-condition. The logistic regression also showed which factors ought not to be include in the INUS-condition: the policy area of the organization and innovation, the national GDP, the type of the innovation, the size of the organization, and the level of government at which the innovation is located.

However, the data and the nature of the analysis make it impossible to make claims about the sufficiency or necessity of these factors. For this, qualitative research is necessary. The quantitative data do strengthen the arguments which are made in general, however, and can generalize the findings about C_{FAL} in particular from the three case studies. Since age and the Hofstede score are only proxies of that which they are supposed to represent, and considering the noise in the data this brings with it, the focus of the qualitative investigation focused on culture and instruments of FAL. It was found that the following paths were found:

Table 39: Summary of case study findings

	C_{FAL}	I_{FAL}	X (Appropriateness)	X (Champion)	Y	Hypothesized outcome
Case 2	+	+	+	+	o	Sustainable
Case 1 & 3	-	+	-	-	o	Non-sustainable

Based on these findings, combined with the findings on the relevant 'X' variables, a few conclusions can be drawn:

- I_{FAL} is not sufficient on its own to establish sustainability.
- Since I_{FAL} was observed in all cases, no conclusion can be drawn on its individual necessity.
- C_{FAL} seems necessary to establish sustainability

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- As C_{FAL} was not observed in absence of I_{FAL} , no conclusion can be drawn on its individual sufficiency.
- A consensus on the appropriateness of the innovation seems necessary to establish sustainability.
- As the appropriateness of the innovation was not observed in absence of C_{FAL} , I_{FAL} , or both, no conclusion can be drawn on its individual sufficiency.
- The presence of an innovation champion seems necessary to establish sustainability.
- As the presence of an innovation champion was not observed in absence of C_{FAL} , I_{FAL} , or both, no conclusion can be drawn on its individual sufficiency.

In observing both occurrences and non-occurrences of all three main factors, it is possible to draw conclusions on both the necessity and sufficiency of several factors, and several combinations. The results from table 39 indicate that C_{FAL} , I_{FAL} , a consensus around the appropriateness of the innovation, and the presence of an innovation champion, seems to be sufficient, and individually necessary, to explain the sustainability of public sector innovations. It is thus possible to draw up a plausible INUS-conditions, which looks as follows:

$((C_{FAL} \& I_{FAL}), \text{Appropriateness, Innovation Champion}) \text{ or } (Y) \rightarrow \text{Sustainable Innovations}$

Together with the results from the quantitative research, especially the place of C_{FAL} seems rather solid. However, not all combinations were observed, as there were only three cases which the researchers were able to investigate, covering two possible paths. To draw final conclusions, further research is necessary.

With regards to the earlier discussion in 5.3.3., two types of causality have been observed and applied: neo-humean regularity, and counterfactual causality. The former through a survey of 220 public sector innovations, the latter through three in-depth case studies. Ideally, these two types of causality would be complemented with research through manipulation (experiments) and research on causal mechanism. These could be satisfied through longitudinal research designs. It is assumed here, however, that despite the fact that 'only' two forms of causality have been investigated, a solid basis has been laid out to talk about C_{FAL} , I_{FAL} , and both X's in cautious causal terms.

8.4 Evaluating the research design

Based on the empirical summary and methodological evaluation in the former three paragraphs, it is now possible to discuss and evaluate the overarching research design. How appropriate was this design in retrospect in order to investigate the sustainability of public sector innovations? In 8.4.1, the INUS-condition is assessed as a tool to systematically compare and evaluate the results. Afterwards sub-paragraph 8.4.2 and 8.4.3 critically assess the usefulness and appropriateness of the six-country comparison, as well as the use of the innovation award method to identify and select innovations. Finally, the mixed method approach will be evaluated last, in 8.4.4.

8.4.1 The INUS-condition

On a higher level, one could question the use of the INUS-condition in this research. It is true that the use of this method brings an extra level of complexity to the research, but it was believed that it shows the complexity which will be found in real life, *and* provide a framework to structure the different evidence and empirical results. No one or two factors can predict or promise long-lasting innovations. The very nature of INUS-condition is rooted in that assumption. Its use is a manner to escape the trend of variable-driven research, and places the empirical results in a more complex causal model, admitting that the results are only one part of the puzzle.

Moreover, terms as necessity and sufficiency are thrown around quit handily, without a thorough reflection on what these terms exactly entail, and which kind of case selection and evidence base is necessary to make claims about them. The use of the INUS-condition put this issue front and centre, and forced the researchers to think more explicitly about these issues. In this sense, when many writers talk about the necessity of innovation or the necessary conditions to foster innovation, the appliance of INUS-conditions might be appropriate, and indeed needed.

That being said, it also adds a layer of complexity on the design of the study, and strongly favours the use of qualitative methodology, or QCA, instead of the more prevalent statistical methods. It is the combination of qualitative and quantitative methods that makes the proper use of an INUS-condition possible, following Lieberman's nested analysis. Many research endeavours do not have the time or resources to apply both research strategies, making the practical use of INUS-condition only possible on certain cases. The importance

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of investigating the right type of cases (both occurrences and non-occurrences of the dependent and independent variables) further complicates this matter.

8.4.2 Six-Country Comparison

The sample of countries was chosen partly in the context of an international research project, partly because of the specific administrative cultures these countries display. The reality of the project in which the research took place can only be taken as a fact, but overall it does not seem to have had an impact on the findings. It required us to include countries from particular administrative cultures, which can be seen as an added value. The results are therefore highly interesting, especially from the quantitative research: there were no relevant differences between the countries in terms of the key independent and dependent variables. This in itself is a noteworthy finding.

The biggest problems arose from the fact that the nature of the sample differed between the countries. The sheer number of cases differed strongly, as did the distribution of these cases over for example level of government. As the latter was also not found to be related to the key variables in our research, this does not constitute an insurmountable obstacle, however. The number of cases is also not due to issues such as culture, history, mode of governance, etcetera, but is linked to more practical issues: the number of award programmes, the number of nominees per award, and the funds available in the research project per country to exhaust the potential number of respondents.

In retrospect, the problem is not that these countries are different in the issues mentioned above, it's problematic that it is unknown how different they are in terms of innovation management, culture, and policies. These could have potentially influenced the innovations development after their initiation. The Hofstede score is an attempt at catching these difference, but a far from perfect one. This measure was in fact to the sustainability of the innovations. It remains, however, an important shortcoming that exists as a gap throughout the literature.

8.4.3 Innovation award methodology

The pros and cons of the innovation award method have been discussed at length earlier on in paragraph 5.4. Overall, however, the method was evaluated positively. There were indeed some complications, especially with regards to differences in the number of possible cases and the financial resources which were necessary to retrieve enough suitable respondents.

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However, finding 220 innovations which were all independently evaluated on whether they in fact constitute innovation, would have been even harder had another approach been chosen as case selection method. The same goes for the problems surrounding personnel turnover and the lack of institutional knowledge with regards to innovation from 'long' ago. Unless a truly longitudinal approach is adopted, one with a lot of risks and problems of its own, not to mention substantial long-term resource commitments from both the organization and the scholars, digging into the past in order to find life stories of innovation will remain necessary.

Until an easier way of identifying and selecting innovations in the public sector can be found, the award methodology remains relevant and useful because of its great advantages in terms of transaction costs and information. A possible alternative is a closer collaboration between academia on the one hand, and the multitude of innovation labs and behavioural insight units which are established all over the world (Tönurist et al., 2017). Considering it is their core business, these organizations should be able to provide many cases of innovations. Their function for public sector scholars could be comparable to that of R&D departments for private sector scholars.

8.4.4 *Mixed method approach*

The combination of qualitative and quantitative methods can only strengthen ones conclusions, compensate for each other's weaknesses, and form a synergy through each other's strengths. This dissertation is believed to be a good example in this regard. The survey showed where potential causal links between organizational characteristics and innovation sustainability lay, and qualitative research was able to further unravel how this relationship played out in practice. Secondly, the qualitative research was able to control for some important shortcomings of the survey, most notably its cross-sectional nature used for a longitudinal model.

A problematic feature of this approach, as the author witnessed first-hand, is that the complementarity of the two makes it harder to split the two up. Since the results of each piece on its own is less valuable, they both raise a lot of questions without the other part present. This makes it much harder to try and publish the findings through peer-reviewed articles, where word limits force authors to pick one of the two.

Finally, it is believed that this dissertation does indeed do justice to Creswell's definition of a mixed method approach:

“An approach to research in the social, behavioural, and health sciences in which the investigator gathers both quantitative (closed-ended) and qualitative (open-ended) data, integrates the two, and then draws interpretations based on the combined strengths of both sets of data to understand research problems.” (2015, p. 2, italics added)

8.5 Theoretical Implications of the Results

Cultures of feedback, accountability and learning, based on the findings of the survey and case studies, seem to be necessary but insufficient in explaining the sustainability of innovations. The results on the impact of instruments of feedback, accountability and learning paint a more diffuse picture. The concrete instruments of FAL (following the definition given in sub-paragraph 7.1.6, focusing on procedures, fora and systems) are not sufficient to explain innovation sustainability, if one combines the quantitative and qualitative results. Based on the results from the qualitative leg of the dissertation it is not possible to draw conclusions of its necessity. However, in the light of the quantitative results, this seems unlikely to be the case. Also drawn from the qualitative investigation is the inductively found result that a consensus around the appropriateness of the innovation, as well as an innovation champion, seem necessary for the sustainability of innovations. This, in short, is the main conclusion of this dissertation. What do these results add to existing parts of public management literature, and how do the results from this dissertation relate to other research findings? The focus of the discussion is put on C_{FAL} , considering the fact that the conclusions on C_{FAL} are most solid, especially when one combines the quantitative with the qualitative findings.

8.5.1 Sustainability and termination of public sector innovations

The findings of this dissertation make a contribution to various research strands. First and foremost, it presents a start in filling up the gap in the literature surrounding the survival or termination of public sector innovations (Pollitt, 2011; De Vries et al., 2016). Although others had already found that around 10% of awarded and nominated innovations tend to get terminated in time, this research shows an up until now non-existing light on the causes of

these terminations. The research presented here shows that these nominated and awarded innovations are rather sustainable, at a rate of 90 percent.

In line with an added focus on the sustainability and termination of public sector innovations, this dissertation also adds to the policy termination literature, in particular the termination literature focusing on policy programmes, as opposed to the termination of organizations, state functions and policies. The influence of evaluation has been contested in this strand of literature as a cause for termination, but the results presented here seem to point in that direction, albeit in a nuanced way. Properly executed evaluations, in the form of C_{FAL} seem to matter in determining the sustainability of innovations, until politics comes in between, as was observed in case 1, where the politics changed the appropriateness of the innovation, and in case 3, where the political battle between the administration and political executives claimed a significant part in sealing the fate of the innovation. These findings align most notably with earlier work in the policy termination literature that does acknowledge the relevance of evaluations, but agrees that politics can trump that role (Behn, 1978; Gevay-May, 2004; Volden, 2016; Turnhout, 2009). The results are also in line with previous research concluding that the external legitimacy (appropriateness) of innovations has a significant effect on their sustainability (Gimmon & Spiro, 2013; Delmar & Shane, 2004; Jack & Anderson, 2002).

8.5.2 Continuous improvement and groping along

This dissertation also emphasizes the importance of what happens to the innovation after the design and implementation phase for its chances of maintaining sustainable. Innovations do not remain sustainable due to a perfect design, but rather through a learn-as-you-go approach of measurement, analysis, and adjustment. Golden (1990) named it 'groping along'. Moldogaziev and Resh (2016) stressed the importance of the administration of the innovation vis-à-vis its design, whereas the latter usually receives most of the attention of practitioners and academics alike. Although the importance of innovation management and continuous improvement of innovations has thus been mentioned previously in the literature, still very little is known about how this takes place in the public sector. This dissertation thus adds to these insights as well.

The conclusions also support the main ideas behind continuous improvement and learning organization theory (Fryer & Ogden, 2014; Bessant et al. 2001; Senge et al., 1990),

connected to the idea of muddling through as described by Golden and Moldogaziev and Resh, where this is defined as “all members of the organization work[ing] together on an ongoing basis, improving processes and reducing errors to improve overall performance for the customer.” (Fryer et al., 2007, p. 498) The evidence here shows that a culture of openness and constructive cooperation, in which continuous improvement can take place fruitfully, is an important predictor of sustainability, therefor aligning itself with research done by for example Fraser (1995), Woods (1997) and Watson & Chileshe (2004) (see Fryer et al., 2007, for a more complete overview).

8.5.3 Innovative programme sustainability

Chapter 3 laid out a number of strands of literature that focus on the sustainability of programmes in one way or another. In that chapter is was also noted that some of these strands were less relevant for the current research than was expected: IS/ICT project literature as the most notable example.

The healthcare literature was by far the most extensive and longstanding scholarly tradition with regards to project and innovation sustainability. As can be read in table 3 (p. 47), culture is an aspect that hardly finds its way in this strand of research. In that respect, this dissertation can function as an important addition to the field, even though the focus did not lie primarily on innovative health care projects. ‘The organizational context or setting’ (under which C_{FAL} could rightly be included) is mentioned in Shediak-Rizkallah & Bone (1998, p. 99). They label the organizational setting as:

- Institutional strength. (How mature (developed, stable, resourceful) is this organization?)
- Integration with existing programmes/services.
- Programme champion/leadership.

C_{FAL} could be categorized under the first bullet point, but is somewhat of a stretch. Although evaluation and adaptation of innovations after their initial implementation comes to the fore in several of the most influential models in the literature (e.g. Shediak-Rizkallah & Bone, 1998; Gruen et al., 2008; Schell et al., 2013 and Fleiszer et al. 2015), the review by Wiltsey Stirman, et al. (2012) show that only a few studies actually focus on this issue. The results of this dissertation thus serves as yet another reminder that evaluation deserves more attention when it comes to the study of innovative project sustainability. Lastly, the innovation

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champion/leader factor did come to the fore in the qualitative results of this dissertation, at least until the innovation was integrated or routinized into the organization.

The innovative social programme literature and the research on the sustainability of educational innovations do not focus particularly on the role of evaluation. However, the role of the organizational environment, is in fact seen as an important predictor of sustainability by Savaya et al. (2008). Sharir and Lerner (2006) also point towards the legitimacy of the idea behind the venture in public discourse as an important factor. This overlaps with the X-value found in this dissertation: the appropriateness of the innovation, especially as in case 1. Yu et al. (2012) found that the proven effectiveness of the innovation improved the sustainability, which indicates that evaluation might have a particular role in this, as it can prove the effectiveness. Secondly, Dijkman et al. (2015) found the same (concrete advantages from innovation → sustainability), and added organizational strengths to this as an important factor. These organizational strengths, however, are defined as strong management, a mature organizational structure and low staff turnover. C_{FAL} , then, would be an addition to this.

As a final note: the literature from different policy areas drove the researcher to include the policy areas of the organizations and innovations as control variables. Through the logistic regression no differences were found between the specific policy areas. It is thus possible for the different research areas on innovative programme sustainability (education, health care, social policy, etc.) to learn from each other, with evident contextual adjustments left aside. An integration of the evidence, models and insights from these strands of literature would be an interesting opportunity for further research.

8.5.4 Performance information and evaluation usage

Most importantly, however, this study adds to the existing literature on performance information and evaluation usage. This strand of literature can broadly be divided in three groups: performance information and evaluation use, use of policy advice, and the use of scientific knowledge in policy-making. For the nature of this study, the literature from performance information and evaluation usage is most applicable.

C_{FAL} embodies a culture in which performance information and evaluation data is used in as rational a way as humanly possible, or as De Kool (2008) names it: the rational approach. It highlights the utilization of information in order to achieve goals. In essence

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C_{FAL} constitutes an open and constructive environment in which performance information on innovations can be used in order to improve its functioning. This is thus in line with the rational approach. Case 2 of the qualitative study comes eerily close to the rational usage of performance information, although it would be difficult to call any organization or person completely rational.

This contrasts with another way of performance information usage: as a tool to prove someone is right or wrong. Moynihan (2008a) labels this as the 'advocacy use' of performance information. This way of using performance information is clearly identified in case 1. This case showed how performance information and evaluation data was ignored for a long time, most likely due to the influence of a particular view on the appropriateness of the innovation. A sudden shift in this respect at the top of the organization and in society, changed the usage into the more rational approach. By then, however, it was too late. Case 3 showed how clashing views on the role of quality management and independence of the administration led to a rift inside the organization, and how the performance information on the innovation lost all its rational meaning in the subsequent power struggle. Information was used as an advocacy tool to instil certain changes in the organization.

Performance information usage is also strongly linked to two different manners of learning: the cultural and structural goal-based learning approaches as put forth by Moynihan (2008b). Both focus on the goals of policies, and information gathering is seen as a way to improve the efficiency and effectiveness of the respective programme. The difference lies in the things which support learning activities.

The structural learning approach relies on what have here been labelled as instruments of FAL. Lipsitz, Poper and Oz (1996, pp. 293) argued that learning is constituted by "institutionalized structural and procedural arrangements that allow organizations to systematically collect, analyse, store, disseminate, and use information that is relevant to the effectiveness of the organization." A cultural route to learning, however, focusses on how positively learning is observed in an organization. Is it welcomed, or viewed suspiciously? It is thus more about *how* the performance information is used, and in what context. Others have also found the organizational culture to be influential in performance information usage (Broadnax & Conway, 2001; de Lancer & Holzer, 2001), as well as specifically a supportive and open culture around innovation (Folz, et al., 2009; Johansson & Siverbo,

2009). Finally, Hall and Taylor (1996) show the importance of *cultures* when performance information is used to respond to challenges, as opposed to *structural manners* of learning (such as the instruments of FAL in this dissertation).

The analysis in this dissertation shows stronger proof for the cultural route to learning (C_{FAL}). The separate items in C_{FAL} are in line with the notion that the effect of the culture and environment in which people and organizations try to learn can have a large effect on performance information usage, and the sustainability of innovations. Stimulating such cultures will

“embrace openness to change, and values learning from mistakes in order to improve for the future. Performance information [...] facilitates learning and improvement by providing additional feedback. Furthermore, an innovative culture can foster data use because it emphasized dialogue and discussion rather than reward and punishment [...]” (Moynihan, et al. (2012), in Kroll, (2015), pp. 472-473, italics added)

When you put this quote side by side with the content of C_{FAL} , the overlap becomes obvious.

The evidence on the structural ways of learning is less clear. On the basis of the evidence found in this dissertation, however, it is not possible to say if I_{FAL} in and of itself a sufficient cause for sustainability of public sector innovations. C_{FAL} does however seem to be necessary for sustainability to be established. These results thus add to the growing body of literature that finds that (the maturity and quality of) measuring instruments itself are not sufficient for data usage to really take place. This strand of literature emphasizes the importance of an innovative, open culture, where differences of opinion and making mistakes are not subverted, but encouraged and learned from (see for example Cepiku, et al., 2016; Salge & Vera, 2012; Han et al., 1998). On the other hand, at least the quantitative research in this dissertation goes against a significant part of the performance information usage literature (Kroll, 2015). The maturity of measurement systems in this literature is seen as one of the most important drivers of data usage (see for example Kroll & Proeller, 2013; Ammons & Rivenbark (2008) and Taylor, 2009). Although it is assumed, as mentioned before, that the data produced are relevant and useful, there is no direct link found between the extent I_{FAL} is embedded, with the sustainability of innovations. Their mere existence is not enough. The latter is also proven by the qualitative research, where I_{FAL} was found to be an insufficient

factor in predicting an innovation's sustainability. The organizational culture in which the data derived through the instruments is discussed and analysed, makes a greater impact, and is in fact found to be necessary (albeit within an unnecessary condition).

8.5.5 *Discussing non-significant findings*

The effect of the respective policy area of the innovation and the organization on the sustainability have already been discussed in 8.5.3, as were the differences between countries in 8.4.2. These weren't the only control variables however. The size of organization, the type of the innovation and the level of government were also investigated. All results with regards to these three variables were found to be non-significant.

The final variable at the national level is the national GDP. This variable was found to be significant, but the effect size was approximate to zero. Arundel et al. (2015) found that "*the cultural or the income differences between countries could partly explain differences in how agencies innovate.*" (p. 1277, italics added) The results here point towards the former, considering the impact the Hofstede score seems to have.

At the organizational level, the size of organizations has been found to be linked to innovations for over a number of decades, although it's been largely inconclusive (Damanpour, 1992; Ettlé & Rubenstein, 1987). Mote et al. (2015) found that greater size can be a negative force on innovation, even though it has been assumed that larger organizations are better at incremental innovations, and at continuous improvement (Rogers, 1983). It could thus be hypothesized that larger organizations would be in a better position to maintain their innovations than smaller ones, which have fewer resources available for maintenance and continuous improvement. The results in this dissertation, however, point to the idea that the size of organizations does not seem to have an impact on the sustainability of innovations. Furthermore, specialization of the organization to which the innovations belong does not seem to impact the sustainability of innovations. Arundel et al. (2015) did find that general administrations, as opposed to specialized innovations, are more prone to bottom-up innovations. Finally, the last organizational variable was governmental level. There does not seem to be a connection between the sustainability of innovations, and whether it was located at the municipal, regional/provincial or national/federal level.

At the level of the innovation, two control variables were included: the policy area of the innovation, and the innovation type. Both were found to be insignificantly connected to the

sustainability of the innovation. These results with regards to the innovation's respective policy area shows, like the policy area of the organization it belongs to, that cross-over between policy areas should be possible from the perspective of sustainability. At the same time, the lessons to be learned from the results presented in this dissertation could be used for different types of innovations.

8.6 Future Research

The research conducted in this dissertation has led to many lessons learned. In retrospect we could have made different choices in our research design, but they will have to function as warnings or advice for future research. At the same time, as with any research endeavour, the results created more questions than it provided answers. After having discussed the methodological lessons learned, we will therefore discuss the vistas for future research.

Many question arose from the results and analysis of this dissertation. One of which is the difference in innovation cultures. Although a lot of research has been conducted on the innovation cultures of organizations and innovative characteristics of individuals, far less knowledge is available on the differences and particularities of the innovative cultures of policy fields, levels of government and countries as a whole. This is an important and interesting vista for further research, and could potentially be influential in how C_{FAL} differs per category, and thus how termination of innovations operates. The possibilities for innovations, or the way in which innovation is achieved might differ greatly between the different categories of these typologies. At least, one would assume based on common sense. Future research should find out if this is indeed the case. As said in the quantitative chapter, Hofstede's research is one example, but it has received a tremendous amount of critique, and is used in this dissertation in a very pragmatic sense. Taking into account the specific traditions, organizational and historic context of levels of government, policy areas and countries (think of types of welfare states, policy and administrative regimes) should be done in a much different fashion than the purely individualistic way in which Hofstede and his following has conducted their research.

Secondly, a few new research venues have been talked about above: finding non-nominated cases in order to further enlarge the group of terminated cases, and looking for more mixed method and longitudinal research designs.

Thirdly, the political side of innovation should be investigated further, as this

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investigation showed it had a significant impact on the termination of innovations. Innovation is a political word, many politicians flaunt it around in order to attract voters and seem modern, and forward-thinking. Considering the importance that is thus attached to innovations and new initiatives by politicians trying to make their mark, these innovations might get a very partisan label. With a new incoming political figure, this may lead to its degradation or termination, purely based on this label. At the same time, it can also give the designers and innovation champions a sense of pride when the innovation turns out to be (initially) successful, or get an award. This might provide individuals, bureaus, departments or organizations with an incentive to hold on to the innovation in irrational ways. This, combined with the influence of public choice theory, could be yet another interesting route for further research.

Finally, we already mentioned the possible importance of innovativeness and budget of a particular innovation. This point is connected to the use of historical institutionalism and path dependency, as discussed in paragraph 3.2.3. The more innovative an innovation, the more ground breaking its consequences, the more difficult it might be to terminate it. The opposite goes for budget: the lower the budget, the less inclination to be very careful and critical of its functioning. These are again, interesting point for future research, so academics know what to do next. But what about practitioners, what can they do with these results? We will discuss this next.

8.7 Implications for Practice

Organizations who implement innovations know that their job isn't done at that point. Although researchers seem to stop in large number after that instance, the innovation, its development, successes and failures continue. One of the biggest implications for practitioners from this dissertation that in this further development of an innovation, instruments aren't enough. Having evaluations based on customer surveys, input by employees or measurement systems can help, and is a prerequisite for continuous improvement. What is more important for the upkeep of the innovation, however, is how this information is then used. In this sense, if an organization is keen on creating sustainable innovations, it ought to invest more in the creation of an open, transparent and creative culture. The items which fall under the culture of FAL can all be points of attention for the

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management and leadership of innovative organizations. Hence, in order to create more sustainable innovations, public sector managers might have to focus on

- ...generating an environment in which people are **comfortable talking about problems**, disagreements and differences in opinion.
- ...encouraging **staff members to express their concerns**, ideas and suggestions about the functioning of the organisation.
- ...creating a **culture of adversarial debate** and openness for constructive criticism.
- ...making sure that **if a creative attempt to solve a problem fails, the responsible staff members will not be penalized**.
- ...emboldening **productive conflict and debate** during internal discussions.
- ...**encouraging experimentation** and alternative ways of getting work done.
- ...ensuring that **feedback information from staff members has great impact** on the strategic decisions made by the organisation.
- ...building a **culture without a tendency to avoid risks**.
- ...forming an organization which is very **transparent about its results** towards external stakeholders
- ...and one in which **people feel responsible** for the performance of the organization.

Together these issues constitute a culture in which the instruments of FAL can flourish, and reach their optimal effect.

Finally, in the introduction the ambidexterity of governments to produce both innovations and stability was briefly discussed. Through the results of this dissertation, governments might have tool in hand to deal with this complex task. Trust between citizens and governments keeps deteriorating, and a government who keeps changing its course, only to change it again and again a few years later, doesn't create more confidence among the people. As Pollitt and Bouckaert phrased it: "*there is no fundamental or universal contradiction* between innovation on the one hand and stability and continuity on the other." (2011, p. 195, italics in original) When innovations are introduced, and are kept stable, with minute continuous improvements, this might re-establish some trust that was lost. A culture of FAL, in this way, can help the government to be what to people want it to be: both stable and innovation, agile and steady. Dealing with this ambidexterity could be a small

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but relevant part of creating a more responsive governance to the people, improving the functioning of government, and healing some of its ailments. It is a thrill and an honour that the results presented here might play a tiny role in this undertaking.

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Samenvatting in het Nederlands

Binnen de literatuur rondom innovatie in de publieke sector ontbreekt het aan een focus op de ontwikkeling van innovaties ná diens implementatie. Hoeveel innovaties blijven bestaan? Hoe lang blijven ze bestaan? Het vergroten van deze duurzaamheid kan de inherente disruptieve gevolgen die samengaan met innovaties verzachten. Dit proefschrift focust daarom op de temporale duurzaamheid van innovaties in de publieke sector.

Aangezien we nog heel weinig weten over hoe duurzaam innovaties zijn, en welke factoren dit stimuleren, was er nood aan een nieuw theoretisch model. Op basis van een literatuurstudie binnen gerelateerde onderzoekdomeinen kwamen er drie factoren naar boven die potentieel een impact zouden kunnen hebben: terugkoppeling (feedback), verantwoording (accountability), en leren. Dit 'FAL-model' voorziet dat organisaties terugkoppeling over het functioneren van de innovatie opzoeken, onder druk van verantwoordingsverplichtingen, en deze informatie via leerprocessen kunnen herwerken tot actie om de innovatie aan te passen. Wanneer deze drie stappen, die met elkaar overlappen en alle drie op de andere twee inspelen, continu worden toegepast, zou de desbetreffende innovatie in duurzaamheid moeten kunnen toenemen. De basisdoelstelling van dit proefschrift is daarom het meten van de mate waarin FAL is geïntegreerd in een organisatie, de duurzaamheid van innovaties binnen diezelfde organisatie, en het onderzoeken van een mogelijke link tussen die beiden.

Het onderzoek vond plaats binnen LIPSE, een FP-7 project gefinancierd door de Europese Commissie. In die context werd gekeken naar innovaties in België, Frankrijk, Nederland, Roemenië, Slowakije, en het Verenigd Koninkrijk. De eerste helft van het onderzoek was kwantitatief van karakter, en gebruikte een survey instrument om FAL en duurzaamheid te meten. Het tweede deel had een kwalitatief karakter, en onderzocht drie cases van dichtbij naar de processen die leiden tot de afschaffing van de desbetreffende innovatie.

Innovaties werden geselecteerd door te focussen op cases die genomineerd waren voor een innovatie award, of deze award gewonnen hadden. 845 cases werden geselecteerd, waarvan er 220 reageerden op het survey. 20 van deze innovaties bestonden niet langer, en werden daardoor ingeschaald als niet duurzaam. Een factor analyse wees uit dat het survey niet de FAL-dimensies had gemeten die gehoopt waren. In tegenstelling, het survey bracht

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twee nieuwe varianten van FAL naar voren: een cultuur rondom FAL, en instrumenten van FAL. Deze werden als volgt gedefinieerd:

Instrumenten van FAL: Structurele middelen, in de vorm van procedures, systemen en discussiefora, welke als doel hebben om de prestaties van innovaties te meten, analyseren en bediscussiëren.

Cultuur van FAL: Een open werk omgeving in welke de analyse, beoordeling en discussie van de innovatie's prestatie data plaats kan vinden, met ruimte voor hoor en wederhoor, impact op besluitvorming, en verdere experimentatie, met de potentie voor correctieve maatregelen, in alle lagen van de organisatie.

Een logistische regressie liet een viertal belangrijke conclusies zien:

- Organisaties met een hogere FAL cultuur score hebben duurzamere innovaties.
- Oudere innovaties zijn minder duurzaam.
- Organisaties in landen met een hoge Hofstede score hebben duurzamere innovaties.
- Instrumenten van FAL lijkt niet gelinkt te zijn aan duurzaamheid.

De Hofstede score werd op een zeer pragmatische manier gebruikt. Daarom worden hier ook geen conclusies aan verbonden, behalve dan dat het zeer interessant is om deze verder te onderzoeken.

Met deze gegevens werd vervolgens een start gemaakt aan het kwalitatieve onderdeel van het proefschrift: een drietal case studies naar twee niet duurzame innovaties, en één duurzame innovatie. Dit deel van het onderzoek leverde drie gedetailleerde beschrijvingen op van de levens van drie innovaties; van hun geboorte tot hun sterfte. Hierdoor werd beter zichtbaar hoe de causaliteit omtrent cultuur en instrumenten van FAL precies werkt. Twee extra factoren kwamen hierbij naar voren als zeer belangrijk. 1) Er dient een consensus te bestaan over de mate waarin de innovatie een gepaste oplossing is voor het probleem dat het oplost, en over de manier waarop de innovatie wordt uitgevoerd. 2) Er dient een voorvechter in de organisatie aanwezig te zijn om het nut van de innovatie te bepleiten ten overstaan van critici.

Om deze resultaten te structureren werd gebruik gemaakt van de INUS-conditie. Dit

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is een middel om op een gestructureerde wijze te spreken over hoe *noodzakelijk* een factor is om tot een uitkomst te komen, en of deze factor (alleen of in combinatie met andere factoren) *voldoende* is om tot een uitkomst te komen. Met het gebruik van deze methode kon de volgende voorzichtige conclusies getrokken worden:

- Instrumenten van FAL zijn niet voldoende in zichzelf om tot duurzaamheid te leiden.
- Er kunnen geen conclusies getrokken worden of de noodzakelijkheid van Instrumenten van FAL voor de duurzaamheid van innovaties.
- Een Cultuur van FAL lijkt noodzakelijk voor duurzame innovaties.
- Er kunnen geen uitspraken gedaan worden over de mate waarin een cultuur van FAL in en op zichzelf voldoende is voor het bereiken van duurzaamheid.
- Een consensus over de gepastheid van de innovatie lijkt noodzakelijk om duurzaamheid te bereiken.
- Er kunnen geen uitspraken gedaan worden over de mate waarin de gepastheid van de innovatie in en op zichzelf voldoende is voor het bereiken van duurzaamheid.
- De aanwezigheid van een voorvechter voor de innovatie lijkt noodzakelijk voor de duurzaamheid van een innovatie.
- Er kunnen geen uitspraken gedaan worden over de mate waarin de aanwezigheid van een voorvechter voor de innovatie in en op zichzelf voldoende is voor het bereiken van duurzaamheid.

Dit proefschrift betreft een exploratief onderzoek. De conclusies die hier uit getrokken worden mogen dan ook niet te straf geformuleerd worden. Echter, zeker in het licht van de resultaten van het kwantitatieve onderzoek, lijkt er een sterke case gemaakt te worden voor het belang van een cultuur van FAL om innovaties duurzaam te maken.

Verder onderzoek zou moeten proberen om uit te vinden of er zoiets bestaat als een nationale innovatie cultuur binnen de publieke sector, of de innovativiteit en omvang van een innovatie invloed heeft op beslissingen, en zou moeten focussen op longitudinaal onderzoek.

Voor ambtenaren en beleidsmakers kan het, op basis van de resultaten van dit proefschrift, van belang zijn om te focussen op het creëren van een cultuur rondom FAL. Dit zou de duurzaamheid en continuïteit van innovaties sterk ten goede kunnen komen.

Summary in English

Within public sector innovation literature, the focus is heavily tilted towards the development of innovations after their implementation. How many of these innovation remain after a few years? How long do they last? Increasing the temporal sustainability of innovations can offset some of the inherent disruptions that coincide with innovations. This dissertation therefor focuses on what causes the sustainability of public sector innovations.

Considering that very little is known about the sustainability of public sector innovations, there was a need to create and test a novel theoretical model. On the basis of a literature study within related research domains, three factors came to the fore that could potentially impact the sustainability of innovations: feedback, accountability, and learning. This FAL-model entails that organisations will look for feedback information on the performance of the innovations, under the pressure of accountability mechanisms, which will lead to action through learning processes to improve and adapt the innovations. When these three factors, which overlap and individually play into the other two, are constantly present, this could improve the sustainability of the respective innovation. The basis of this dissertation this therefore to measure the embeddedness of FAL within organisations, how sustainable their innovations have proven to be, and to investigate the relation between these two facts.

The research took place within LIPSE, an FP-7 project financed by the European Commission. In that context the focus was put on innovations from Belgium, France, the Netherlands, Romania, Slovakia, and the UK. The first half of the research had a quantitative nature, and use a survey instrument to measure FAL and sustainability. The second part had a qualitative nature, and investigated three cases up close to see how the processes leading up to the innovation's termination came about.

Innovations were selected by focusing on nominated and winners of innovation awards. 845 cases were selected, of which 220 responded to the survey. 20 of these innovation no longer existed, and were deemed to be non-sustainable. A factor analysis showed that the survey did not measure FAL as was hoped and intended. Instead, it brought forth two new factors: a culture of FAL and instruments of FAL. These were defined as follows:

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Instruments of FAL: *Structural arrangements, in the form of tools, procedures, systems or discussion fora, which measure, analyse and/or discuss the performance of innovations.*

Culture of FAL: *An open work environment in which the analysis, assessment and discussion of innovation's performance data can take place, with room for adversarial, impactful debate, and further experimentation, with the potential for corrective measures, at all layers of the organization.*

A logistic regression showed four important conclusions:

- Organisations with a higher FAL culture score have more sustainable innovations.
- Older innovations are less sustainable.
- Organisations in countries with a higher Hofstede score have more sustainable innovations.
- Instruments of FAL do not seem to be linked to innovation sustainability.

The Hofstede score was used in a very pragmatic way. This is why no conclusions are drawn from these findings, except that it warrants further research in the future.

With these findings the qualitative part of this dissertation could commence: three case studies into two non-sustainable innovations, and one sustainable innovation. This part of the research resulted in three in-depth and detailed accounts of the lives of innovations; from the cradle to the grave. This visualized the causality surrounding FAL culture and instruments. Two additional factors came to the fore through these analyses. 1) There needs to be a consensus about whether the innovation is an appropriate response to a problem, and whether it is carried out appropriately. 2) There needs to be an innovation champion to defend its case when it is under attack by critics.

To further structure these findings the INUS-condition was used. This is a tool to make more sound and structured claims about the *necessity* and *sufficiency* of individual factors (or in combination with each other) in causing a certain phenomenon. Using this method, the following cautious conclusions could be drawn:

- FAL Instruments is not sufficient on its own to establish sustainability.
- No conclusion can be drawn on the individual necessity of FAL Instruments to cause sustainability.

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- FAL Culture seems necessary to establish sustainability
- No conclusion can be drawn on FAL Culture's individual sufficiency.
- A consensus on the appropriateness of the innovation seems necessary to establish sustainability.
- No conclusion can be drawn on the individual sufficiency of a consensus on the appropriateness to establish sustainability.
- The presence of an innovation champion seems necessary to establish sustainability.
- No conclusion can be drawn on the individual sufficiency of innovation champions to create sustainable innovations.

This dissertation constitutes an exploratory investigation. The conclusion formed here can therefore not be stated too firmly. However, especially in the light of the quantitative results, there does seem to be a strong case for the importance of FAL Cultures in order to create more sustainable innovations.

Further research ought to try and investigate whether there is such a thing as a national public sector innovation culture, whether the innovativeness and budget/size of the innovation impact the decision making around it, and should focus more on longitudinal research.

Finally, for practitioners, on the basis of the results presented in this dissertation, it could be worthwhile to focus on creating a FAL Culture in their organisations. This could significantly improve the sustainability and continuity of the innovations.

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Annexes

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Annex I – Survey

Part 1

This part of the survey deals with the project or the practice which was recognised as a ‘good practice’, and to which we referred in the introduction letter of this survey. We are curious about the subsequent life course of the project / the practice after its recognition as a ‘good practice’.

- 1) **What is the current status of the project or the practice in your organisation? Please select one option.**
In the follow-up questions you will have the opportunity to further explain and refine your answer.

The project/practice is still operational in its original form.	→ go to question 6
The project/practice is still operational, but has undergone some changes.	→ go to question 2
The project/practice is not operational anymore. The project/practice was actively stopped. An explicit decision was made to terminate it.	→ go to question 4
The project/practice is not operational anymore. The project/practice was not actively terminated however. It just withered away or disappeared.	→ go to question 5
I don't know	→ go to question 6

- 2) **Please describe how the project or the practice changed or evolved over the years, after its recognition as a good practice** (For example: expansion of the scope of application, reduction of the scope of application, refinement of the techniques, transition from ‘project status’ to ‘ongoing operations’, ...):

- 3) **Please describe the major reasons for these changes or evolutions.**

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- 4) **Was the decision to terminate the project/practice followed by a decision to replace it with something new? If desired, you can explain your answer in the corresponding text box.**

	No	
	Yes, it	
	I don't know	

- 5) **Please describe why the project or the practice disappeared or why it was terminated** (For example: the practice received a negative evaluation, the project lost its relevance, the driving force behind the project left the organisation, a shift in political priorities occurred, the need which was met by the practice disappeared or decreased, ...):

--

- 6) **Are you aware of other organizations that have adopted this good practice or that have, at least, been inspired by it? Please select one option.**

	No
	Yes, the project/practice was an inspiration to one or a few other organisations.
	Yes, the project/practice was an inspiration to a considerable number of other organisations.
	I don't know

- 7) **Which efforts were made to promote the good practice. Please select all that apply.**

	People of my organisation gave presentations and lectures
	My organisation received visits from interested organisations
	My organisation made documents available on the internet
	My organisation took part in learning platforms and exchange conferences
	My organisation provided tailored support and advice to interested organisations
	The project/practice was the object of a scientific study
	Other:...
	None
	I don't know

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Part 2

In this part of the survey, we want to ask some general questions about your organisation.

8) How many people work in your organisation, approximately? Please select one option.

	< 25 FTEs (full-time equivalents)
	25-100 FTEs
	100-250 FTEs
	250-500 FTEs
	> 500 FTEs
	I don't know

9) How old is your organization in its current form¹⁷, approximately? Please select one option.

	< 10 years
	10-25 years
	25-50 years
	> 50 years
	I don't know

¹⁷ What do we mean with 'current form'? Some examples:

- A merger with another organization implicates a new form;
- Your organization used to be a department within a department or ministry, but has been autonomized and cut off from the former 'principal'. This movement implicates a new form.;
- The change from an internally autonomized agency to an externally autonomized agency implies a new constellation.;
- A new name does not necessarily constitute a new form.

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10) Please respond to each item in terms of how descriptive it is of your organisation.

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	I don't know
My organization is characterized by a culture of adversarial debate and openness for constructive criticism.	1	2	3	4	5	o
Within my organisation, people are usually comfortable talking about problems, disagreements and differences in opinion.	1	2	3	4	5	o
My organisation encourages productive conflict and debate during internal discussions.	1	2	3	4	5	o
Within my organisation, well-established perspectives and assumptions are never challenged or questioned.	1	2	3	4	5	o

11) Please respond to each item in terms of how descriptive it is of your organisation.

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	I don't know
My organization is characterized by a tendency to avoid risks.	1	2	3	4	5	o
My organization encourages experimentation and alternative ways of getting work done.	1	2	3	4	5	o
If a creative attempt to solve a problem fails, the responsible staff members are penalized.	1	2	3	4	5	o
My organisation has a formal process for conducting and evaluating experiments or new ideas.	1	2	3	4	5	o

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12) Please respond to each item in terms of how descriptive it is of your organisation.

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	I don't know
My organisation systematically keeps records and archives to document past experiences.	1	2	3	4	5	0
My organisation has formal procedures to ensure that lessons learned in the course of a project are passed along to others doing similar tasks.	1	2	3	4	5	0
In my organisation, people are too busy to invest time in the improvement of work processes.	1	2	3	4	5	0
Despite the workload, people in my organisation find time to reflect on past performances.	1	2	3	4	5	0
The staff members of my organization have rather homogeneous educational backgrounds.	1	2	3	4	5	0

13) Please respond to each item in terms of how descriptive it is of your organisation.

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	I don't know
My organisation has monitoring systems that allow it to monitor a wide spectrum of performances and to compare those performances with the stated goals and objectives.	1	2	3	4	5	0
If discrepancies between performances and goals are detected, my organisation will take action in order to reduce these discrepancies.	1	2	3	4	5	0
My organisation regularly evaluates whether or not the existing organizational goals and objectives are still appropriate.	1	2	3	4	5	0
My organisation has a quality management system that systematically strives for continuous improvements throughout the entire organisation.	1	2	3	4	5	0

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14) Please respond to each item in terms of how descriptive it is of your organisation.

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	I don't know
My organisation has access to learning platforms that allow (public) organisations to share knowledge and experiences with other (public) organisations.	1	2	3	4	5	0
My organisation shares its knowledge and experience with other (public) organisations.	1	2	3	4	5	0
My organisation learns from the experiences of other (public) organisations.	1	2	3	4	5	0

15) Please respond to each item in terms of how descriptive it is of your organisation.

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	I don't know
My organisation has an obligation to report about its performances to a higher authority.	1	2	3	4	5	0
My organisation has the opportunity to explain and justify its conduct towards this higher authority.	1	2	3	4	5	0
This higher authority has the possibility to penalize my organisation for failing to achieve stated goals or expected performance standards.	1	2	3	4	5	0
In general, the people of my organisation feel responsible for the performance of the organisation.	1	2	3	4	5	0
Towards external stakeholders, my organisation is very transparent about its results.	1	2	3	4	5	0

Part 3

This part of the survey deals with the sources of incoming information on which your organisation may or may not rely. Public sector organisations may receive feedback information about their internal operations and/or about their environment from a whole variety of sources. In this survey, we distinguish between six potential sources:

- the staff of the organisation
- the users/customers of the organisation
- ombudsman institutions
- internal audit offices
- external audit offices
- evaluations of reforms

For each of these sources, we would like to ask you some questions.

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The staff of the organisation

16) *Please respond to each item in terms of how descriptive it is of your organisation.*

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	Not applicable / I don't know
My organisation encourages staff members to express their concerns, ideas and suggestions about the functioning of the organisation.	1	2	3	4	5	0
The feedback information from staff members is discussed and assessed by our managers in regular meetings.	1	2	3	4	5	0
The feedback information from staff members has great impact on the strategic decisions made by the organisation.	1	2	3	4	5	0

The users/customers of the organisation

17) *How would you describe the complaint management system of your organisation? The response options are explained in footnote. Please select one option.*

Non-existent
Premature ¹⁸
Moderately mature ¹⁹
Mature ²⁰
Not applicable
I don't know

¹⁸ In an premature complaint management system:

- complaints are dealt with on an individual and ad hoc basis
- complaints are not systematically mapped, nor analyzed
- there is no reporting about the numbers or the types of complaints to the top management

¹⁹ In a moderately mature complaint management system:

- complaints are dealt with in a uniform and systematic way by a unit created for that purpose
- complaints are not systematically mapped, nor analyzed
- there is no reporting about the numbers or the types of complaints to the top management

²⁰ In a mature complaint management:

- complaints are dealt with in a uniform and systematic way by a unit created for that purpose
- complaints are systematically mapped and analyzed. In this way, structural flaws and weaknesses in the functioning of the organisation may be exposed.
- there is reporting about the numbers or the types of complaints to the top management

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18) **How often does your organisation organize a customer satisfaction survey? Please select one option.**

Never
Less than once every five years
At least once every five years
At least once every two years
At least once a year
Not applicable
I don't know

19) **Please respond to each item in terms of how descriptive it is of your organisation.**

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	Not applicable / I don't know
The feedback information from customers is discussed and assessed by our managers in regular meetings.	1	2	3	4	5	0
The feedback information from customers has great impact on the strategic decisions made by the organisation.	1	2	3	4	5	0

Ombudsman institutions

Complaints from customers may be dealt with by an internal complaints management office. However, when the customer is not satisfied by the solution offered by the internal complaints management office, he or she may turn towards an ombudsman institution. This is an institution external to the organisation. It is usually created by a higher authority to exercise some kind of oversight over a public sector organisation.

20) **Does your organisation have an ombudsman²¹ institution assigned to it?**

No	→ go to question 22
Yes	→ go to question 21
I don't know	→ go to question 22

²¹ Complaints of customers are dealt with by internal complaint mechanisms and/or customer services. When the complainant is not satisfied with the solution provided by the customer services or complaint mechanism, he or she can take the case to the Ombudsman. This is an institution who is, in principle, situated outside of the organization in question. An ombudsman is usually formed by a higher authority to supervise the conduct of public organisations.

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21) Please respond to each item in terms of how descriptive it is of your organisation.

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	Not applicable / I don't know
My organisation systematically screens and assesses the feedback information obtained from this ombudsman institution.	1	2	3	4	5	0
The reports and recommendations from this ombudsman institution have great impact on the strategic decisions made by the organisation.	1	2	3	4	5	0

Internal audit office²²

22) Does your organisation have an internal audit office?

No	→ go to question 25
Yes	→ go to question 23
I don't know	→ go to question 25

23) Audit offices may devote their attention to different dimensions of the conduct of an organisation: compliance with laws and regulations; accuracy and reliability of financial statements; performances and proper management. For each dimension, please indicate the extent to which it receives attention from your internal audit office.

²² Auditing refers to the scrutinizing and judging the activities, processes and/or results of an organisation. The goal of auditing is to create more certainty for the principal or third parties (e.g. the public) about the way the organization is functioning and tries to reach its targets. Besides that, the audit office can have an advisory role, by proposing recommendations and improvements. We separate two particular kinds of audit offices: internal audit offices and external audit offices.

- A public internal audit office is a unit within the organization it scrutinizes. She reports directly to the civil service or political top of the organization.

- A public external audit office is a unit outside of the organization under scrutiny. She usually reports to the legislative power.

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	Receives no attention	Receives a little attention	Receives moderate attention	Receives moderate to much attention	Receives very much attention	Not applicable / I don't know
Compliance with laws and regulations	1	2	3	4	5	0
Accuracy and reliability of financial statements	1	2	3	4	5	0
Performances and proper management	1	2	3	4	5	0

24) *Please respond to each item in terms of how descriptive it is of your organisation.*

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	Not applicable / I don't know
My organisation systematically screens and assesses the feedback information obtained from its internal audit office.	1	2	3	4	5	0
The audits (and recommendations) from this internal audit office have great impact on the strategic decisions made by the organisation.	1	2	3	4	5	0

External audit office²³

25) *Does your organisation have an external audit office assigned to it?*

No	→ go to question 28
Yes	→ go to question 26
I don't know	→ go to question 28

²³ Auditing refers to the scrutinizing and judging the activities, processes and/or results of an organisation. The goal of auditing is to create more certainty for the principal or third parties (e.g. the public) about the way the organization is functioning and tries to reach its targets. Besides that, the audit office can have an advisory role, by proposing recommendations and improvements. We separate two particular kinds of audit offices: internal audit offices and external audit offices.

- A public internal audit office is a unit within the organization it scrutinizes. She reports directly to the civil service or political top of the organization.

- A public external audit office is a unit outside of the organization under scrutiny. She usually reports to the legislative power.

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26) *Audit offices may devote their attention to different dimensions of the conduct of an organisation: compliance with laws and regulations; accuracy and reliability of financial statements; performances and proper management. For each dimension, please indicate the extent to which it receives attention from your external audit office.*

	Receives no attention	Receives a little attention	Receives moderate attention	Receives moderate to much attention	Receives very much attention	Not applicable / I don't know
Compliance with laws and regulations	1	2	3	4	5	0
Accuracy and reliability of financial statements	1	2	3	4	5	0
Performances and proper management	1	2	3	4	5	0

27) *Please respond to each item in terms of how descriptive it is of your organisation.*

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	Not applicable / I don't know
My organisation systematically screens and assesses the feedback information obtained from its external audit office.	1	2	3	4	5	0
The audits (and recommendations) from this external audit office have great impact on the strategic decisions made by the organisation.	1	2	3	4	5	0

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Evaluations of reforms

28) *Please respond to each item in terms of how descriptive it is of your organisation.*

	Highly inaccurate	Inaccurate	Neither accurate nor inaccurate	Accurate	Highly accurate	Not applicable / I don't know
The reforms in my organisation are periodically subjected to evaluations.	1	2	3	4	5	0
My organisation systematically screens and assesses the feedback information obtained from these evaluations.	1	2	3	4	5	0
These evaluations (and their recommendations) have great impact on the strategic decisions made by the organisation.	1	2	3	4	5	0

You reached the end of this survey.

Thank you very much for your cooperation.

If you have any comments regarding this survey, you may use the space below to express them.

Annex II – Survey Questions per Subtheme

Questions marked with an asterisk signify reversed scored questions, meaning that a higher score implies a negative impact on FAL. These results were converted before calculating the final score.

Table A: Survey items measuring Learning

LEARNING	Survey item		Type of survey item
Psychological safety & Transparency & Culture of adversarial debate and openness for alternative perspectives	Q10.a	My organization is characterized by a culture of adversarial debate and openness for constructive criticism.	Five-point scale
	Q10.b	Within my organisation, people are usually comfortable talking about problems, disagreements and differences in opinion.	Five-point scale
	Q10.c	My organisation encourages productive conflict and debate during internal discussions.	Five-point scale
	Q10.d	Within my organisation, well-established perspectives and assumptions are never challenged or questioned.	Five-point scale *
Tolerance for errors, risk-taking and experimentation	Q11.a	My organization is characterized by a tendency to avoid risks.	Five-point scale *
	Q11.b	My organization encourages experimentation and alternative ways of getting work done.	Five-point scale
	Q11.c	If a creative attempt to solve a problem fails, the responsible staff members are penalized.	Five-point scale *
	Q11.d	My organisation has a formal process for conducting and evaluating experiments or new ideas.	Five-point scale
Time for reflection – slack learning	Q12.c	In my organisation, people are too busy to invest time in the improvement of work processes.	Five-point scale *
	Q12.d	Despite the workload, people in my organisation find time to reflect on past performances.	Five-point scale
Diversity of staff	Q12.e	The staff members of my organization have rather homogeneous educational backgrounds.	Five-point scale *
Systematic knowledge management	Q12.a	My organisation systematically keeps records and archives to document past experiences.	Five-point scale
	Q12.b	My organisation has formal procedures to ensure that lessons learned in the course of a project are passed along to others doing similar tasks.	Five-point scale
	Q14.a	My organisation has access to learning platforms that allow (public) organisations to share knowledge and experiences with other (public) organisations.	Five-point scale
	Q14.b	My organisation shares its knowledge and experience with other (public) organisations.	Five-point scale
	Q14.c	My organisation learns from the experiences of other (public) organisations.	Five-point scale
Analysis and interpretation of feedback information to identify and solve problems	Q13.b	If discrepancies between performances and goals are detected, my organisation will take action in order to reduce these discrepancies.	Five-point scale
Impact of received feedback information	Q16.c	The feedback information from staff members has great impact on the strategic decisions made by the organisation.	Five-point scale
	Q19.b	The feedback information from customers has great impact on the strategic decisions made by the organisation.	Five-point scale

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	Q21.b	The reports and recommendations from this ombudsman institution have great impact on the strategic decisions made by the organisation.	Five-point scale
	Q24.b	The audits (and recommendations) from this internal audit office have great impact on the strategic decisions made by the organisation	Five-point scale
	Q27.b	The audits (and recommendations) from this external audit office have great impact on the strategic decisions made by the organisation.	Five-point scale
	Q28.c	These evaluations (and their recommendations) have great impact on the strategic decisions made by the organisation.	Five-point scale

Table B: Survey items measuring Feedback

FEEDBACK		Survey item		Type of survey item
Active search for and processing of feedback information	From staff	Q16.a	My organisation encourages staff members to express their concerns, ideas and suggestions about the functioning of the organisation.	Five-point scale
		Q16.b	The feedback information from staff members is discussed and assessed by our managers in regular meetings.	Five-point scale
	From customers	Q17	How would you describe the complaint management system of your organisation?	Multiple choice
		Q18	How often does your organisation organize a customer satisfaction survey?	Multiple choice
		Q19.a	The feedback information from customers is discussed and assessed by our managers in regular meetings.	Five-point scale
	From ombudsmen	Q21.a	My organisation systematically screens and assesses the feedback information obtained from this ombudsman institution.	Five-point scale
	From internal audit	Q22	Does your organisation have an internal audit office?	Yes / No
		Q23.a	Degree of attention of internal audit office for compliance with laws and regulations	Five-point scale
		Q23.b	Degree of attention of internal audit office for accuracy and reliability of financial statements	Five-point scale
		Q23.c	Degree of attention of internal audit office for performances and proper management	Five-point scale
		Q24.a	My organisation systematically screens and assesses the feedback information obtained from its internal audit office.	Five-point scale
	From external audit	Q27.a	My organisation systematically screens and assesses the feedback information obtained from its external audit office.	Five-point scale
	From evaluation	Q28.a	The reforms in my organisation are periodically subjected to evaluations.	Five-point scale
		Q28.b	My organisation systematically screens and assesses the feedback information obtained from these evaluations.	Five-point scale
	From measurement Instruments	Q13.a	My organisation has monitoring systems that allow it to monitor a wide spectrum of performances and to compare those performances with the stated goals and objectives.	Five-point scale
Q13.c		My organisation regularly evaluates whether or not the existing organizational goals and objectives are still appropriate.	Five-point scale	
Q13.d		My organisation has a quality management system that systematically strives for continuous improvements throughout the entire organisation.	Five-point scale	

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Table C: Survey items measuring Accountability

ACCOUNTABILITY	Survey item		Type of survey item
Information and reporting	Q15.a	My organisation has an obligation to report about its performances to a higher authority.	Five-point scale
Debate, explanation and justification	Q15.b	My organisation has the opportunity to explain and justify its conduct towards this higher authority.	Five-point scale
Possibility of sanctions	Q15.c	This higher authority has the possibility to penalize my organisation for failing to achieve stated goals or expected performance standards.	Five-point scale
Responsibility for performance	Q15.d	In general, the people of my organisation feel responsible for the performance of the organisation.	Five-point scale
Transparency about performance	Q15.e	Towards external stakeholders, my organisation is very transparent about its results.	Five-point scale
Subject to ombudsman review	Q20	Does your organisation have an ombudsman institution assigned to it?	Yes / No
Subject to external audit	Q25	Does your organisation have an external audit office assigned to it?	Yes / No
Focus of external audit	Q26.a	Degree of attention for compliance with laws and regulations	Five-point scale
	Q26.b	Degree of attention for accuracy and reliability of financial statements	Five-point scale
	Q26.c	Degree of attention for performances and proper management	Five-point scale

Annex III – QCA Results

Qualitative Comparative Analysis rests on two pillars: necessity and sufficiency. In that sense it seems a logical option as a methodology in our research design, so focused on the INUS-condition. And scholars such as Mahoney et al. have drawn comparisons between the two (2009, p. 118). In this annex we display the results of the QCA analysis we carried out for the quantitative results of this research, both as fuzzy and as crisp datasets²⁴. After a short introduction of the method, we will describe the results we found and the reasons why this eventually did not turn out to be a suitable venue for this dissertation.

1: Introduction

“QCA can be described by two main principles: complex causality as an underlying assumption, and the combination of detailed within-case analyses with formalized cross-case comparisons as the *modus operandi*.” (Legewie, 2013, p. 3, italics in original)

This view of QCA as a method including within-case analysis represents the earlier day version of the method (Ragin, 2008; Grofman & Schneider, 2009). Recently QCA is more often used as “an alternative for regression-based methods.” (Glaesser, 2008, p. 197) With 244 cases it is not possible for us to determine the extent in which FAL or C_{FAL} is present in each case with in-depth knowledge. Hence we adopt the view of the later generation of QCA scholars.

QCA looks at complex causality where multiple causal conditions in specific combinations lead to the occurrence of a phenomenon (Molenveld, 2016; Vis, 2012). It does so in terms of set-theoretic terms. Imagine we have a causal condition believed to cause and a specific outcome. Cases are then classified on their membership of these categories. The possible ‘paths’ then look as follows, with 1 indicating that the condition or outcome was indeed observed in the case:

	<i>Causal condition</i>	<i>Outcome</i>
<i>Path 1</i>	1	1
<i>Path 2</i>	0	1
<i>Path 3</i>	1	0
<i>Path 4</i>	0	0

²⁴ The author wishes to extend his gratitude to Astrid Molenveld for her help and teachings in general, and with regards to this part of the research in particular.

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If all cases can be grouped on path 1 and 4 this means that condition 1 is both necessary and sufficient. Where condition 1 is present, the outcome is observed. If it is not present, the outcome is not observed. If, however, if there are also cases where condition 1 is not observed, but the outcome is still present (path 2), this means that condition 1 is perhaps sufficient to explain the outcome, but not necessary. Likewise, if there are cases in both path 1 and path 3, this means that condition 1 might be necessary, but not sufficient to explain 1.

Usually, however, things aren't as clear cut. Near sufficiency and near necessity are usually closer to reality than complete necessity and sufficiency. For example, near sufficiency occurs when, let's say, 80% of the cases with the causal condition present, the outcome is also observed. Glaesser (2008) depicts this as follows, with 'O' being the outcome and 'A' the causal condition:

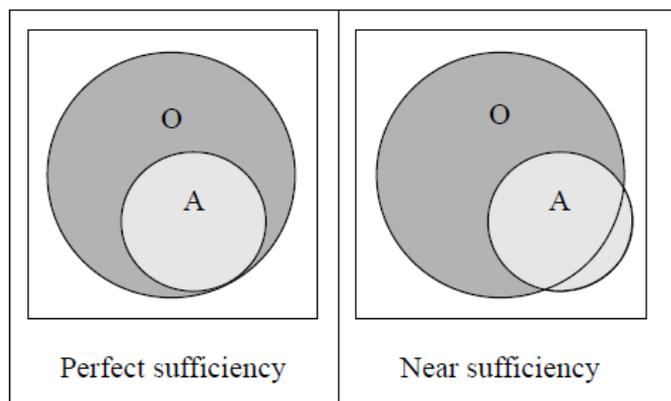


Figure A: Venn diagram of sufficiency (Glaesser, 2008, p. 198)

Figure A shows that in the case of both sufficiency and near sufficiency, there are cases without the causal condition (A) which can cause the outcome to occur. Hence, the condition is not necessary, but it is sufficient. In the case of near sufficiency there are also cases which have the causal condition present, but lay out-side the circle O, and hence do not have the outcome present.

In the case of depicting near necessity, then, the two letters are switched around:

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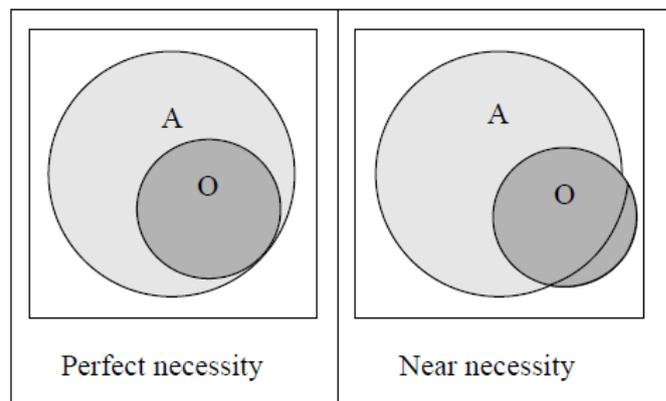


Figure B: Ven diagram of necessity (Glaesser, 2008, p. 199)

On the left side, the condition A is always necessary for O to occur. On the right side, this is the case most of the times, although there are some cases where the outcome is present without the presence of condition A. If the two circles would overlap completely and perfectly, there would be perfect necessity and sufficiency. Since all cases with A are followed by the outcome O, and all cases with the outcome O have the causal condition A present.

QCA provides a methodology to determine whether a specific case is a member of the set of the cases with a specific outcome, and of the set of cases with a specific causal condition. Whether membership is always so dichotomous differs per topic and concept. One of the prime examples of dichotomies: gender, has been put into question, and even a seemingly straightforward dichotomy as day and night also has dusk and dawn as intermediaries. This is the difference between so-called crisp and fuzzy sets in QCA. Crisp sets are those where membership is either present, or not present. You either have the Belgian nationality, or you don't. In social scientific research, however, such identification are almost never so straightforward. When does an organization have a learning culture, and when doesn't it? There is definitely a grey area in such variables in social scientific research. Fuzzy data sets concern such concepts where membership is up for debate, and the lines are vague. In those sets you speak of full membership, full non-memberships, and cases which are either more in or more out of the respective set. Open source separate software was designed for both crisp (Tosmana) and fuzzy sets (fsQCA), enabling us to categorize and analyze cases using QCA. Considering that feedback, accountability, learning, culture and instruments are not clear-cut yes/no variables (or conditions, in QCA-terminology), we will carry out fuzzy set analysis.

In this software, and in the discussion of QCA results, specific notifications and symbols are used. What we would call 'independent variable' in statistical methodology, we call 'conditions' in QCA

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terminology. The 'dependent variable' becomes the outcome. Finally, a 'formula' in statistical terms would be a 'recipe' or 'path' in QCA-terms.

When there are (for example) two causal conditions (A and B), membership is noted with an upper case, and non-membership with either a lower case notation or a '~' in front of the respective condition. A combination of memberships or non-memberships is notated with an asterisk, and finally, the set union or logical OR is replaced with a '+'. The possible pathways with two conditions, A and B, are thus:

$$A*B + A*\sim B + \sim A*B + \sim A*\sim B$$

The software then investigates how many cases fit the above described options, and the attached outcomes. In the data the software provides, several important numbers are shown per possible path:

- Coverage: "The extent to which each path can explain the outcome." (Legewie, 2013, p. 20)
- Consistency score: The amount of cases with contradictory outcomes but the same (non-)membership of conditions.

The higher the scores are, the better the specified model. All scores will be between 0 and 1. This makes the scores themselves a fuzzy outcome, with the consequential discussion on what the appropriate cut-off point is for 'bad' and 'good' models. 0.75 is usually taken as a minimal score (Legewie, 2013).

2: Results

The analyses for this research have been carried out with feedback, accountability, learning and culture of FAL as conditions, and the survival or non-survival as the outcome. All four conditions are good examples of concepts which are difficult to put into crisp sets. However, we will carry out both fuzzy and crisp set analysis. We expect the limited variance on the outcome side (22 non-survivors vs. 242 survivors) to be problematic in the use of this specific method.

Using the software of fsQCA (for fuzzy data) and Tosmana (for crisp data), we analyzed the following combinations:

- FAL → 1 (Meaning cases with the FAL conditions present will see the outcome of surviving innovations)
- Culture (C) and Instruments (I) → 1 (Meaning cases with the conditions C and I present will see the outcome of surviving innovations)

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The most relevant results are reported below. For the FAL conditions, fuzzy, we tested which conditions were found to be necessary in order to get to a surviving innovations. Full membership was considered to be the case when an organization scored 0.8 on a 0-1 scale. Non-membership was attached to cases which scored between 0 and 0.6. This relatively high threshold was chosen because of the skewedness of the data. This way we carried out a more conservative analysis.

Analysis of Necessary Conditions

Outcome variable: ~survival

Conditions tested:

	Consistency	Coverage
Feedback	0.647072	0.921424
~Feedback	0.352928	0.889330
Accountability	0.735541	0.918185
~Accountability	0.264459	0.887394
Learning	0.667387	0.918879
~Learning	0.332613	0.892218

The consistency levels show that the present conditions (where F, A or L are indeed present) are more connected to survival than the absent conditions where they are not present. If consistency is below 1.0, this means that the recipe covers one or more cases that do not display the outcome; i.e., they deviate from the general pattern found in the data. The lower the consistency score, the more cases which do not fit that patterns. With 0.75 as a minimal value, we can see that this model does not fit that criterion, indicating a badly specified model.

For the C I conditions, fuzzy, we tested the same, for the same threshold for membership and non-membership: respectively 0.8 and 0.6. We found roughly similar results, with a badly specified model, considering the following consistency scores.

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Analysis of Necessary Conditions

Outcome variable: ~survival

Conditions tested:

	Consistency	Coverage
Culture	0.738604	0.922320
~Culture	0.261396	0.876321
Instruments	0.705901	0.916486
~Instruments	0.294099	0.894261

In the fuzzy set analysis we found many paths with contradictory cases in them (paths which explain both 1- and 0 -outcomes). This makes it impossible to minimalize conditions. We would need extra information in order to explain why the surviving cases are in there, despite lacking certain conditions or combinations of conditions. To do this we need more information on the cases, which is unavailable from our dataset. A crisp set analysis of CI did not lead to any paths which were without contradictions.

Although these results seem to indicate a relationship between the survival of innovations and FAL and CI as causal conditions, we do note two very important hesitations:

- The low number of variety on the causal conditions makes it difficult for QCA to minimalize paths and causal conditions. This makes it harder to find truly sufficient and necessary conditions.
- The combination of fuzzy based conditions with a crisp outcome is questionable from a methodological standpoint.

These two reasons make us to conclude to disregard these outcomes. We're not saying they are completely worthless (they might be the basis for further research), but they can't for a basis for any conclusions in this research.

3: References

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Annex IV – Mean Scores and Standard Deviations FAL

	F	A	L	FAL
WHOLE SAMPLE	.63 (.17)	.70 (.14)	.65 (.11)	.65 (.12)
COUNTRY				
BELGIUM (N=72)	.69 (.15)	.76 (.14)	.66 (.10)	.69 (.11)
FRANCE (N=79)	.51 (.14)	.61 (.11)	.61 (.11)	.58 (.10)
NETHERLANDS (N=23)	.70 (.12)	.74 (.11)	.69 (.09)	.70 (.09)
ROMANIA (N=19)	.68 (.17)	.71 (.14)	.64 (.10)	.67 (.12)
SLOVAKIA (N=13)	.72 (.14)	.69 (.13)	.67 (.07)	.70 (.09)
UK (N=14)	.74 (.18)	.76 (.16)	.78 (.08)	.76 (.11)
GOVERNMENTAL LEVEL				
FEDERAL/NATIONAL (N=120)	.59 (.17)	.65 (.14)	.64 (.11)	.63 (.12)
REGIONAL/PROVINCIAL (N=43)	.68 (.15)	.77 (.14)	.67 (.10)	.69 (.11)
LOCAL (N=54)	.68 (.16)	.73 (.13)	.66 (.10)	.68 (.11)
ORGANIZATIONAL SIZE				
< 25 FTE (N=59)	.52 (.15)	.64 (.11)	.65 (.11)	.61 (.11)
25 - 100 FTE (N=36)	.64 (.16)	.70 (.15)	.64 (.10)	.65 (.11)
100 - 250 FTE (N=29)	.71 (.14)	.72 (.16)	.67 (.12)	.69 (.12)
250 - 500 FTE (N=23)	.72 (.14)	.78 (.15)	.68 (.09)	.71 (.11)
> 500 FTE (N=72)	.66 (.17)	.71 (.15)	.64 (.11)	.66 (.13)
TYPE OF INNOVATION				
SERVICE/PRODUCT (N=52)	.56 (.14)	.66 (.11)	.62 (.09)	.61 (0.1)
ADMINISTRATIVE (N=72)	.70 (.15)	.74 (.13)	.68 (.09)	.69 (.10)
TECHNOLOGICAL (N=61)	.62 (.18)	.67 (.17)	.63 (.12)	.63 (.13)
GOVERNANCE (N=33)	.65 (.19)	.72 (.17)	.69 (.12)	.68 (.14)

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POLICY AREA OF ORGANIZATION	F	A	L	FAL
AGRICULTURE (N=7)	.71 (.13)	.80 (.11)	.65 (.06)	.69 (.09)
ECONOMIC AFFAIRS (N=14)	.52 (.21)	.63 (.13)	.60 (.12)	.58 (.14)
EDUCATION (N=22)	.69 (.16)	.76 (.13)	.67 (.09)	.69 (.11)
ENVIRONMENT (N=1)	.81 (-)	.83 (-)	.76 (-)	.79 (-)
FINANCE (N=3)	.59 (.08)	.71 (.10)	.67 (.05)	.65 (.06)
FOREIGN POLICY (N=0)	- (-)	- (-)	- (-)	- (-)
GENERAL ADMINISTRATION (N=108)	.60 (.16)	.65 (.14)	.64 (.10)	.63 (.11)
JUSTICE (N=9)	.68 (.07)	.70 (.12)	.64 (.07)	.66 (.06)
PUBLIC HEALTH (N=30)	.67 (.19)	.75 (.13)	.70 (.10)	.70 (.11)
INFRASTRUCTURE (N=8)	.61 (.18)	.66 (.20)	.57 (.12)	.60 (.14)
SOCIAL POLICY (N=18)	.76 (.18)	.80 (.13)	.70 (.12)	.74 (.13)
POLICY AREA OF INNOVATION				
AGRICULTURE (N=5)	.72 (.15)	.81 (.11)	.65 (.07)	.70 (.10)
ECONOMIC AFFAIRS (N=27)	.50 (.15)	.58 (.13)	.58 (.11)	.55 (.11)
EDUCATION (N=32)	.68 (.16)	.72 (.14)	.66 (.09)	.68 (.11)
ENVIRONMENT (N=11)	.55 (.14)	.65 (.10)	.62 (.08)	.60 (.10)
FINANCE (N=3)	.72 (.20)	.82 (.20)	.72 (.07)	.73 (.13)
FOREIGN POLICY (N=3)	.58 (.17)	.63 (.12)	.67 (.04)	.63 (.08)
GENERAL ADMINISTRATION (N=58)	.63 (.15)	.68 (.14)	.65 (.10)	.65 (.11)
JUSTICE (N=11)	.68 (.08)	.68 (.17)	.66 (.08)	.67 (.07)
PUBLIC HEALTH (N=23)	.64 (.22)	.73 (.14)	.71 (.11)	.69 (.13)
INFRASTRUCTURE (N=21)	.67 (.12)	.70 (.13)	.69 (.10)	.68 (.09)
SOCIAL POLICY (N=25)	.68 (.21)	.79 (.16)	.66 (.14)	.69 (.15)

Annex V – Mean Scores and Standard Deviations

C_{FAL} and I_{FAL}

	CFAL	IFAL
WHOLE SAMPLE	.73 (.16)	.65 (.19)
COUNTRY		
BELGIUM (N=72)	.71 (.12)	.70 (.17)
FRANCE (N=79)	.71 (.15)	.53 (.18)
NETHERLANDS (N=23)	.74 (.10)	.65 (.16)
ROMANIA (N=19)	.72 (.15)	.73 (.19)
SLOVAKIA (N=13)	.77 (.14)	.81 (.15)
UK (N=14)	.86 (.08)	.76 (.16)
GOVERNMENTAL LEVEL		
FEDERAL/NATIONAL (N=120)	.72 (.14)	.61 (.21)
REGIONAL/PROVINCINAL (N=43)	.72 (.13)	.69 (.17)
LOCAL (N=54)	.72 (.13)	.69 (.17)
ORGANIZATIONAL SIZE		
< 25 FTE (N=59)	.78 (.14)	.54 (.17)
25 - 100 FTE (N=36)	.74 (.13)	.63 (.19)
100 - 250 FTE (N=29)	.73 (.13)	.69 (.21)
250 - 500 FTE (N=23)	.72 (.13)	.73 (.18)
> 500 FTE (N=72)	.68 (.13)	.70 (.18)
TYPE OF INNOVATION		
SERVICE/PRODUCT (N=52)	.73 (0.13)	.54 (0.17)
ADMINISTRATIVE (N=72)	.74 (.13)	.71 (.18)
TECHNOLOGICAL (N=61)	.69 (.15)	.64 (.19)
GOVERNANCE (N=33)	.76 (.15)	.69 (.20)

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POLICY AREA OF ORGANIZATION	CFAL	IFAL
AGRICULTURE (N=7)	.71 (.09)	.78 (.11)
ECONOMIC AFFAIRS (N=14)	.71 (.15)	.49 (.19)
EDUCATION (N=22)	.76 (.12)	.66 (.19)
ENVIRONMENT (N=1)	.83 (-)	.90 (-)
FINANCE (N=3)	.70 (.03)	.72 (.14)
FOREIGN POLICY (N=0)	- (-)	- (-)
GENERAL ADMINISTRATION (N=108)	.72 (.14)	.61 (.19)
JUSTICE (N=9)	.69 (.11)	.70 (.09)
PUBLIC HEALTH (N=30)	.77 (.10)	.72 (.17)
INFRASTRUCTURE (N=8)	.60 (.16)	.64 (.29)
SOCIAL POLICY (N=18)	.77 (.17)	.72 (.18)
POLICY AREA OF INNOVATION		
AGRICULTURE (N=5)	.72 (.11)	.76 (.13)
ECONOMIC AFFAIRS (N=27)	.70 (.16)	.48 (.19)
EDUCATION (N=32)	.74 (.12)	.68 (.17)
ENVIRONMENT (N=11)	.69 (.08)	.59 (.17)
FINANCE (N=3)	.78 (.07)	.85 (.09)
FOREIGN POLICY (N=3)	.76 (.08)	.52 (.31)
GENERAL ADMINISTRATION (N=58)	.71 (.13)	.63 (.19)
JUSTICE (N=11)	.73 (.13)	.70 (.12)
PUBLIC HEALTH (N=23)	.78 (.13)	.69 (.18)
INFRASTRUCTURE (N=21)	.76 (.15)	.72 (.17)
SOCIAL POLICY (N=25)	.71 (.17)	.67 (.22)

Annex VI – Regression Outcomes

Model 1: best model gdp

SURVIVAL	COEFFICIENT	STD. ERR.	Z	SIGN.	[95% CONF. INTERVAL]	
FAL CULTURE	5.782	2.006	2.88	0.004	1.850	9.714
FAL INSTRUMENTS	0.768	1.617	0.47	0.635	-2.401	3.936
GDP	0.000	0.000	2.95	0.003	0.000	0.00
AGE	-0.284	0.101	-2.82	0.005	-0.482	-0.086
ORGANIZATIONAL SIZE²⁵						
25 – 100 FTE	0.796	1.059	0.75	0.452	-1.280	2.872
100 – 250 FTE	0.759	1.116	0.68	0.497	-1.429	2.947
250 – 500 FTE	1.332	1.422	0.94	0.349	-1.455	4.118
> 500 FTE	0.014	0.808	0.02	0.986	-1.570	1.598
INNOVATION TYPE²⁶						
ADMINISTRATIVE	-0.336	0.821	-0.41	0.682	-1.945	1.272
TECHNOLOGICAL	-0.076	0.806	-0.09	0.925	-1.656	1.504
GOVERNANCE	0.666	1.054	0.63	0.528	-1.400	2.733
GOVERNMENTAL LEVEL²⁷						
REGIONAL / PROVINCIAL	1.040	0.887	1.17	0.241	-0.697	2.778
LOCAL	0.947	0.740	1.28	0.201	-0.504	2.397
CONSTANT	-3.696	1.743	-2.12	0.034	-7.112	-0.279

Number of observations	=	211
LR chiz (9)	=	30.43
Prob > chiz	=	0.004
Pseudo R ₂	=	0.230
Log likelihood	=	-50.927

²⁵ Reference category: < 25 FTE

²⁶ Reference category: Product / Service

²⁷ Reference category: Federal / National

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Model 2: best model country

The Netherlands (23 obs) predict success perfectly and is dropped.

	SURVIVAL	COEFFICIENT	STD. ERR.	Z	SIGN.	[95% CONF. INTERVAL]	
FAL CULTURE		5.782	2.027	2.73	0.006	1.559	9.505
FAL INSTRUMENTS		0.768	1.636	0.63	0.528	-2.175	4.237
COUNTRIES²⁸							
FRANCE		-0.144	1.018	-0.14	0.887	-2.140	1.851
THE NETHERLANDS		o (Empty)					
ROMANIA		-2.089	1.105	-1.89	0.059	-4.255	0.076
SLOVAKIA		-0.175	1.295	-0.14	0.893	-2.714	2.364
UNITED KINGDOM		-1.872	1.512	-1.24	0.216	-4.835	1.091
AGE							
		-0.245	0.121	-2.02	0.043	-0.483	-0.008
ORGANIZATIONAL SIZE²⁹							
25 - 100 FTE		0.909	1.132	0.80	0.422	-1.309	3.127
100 - 250 FTE		0.607	1.117	0.54	0.587	-1.583	2.800
250 - 500 FTE		1.151	1.409	0.82	0.414	-1.611	3.913
> 500 FTE		-0.157	0.803	-0.20	0.845	-1.732	1.418
INNOVATION TYPE³⁰							
ADMINISTRATIVE		-0.917	0.965	-0.95	0.342	-2.809	0.974
TECHNOLOGICAL		-0.168	0.829	-0.20	0.839	-1.794	1.457
GOVERNANCE		0.551	1.071	0.51	0.607	-1.549	2.650
GOVERNMENTAL LEVEL³¹							
REGIONAL / PROVINCIAL		1.048	0.884	1.19	0.236	-0.685	2.780
LOCAL		0.721	0.754	0.96	0.339	-0.758	2.200
CONSTANT							
		-0.873	1.875	-0.47	0.642	-4.547	2.801

Number of observations	=	188
LR chiz (9)	=	24.60
Prob > chiz	=	0.077
Pseudo R2	=	0.193
Log likelihood	=	-51.410

²⁸ Reference category: Belgium

²⁹ Reference category: < 25 FTE

³⁰ Reference category: Product / Service

³¹ Reference category: Federal / National

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Model 3: best model Hofstede losse dimensions

	SURVIVAL	COEFFICIENT	STD. ERR.	Z	SIGN.	[95% CONF. INTERVAL]	
FAL CULTURE		5.474	2.051	2.67	0.008	1.453	9.49
FAL INSTRUMENTS		0.535	1.687	0.32	0.751	-2.772	3.842
HOFSTED E DIMENSIONS							
POWER DISTANCE		-7.644	1267.34	-0.01	0.995	-2491.585	2476.298
UNCERTAINTY AVOIDANCE		3.475	720.926	0.00	0.996	-1409.515	1414.465
MASCULINITY / FEMININTY		-7.297	1254.221	-0.01	0.995	-2465.525	2450.93
INDIVIDUALISM / COLLECTIVISM		3.176	218.074	0.01	0.988	-424.240	430.593
AGE							
		-0.225	0.118	-1.90	0.057	-0.456	0.007
ORGANIZATIONAL SIZE³²							
25 – 100 FTE		1.021	1.113	0.92	0.359	-1.161	3.203
100 – 250 FTE		0.8275	1.142	0.72	0.469	-1.411	3.066
250 – 500 FTE		1.430	1.437	0.99	0.320	-1.387	4.247
> 500 FTE		0.023	0.839	0.03	0.978	-1.621	1.668
INNOVATION TYPE³³							
ADMINISTRATIVE		-0.723	0.931	-0.78	0.437	-2.548	1.102
TECHNOLOGICAL		-0.209	0.817	-0.26	0.798	-1.810	1.392
GOVERNANCE		0.612	1.119	0.55	0.584	-1.580	2.805
GOVERNMENTAL LEVEL³⁴							
REGIONAL / PROVINCIAL		1.204	0.892	1.35	0.177	-0.543	2.952
LOCAL		0.773	0.768	1.01	0.314	-0.732	2.279
CONSTANT		-0.689	131.838	-0.01	0.996	-259.087	257.709

Number of observations	=	211
LR chiz (9)	=	34.91
Prob > chiz	=	0.004
Pseudo R ₂	=	0.264
Log likelihood	=	-48.687

³² Reference category: < 25 FTE

³³ Reference category: Product / Service

³⁴ Reference category: Federal / National

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Model 5: policy area innovation

Finance (3 obs), Foreign Policy (3 obs), and Public Health (21 obs) predict success perfectly and are dropped.

SURVIVAL	COEFFICIENT	STD. ERR.	Z	SIGN.	[95% CONF. INTERVAL]	
FAL CULTURE	6.210	2.035	3.05	0.002	2.222	10.199
FAL INSTRUMENTS	1.561	1.655	0.94	0.346	-1.683	4.804
COMBINED HOFSTEDE	2.128	0.680	3.13	0.002	0.794	3.462
AGE	-0.300	0.103	-2.81	0.005	-0.491	-0.088
POLICY AREA						
INNOVATION³⁵						
ECONOMIC AFFAIRS	0.3845	1.488	0.26	0.796	-2.531	3.301
EDUCATION	0.724	1.340	0.54	0.589	-1.902	3.349
ENVIRONMENT	-0.420	1.500	-0.28	0.779	-3.354	2.516
FINANCE	o (Empty)					
FOREIGN POLICY	o (Empty)					
GENERAL ADMINISTRATION	1.344	1.372	0.98	0.327	-1.345	4.033
JUSTICE	-0.580	1.416	-0.41	0.682	-3.354	2.195
PUBLIC HEALTH	o (Empty)					
INFRASTRUCTURE	1.501	1.667	0.89	0.371	-1.786	4.788
SOCIAL POLICY	-3.037	1.680	1.64	0.100	-0.532	6.053
CONSTANT	-3.037	2.071	-1.47	0.143	-7.097	1.022

Number of observations = 187
 LR Chiz (9) = 34.38
 Prob > chiz = 0.000
 Pseudo R2 = 0.270
 Log likelihood = -46.406

³⁵ Reference category: Agriculture

Error! Use the Home tab to apply Kop 1 to the text that you want to appear here.

Model 6: policy area organization

Environment (1 observation) & Finance (3 observations) predict success perfectly (0 cases in one of the categories) and are dropped

SURVIVAL	COEFFICIENT	STD. ERR.	Z	SIGN.	[95% CONF. INTERVAL]	
FAL CULTURE	5.798	1.976	2.93	0.003	1.925	9.671
FAL INSTRUMENTS	1.102	1.449	0.76	0.447	-1.737	3.941
COMBINED HOFSTEDE						
AGE	-0.261	0.101	-2.58	0.101	-0.459	-0.062
POLICY AREA ORGANIZATION³⁶						
ECONOMIC AFFAIRS	0.423	1.730	0.24	0.807	-2.967	3.813
EDUCATION	0.507	1.397	0.36	0.717	-2.231	3.244
ENVIRONMENT	0 (Empty)					
FINANCE	0 (Empty)					
GENERAL ADMINISTRATION	0.426	1.239	0.34	0.731	-2.004	2.857
JUSTICE	-0.629	1.418	-0.44	0.657	-3.408	2.150
PUBLIC HEALTH	1.742	1.561	1.12	0.264	-1.318	4.802
INFRASTRUCTURE	2.052	1.729	1.19	0.235	-1.336	5.440
SOCIAL POLICY	1.919	1.750	1.10	0.273	-1.511	5.350
CONSTANT	-2.189	1.950	-1.12	0.262	-6.012	1.633

Number of observations	=	211
LR Chiz (9)	=	30.87
Prob > chiz	=	0.001
Pseudo R ₂	=	0.233
Log likelihood	=	-50.708

³⁶ Reference category: Agriculture

Error! Use the Home tab to apply Kop 1 to the text that you want to appear here.

Model 7: best model hofstede Firth Logit

	SURVIVAL	COEFFICIENT	STD. ERR.	Z	SIGN.	[95% CONF. INTERVAL]	
FAL CULTURE		4.663	1.930	2.42	0.016	0.880	8.446
FAL INSTRUMENTS		0.814	1.746	0.47	0.641	-2.608	4.237
COMBINED HOFSTEDE		2.015	0.676	2.98	0.003	0.690	3.341
AGE		-0.223	0.089	-2.50	0.012	-0.399	-0.048
ORGANIZATIONAL SIZE³⁷							
25 – 100 FTE		0.762	0.985	0.77	0.439	-1.168	2.692
100 – 250 FTE		0.603	1.022	0.59	0.556	-1.401	2.606
250 – 500 FTE		0.914	1.236	0.74	0.460	-1.509	3.337
> 500 FTE		0.022	0.756	0.03	0.976	-1.460	1.504
INNOVATION TYPE³⁸							
ADMINISTRATIVE		-0.341	0.756	-0.45	0.652	-1.823	1.140
TECHNOLOGICAL		-0.109	0.741	-0.15	0.883	-1.561	1.343
GOVERNANCE		0.516	0.954	0.54	0.588	-1.354	2.387
GOVERNMENTAL LEVEL³⁹							
REGIONAL / PROVINCIAL		0.944	0.787	1.20	0.230	-0.598	2.487
LOCAL		0.728	0.689	1.06	0.291	-0.622	2.077
CONSTANT		-1.796	1.405	-1.28	0.201	-4.548	0.957

Number of observations	=	211
LR chiz (9)	=	21.10
Prob > chiz	=	0.0709
Log likelihood	=	-43.780

³⁷ Reference category: < 25 FTE

³⁸ Reference category: Product / Service

³⁹ Reference category: Federal / National

Annex VII – Correlation table independent variables

		<i>FAL Culture</i>	<i>FAL Instruments</i>	<i>Age</i>	<i>Hofstede</i>	<i>GDP</i>	<i>Country</i>	<i>Type of Innovation</i>	<i>Level of Government</i>	<i>Organizational Size</i>	<i>Policy Area Innovation</i>	<i>Policy Area Organization</i>
<i>FAL Culture</i>	Correlation Coefficient	1,000										
	Sig. (2-tailed)											
	N											
<i>FAL Instruments</i>	Correlation Coefficient	,328**	1,000									
	Sig. (2-tailed)	0,000										
	N	220	220									
<i>Age</i>	Correlation Coefficient	-0,052	,258**	1,000								
	Sig. (2-tailed)	0,447	0,000									
	N	215	215	233								
<i>Hofstede</i>	Correlation Coefficient	0,068	-,256**	-,310**	1,000							
	Sig. (2-tailed)	0,318	0,000	0,000								
	N	220	220	233	238							
<i>GDP</i>	Correlation Coefficient	-0,115	0,031	,403**	,198**	1,000						
	Sig. (2-tailed)	0,089	0,644	0,000	0,002							
	N	220	220	233	238	238						
<i>Country</i>	Correlation Coefficient	,238**	0,047	-,449**	,270**	-,575**	1,000					
	Sig. (2-tailed)	0,000	0,486	0,000	0,000	0,000						
	N	220	220	233	238	238	238					
<i>Type of Innovation</i>	Correlation Coefficient	0,022	0,122	,181**	0,024	0,038	-0,016	1,000				
	Sig. (2-tailed)	0,746	0,072	0,008	0,724	0,574	0,820					
	N	218	218	215	218	218	218	218				
<i>Level of Government</i>	Correlation Coefficient	-0,007	,229**	,420**	-,251**	,315**	-,195**	0,107	1,000			
	Sig. (2-tailed)	0,921	0,001	0,000	0,000	0,000	0,003	0,118				
	N	217	217	230	235	235	235	235	235			
<i>Organizational Size</i>	Correlation Coefficient	-,312**	,285**	0,063	-,152*	,159*	-0,127	,157*	0,120	1,000		
	Sig. (2-tailed)	0,000	0,000	0,345	0,020	0,015	0,052	0,020	0,069			
	N	219	219	230	235	235	235	217	232	235		
<i>Policy Area Innovation</i>	Correlation Coefficient	0,099	,197**	,171*	-0,064	0,094	-0,037	0,118	,213**	0,001	1,000	
	Sig. (2-tailed)	0,144	0,003	0,012	0,349	0,165	0,589	0,081	0,002	0,989		
	N	219	219	215	219	219	219	218	216	218	219	
<i>Policy Area Organization</i>	Correlation Coefficient	0,056	,137*	,187**	-0,090	0,126	-,196**	0,113	,230**	0,060	,596**	1,000
	Sig. (2-tailed)	0,406	0,043	0,006	0,185	0,062	0,003	0,097	0,001	0,380	0,000	
	N	220	220	215	220	220	220	218	217	219	219	220

p ≤ 0.050 = *
p ≤ 0.010 = **
p ≤ 0.001 = ***

Annex VIII – Interview Protocol

Begin met een narratief over de innovatie (sequence of events), specificeer daarna vragen aan de hand van je ‘shoppinglist’, analyseer de data op causale verbanden, en keer dan terug voor de uiteindelijk vragen.

- Uitleg over het project LIPSE → One-minute-pitch, gevolgd door het type vragen dat ik zal stellen, zonder mijn hypothese te onthullen.
- Kom hierin op gelijke voet met de respondent, op twee manieren:
 - o Geef blijk van expertise zodat ze je serieus nemen.
 - o Imponeer niet teveel met kennis en wetenschappelijk jargon zodat respondenten zich geïntimideerd zouden kunnen voelen.

Vraag (Grand Tour Question)

We beginnen zeer breed. Kunt u mij het proces vertellen over het project? Vanaf het moment waarop het idee is ontstaan, tot het besluit om een andere methode te gebruiken.

Ononderbroken laten praten, enkel korte vragen ter verduidelijking.

Informatie waar ik naar op zoek ben (Shoppinglist):

- Het verhaal achter de innovatie.
 - o Hoe is het ontstaan, bij wie?
 - Wie waren de besluitnemers?
 - Wie die drijvende krachten/uitvoerders?
 - o Hoe is het geïmplementeerd?
 - Hoe is het ontwikkeld toen het in werking was?
 - o Wat heeft geleid tot afschaffing?
 - Speelden er politieke zaken een rol?
 - Was het puur functioneel?
 - o Welke rol speelde het vertrekken van ‘de trekkende kracht’?
 - Kon dit niet overgenomen worden?
 - Hoe werd zijn/haar kennis opgeslagen?
 - Wie was zijn opvolg(st)er?

Vervolg vragen (indien nog niet beantwoord):

Haal de factoren uit hun verhaal naar voren die een link hebben met FAL, en vraag daar naar:

- Is de innovatie een zelf bedachte innovatie, of is het (deels) overgenomen vanuit een andere organisatie, of uit de literatuur?
- Wat is er overgebleven van het project?
 - o Hebben er evaluaties plaatsgevonden?
 - Aan het begin, einde, of tussendoor?
 - Hoe vond deze evaluatie plaats?
 - Heeft deze evaluatie invloed gehad op de voortgang van de innovatie
 - o Is er geleerd van deze evaluatie?
 - Is de kennis die uit de evaluatie naar voren kwam teruggekoppeld?
 - Naar wie?
 - Wat is hier mee gedaan?
 - o Zou ik de documentatie van deze evaluaties mogen/kunnen inzien?
 - o Is er verantwoording afgelegd over dit project?
 - Wanneer?
 - Aan wie?
 - Waarover?
 - o In documenten staat ook dat er niet-bedoelde effecten waren door het project. Welke waren effecten waren dat?
- Welke invloed had de prijs op deze drie punten?
- Zijn leerprocessen, feedback en verantwoording afleggen sterk veranderd de afgelopen jaren?
 - o Is er nog veel invloedrijk personeel
- Pijnlijkere vragen:
 - o Beschouwt u dit project als mislukt?
 - o Is het de tijd en het geld waard geweest?
 - o Wat zou u beschouwen als een mislukte innovatie?
- Andere vragen specifiek gerelateerd aan de respectievelijke innovatie.
- Wat zou u nu anders doen bij het opstarten van zo'n project?
- Heeft u op dit moment innovatieve initiatieven lopen, of in ontwikkeling?

Sluit af met

- o Vragen naar contact info 'vertrokken drijvende kracht'
- o Info over gesproken personen
 - Rol bij project
 - Huidige en toenmalige functie
 - Hoe lang bij deze organisatie

Shopping list

- Tussentijdse evaluatie (sterkte-zwakte analyse)
- Andere evaluaties
- Kwaliteitsconferentie
- Verantwoording afgelegd (rol OCMW raad)
- Kwaliteitscirkel
- CAF-evaluaties
- FAL door de tijd heen (personeelsverloop)
- Huidige innovatieve projecten
- Lessen meegenomen?

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Annex IX – Focus group guide

10h00 – 10h20	<p>Introductie</p> <ul style="list-style-type: none"> - Mezelf - Onderzoek - Doel focusgroep <p>Kennismaking deelnemers</p> <ul style="list-style-type: none"> - Huidige organisatie + titel - Organisatie + relatie tot innovatie in studie <p>Regels</p> <ul style="list-style-type: none"> - Hoffelijk, maar open en vrij discussiëren - Opname
10h20 – 10h30	<p>Schrijfpdracht (bewaren voor na focusgroep)</p> <ul style="list-style-type: none"> - Wat waren de drie voornaamste factoren waarom uw innovatie is beëindigd? - Wat is het beste punt van uw case-omschrijving in de paper? - Welk punt heeft uw case-omschrijving in de paper fout?
10h30 – 11h00	<p>Warm-up discussie over schrijfpdracht</p> <p>Doel:</p> <ul style="list-style-type: none"> - Vergelijking eigen interpretatie oorzaken en die in de paper (paper wel al gelezen, dus misschien biased) - Reflectie over mijn analyse
11h00 – 11h15	Pauze
11h15 – 12h15	<p>Kerndiscussie</p> <ul style="list-style-type: none"> - Welke instrumenten waren er om het functioneren van de innovatie te monitoren? - Hoe werd de informatie van die informatie besproken? - Hoe vrijelijk, open en productief waren de discussies over de ‘tussen-evaluaties’? - Leidde de informatie tot wijzigingen als er inefficiënties gevonden werden? - Waren de betrokkenen transparant over de resultaten, en namen verantwoordelijkheid voor de resultaten?
12h15 – 12h30	<p>Tips voor academici:</p> <ul style="list-style-type: none"> - Wat zou u graag willen weten of willen leren over innovatie? Aan welk soort kennis over welk onderwerp heeft u behoefte met betrekking tot innovatie?

Welke waren de drie voornaamste factoren waardoor uw innovatie is beëindigd?

1. _____

2. _____

3. _____

Op welk punt legde de case-omschrijving in de paper de vinger op de zere plek?

Met welk punt in de case-omschrijving in de paper gaat u niet akkoord?

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