Innovating Inside the Box

An Exploratory Comparative Case Study of Regulations' Impact on Innovation in the Insurance Industry

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Alexander Ivarsson

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ABSTRACT

Innovation in general is an important driver for economic growth and consumer welfare. However, with the purpose of consumer protection and ensuring stability of the financial system, the insurance sector is bound to follow stricter regulations than most other sectors. The purpose of this study is to explore and gain insights into how insurance companies perceive, work with and are affected by regulations in relation to innovation activities. The research question is defined as *How do regulations impact insurance companies' innovation?* By carrying out a qualitative explorative comparative case study of two Swedish insurance companies, understanding of innovation in a regulated industry from a company perspective is expanded.

The study revealed that regulations impact the case companies in four major ways. (1) Regulations can prevent innovation and reduce customer value; regulations close off avenues of innovation. Radical innovation seems especially difficult to pursue, making incremental innovation most prevalent. The absence of innovation negatively affects customers through higher prices and inferior products. (2) Regulations require additional resource investments; guiding an innovation project through the regulations requires both expertise, knowledge and extended project development times. As a result, both time and cost requirements are increased, effectively reducing the incentives to innovate. (3) Regulations are negative for creative performance; the regulations act as boundaries that limit the perceived creative space. Frequent regulatory setbacks demotivate employees, and overall creativity is reduced as a result. (4) Regulations can stimulate and shape innovation. Regulations have the power to change the market dynamics. Especially increased competition drives innovation. Innovation may be forced by regulation or steered into different directions due to regulations.

While the findings in themselves are not generalisable, interesting points for further research are identified. The main contribution of this study is thus the broad view attained of innovation and regulation in the insurance industry. While it shows that it is possible to pursue innovation inside the box, defined by regulations, there is a need for further research on how regulated companies best work with innovation and how effective regulation may be developed in order to find a balance between protection and innovation that best benefits society and the economy.

Keywords
Financial innovation, Innovation management, Regulation, Insurance

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ABBREVIATIONS AND DEFINITIONS

FI	Finansinspektionen (Swedish Financial Supervisory Authority)
FRL	Försäkringsrörelselagen (Insurance Business Act)
LFAB	Länsförsäkringar AB
Länsförsäkringar G&B	Länsförsäkringar Göteborg och Bohuslän
TPL	Lag om tjänstepensionsföretag (Legislation for Occupational Pension Companies)

1. INTRODUCTION

This chapter presents background to the research topic. It contains a brief overview of the financial sector and how it is regulated. Moreover, the case companies are introduced. A problem discussion as well as the purpose and research questions are presented. The chapter concludes with presenting the delimitations of this study.

1.1. Background

The current business environment requires companies to continuously adapt to ensure survival. Demands are continuously changing and companies must be able to adjust and innovate (Caniëls & Rietzschel, 2013). Innovation in general is an important driver for economic growth and consumer welfare. However, regulated industries often have to work within boundaries that are designed, not with innovation in mind, but rather with stability and protecting the status-quo as first priorities (Prieger, 2002).

The financial sector is heavily regulated (Asante, Owen, & Williamson, 2014), primarily due to the large impact it has on society as a whole (Erkens, Hung, & Matos, 2012). With the purpose of consumer protection and ensuring stability of the financial system, the financial sector is bound to follow stricter regulations than most other sectors (FI, n.d.-e).

The benefits of financial innovation to the economy are generally accepted (e.g. Khraisha & Arthur, 2018; Levine, 1997; Shiller, 2008). In the financial sector, technology can contribute to greater innovation that in turn can provide benefits such as financial inclusion, increase consumer value and contribute to productivity (McQuinn, 2019). This suggests that innovation in the financial sector should be of great interest to governments and regulators. However, innovation is usually associated with risk, and risk is exactly what these regulations are trying to mitigate (FI, n.d.-e).

According to economic theory, regulations have two major impacts on innovation. Firstly, the resources available for investment in innovation and its associated activities are effectively reduced as a consequence of compliance with regulations. Secondly, the incentives for investment are altered by regulations (Blind, 2012). Several studies support this, showing a negative impact of regulations on innovation (Alesina, Ardagna, Nicoletti, & Schiantarelli, 2005; Bassanini & Ernst, 2002; Klapper, Laeven, & Rajan, 2004; Pellegrino & Savona, 2017), while deregulation generally has a positive effect on innovation (Crafts, 2006; Gorgens, Paldam, & Wurtz, 2003).

Thus, a tension exists between regulations and innovation (see Vinnova, n.d.). Innovation is an important source of competitive advantage and companies are making great efforts to innovate

within the boundaries of the regulations. 95% of insurance companies consider new technologies, ways of working, and processes helpful in meeting their customers' demands and expectations (Capgemini & Efma, 2019), indicating a clear wish to be innovative to increase, among other things, customer satisfaction.

The tensions between regulations and innovation are therefore interesting to study. By gaining insights into how heavily regulated industries work with innovation in order to fulfil their competitive and business goals, light can be shed on the impact regulations have on subjects connected to innovation. The financial sector in general is a good example of such an industry. The insurance sector, which has seen an increase of innovation (OECD, 2017), is in this study used to explore the tensions between regulation and innovation from a company perspective.

1.2. The Financial Sector and its Regulation

The financial sector is one of the most regulated industries in almost all countries of the world. This is a result of many global social catastrophes which have been caused by crises in the financial system, most recently in 2008. When analysing the financial crisis of 2008, there are some key factors that are brought up, where one is the destabilisation of the global economy as a result of complex financial innovation (Asante et al., 2014). The reason why the financial market is under so much restriction and scrutiny is because of the influence it has on every level of the society (Erkens et al., 2012), and the acceleration of the number of financial innovation projects in the last three decades (Moloney, Ferran, Payne, & Avgouleas, 2015).

In a liberal marketplace, resources flow freely to organisations and projects where it has the greatest potential to yield growth. The problem is that the greatest potential to yield growth through innovation in the financial sector may sometimes have major negative impacts on all levels of a society. Studies show that it is often difficult to understand the severity of risks a financial innovation project may have before it is developed and commercialised. It is therefore not unusual that financial innovation projects are both developed and commercialised before it is understood how it can or will affect society, and the risk it may bring (Asante et al., 2014).

In this study the financial sector is defined as including banking and insurance businesses who are under the supervision of Finansinspektionen (hereafter: FI), the supervisory authority of the financial market in Sweden. FI authorises, supervises and monitors all companies that operate in the Swedish financial market. FI operates under the Ministry of Finance. They pursue the goals of promoting stability and efficiency in the Swedish financial system, as well as ensuring consumer protection (FI, n.d.-a).

Financial stability refers to the objective of having an efficient and stable financial system. This is considered a precondition for the economy to function and grow. Crises in the system create widespread risks for society, and the financial system must therefore be trusted and able to deliver financial services to companies and citizens (FI, n.d.-c). FI conditions financial stability upon the system's ability to (FI, n.d.-c):

- Mediate payments
- Transform savings into financing
- Manage risk
- Be resilient to shocks that may threaten these functions.

1.3. The Case Companies

The studied case companies were selected according to the process described in 2.4.2.2. In the following a brief introduction of each company is presented, with the purpose of offering some context.

1.3.1. Länsförsäkringar Gothenburg and Bohuslän

Länsförsäkringar was founded in 1936 and is a fully customer owned company. They have the strategy of having a strong local presence, and the company is made up by 23 locally independent organisations, organised by geographical area. This study investigates Länsförsäkringar Gothenburg och Bohuslän (hereafter: Länsförsäkringar G&B) (Länsförsäkringar, n.d.-c).

The company is made up of the three branches of bank, traditional insurance and occupational pension insurance. The brand also offers real estate services. Länsförsäkringar G&B has approximately 370 employees (Länsförsäkringar, n.d.-c).

Länsförsäkringar believes in the collaboration between companies and innovation in order to create value for its customers, in combination with the ambition to improve the local society (Länsförsäkringar, n.d.-a). The three local Länsförsäkringar companies, Länsförsäkringar Skåne, Länsförsäkringar Älvsborg and Länsförsäkringar G&B co-own an innovation company as part of their innovation initiative – Lfant. They work with customer driven development with the purpose of meeting customers' future needs for simplicity and security (Lfant, n.d.-b).

In Figure 1 the organisational structure of the Länsförsäkringar organisation is depicted. All 23 independent local Länsförsäkringar companies jointly own Länsförsäkringar AB (hereafter: LFAB). Länsförsäkringar G&B also own a subsidiary called LFGB Innovation AB. Three local companies, Länsförsäkringar G&B, Skåne and Älvsborg co-own the innovation company Lfant AB. There are other subsidiaries owned by all the 23 local Länsförsäkringar companies, however, only subsidiaries relevant for this study have been included.

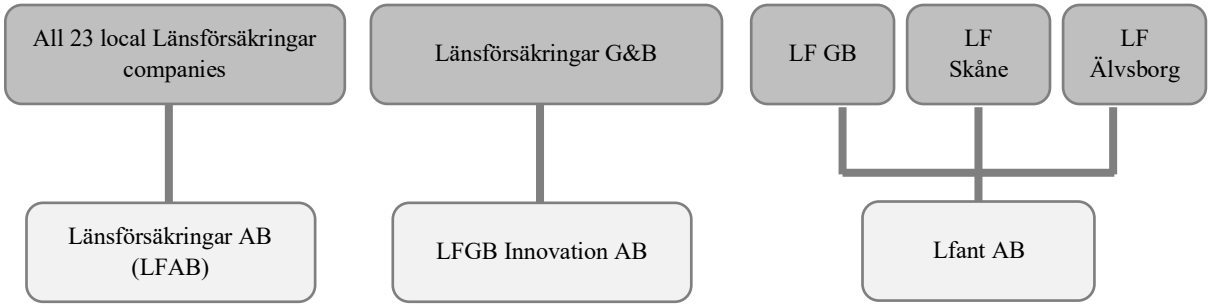

Figure 1. The Länsförsäkringar Group organisational scheme (only entities relevant to this study are included) (Länsförsäkringar, n.d.-b; Lfant, n.d.-a). LF is an abbreviation of Länsförsäkringar in this figure.

1.3.2. SPP

SPP is a Swedish occupational pension insurance provider, founded in 1917 by the families Wallenberg and Söderberg. Its purpose then was to provide qualitative and reliable occupational pension insurance for its white-collar workers. Today, SPP is owned by the Norwegian financial services company Storebrand (see Figure 2) and differentiates itself with an intense focus on sustainability in its capital management (SPP, n.d.). They employ 384 persons.

SPP has lately received recognition for its innovation initiatives. In 2018 they were rewarded SPV's Guldkanten for its innovation project Gajda (SPV, n.d), and in December 2019 they received the CIO award for the best digital project in competition with other organisations outside the insurance industry (SPP, 2019).

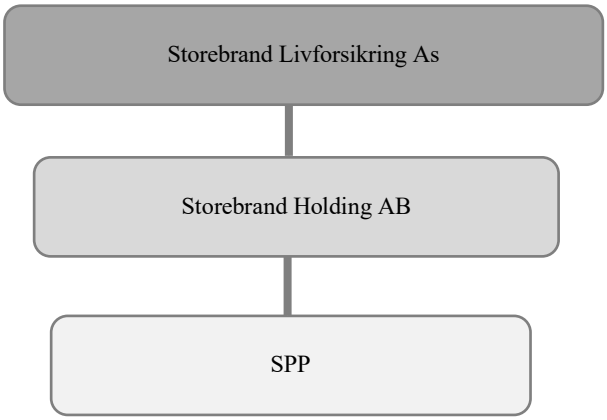

Figure 2. SPP's organisational scheme (only entities relevant to this study are included). (SPP, n.d.)

1.4. Problem Discussion

There is a need for regulations in the financial system, especially considering the potentially disastrous consequences of shocks in the system, as the 2008 financial crisis demonstrated. The crisis showed that actors in the financial sector chose to take on large risks when they could, since they operated in a policy environment that allowed and even encouraged it (Calomiris, 2009). This implies a clear need for effective and thoughtful regulations, considering the importance and influence of the financial system for the society as a whole (Erkens et al., 2012).

Thus, the benefits of regulation in the financial industry are established. However, regulations are also shown to have an impact on innovation and growth: For example, it has been shown that all regulations have a significant negative effect on growth both for society and business (Loayza, Oviedo, & Serven, 2005). Yet, there is a lack of studies on financial innovation (Anderloni, Llewellyn, & Schmidt, 2009; Frame & White, 2014), most studies on regulation and innovation have a macroeconomic focus (e.g. Alesina et al., 2005; Bernier & Plouffe, 2019; Blind, 2012; Calomiris, 2009; Crafts, 2006) or have focused on other industries (e.g. Abraham & Davis, 2007; Chataway, Tait, & Wield, 2006; Faulkner, 2009; Garcia-Murillo, 2011; Kolady & Herring, 2014; Prieger, 2002).

Standardised legislation does not manage to make a distinction between good and bad innovation, with the consequence that many good financial innovations have been suffocated by the regulations (Moloney et al., 2015). There is a greater interest from regulators to take innovation into consideration in legislation. For example, the EU has established an Innovation Principle which states that future EU directives are to be designed with the effect on innovation in mind so that an environment where innovation can flourish is established in the EU (The European Commission, n.d.). Thus, there is a need for a deeper exploration of the subject that divulges a company perspective on regulations in relation to innovation if regulations are to be accurate and effective. By studying the topic qualitatively, there is opportunity to investigate how companies perceive regulations and adapt to the innovative environment they are currently in. The study is able to show not just *if* innovation is affected, but also *how* and *why.*

As innovation management research is moving towards adopting contextual approaches (Khraisha & Arthur, 2018; Ortt & van Der Duin, 2008), it further cements the need for studies specifically targeting financial innovation in order to reveal the specifics of the phenomenon. Dynamics of the financial markets, competition from start-ups and changing consumer demand are contributing to the need of investigating the nature of financial innovation in firms and the factors that are affecting its success (Khraisha & Arthur, 2018). An exploratory, qualitative study on the topic is a suitable starting point for building such insights.

1.5. Purpose and Research Question

The purpose of this study is to explore and gain insights into how insurance companies perceive, work with and are affected by regulations in relation to innovation activities. The aspiration is that this study will contribute to a further understanding of how regulations have an impact on innovation from a company perspective. Thanks to its exploratory nature, the study's results can create a starting point for further research in the academic community. The hope is also to contribute practically to companies by mapping out the particularities of working with innovation under the pressure of heavy regulation.

The research question is thereby defined as follows:
How do regulations impact insurance companies' innovation?

1.6. Delimitations

This is not a study on law and the purpose is not to consider any legal perspectives on the innovation process in detail. The study will stay inside the frames of innovation management and the impact of regulations. A choice of relevant regulations will be mentioned and explained for context and a deeper understanding for the reader, however, this will mostly refer to how the regulations impact the innovation process through citations from the respondents.

This study will only consider the insurance industry in Sweden. There are many other industries that are faced with heavy regulatory scrutiny, however, because of industry specific regulations as well as the nature of case studies, the insights generated in this study to be applicable outside the industry in question in this study. The results are not applicable to the insurance industry in other countries since regulations vary between different countries.

2. METHOD

This chapter presents the methodological considerations of this study. First, the chosen research strategy followed by research design are elaborated on and argued for. In the following the research process has been illustrated. Subsequently, the data collection process is explained in depth. In Section 2.5. the data analysis approach is presented. The chapter continues with an elaboration on how the analytical framework was constructed and closes off with reflections on research quality and ethical considerations.

2.1. Research Strategy

When conducting research, there are generally two research strategies that are applied: qualitative or quantitative method. The choice between the two should be based on the fit with the research question and purpose of the study (Bell, Bryman, & Harley, 2019). A qualitative method makes a more exploratory approach possible, where the research does not have to test preconceived hypotheses, but can study a subject in a broad manner (Bell et al., 2019), which is suitable with regards to our purpose to explore regulation and innovation in insurance companies.

To respond to the defined research questions, the research needs to convey the multi-faceted and complex processes of innovation in regulated industries. Quantitative methods have the advantage of enabling relationships to be tested (e.g. "do regulations have an impact on innovation?") but it often lacks the possibility to gain a deeper understanding of the different mechanisms affecting innovative performance in firms. It would also restrict the possibility to gather unexpected responses (Bell et al., 2019). This seems contradictory to the purpose of being exploratory. Since the company perspective taken in this study has not been studied in detail before, the idea is to explore the topic and map out possibilities for further, more targeted research. Such research may then be more suited to quantitative approaches, in order to test the themes found in this study. It would have been premature to carry out quantitative testing of theory solely on the basis of current knowledge, which is mostly based on macroeconomic theory and aggregated data.

The purpose of a qualitative research strategy is to gain understanding of the interviewee's perception of, for example, a phenomenon (Patel & Davidson, 2011), in the case of this study, innovation in relation to regulations. The qualitative strategy has been able to provide context and additional information about and around the topic. Furthermore, a qualitative strategy has been able to divulge information about how companies act and are affected by regulations and has encompassed nuances that could not as effectively be reflected by a quantitative research approach (Bell et al., 2019).

Furthermore, an inductive approach, which is typical to the qualitative research strategy, seems most beneficial to fulfil our purpose. The study aims to generate insights on the basis of the

empirical data collected. The purpose of an inductive approach is to use the outcome of the research to generalise and develop theory. The inductive strategy does however contain elements of deduction as well, as is highlighted by Bell et al., (2019), since the process is iterative. Data collection and theory development have been simultaneously ongoing processes (Bell et al., 2019). This is presented in more detail in 2.3 and onwards. There are, however, limitations to inductive methods that are important to mention. With inductive approaches, there is a risk that no theory can actually be developed - they may provide interesting empirical generalisations, but the theoretical significance may be unclear (Bell et al., 2019). As this is an explorative study, the theoretical significance of our conclusions is indeed unclear, and the findings of our study are rather to be helpful in refining and confirming potential theory that can be inspired by the indications found in our study.

2.2. Research Design

The research design regards the structure of the execution of the research method and data analysis. When choosing a research design, it needs to be considered what is the most appropriate method in collecting data in line with the research purpose and research questions (Bell et al., 2019). We have chosen to conduct an exploratory comparative (multiple) case study. It is not unusual that a study may have elements of several research designs, especially when a case study is included. Exploratory case studies are usually applied for mapping out interesting themes for further research (Lee, Collier, & Cullen, 2007), which is directly in line with our purpose, since we have aimed to illuminate a topic where little previous research has been done. Comparative studies with a qualitative research strategy take the form of multiple-case studies (Bell et al., 2019). In the following, the different components of the research design are presented and discussed in greater depth.

A case study is focused on an intensive and detailed study of a case, often with high complexity in the case and study in question. A case can be an organisation, a location, a person or an event. It is often seen as preferable to use a qualitative research method in order to allow for capturing the complex behaviour within the studied case (Bell et al., 2019). According to Bell et al. (2019), multiple cases are used in order to jointly explore a general phenomenon. Furthermore, it has been proposed that case studies are an appropriate research design for exploring the influence of regulatory frameworks on innovation in specific markets (Blind, 2012).

The comparative design was chosen because the understanding of this phenomenon could be achieved better through comparison of two relevant cases (Bell et al., 2019). Put simply, this design entails the study using more or less identical methods for two or more contrasting cases (Bell et al., 2019). As this study's purpose is to explore the phenomenon of innovation in regulated industries, we found that multiple cases could give more depth than one. Multiple-case studies are becoming increasingly common and are seen as part of the comparative design method due to the fact that comparison between the studied cases occur. Deeply studying two cases allowed for identification of similarities and differences between the cases (Bell et al.,

2019), as well as gave insights into how the particularities of the organisations could affect their perceptions of regulation and innovation. For example, how the different kinds of innovation the case companies pursue meant that they experienced different types of challenges and opportunities. Thus, studying multiple cases enabled us to do a deeper analysis when differences between the case companies became apparent. Had we only studied one case, such connections may not have been found and the conclusions would probably have been less insightful.

The benefits of a case study is thus the detailed and nuanced view of the case which can be identified (Bell et al., 2019). However, one disadvantage of case studies is that it may feel like they provide too small of a sample (Siggelkow, 2007). This is another reason for including two cases in this study. Multiple cases can offer more grounds for generalisation than one single case (Bell et al., 2019). While it may have been preferable to include even more cases, the time constraints of this project would have demanded each case to be less in-depth. There is thus a trade-off between depth and quantity. As the purpose of this study is to explore the phenomenon and lay ground for further research on the topic, it was deemed more valuable to do a limited but deep analysis, rather than a broad but shallow analysis. A deeper analysis has given the opportunity to find interesting points of further research and make contextual connections (Bell et al., 2019). A shallower approach would, according to our assessment, not contribute as much to academia.

It is nevertheless not claimed that these two cases are representative for the whole industry, nor is that the purpose of this study. While it is reasonable that some findings will be similar in other companies or other regulated industries, the study has also shown that the perceptions of regulation and innovation in insurance companies is contextual. Since the goal of this study is to generate researchable insights for further studies, generalisations from this study should not be made. Rather, the point is to create an overview of the topic and explore how insurance companies work with innovation. It is about exploring and generating insights into how these two studied cases do work in order to innovate, and how their actions are similar or different from each other (see Lee et al., 2007).

2.3. Research Timeline

This study was carried out during the spring of 2020. Figure 3 illustrates how the research was conducted (writing up of the thesis is not included) in order to illustrate the method and iterative process.

In the first step, a brief pre-study was conducted, to ensure that the topic would be interesting for further research. The pre-study took the form of an online database search on keywords such as *innovation, regulation* and *financial industry.* We found that the topic remained interesting as there seemed to be a lack of previous studies. Following that, the formal thesis process began. As the table shows, the process was iterative and multiple steps were taken simultaneously and interchangeably. As is customary within exploratory, qualitative research

employing an inductive approach, the review of literature, interviewing, and analysis took place continuously and were allowed to shape each other (Bell et al., 2019). In the following sections, each part will be elaborated on in detail.

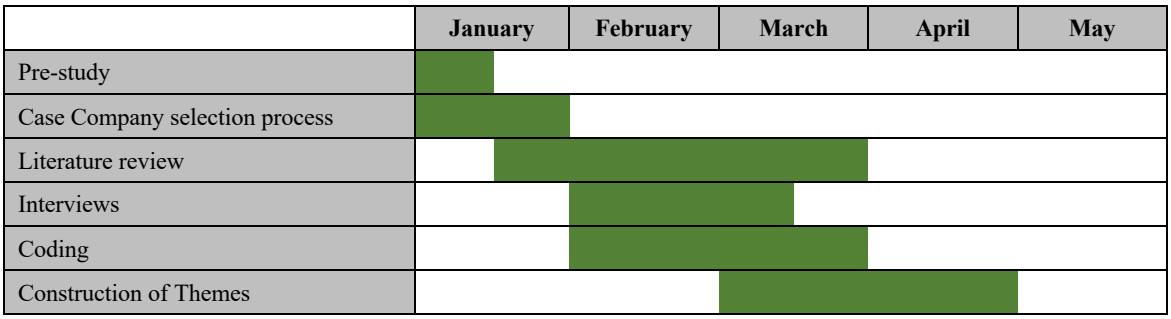

Figure 3. Illustration of the research timeline and the iterative process.

2.4. Data Collection

2.4.1. Qualitative Interviews

We chose to conduct interviews in this study since it allowed for gaining deep knowledge about the respondents in a flexible and efficient manner. Qualitative interviews place the focus on how the respondent understands and relates to the relevant topics and what he or she finds important. (Bell et al., 2019)

Qualitative interviews are normally unstructured or semi-structured (structured interviews are rather used in quantitative research). For this study, semi-structured interviews were appropriate. Both interview styles include a lot of flexibility, however, semi-structured interviews are helpful when aiming to steer the interviews toward specific subjects, as was the case in this study (Bell et al., 2019). Since the study compares two cases, it is important that certain issues are addressed in order to increase comparability and to be able to discern the companies' views on the relevant subjects. For this reason, it was suitable to schedule several interviews with each of the companies and apply an iterative process where we could iterate between interviews, analysis, and theory. Semi-structured interviews were suitable since they made it easier to ensure cross-comparability (Bell et al., 2019).

In semi-structured interviewing an interview guide (found in Appendix 1) is designed and used as a general reference point for the interviews (Bell et al., 2019), which is presented and discussed under 2.4.3.

2.4.2. Selection of Industry, Cases and Interviewees

2.4.2.1. Selection of Industry

As was introduced in Chapter 1, the financial industry was chosen in order to study innovation in relation to regulation. This was deemed suitable because, even though all companies must adhere at least a minimum level of regulations, the financial industry is one of the most heavily regulated industries in the world (Asante et al., 2014). This industry is under heavy regulation and scrutiny due to its large impact on society as a whole, in a more substantial way than other industries (Erkens et al., 2012). We have defined the financial industry by the scope of organisations under supervision of FI. FI supervises the financial system and ensures stability and efficiency on this market (FI, n.d.-a).

FI has divided the financial market into two broad categories; bank and insurance (FI, n.d.-b). This definition is also supported, and extended, by Arthur (2017) who defines the financial industry according to four main categories, these being *monetary financial institutions*, *other financial institutions*, *insurance companies or intermediaries*, and *activities auxiliary to financial intermediation*.

In recent years, there has been a rising prevalence of innovation in the insurance industry, coining the term "InsurTech". Digitalisation and new technologies present great opportunities for development within this sector (OECD, 2017). A study on trends in the insurance industry revealed that insurance companies are starting to switch focus from compliance with external regulation (PwC, 2019). Instead, they are now starting to focus on increasing their efficiency through adoption of new technologies and automatisation in order to increase their competitiveness. Studies by SKI indicates that insurance companies need to build a more emotional connection with their customers, by creating customer experiences outside the insurance product itself. Customers are also exhibiting higher demands on simplicity and digital solutions (SKI, 2019). Insurance is thus an industry that is facing both challenges and opportunities in relation to innovation, which is why it is so interesting to study in this context.

In the context of this study, we are focusing on the insurance companies-category, which is described as including companies having the role of pooling and diversifying risk. In the insurance industry, FI includes insurance companies, pension foundations, subsidiary associations and insurance distributors (FI, n.d.-d).

2.4.2.2. Selection of Case Companies

A common criticism to case studies is that the sample is biased (Siggelkow, 2007). The selection of case companies for this study is not random, however, we have made an effort to be systematic and transparent in our sampling process in order to reduce bias.

The cases were chosen according to purposive sampling. It is a non-probability form of sampling. The sample can therefore not be considered representative of the industry, nor is that the purpose of this study. The point of purposive sampling is instead to choose cases in a strategic manner so that they are relevant for revealing a phenomenon and are relevant to the research question (Bell et al., 2019). The aim of this sampling method was to be able to choose organisations that can offer insights that other organisations cannot (Siggelkow, 2007). Bell et al. (2019) press that researchers must clarify exclusion and inclusion criteria for cases.

The selection criteria for the case companies were arranged as a funnel, see Figure 4, where companies were filtered out successively. More than 6000 companies have permission to offer financial services in Sweden. We started with a list retrieved from FI's company database (FI, 2020), which showed companies with permission to offer financial services, and filtered on Insurance companies. 291 companies were included in the list. On the right-hand side of Figure 4, the number of companies remaining after each criterium was applied is stated.

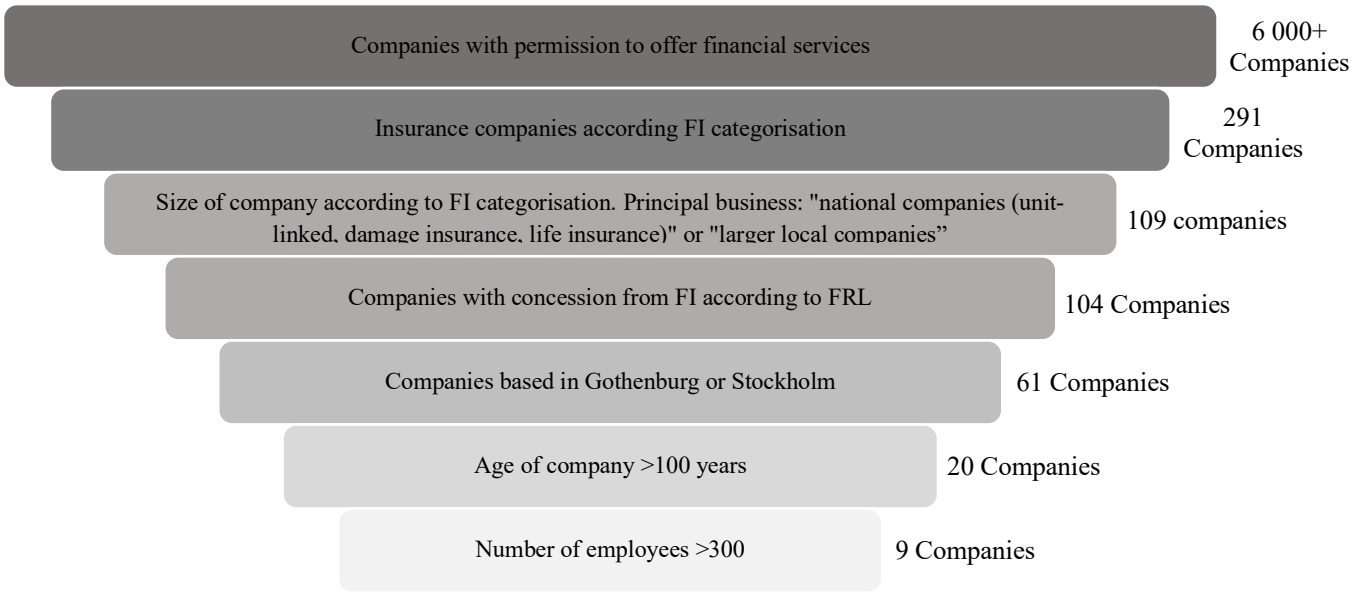

Figure 4. Case company selection criteria funnel and number of remaining companies after application of criteria.

Firstly, the companies had to be under FI's supervision. This criterium refers to our definition of the financial market in Sweden. Secondly, the companies had to be insurance companies, according to FI's categorisation. Thirdly, we filtered within the insurance industry category. We aimed to reach larger companies; thus, we chose to eliminate smaller local insurance companies, cattle insurance and subsidies associations. We also eliminated damage captive companies since they do not insure external customers. Companies under the category national company, life insurance, unit-linked insurance and damage insurance were included as well as larger local companies. 109 companies remained. (FI, 2020)

Fourthly, we filtered on companies with a concession from FI, according to current regulation in order to ensure similar regulatory circumstances. 104 companies remained. Next, we filtered on insurance companies based in Stockholm or Gothenburg. Gothenburg was chosen partially because we are based at Gothenburg University. From a time-, environment-, and economic

perspective, it was deemed preferable to interview local companies. Furthermore, as Sweden's second largest city, companies based in Gothenburg serve a relatively substantial market. However, this only left 4 companies. Since we wanted to ensure we have a choice of companies, and could apply further filters, we decided to also include Stockholm in order to reach a higher number of relevant potential respondents. We included Stockholm since roughly a third (99 out of 291) of Swedish insurance companies are based there. At this point 61 companies remained (FI, 2020).

We included criteria for the age of the companies. The reason for that was that we found that the dynamics and tensions between regulations and innovation may become more apparent for companies with a long history. The insurance industry has been, and in many ways still is, a traditional and protected industry. Interviewing older, more traditional companies gave more insights into those tensions and the challenges and opportunities of new entrants and technologies. Traditional companies moving towards become more and more innovative could give interesting findings. When considering how to define the criteria we took a practical approach and considered the data. Of the 61 companies remaining at this stage, 33% were over 50 years old. This led us to the judgement that this is a reasonable limit for this specific industry. Lastly the number of employees was set to minimum 250 employees according to the EU definition of large companies (European Comission, n.d.), in order to ensure that the companies are similar in size. In Table 1 the remaining 9 companies are presented. The full list can be found in *Appendix 2: Selection of Case Companies,* along with explanations of abbreviations.

Company Name	(Main) Type	Concession	City	Age	Employees
Alecta pensionsförsäkring, ömsesidigt	NL	Yes	Stockholm	103	367
Länsförsäkringar Göteborg och Bohuslän	LL	Yes	Göteborg	175	381
SPP Pension & Försäkring AB (publ)	NU	Yes	Stockholm	103	384
Folksam ömsesidig livförsäkring	NL	Yes	Stockholm	112	788
Folksam ömsesidig sakförsäkring	ND	Yes	Stockholm	112	788
Livförsäkringsbolaget Skandia, ömsesidigt	NL	Yes	Stockholm	165	1920
AFA Livförsäkringsaktiebolag	NL	Yes	Stockholm	58	575*
AFA Sjukförsäkringsaktiebolag	ND	Yes	Stockholm	58	575*
AFA Trygghetsförsäkringsaktiebolag	ND	Yes	Stockholm	58	575*

*in the group.

Table 1. Top 9 insurance companies after application of selection criteria.

Basic similarities between the companies had been established. It is suggested by Stake (1995, in Bell et al., 2019) that researchers should consider the opportunity to learn when choosing cases to study. At this point we therefore began a brief qualitative research of the companies. We found that both Länsförsäkringar G&B and SPP have a strong innovation focus. Thus, we found that these companies would be able to offer interesting insights in this study.

2.4.2.3. Selection of Interviewees

The selection of respondents is highly important for the empirical findings and the result of the study. By using appropriate and correct methods for choosing respondents, researchers can avoid or reduce the risk of bias in the study (Bell et al., 2019). We chose to apply the snowball sampling method for this study. Since the method cannot produce a statistically representative sample as it is not random, it is primarily applied in qualitative research. According to this method, we made initial contact with the organisations, in our case SPP and Länsförsäkringar G&B. In the next step, they organised and contacted appropriate respondents within their organisations (Bell et al., 2019). Both organisations are large so it would have been difficult for us to independently identify and directly contact the most relevant individuals for our study. The snowball method was helpful in ensuring that we came into contact with the most relevant representatives for each organisation. These interviewees could then in the next step suggest and organise another set of interviewees with individuals he or she deemed relevant for this study. Snowball sampling is a form of purposive sampling – the goal is not to find a representative sample, the point is rather to identify the most relevant interviewees in relation to the research question in the study (Bell et al., 2019). Information about the respondents and the respective interviews are summarised in Table 2.

Company	Respondents	Title	Date	Length
Länsförsäkringar G&B	Justus Alholt	Business Development and Environmental Monitoring	2020-02-04	01:10:00
Lfant (Länsförsäkringar G&B)	Helena Wallskog	Business Developer Innovation	2020-02-05	00:41:34
Länsförsäkringar G&B	Ricard Robbstål	CEO	2020-02-07	00:56:54
SPP	Monika Rappe	Head of the Innovation and Development Portfolio	2020-02-17	00:43:56
SPP	Per Lindberg	Chief Product Manager	2020-02-20	00:51:49
SPP	Magda Nyberg Rosloniec	Business Developer	2020-03-04	00:52:30

Table 2. Respondents

2.4.3. Interview Guide

An interview guide's purpose is to be helpful in guiding the interview, as the name suggests. There are many types of interview guides and the most important thing is that it contains the topics and issues that are to be addressed in the interview. It is important that the guide provides flexibility and allows for gaining insights into the respondents' view of their social world (Bell et al., 2019). The interview guide can be found in Appendix 1.

Before constructing the interview guide, the data needs were considered, i.e. "What knowledge is needed to answer the research questions?". A research focus was broadly specified and questions were designed in a way that provided the knowledge needed, from the perspective of the respondent (Bell et al., 2019). The study started off with a broad focus and the interview guide was therefore designed to cover a broad range of topics. Since few previous studies on

the topic have been produced, an interesting focus point could not effectively be identified during the first phase of the literature review. The first interviews were held early on and interesting findings from these interviews were instead the basis of narrowing down the research focus. This had the disadvantage that some of the interview material was not relevant as a narrower focus was defined, but the advantage that the focus area addressed issues brought up by the companies. This was beneficial since the aim of this study is to investigate innovation in regulated industries from a company perspective.

The interview guide helped keep the conversation going and made sure that certain topics were addressed. The respondents were encouraged to reply openly, and were not forced to stay on topic, even rambling responses could contribute to insights. The questions and topics lined out in the interview guide were not asked in a specific order but were modified according to the specific situation of each interview. Questions were also added, for example, based on what had already been said during the interview or if something needed further developed responses or follow-up (Bell et al., 2019).

The interview guide provided order and structure so that the interviews had a natural flow, but, as previously noted, the order of the questions and topics came to change depending on the individual interview itself. The questions were formulated so that they could help answer potential research questions but were not so specific as to prevent the respondents from giving open answers according to their own view (Bell et al., 2019). Not being too specific was important since the study is exploratory. If questions had been too specific or even leading, it could have incorporated bias into this study, since minor factors (certain challenges or opportunities) could have been given disproportionate room in the interviews. This would have increased the risk of making something the respondent perceives as relatively unimportant seem important. Other considerations included using a comprehensible language and remembering to gather contextual information such as general personal data as well as specifics about their professional experience (Bell et al., 2019).

The interview guide was designed so that more open and broad questions were asked in the beginning of the interview. One such question was, “Can you tell us about a recent innovation project?”. In the later parts of the interview more specific questions about regulations were asked such as “Which regulations do you think have the largest impact on your innovation work?”. This was done in order to not direct the interviews to specific areas in the beginning in order to see what considerations the respondents had spontaneously, while the later, more pointed questions ensured that certain topics were addressed, to ensure cross comparability and that the research purpose was properly addressed (Patel & Davidson, 2011). This structure also helped accommodate the concerns mentioned above, the broader questions gave insights into what the respondent thought was most important or most affecting them. Thus, the risk of bias was reduced, while we were still able to ask specific questions without leading the respondents.

After reviewing our empirical material, we have reflected on our interview guide and what could have been done differently. As we have worked in a highly iterative manner, working on

theory, data collection and analysis interchangeably, even revising our research question as we went along, we sometimes found that we had not asked about some aspects that were found in theory at a later stage. Since the area is so unexplored it was difficult to early on have a precise view of the data needs. However, as it is an exploratory study, the broad questions asked also had an exploratory quality. Hence, we did not view it as a problem that some issues were less elaborated on than others, rather we interpreted that this was not of high importance for the organisations. In our judgement, this approach was valid in accordance to our purpose and research question.

2.4.4. Interview Process

As Länsförsäkringar G&B is based in Gothenburg, the interviews could be held at their offices. SPP-respondents were interviewed by phone, a choice based on cost, time and environmental considerations. The most relevant drawback to telephone interviewing in this context was that it made it impossible to observe body language that could give greater depth to respondents' answers (see Bell et al., 2019). However, it was our judgement that the topic at hand was suitable for telephone interviews, since body language divulging feelings of the respondent was less important than their knowledge and insights into how regulations are impacting them in their work with innovation. Feelings such as frustration, pessimism or optimism were interesting, however, such feelings are often revealed in word choices and voice tone. In case of unclarity, follow-up questions were asked. Thus, it was our judgement that the interviews would be of sufficiently high quality by telephone.

The interviews were held in a quiet, private space. At Länsförsäkringar G&B, two interviews were held in conference rooms, and one in the office of the respondent. As SPP-representatives were interviewed by phone, we had less insights into the specific circumstances of their respective locations, however, we did not experience disturbances or distraction from any of the respondents.

Both of us were present during all interviews. Bechhofer, Elliott, and McCrone (1984) find that, although being more costly in terms of time, having several interviewers present can have considerable advantages. One person can lead the interview and take only brief notes while the other takes detailed notes and carefully observes the respondent's reactions. The more passive party can thus make sure that the necessary topics are addressed and keep track of the development of the interview. The passive person could interject at any point during the interview with questions. Another advantage of this was that we as interviewers could engage in discussion, making the interview more relaxed since the respondent may have felt less put on the spot and the interview could be more of a casual conversation (Bechhofer et al., 1984). The risk of this constellation being construed as intimidating by the respondent was regarded as low, a manager at a company was unlikely to feel intimidated by two students, with regards to their superior experience.

All interviews were recorded in line with recommendations from Bell et al. (2019) to ensure that no details were missed or forgotten afterwards. We used the iPhone's recording application. After the interviews, we made notes of what was brought up, to make sure information was not forgotten. Initial reflections were also noted, with the purpose of starting the analysis process immediately (Bell et al., 2019). The interviews were transcribed partially. The primary reason for not doing a full transcription was the time consumption in relation to the expected benefit. Instead, we listened to our recordings carefully and subsequently transcribed relevant parts as is recommended by Bell et al. (2019). In the end, almost the entire interviews were transcribed, as we chose to transcribe any parts that were deemed at least potentially interesting.

It is pressed that quotes must reproduce exactly what is said by the interviewee (Bell et al., 2019). The interviews were held in Swedish and all quotes have been translated into English. We have been committed to portraying the material as faithfully to the source material as possible and have made an effort to find direct translations to the greatest extent possible. After translation we have reviewed each quote to make sure the tone and any implicit meanings remained intact. However, it must be kept in mind that minor errors likely are impossible to avoid.

The data collection process continued until theoretical saturation was achieved. The interviewing process thus continued for as long as new theoretical findings emerged which could create new and more clusters of concepts and themes. Once theoretical saturation was achieved, there was no point in continuing the interview process (Bell et al., 2019). We therefore chose not to set a target number of interviews ahead of the process (the need to be able to keep generating new respondents during the interview process is another reason why the snowball method was appropriate in this study) (Bell et al., 2019).

There was a risk of not being able to achieve theoretical saturation. Participation in the interviews required the case companies to volunteered significant amounts of time (Bell et al., 2019). Our hope is that the research is mutually beneficial in that the conclusions drawn can be useful in the case companies' future. To minimise the risk, we started our interview process early, with the possibility to extend it if a saturated data gathering was not achieved. Secondly, the use of the snowball method ensured that only relevant people were interviewed and that we did not take time from respondents who did not have sufficient insight into this topic.

The original plan was to conduct the interviews in several rounds. This was based mainly on the comparative nature of the study – for the purpose of comparing two studies, carrying out interviews in several stages can increase comparability and make sure that all topics are addressed by both cases. For example, it would have enabled interesting topics brought up by one respondent to be addressed in an upcoming interview with the other case company and vice versa – the emphases of the interviews can be adjusted according to the issues that occur during the process. Due to the nature of the research topic, it was appropriate to access senior managers within the case companies. They often have limited spare time to participate in a master thesis project, thus, we scheduled the interviews at the respondents' convenience. By

coincidence this resulted in all three of Länsförsäkringar G&B's interviews being held before the three at SPP. This created challenges since we initially wanted to spread out the interviews, to allow ourselves to fully reflect and analyse each interview before having another one, to asses if some areas were more interesting and if we should pivot. By allowing for analysis between the rounds, the next interviews can build on what has been brought forward in the previous round. This is also closely related to the use of an inductive approach, where an iterative process is suggested (Bell et al., 2019). However, each respondent offered to answer any complementary questions over the phone if necessary. This was judged as a good enough solution to ensure quality in our study.

2.5. Data Analysis

Qualitative research has the value of providing rich and complex data to create valuable insights into social phenomena and behaviours of the respondents. However, with this richness comes the challenge of an often large and unstructured dataset, resulting in information overload for the researchers and important data are at risk of being overlooked when conducting the analysis. This requires a plan of how data should be organised and analysed in order to ensure the study's validity, which becomes even more important since there are very few well established and accepted methods for analysing qualitative data (Bell et al., 2019).

2.5.1. Data Analysis Principles

One of the few well established and accepted methods for qualitative analysis is thematic analysis (Bell et al., 2019). It is an approach that uses coding and the development of themes (Boyatzis, 1998) in "identifying, analysing, organising, describing and reporting themes found within a data set" (Norris, White, & Moules, 2017, p. 2). Thematic analysis is useful in order to assess the perspectives of different respondents or cases. It can aid in examining similarities and differences as well as facilitate discovery of surprising insights (Braun & Clarke, 2006; King, 2004).

In qualitative methods, data analysis is one of the most difficult parts of the research process, and common criticism is that the process of analysing data is not described in enough detail, and so it becomes difficult to evaluate the trustworthiness of the research (Norris et al., 2017). Thus, in the interest of transparency, an elaboration on how the thematic analysis was conducted is presented in this section.

The thematic analysis process of this study is illustrated in Figure 5. The process was iterative, and codes, concepts and themes were developed and refined continuously. The analysis of data began already after the first interview had been conducted, followed by more interviews. The data were broken down into sections directly after the interview in order to avoid information overload after all interviews had been conducted (Bell et al., 2019).

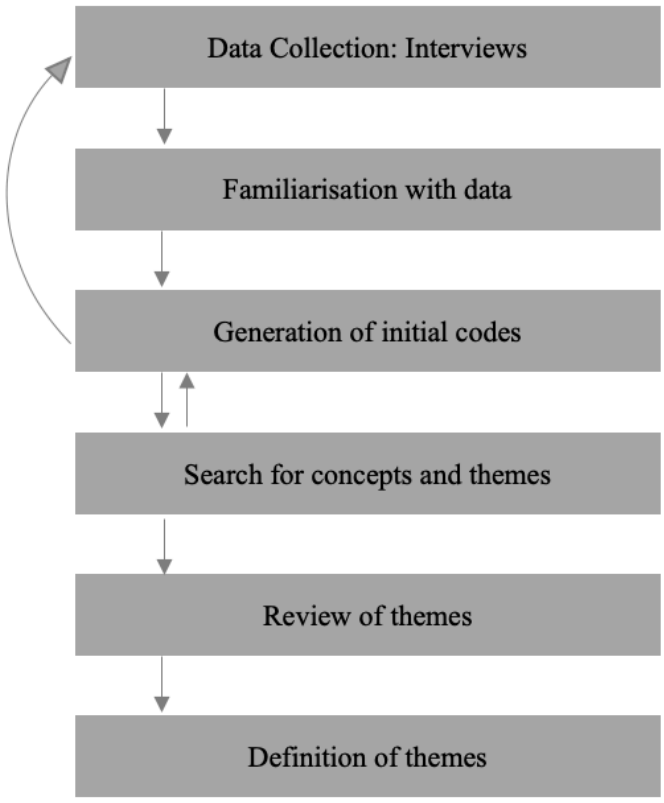

Figure 5. Thematic analysis process. Inspired by Norris et al. (2017).

According to Boyatzis (1998), thematic codes can be developed in three ways: (1) Theory driven, (2) Prior data or prior research driven and (3) Inductive or data driven. In coding the empirical material gathered in this study, codes have been formed primarily in an inductive manner, from the data gathered. This choice was made due to the explorative nature of the study, where there is little directly corresponding previous research to compare to. However, our analytical framework has also been used as a point of comparison with the empirical material. Even though previous studies have mostly been of macroeconomic focus or on other types of industries, it was deemed interesting to investigate how these studies could compare to the insurance industry. While we did not let previous studies steer the coding, they were kept at the back of our mind during the process. They are therefore assumed to have influenced the coding process to a certain extent, although the primary approach has been inductive.

Once all interviews had been conducted, we used the already coded data in order to form themes. Bell et al., (2019) recommends looking for the following when identifying the themes: repetition, categories, metaphors and analogues, transitions, similarities and differences, linguistic connectors, missing data and theory-related materials. It is important to highlight that for example repetition between interviews itself is not enough to be considered a code. The data needed to be further analysed another one or two stages, and be relevant to the research question, in order to be considered a theme in the eyes of thematic analysis (Bell et al., 2019).

We created concepts out of two or more codes. Thereafter we combined concepts into first-level themes. These were then further processed and constructed into second-level themes, which have a higher abstraction and are focused on the indications of the consequences

regulations have on innovation in the insurance industry. We anchored concepts and themes on repetition and on the emphasis placed on the topics by the respondents. We related and compared potential themes to previous studies and kept the research question in mind in order to ensure the relevance of each emerging theme.

The formation of concepts and themes was thus mainly based on the following principles:

- Relevance to research question
- Repetition
- Categories
- Emphasis signalling importance
- Relation to previous studies

The thematic analysis lacks a clear procedure and allows for a high level of flexibility. A disadvantage of thematic analysis is therefore the subjective interpretation of the data and the coding. We took precaution against the subjectivity through firstly having the data coded by each one of us separately, and then compared. Secondly, by having a high level of transparency through our research and the interviews, so that readers can assess the subjectivity of the thematic analysis and whether it has influenced the analyses, thereby increasing the validity of the analysis and results (Bell et al., 2019). We also chose to present a high number of quotes in the results section, with the purpose of increasing transparency and allowing the reader to evaluate our interpretation of the empirical data.

2.5.2. Example of How a Theme was Developed

For example: the theme *Regulations require additional resource investments* (see Table 3) was coded according to the process described below.

Concepts	First-Level Themes	Second-Level Themes
Compliance is time consuming	Regulations increase resource consumption	Regulations Require Additional Resource Investments
Compliance is expensive		
Compliance requires additional competences		
Regulations impact innovation priorities	Compliance as project management activity	
Compliance before and during selection		

Table 3. Example of thematic analysis: Regulations require additional resource investments.

The method adopted for the thematic analysis can be illustrated with the following example. At the basic level, codes concerned with resources and compliance were found in the material e.g. *time, cost, regulations are difficult to understand*. After grouping codes together, we found that concepts could be created depending on how different aspects were considered. Respondents viewed compliance activities in different lights: they could be time consuming, increase costs, and they could require specialist knowledge.

The relevance of these concepts and themes was further cemented in the high frequency with which they were mentioned by the respondents and the importance they placed on them. Furthermore, we found that resource consumption was highly relevant for answering the research question and that previous studies further supported the finding. Thus the theme was valid according to the process and criteria defined in Section 2.5.1.

2.6. Analytical Framework

The literature review has been conducted according to the principles of narrative review. The purpose of the literature review is to gain an initial understanding of the topics. A systematic literature review would have been problematic in that the research is exploratory in nature and defining clear criteria for the review was therefore difficult and could even have counteracted the openness of the study. Narrative reviews are less focused and are therefore appropriate in inductive studies where theory is formed from the research. In inductive studies, predetermining the research focus can be directly problematic since theory is the outcome of the study, not the basis of the study. Inductive studies require more flexibility to adjust the research focus as the process goes along (Bell et al., 2019).

There is a lack of studies on the topic at hand. This was quite quickly discovered during the pilot study we conducted before selecting a final topic. We searched for keywords such as *innovation, regulation, financial industry* and *insurance industry.* Very few relevant articles were found and most of those that were relevant had a macroeconomic focus. However, there are a number of studies and sources that combined can give insights on how regulations logically may impact the innovation process. We thus chose to take on this subject with an open, but not empty, mind, in spite of the limited knowledge on the topic since it is useful that the analytical framework gives some initial insight into what might be found in the study (Siggelkow, 2007).

As we started to construct the analytical framework chapter, questions and ideas emerged that prompted us to look for more information on a certain topic. We also looked for studies that had cited the relevant literature that we had found. Before conducting the first interviews a draft of the analytical framework had been produced and was used in constructing the interview guide. However, as the research process moved forward, the analytical framework was revised and reworked several times. When topics were brought up in the interviews and we inductively developed ideas for what it may mean theoretically, we returned to the analytical framework and searched for previous studies that corroborated or contradicted the data. Thus, the analytical framework has been iteratively constructed and the image of the research field has emerged as the research process moved along (see Bell et al., 2019).

Therefore, the analytical framework was constructed through combining a number of sources and finding hypothetical connections. We have included sources such as academic articles, university textbooks and OECD reports to make sense of the subject. Many studies have a macroeconomic focus (e.g. Alesina et al., 2005; Blind, 2012; Calomiris, 2009; Crafts, 2006),

which gives the possibility of using those results as starting points for the research, however, the aim of this study is to dig deeper and explore individual companies' experiences: the how's and why's. Thus, while the macroeconomic perspective and aggregated results can give indications of how regulations may impact innovation in companies, a company perspective was missing in the area. The studies we found that were focusing on companies had been conducted in other industries and were often very specific. They were often case studies, focusing on industries such the pharmaceutical industry (Abraham & Davis, 2007), agrobiotechnology (Chataway et al., 2006), tissue engineering (Faulkner, 2009) and the telecommunications industry (Prieger, 2002), making their applicability in this study limited.

This lack of previous studies is also one of the reasons this study is valuable. When there is only a limited amount of theoretical knowledge on a topic, case-studies can usually serve as inspiration for further research. Inductive research that allows theory to be generated from the collected data can be a valuable starting point (Siggelkow, 2007).

2.7. Research Quality

Throughout the method section, we have discussed and highlighted any potential concerns regarding the research quality. In the following section we will in greater detail elaborate on concerns regarding the quality of this study, in line with Bell et al.'s (2019) recommendation to consider reliability and validity.

2.7.1. Reliability

Bell et al. (2019) emphasise the importance of reliability in order to ensure quality in business research, they also differentiate between *internal* and *external* reliability. The factor of *external* reliability is concerned with whether the results can be repeated and kept consistent if it was ever replicated by other researchers (Bell et al., 2019; Leung, 2015). Qualitative research is allowed to have a margin of variability to its result and still be considered reliable. Studies may differ in richness and ambience within similar dimensions, due to the difficulty of replicating a social setting which is in constant development over time (Bell et al., 2019; Leung, 2015). We have ensured a high level of external reliability through careful documentation of all details related to the study. We have had the ambition to adopt a maximum level of transparency regarding all decisions we have made and who participated in this study. Due to the social context of this study, the respondents will have a direct impact in the result and ultimately also the ability to replicate this study, we have therefore included the respondents' names, organisations and titles, with the full consent of all participants. The interview guide with the set of all questions can also be found in the appendix, in line with Bell et al.'s (2019) recommendation.

Internal reliability is achieved when more than one of the researchers within the study agree on the findings of the study – a high level of agreement between the researchers indicates a strong

internal reliability (Bell et al., 2019). It has been very important for us that both researchers fully agree on everything in this paper since this improves the reliability of the results. We have throughout the study had impeccable communication and any differences have been discussed until unanimity was reached. For example, in the coding process, we coded each interview independently, followed by a comparison of our coding. Similarities were perceived as accurate with a high level of internal reliability; any differences were discussed until both researchers agreed on the coding results (see Bell et al., 2019). Any remaining ambiguities have been elaborated on in the analysis section, Chapter 5.

2.7.2. Validity

According Bell et al. (2019), validity is focused on the integrity of the conclusion which is generated in the study. Leung (2015) complements this by saying that validity in qualitative research is judged by the appropriateness of the chosen tools, processes and data. This implies that the research question must be valid for the required outcome and that the method is suitable for answering such a research question. Furthermore, the design must be in line with the method and appropriate data analysis must be conducted. Lastly, the result and conclusion must be considered valid for the context (Leung, 2015).

Bell et al. (2019) argue that internal validity is concerned with whether there is a good match between the observations made by the researchers and the theoretical framework that was developed in the study. This is very much in line with what Leung (2015) sees as validity. To ensure a high level of internal validity we have chosen to clearly argue for our choice of method, research question, research design, data analysis and how the results and conclusion have been identified and created. These arguments can be found in the respective sections throughout this chapter.

External validity is concerned with the degree to which the findings of the study can be generalised across different social settings. There are sometimes arguments that external validity is a problem for qualitative studies because of the tendency to use case studies and small samples, and it is therefore more difficult, and many times impossible, to generalise (Bell et al., 2019; Siggelkow, 2007). This study has the structure of a multiple case study, which somewhat increases the ability to generalise the findings and results compared to having just a single case study (Bell et al., 2019). However, due to the fact that the chosen industry is large and broad, generalisation from this study should be done with extreme restraint. However, it can be argued that the factor of *external validation* is less applicable for qualitative case studies and that it is most likely not fulfilled.

2.8. Ethical Considerations

Bell et al. (2019) emphasise the importance of ethics and any issues related to ethics that may arise within the scope of the research. We have taken the opportunity to highlight and be transparent with the issues we have faced below.

The topic of innovation in regulated industries is by itself not a particularly sensitive topic and does not per se require any specific handling. The responses, however, can in their nature be considered strategic firm specific information. It was made clear to the respondents that this thesis will be a public document accessible to anyone who wishes to access it in full. It has been important for us that each respondent is fully aware that their answers cannot be under any form secrecy, and that the information shared with us should not be subjected to company secrecy. Both studied companies have had the opportunity to review the content of this study for approval in order to ensure full transparency and that no secret information is disclosed, before it was published.

Bell et al. (2019) speak of four types of ethical principles to follow in order to ensure a sufficient level of ethical standards. (1) Harm to participants, which is a broad topic and includes anything from physical to psychological harm and is to be considered unacceptable. We have in this study taken any and all steps necessary in order to ensure no harm has or ever will come to our participants or their organisation due to this study. These steps include information before and during the interviews, consent to publish names and titles, and finally the opportunity to review the study before publication.

(2) Lack of informed consent, which occurs if the participants are not given sufficient information to fully understand the nature of the study or what the data and results might be used for, therefore not giving the respondents the opportunity to decline participation (Bell et al., 2019). We have prevented this by giving the respondents information about the study beforehand and answered any questions that have come up during and after the interviews.

(3) Invasion of privacy is concerned with restricting researchers from intruding on a participant's privacy and that the participant's values should not be disrespected (Bell et al., 2019). We have ensured that the participants always have had the right to refuse to answer any questions, this right has not been used by any of the respondents. However, we have not been asking any questions that can be seen as an invasion of privacy, as such topics were not within the scope of this study.

(4) Deception is considered to be present when the researchers present their research as being something different than it actually is (Bell et al., 2019). All respondents were introduced to the topic before the beginning of the interviews.

3. ANALYTICAL FRAMEWORK

This chapter presents previous studies on the topic of regulations and innovation. It begins by defining innovation and financial innovation. Then a brief overview of relevant regulation of insurance and pension companies in Sweden is presented. In Section 3.3. a review of the impact regulation has on innovation can be found. The chapter concludes with a summary.

3.1. Innovation

Innovation can be defined as the *"introduction of new solutions in response to problems, challenges, or opportunities that arise in the social and/or economic environment"* (Edler & Fagerberg, 2017, p. 4). Innovation arising due to new combinations of already existing resources, knowledge and capabilities is widely viewed as a force of change in economic activities. This can concern services, manufacturing, private or public sector and so forth (Edler & Fagerberg, 2017).

Invention differs from innovation in that inventions are novel ideas and innovation includes implementing these inventions. However, novelty does not necessarily mean that it has never been seen before, i.e. it does not have to be radical. The term innovation also includes incremental improvements. (Edler & Fagerberg, 2017)

Companies tend to innovate due to one main reason; they have the need or opportunity to innovate. This is itself driven by five factors, of which four are external and one is internal. The external factors include technological development, increased competition, changing customers and changing business environment. The internal factor is the strategic intent of the company and their aspiration. (Goffin & Mitchell, 2017)

There are different degrees of innovation. A common typology is incremental innovation and radical innovation. Incremental innovation can be defined as innovation bringing technical improvements to products, services (Green & Cluley, 2014) or processes. It can also be current products or services that are launched to a new market. This type of innovation is considered relatively easy to develop as it can be based on customer needs (Goffin & Mitchell, 2017). Incremental innovations maintain status quo (Srinivasan, Lilien, & Rangaswamy, 2002; Story, O'Malley, & Hart, 2011; Tellis, Prabhu, & Chandy, 2009).

Radical innovation is on the other hand defined as innovation that challenges the existing paradigms (Green & Cluley, 2014) and have the potential of transforming markets (Srinivasan et al., 2002; Story et al., 2011; Tellis et al., 2009). Radical innovation is concerned with new products, services, processes or business models for markets that do not yet exist. It is difficult and uncommon to develop such innovations (Goffin & Mitchell, 2017).

3.2. Financial Innovation

Finance can be described as being the result of accumulated product and process innovation over centuries, improved in order to allocate capital and manage risk. The boundaries of financial innovation have been challenged and stretched over human history starting during antiquity, where the foremost innovation was to store value through the metallic coin and record debt (Moloney et al., 2015).

Financial innovation can be described as human knowledge breakthrough and other creative inventions, which have resulted in the following development (Moloney et al., 2015):

- New financial products which have resulted in improved capital allocation through stock, bond, funds etc.
- Development and creation of new processes and organisations in order to access capital. This includes establishments of new financial institutions and new forms of credit.
- New techniques to handle risk management from financial transactions and commercial deals.
- Technology innovation developed in order to improve the processes and products themselves focusing on risk management. It includes new technology's use in trading, capital allocation, product design, in distribution of risk etc.

A commonly accepted definition of financial innovation describes financial innovation as "the creation and the popularisation of new financial products, processes, markets, and institutions." (Khraisha & Arthur, 2018, p. 3). However, a more specific definition is suggested by Khraisha and Arthur (2018, p. 3):

"Financial innovation is a process, carried out by any institution, that involves the creation, promotion and adoption of new (including both incremental and radical) products, platforms, and processes or an enabler of technologies that introduce new ways or changes to the way a financial activity is carried out."

This definition highlights that financial innovation can come from many different kinds of actors in a market and does not limit financial innovation to mean innovation in securities or financial instruments but encompasses a broader range of innovation. (Khraisha & Arthur, 2018)

3.2.1. Swedish Regulation for Insurance- and Pension Companies

Insurance companies fulfil two important functions from the viewpoint of the insured. Firstly, they contribute to reduced risk-taking in different situations and secondly, they offer a secure saving option (Falkman, 2019). In Försäkringsrörelselagen, (2010:2043) ("Insurance Business Act", hereafter FRL), laws and regulations are outlined that set boundaries for insurance companies. Occupational pension companies are regulated separately, in Lag (2019:742) om tjänstepensionsföretag ("Legislation for Occupational Pension Companies", hereafter: TPL),

however, there are great similarities. Insurance companies and occupational pension companies may only be operated under permission, i.e. concession, according to FRL and TPL respectively.

Table 4 summarises a choice of regulations that are considered valuable to understand in the context of this study. Although there are of course many more rules regulating the insurance industry, these are considered relevant to this study. They are elaborated on in more detail in the following sections.

Risk Reduction	
Insurance companies are required to…	**Insurance companies are not allowed to…**
• Reduce risk-taking in different situations (Falkman, 2019). • Follow general principles of caution (FRL 6:1, TPL 6:1), risk control (FRL 6:2; TPL 6:3), and risk diversification (FRL 6:3; TPL 6:4-5) when considering investments. • Offer a secure saving option (Falkman, 2019). • Ensure stability by removing the threat of insurance companies being unable to fulfil their promises as a consequence of such a project (Falkman, 2019).	• Engage in non-permissible activities (FRL ch4§4, TPL ch4§5.) • Jeopardise policyholders (Falkman, 2019).

Table 4. Summary of relevant regulation to reduce risk in the insurance industry.

3.2.1.1. Solvency and Risk

The regulations take a stand on the type of risk insurance companies can undertake. The purpose is to make sure that the basic promises insurance companies make to the insured are not jeopardised (Falkman, 2019). The EU directive Solvency II (Directive 2009/138/EC) regulates the amount of capital that any insurance company operating in the EU must have in order to reduce risk of insolvency. Insurance companies must hold capital in relation to their assumed risk and must be able to guarantee that their financial resources are enough to withstand financial difficulties. However, in article 133 of the directive it is stated that with regards to insurance companies' assets there is investment freedom and that it is thus not allowed to regulate how insurance companies invest their assets. However, there is a general precautionary principle (FRL 6:1; TPL 6:1) with regards to the investments an insurance company may undertake. Thus, investments must follow some general principles about caution, risk control (FRL 6:2; TPL 6:3), and risk diversification (FRL 6:3; TPL 6:4-5).

3.2.1.2. Non-Permissible Activities

In FRL 4:4 it is stated that insurance companies may not engage in other activities than insurance or insurance related activities. A corresponding principle is found in TPL 4:5.

In the proposition to the law it is expressed that any activities carried out by an insurance company must be naturally connected to insurance (Prop. 2009/10:246). The government has stated that, in practice, the term insurance business has been treated in wide terms, and been

considered to include business that has a natural connection to insurance, such as marketing, information, advisory services, claims adjustment and capital management (Eckerberg, 2011).

In practice, insurance companies have been allowed to run other business operations if it can be guaranteed that such business is in the interest of policy holders. Activities with speculative elements cannot be considered to be in the interest of policy holders (Eckerberg, 2011; Prop. 2009/10:246). The purpose is to make sure that insurance companies have an accepted level of solidity through preventing investments in risky projects. Another purpose may be to ensure stability by removing the threat of insurance companies being unable to fulfil their promises as a consequence of such a project (Falkman, 2019).

3.3. Regulation and Innovation

According to economic theory, regulations have two major impacts on innovation. Firstly, the resources available for investment in innovation and its associated activities are effectively reduced as a consequence of compliance of regulations, as will be elaborated on in Section 3.3.2. Secondly, the incentives for investment are altered by regulations. Some regulations, such as patent protection, might produce positive incentives to invest in R&D, while others may reduce incentives (Blind, 2012). Regulations have been found to have an effect on technological development in industries ranging from biotechnology to banking (including pension and insurance companies) (OECD, n.d.).

There are multiple studies that find a negative relationship between regulations and innovation combined with business productivity. Loayza et al. (2005) show in their study that all regulations have a significant negative effect on growth both for society and business. Pellegrino and Savona (2017) found that regulations negatively constrained firms' innovation propensity. Gorgens et al. (2003) identify that a shift from high to moderate level of regulations has a large positive effect on growth. One study finds a negative correlation between the intensity of product market regulations and R&D expenditure in OECD countries (Bassanini & Ernst, 2002).

In the next sections, more specific impacts of regulations on innovation are presented. There is a significant lack of previous studies on this topic. Most previous studies take on a macroeconomic perspective (e.g. Blind, 2012). For the purpose of this study, a framework is produced that combines a range of studies and sources. For example, studies on regulation, innovation management, creativity and motivation.

3.3.1. Predictability

It has been found that there are certain preconditions that should be fulfilled in order to not prevent investments in innovation from being made. Predictability, enforcement and timeliness of regulations have been found as main factors for avoiding long-term negative effects on

innovation (Garcia-Murillo, 2011). Similarly, it has been found that certainty about government policies is imperative for companies to consider risk and opportunity for investment (Marcus, 1981). Yet another study finds that predictable and transparent regulations with credible institutional staying power are important for fostering innovation (Kolady & Herring, 2014). Regulations can put up barriers if they increase uncertainty (OECD, n.d.).

A survey carried out in 1994 showed that companies found that regulations made it more (or much more) difficult to reduce uncertainty (49%) (OECD, n.d.). Although one has to keep in mind that this survey cannot be considered recent and regulation practices may have developed in the last 25 years, the results can still be used, with some caution and awareness.

3.3.2. Resources

Regulations can be considered a constraint in that resources are reduced (Alesina et al., 2005; Blind, 2012) due to the compliance costs that they entail (Blind, 2012). The term compliance cost refers to both the cost of conducting compliance activities, e.g. salaries for compliance officers and time consumption from conducting compliance audits, as well as cost incurred from abiding regulatory demands, such as systems required to meet regulatory demands (Investopedia, 2020).

A survey carried out in 1994 showed that companies found that regulations made it more (or much more) difficult to minimise costs (75% of respondents). That costs are affected through increased compliance cost (OECD, n.d.) is supported by economic theory (Blind, 2012) and other studies (e.g. Alesina et al., 2005). Regulations that increase costs of development can create barriers (OECD, n.d.). The same survey also found that the ability to reduce time to market is hampered by regulations (54% of respondents) (OECD, n.d.). This seems logical, due to the time it may take for companies to ensure compliance and specific procedures that they may have to follow according to regulations.

The effects of reduced resources can for example be that resources for conducting testing and prototyping are reduced. Another effect of regulations is that compliance costs reduce the resources left over for investing in innovation (Blind, 2012). Alesina et al. (2005) have in their study confirmed that if the costs associated with product-market regulation decrease, organisations will increase their investment activities. Crafts (2006) can in his literature study find that deregulations within the OECD have had a positive effect on productivity growth. He can also conclude that regulation has its most important effect on the incentives for investing in innovation, where if the regulations reduce the net return for an investment, it is less likely for an organisation to invest in it.

Regulated demands on organisations can thus restrict innovation by increasing costs and decreasing or even eradicating the expected return on investment of the innovation (Blind, 2012; Swann, 2005).

3.3.3. Creativity

Creativity, defined as generation of ideas that are both novel and useful (Sternberg, 1999), is the foundation of invention and innovation (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Caniëls & Rietzschel, 2015; Mueller, Melwani, & Goncalo, 2012). Creative organisations are often characterised by concepts such as autonomy, weak rules, few boundaries and freedom. However, the truth for most organisations is that constraints and boundaries are present. Studies have found that constraints can have both a positive and negative impact on creativity of organisations and individuals. They can be perceived as impeding the freedom and creativity, or they can act as a positive challenge. Findings on the subject are mixed and inconclusive. Organisational constraints can have different appearances, for example, bureaucracy or limited availability of resources (e.g. money and time) (Caniëls & Rietzschel, 2015). Although the studies referred to in this section do not explicitly study regulation, regulation can be seen as a constraint, thus, the results of these studies are used as analogies in the context of regulation.

3.3.3.1. Constraints Can Affect Motivation

Studies have typically pointed toward constraints and controlling as having negative relationships with creativity. They may present barriers to creative people with the consequence that creative potential is not fully exploited. Negative impacts stem largely from motivation: external constraints impact individuals' needs for autonomy which can diminish intrinsic motivation, and consequently negatively impact creativity (Caniëls & Rietzschel, 2015). Intrinsic motivation – the drive to engage in an activity for the sake of the enjoyment, interest and personal challenge of the activity or task itself is positive for creativity. This connection is called the intrinsic motivation principle of creativity. Extrinsic motivation (e.g. prestige, rewards, social acceptance) is generally negative for creative performance (Hennessey & Amabile, 2010).

There is a connection between success and creative performance. The inner work life is the driver of peoples' creative and productive performance. It consists of emotions, motivation and perceptions during a workday. E.g. happiness, workers' intrinsic interest in their work, or their own views of the company, team or management. The progress principle states that "making progress" is one of the things that can be most beneficial for motivation and boosting inner work life. On the other side of the matter is the effect that negative events have on employees (Amabile & Kramer, 2011). Amabile and Kramer (2011) find that negative events, such as small losses or setbacks, can have a stronger effect than positive progress on inner work life. On days with progress, intrinsic motivation increases by interest and enjoyment of the work. On setback days, both intrinsic and extrinsic motivation decrease. Setbacks can lead to apathy and disinclination to do the work. The more frequently a sense of progress is felt by employees, the more likely they are to be creatively productive on the long-term. This implies that successes and progress, both big and small, have a positive impact on motivation and subsequently creativity (Amabile & Kramer, 2011). If regulations prohibit companies from

being successful in their innovation (e.g. through explicit rules or resource limitations), this could have a negative impact on creativity.

Setbacks can affect perceptions and cause employees to, among other things, find less positive challenge in their work and feel that they have less freedom carrying it out. Progress, on the other hand, increases the positive perception of challenges and results in improved teamwork (Amabile & Kramer, 2011). Roskes (2015) also connects creativity and freedom. Constraints that channel cognitive resources, such as task procedures, strict goals and structures can have dual impact. They can firstly, increase the efficient use of cognitive resources, thereby increasing creativity, and secondly, undermine intrinsic motivation due to the lack of autonomy and freedom.

Autonomy has been mentioned by multiple sources as important for innovative capability (Aasen & Amundsen, 2013; Goffin & Mitchell, 2017). That employees experience freedom to make decisions without control is an important factor for encouraging employee participation in ideation (Aasen & Amundsen, 2013). Thus, employee participation in ideation may decrease if they do not experience autonomy.

Certain kinds of constraints can encourage ingenious solutions (Caniëls & Rietzschel, 2015). One study shows that constraints that limit cognitive resources can be considered as having a positive challenging element which increases intrinsic motivation (Roskes, 2015). Constraints can make employees motivated and energised to find new creative ways of overcoming obstacles (Caniëls & Rietzschel, 2015). One example of an industry that was sprung from constraints is the environmental industry which was formed as a consequence of environmental protection policy. Studies on the subject have found that such regulations drive technological development and that it even has created a new industry (Blind, 2012). On the other hand, Amabile and Kramer (2011) show that progress affects the perception of challenges as being either positive or negative.

Both a limited structure and freedom to improvise are necessary for achieving successful product-innovation (Brown & Eisenhardt, 1997; Caniëls & Rietzschel, 2015). There is a need for balance between firmness (i.e. rules and regulations) and flexibility (i.e. autonomy and adequate resources) for successful innovation (Caniëls & Rietzschel, 2015; Tatikonda & Rosenthal, 2000).

3.3.3.2. Constraints Can Focus Creativity

Positive impacts of constraints are that they can make a task more manageable and more interesting. Too much freedom can render people uncreative and prone to adopt previously known solutions (Caniëls & Rietzschel, 2015), taking the path of least resistance (Caniëls & Rietzschel, 2015; Ward, 1994). A total lack of restraints may increase the tendency of individuals to generate the most obvious ideas (Caniëls & Rietzschel, 2015; Hirst, Knippenberg, & Zhou, 2009). Constraints can also reduce complexity of a task (Caniëls &

Rietzschel, 2015). Furthermore, as was mentioned above, one impact of constraints that channel cognitive resources is that resources may be more efficiently used and creativity increased (Roskes, 2015).

Behavioural psychology makes the suggestion that creative imagination is at its best when constraints are explicitly understood (Caniëls & Rietzschel, 2015; Kamoche & Cunha, 2001). This connects to what Goffin and Mitchell (2017) press on the topic of ideation: identifying a problem or opportunity is highly important, because without doing so, no ideas can arise for solving them. Thus, logically, constraints can aid in defining a problem or challenge and therefore increase creativity. Through a similar mechanism, setting an ambition and target helps increase the relevance of ideas: If the target is not clearly specified, the employees may submit any ideas that, although they may be original, are not useful, since it may fall outside the scope of the organisation (Goffin & Mitchell, 2017). It is also recommended by Goffin and Mitchell (2017) that selection criteria are known to those contributing ideas in order to increase the quality of submitted ideas. It thus seems that relevant regulations should be made explicit to the organisation to set a target and make sure that ideas are useful to a higher degree.

3.3.4. Forcing or Preventing Innovation

Regulations can be a source of new industries (e.g. the environmental industry) (OECD, n.d.). As previously mentioned in the context of creativity, constraints can give rise to ingenious solutions (Caniëls & Rietzschel, 2015). Social regulations can set requirements and focus research efforts (OECD, n.d.). Several studies on environmental innovation (eco-innovation) have found that regulation is the most important stimulus for innovation (Leitner, Wehrmeyer, & France, 2010). Swann (2005) similarly found that the content of regulations could be a considerable source of innovation. Supporting this, one study within the chemical industry claims that innovation is achieved because of regulations – both perceived and actual constraints. Changes that were required to comply with regulations pushed innovation forward (Ruckle, Wilkowski, & Wilson, 2015). Yet another paper finds that regulation can be a driver of financial innovation even when regulations forbid from engaging in certain activities. Companies may then wish to circumvent the regulations in order to maintain profitability. Regulation can also encourage certain types of innovation. In later years, more emphasis has been placed on using regulation as a tool for increasing responsible and social financial innovation. (Khraisha & Arthur, 2018)

Porter (1990) recommends enforcing strict standards on products, safety and environment in order to gain national competitive advantage. He predicts companies will be forced to improve quality and technology. However, strict regulation must be accompanied by an efficient regulatory process that does not consume resources. He warns that easing standards is counterproductive. He goes on to exemplify with Swedish high environmental demands which he finds have pushed the production of high-quality products.

Regulations impose constraints in that they can close off some avenues of innovation (Tidd & Bessant, 2013). Regulations can explicitly forbid certain types of innovations; an example of such regulation is the rule regarding non-permissible activities (FRL; TPL). Regulations can thus present an obstacle to innovation (Swann, 2005).

3.3.5. Selection Criteria

One impact of regulations in the selection phase(s) of an innovation process is that compliance may become a part of selection criteria. Asante et al.'s (2014) study of a large asset-management company showed that the case company employed a stage-gate process. Each innovation process phase was clearly defined by decision gates where both a risk assessment and regulatory compliance took place (Asante et al., 2014).

As has been discussed in Section 3.3.3.2, it seems regulations may have a place among companies' selection criteria. Explicit constraints can stimulate creativity (Caniëls & Rietzschel, 2015; Kamoche & Cunha, 2001) and increase the quality of ideas (Goffin & Mitchell, 2017). Thus, it is reasonable to conceive that companies in regulated industries include regulation in selection criteria in order to make sure relevant ideas are brought forward.

3.3.6. Project Management

In a case study, Asante et al. (2014) cast light on a well-structured innovation process, where a stage-gate model is used. The process includes regular risk assessment and regulatory scrutiny. Compared to four decades ago, today's innovation process in the financial industry is longer, more complicated and under more regulatory scrutiny. This is a result of financial crises during this period of time and governments' motivation to reduce the risk of it repeating. Thus, regulations seem to have an impact on innovation processes.

Asante et al. (2014) found that, in contrast to their what their literature review suggested, there are specific forms of governance for financial innovation, at least in the studied context of fund management. Previous literature did not associate any established new product development or innovation mechanisms with financial innovation per se: Mechanisms such as internal control, codes of conduct, auditing or certification were not specifically connected to financial innovation, and were rather seen as traditional business development tools that could be used by any organisation (Armstrong et al., 2012; Asante et al., 2014).

The study revealed that the stage gate model was applied by the case firm. Each gate included a review process by a review team. It often took the form of a status meeting with evaluation and a decision process regarding which projects were to proceed or pivot. The included parties were often the project development team combined with external senior members of the organisation. In financial projects, a compliance offer would be included in this review team, in order to have regular contact with the project team and assure that the innovation project met all the official regulations. As a last step, the innovation project faced scrutiny from the

responsible national authority before market approval (Asante et al., 2014). However, it is important to defer from generalisation based on this one case study. Asante et al. (2014) press that further studies are needed in order to increase generalisability. However, the results are used, with caution, to compare and contrast to the empirical findings of this thesis.

On the other hand, another study argued that innovation processes for monetary financial institutions can take on different shapes along a continuum of structured and unstructured approaches (Arthur, 2017). The stage-gate model is a classic project management process design used by many organisations. The goal of the stage-gate model, argued by Cooper and Edgett (2007) and Grönlund, Sjödin, and Frishammar (2010), is to improve efficiency and effectiveness and reduce uncertainty by integrating discipline. Its design with multiple stages followed by an equal number of gates between each stage allows for regular regulatory reviews in line with Asante et al.'s (2014) findings.

Frameworks that are recommended for innovation such as agile methods, place a significant emphasis on prototyping and testing in an iterative manner. Agile models have their origin in software development. When developing software for consumer use it was difficult to prespecify products because consumer response was difficult predict. Instead of developing a full product and risk receiving negative feedback upon launch, rendering the work invested useless, applying agile methods allows faster feedback. Agile methods include a trial and error approach, where products do not need to be specified from the onset. Preliminary prototypes are tested on users and are modified if necessary in an iterative manner. (Goffin & Mitchell, 2017)

Due to compliance cost, resources for testing activities may be reduced (Blind, 2012), and the possibility of applying agile project management methods may be reduced. Both due to the increased cost in terms of time, but also other types of compliance costs. Regulations may also close off avenues of testing and prototyping (see Tidd & Bessant, 2013). One study proposes that firms that operate in heavily regulated sectors might have less room for putting employee ideas to the test than less regulated firms (Vera & Crossan, 2004), which can make it more difficult for firms to apply agile methods. Thus, as resources are reduced by regulations (Blind, 2012) resources needed for testing are logically reduced as well. When rapid testing is not possible, staged project management models are recommended (Goffin & Mitchell, 2017).

3.3.7. Incremental and Radical Innovation

In industries with ethical considerations and significant externalities the actors are bound by regulation in most, if not all, of their activities. Hence, the connection between regulation and innovation is close. Safety regulations can create obstacles for innovations that are deemed too risky (likely radical innovation) (Blind, 2012), however, in the financial sector, also incremental innovation can be seen as risky (Asante et al., 2014). Thus, radical innovation in the financial sector is likely deemed even more risky than in other industries with less impact on society.

Asante et al.'s (2014) study showed that the innovation conducted within the asset-management company mostly was of the incremental kind with a focus on the product-process part. The innovation projects focused on risk levels, investment objectives and target markets to mention a few (Asante et al., 2014). It is proposed that all companies normally struggle with selecting radical ideas (which is neither easy nor intuitive) as well as maintaining support for radical ideas (Nicholas, Ledwith, & Bessant, 2015). This can be particularly difficult in regulated industries where the regulatory environment leaves little room for radical changes. Thus, organisations under influence of severe regulations may be subjected to an even greater challenge when trying to conduct radical innovation.

The previously mentioned 1994 survey also showed that companies found that regulations made it more (or much more) difficult to organise in a flexible way (59% of respondents) (OECD, n.d.). It is commonly recommended that innovation projects are run by heterogeneous, cross-functional teams, especially in the earlier moments of the process. Often, standardised processes can be applied to facilitate cooperation. However, more radical innovation may require other processes than usual (Goffin & Mitchell, 2017; Schilling, 2013). Informal, flexible organisational structures have been linked to radical innovation (Olson, Walker, & Ruekert, 1995). Radical innovation is typically built on interaction between different functions and divisions within an organisation as well as collaboration with other organisations and networks (Story et al., 2011). Thus, it seems the inflexibility of an organisation may hinder it from succeeding with radical innovation.

A possible solution to the problem of inflexibility is for companies to look outside the organisation and apply open innovation instead. It can sometimes be beneficial to bring people into innovation projects that are unbound by the existing logic at a company if more radical ideas are to be developed (Goffin & Mitchell, 2017). Collaboration can supply organisations with crucial inputs to achieve growth and development (Schilling, 2013). In order to generate new ideas, Schilling (2013) argues that the involved individual should only have a moderate level of knowledge of the industry. Having too little may result in the individual struggling with understanding it well enough to contribute with meaningful materials. Having too much understanding may result in the individual being trapped inside the existing logic and processes, preventing them from seeing the problem from different perspectives. Reasons for engaging in collaborations may be (1) Access necessary capabilities, skills and resources crucial for innovation development (2) create organisational and individual learnings from the partner (3) share cost and risk for the projects (Schilling, 2013).

Legislation states that insurance companies may not engage in any activities they wish, activities not naturally related to insurance are non-permissible according to FRL and TPL. This can make it difficult to commercialise certain innovations if the innovation is not clearly related to insurance as is defined by law. Especially radical innovation should have difficulties fulfilling the criteria outlined by the regulation. Regulations around risk-taking can also make radical innovation less likely. The cautionary investment principle (Falkman, 2019) can possibly steer away from the most risky (often radical) innovation.

Liability regulation can increase costs for companies if it is too strict (Baniak, 2016; Blind, 2012). Risks are increased, expected revenues decrease and users protect themselves less which can lead to more accidents (Blind, 2012). Viscusi and Moore (1993) show that very high levels of liability affect product innovation negatively. Once again, especially radical innovation should be negatively affected by liability regulation since it is more uncertain and risky (see Goffin & Mitchell, 2017; Green & Cluley, 2014; Srinivasan et al., 2002; Story et al., 2011; Tellis et al., 2009).

3.3.8. Market Conditions

Regulations can also have an impact on market conditions, which in turn can alter the incentives for firms to innovate (Blind, 2012). Economic regulations can help sustain openness of markets as well as competition, which are necessary preconditions for research and innovation (OECD, n.d.). Institutional/administrative regulations also make sure fair rules are in place for all actors in the market, i.e. intellectual property right protection laws (OECD, n.d.). Patent protection can give incentives to invest in innovation, since it allows innovators to make sure they can appropriate value from the innovation (Blind, 2012).

In a study by Klapper et al. (2004) clear evidence is provided that a higher level of industry regulations leads to higher entry barriers for new actors and a higher mark-up on products for existing actors, which is seen to be damaging in new technology development. High entry barriers can on the other hand increase the expected return on investment and reduce competitive pressure for incumbents, encouraging these companies to take risks on innovation (Blind, 2012). However, on the whole, high entry barriers have a negative impact on the overall innovative performance of the market, since innovative companies are hindered from entering the market (Blind, 2012). Start-ups may have a problem entering the market due to requirements that may be insurmountable, such as capital requirements that must be fulfilled to gain permission to operate in the industry (e.g. Solvency II[1]). Great Britain was in 2005 estimated to have the lowest barrier of entry to entrepreneurship among OECD countries. In spite of this low level of regulatory barriers, a taskforce within the government estimated that regulations cost GDP £16 billion annually due to reduced business productivity (Crafts, 2006). There is thus a need to find a balance between competition (which is enabled through lower entry barriers) and insurance policyholder protection (OECD, 2017).

Competition policy can have an impact in that the level of competition in the market has effect on the incentives to innovate (Blind, 2012). Companies can become preoccupied with regulators and protecting what they already have (Porter, 1990). A good level of competition will give companies reason to innovate in order to gain competitive advantage over competitors. Too intense competition can make it more attractive for companies to copy each

[1] Directive 2009/138/EC on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II)

other rather than produce original innovations (Blind, 2012). Lowering entry barriers and enabling more competitors in the form of start-ups could lead to more innovation and positive development in the insurance market (OECD, 2017).

3.3.9. Adoption

Regulations can also create distortion on the choice of technologies to develop, and what technologies are adopted (OECD, n.d.). Regulations can have a positive impact on consumer adoption in that they can help convince consumers of product safety by imposing a minimum safety standard (Blind, 2012). Minimum quality standards make sure innovations keep a certain quality, which keeps customers from being harmed by products, which can increase customer confidence in products (Baniak, 2016) (to a point of overconfidence and failure to use protective measures (Baniak, 2016), similarly to the effects of liability regulation (Blind, 2012)).

Liability regulation can increase market adoption as well, however, the right balance must be found since it can also have negative effects, as presented under Section 3.3.7 in the context of incremental and radical innovation. A positive effect of liability regulations is that they can increase market acceptance and adoption (Blind, 2012). A lack of product liability reduces acceptance of new products among customers (Blind, 2012; Viscusi & Moore, 1993).

3.3.10. Summary of Regulations' Effect on Innovation

In Table 5 the previous sections are summarised with the purpose of giving an overview of previous studies and literature on this topic. In the table the literature findings are presented according to category of impact and if the effect is positive, negative or neutral. Positive effects increase incentives for organisations to innovate or enable them to do so. Negative effects decrease incentives to innovate or make it more difficult to do so. Neutral effects are consequences of regulation that have no clear effect on incentives or the ease of carrying out innovation, but that the literature nonetheless suggests could be an effect of regulation on firms.

	Positive Effects	**Negative Effects**	**Neutral Effects**
Predictability	Predictable and transparent regulations with credible institutional staying power are important for fostering innovation (Kolady & Herring, 2014).	Unpredictability and uncertainty of regulations makes it difficult for innovators to assess risk (Marcus, 1981).	
		Regulations make it more difficult to reduce uncertainty (OECD, n.d.).	
Resources		Regulations lead to compliance cost, which reduces resources for innovation and reduces or removes incentives for investment (Alesina et al., 2005; Blind, 2012; OECD, n.d.).	

	Positive Effects	Negative Effects	Neutral Effects
Creativity	Regulations can increase motivation if they are viewed as a positive challenge (Caniëls & Rietzschel, 2015), increasing innovation.	Regulations can decrease motivation if freedom and autonomy is decreased (Caniëls & Rietzschel, 2015) or if progress is prevented (Amabile & Kramer, 2011).	Regulations should be included in selection criteria to increase quality of ideas (based on Caniëls & Rietzschel, 2015; Goffin & Mitchell, 2017; Kamoche & Cunha, 2001).
	Regulations can increase efficient use of cognitive resources (Roskes, 2015)		
	Regulations can steer away from obvious solutions (Caniëls & Rietzschel, 2015; Hirst et al., 2009; Ward, 1994).	Employee-driven ideation can decrease due to lack of autonomy (Aasen & Amundsen, 2013).	
Regulations Forcing or Preventing Innovation	Regulation can be a source of innovation (Swann, 2005) or new industries (OECD, n.d.), if forced.	Regulations can prevent types of innovation (Tidd & Bessant, 2013) (e.g. rule of non-permissible activities).	
Selection Criteria			Compliance becomes part of selection criteria (Asante et al., 2014).
Project Management		Regulations may restrict testing and prototyping (Blind, 2012; Vera & Crossan, 2004) which can restrict from applying agile methods (Goffin & Mitchell, 2017).	Regulations and regular compliance can encourage the use of staged models (Asante et al., 2014).
Incremental and Radical Innovation		Safety regulation can prohibit risky (e.g. radical) innovation (Blind, 2012).	May lead to companies engaging in open innovation (Goffin & Mitchell, 2017; Schilling, 2013).
		Regulations make it more difficult for companies to organise for radical innovation (OECD, n.d.).	
		The rule of non-permissible activities can restrict possibilities for radical innovation (FRL; TPL)	
		The cautionary principle (Falkman, 2019) can reduce risk-taking.	
		Liability regulations can decrease radical innovation (Blind, 2012; Viscusi & Moore, 1993).	
Market Conditions	High entry barriers can give incumbents incentives to invest in innovation (Blind, 2012).	High entry barriers reduce incentives to innovate (Blind, 2012).	
	Patent protection gives incentives for innovation (Blind, 2012).	High entry barriers can prevent start-ups from entering the market (OECD, 2017), decreasing innovation.	
	Regulations can ensure a fair market (OECD, n.d.).		
Adoption	Safety regulations and minimum quality standards can convince customers of product safety (Baniak, 2016; Blind, 2012).		
	Product liability regulation increases market acceptance (Blind, 2012).		

Table 5. Summary of regulation's effect on innovation.

4. RESULTS

This chapter presents the data collected through qualitative interviews with the respondents. The chapter starts with an overview of contextual background and subsequently moves into presenting data according to the nine first-level themes identified through thematic analysis.

The purpose of presenting the contextual background is to give insights into the companies' view on innovation and some general methods they apply in their innovation work. Gaining an understanding for context and factors not directly related to regulation is helpful for conducting a deep and nuanced analysis. In Section 4.2. and onward, the results are structured according to the first-level themes found in our thematic analysis. This structure has the drawback that it may introduce an element of analysis already in the results chapter, however, the advantage is that the structure offers clarity of how the empirical data have led to the analysis we made. We have made an effort to present the data as authentically as possible, which also is the reason for presenting a high number of quotes. This allows for transparency and the ability for the reader to critically consider the results while it also creates a pedagogical, red thread throughout the results, analysis and conclusions.

4.1. Background and Context

4.1.1. Reasons for Working with Innovation

Länsförsäkringar G&B and their innovation company, Lfant, see innovation as an important part of their strategy and future survival. They see it as non-optional.

"If we do not do the innovation, then someone else will do it" – Justus Alholt, Länsförsäkringar G&B.

"We are in the digital transformation even though we are in a conservative industry. We have to be." – Helena Wallskog, Lfant.

They see innovation as important in order to raise the competence level of their employees and also highlight their ability to impact society:

"We see innovation as part of our strategy as very important, in all aspects. The new technology, it is very important. We want our employees to be very competent, and we are also a very large company and we have an opportunity to have a large impact on society." – Justus Alholt, Länsförsäkringar G&B.

Before Länsförsäkringar G&B, Ricard Robbstål worked within the newspaper media sector, which gave him valuable insights on the importance of innovation and that industries are subject to be challenged at any time by new innovation or other developments.

"What was interesting in media, it was in a free fall there in my last years. […] We had made so much money, we did not know what to do with it. Then everything went away, no one wanted to pay for it [news] […]. That is what I took with me here, I feel there is a low sense of urgency, we have always done well and made much money, and everyone thinks they are invincible, so I try to prepare us for when something happens, that is why I work with innovation." – Ricard Robbstål, Länsförsäkringar G&B.

SPP expresses similar sentiments and highlights that innovation is important for them in order to be able to keep up with the changing industry they are operating in.

"We have to work with innovation. We are in an industry that is, and will keep, changing quickly, so it is a necessity to be able to keep up with that speed. If you have an ambition to be part of changing the industry, you have to work with innovation and dare to try new things." – Monika Rappe, SPP.

Innovation is seen as a source of differentiation and crucial for competitiveness, especially if the ambition is to be a winner in the industry. Innovation is seen as especially important as companies no longer can compete solely on price. Add-on products and improved customer experiences through innovative products are seen as imperative for competitive advantage.

"I think that those that succeed with innovation will be the winners in the future. All the products are the same. For occupational pensions, no matter if you place it with SPP or any other company, with fund management, nothing is different, the only thing we can compete with on a product level is price, and also the price has a lower limit which is zero. It is when you can combine insurance products with customer experiences and add-on products and services that demand innovation that you make a difference. […] The winners are those that can bring forward exciting innovations or make it easier for the user or deliver good customer experience. It is crucial I would say." – Magda Nyberg Rosloniec, SPP

The general lack of interest in the occupational insurance industry has allowed a relatively low innovation rate in the industry but the sense is that expectations are starting to rise and innovation is an important part of being able to meet future customer demands when inefficient solutions no longer will be accepted.

"The occupational pensions industry is not very innovative. In that lies the big opportunity. The main challenge is that it is a low interest product to the vast majority of people – few people go around thinking about their pension savings, unless they are nearing retirement. Also, when it comes to user friendly digital solutions the expectations on our industry have remained low – we believe this will change. Our industry has gotten away with inefficient solutions - you expect forms, telephone queues, and quite boring things in your contact with

an insurance company. The bar has actually been raised, by other industries. We perceive this as an opportunity get ahead of our competitors." – Per Lindberg, SPP.

4.1.2. Organisational Structure

The development structure between the two organisations differ. Länsförsäkringar G&B find that some projects work well to do in small scale and some in large scale with all 23 companies. They sometimes also start initiatives locally and later export the projects to Lfant or LFAB. There can sometimes be difficulties in handling the different players in the organisation, but too much structure is not desirable either:

"There can be a frustration within the organisation about the structure, it can sometimes feel very messy. We have LFAB, Lfant and our own innovation – who actually has control of all this? I love structure, and specially in diffuse areas like innovation, then you need some structure, but I have wanted this to grow a little wild in order to not funnel down too early into being very long term focused, or opportunistic and ad hoc, I want us to be both. We are a long-term focused company, but we are a combination of ad hoc and long term […]. When we find something we can improve, we focus on that." – Ricard Robbstål, Länsförsäkringar G&B.

SPP has a different organisation and has constructed a virtual development organisation within their ordinary organisation. A number of fixed, cross-functional, development teams work in this organisation, but they still report to the ordinary organisation.

4.1.3. Project Management

Länsförsäkringar G&B is currently working according to Pejl[2], a project management method that includes tollgates where decisions are made in a steering group. Ricard Robbstål, Länsförsäkringar G&B, describes it as a type of waterfall model, Justus Alholt, Länsförsäkringar G&B, describes it as a staircase where the steps are divided by a go or no-go decision. They are however currently working with implementing a SAFe[3] structure in order to work more lean-agile.

[2] Pejl is a project management method with fixed decision points and process stages that describe the projects' activities. The model contains checklists and templates to support project group members. https://pejl.se/index.php/modeller/

[3] Scaled Agile Framework. It provides guidance on how companies can master seven core competencies in order to be able to achieve agility to be able to respond to changing business environments. https://www.scaledagileframework.com/about/

Länsförsäkringar G&B works with unique teams that are tailored to the scale and type of each project, including internal and external components.

"[...] we are involving a lot of people from us, employees within this office [...] We also take help from experts on the technology and know-how to gather data, we know bank and insurance, but we need help with the rest. We hire services from those who are good at this, so one really important aspect is collaboration." – Justus Alholt, Länsförsäkringar G&B.

Just as Länsförsäkringar G&B includes employees in the ideation phase, they keep employees involved during the continued development as well.

"As many employees as possible are part of the development process. [...] They may think that some process is ancient, they have great knowledge, so then they have a potential to change and speak their mind. We want to say that everyone is to act as innovator" – Ricard Robbstål, Länsförsäkringar G&B.

Lfant also works in a staged model, where project stages are divided by decision points. They put teams together depending on the type of project. They bring in specialist knowledge and involves the Länsförsäkringar-organisation in different ways, by including different people in their teams.

SPP works with standing agile development teams, which enables them to save time. The teams have different focus areas, goals, and can be successively adapted according to their needs. The teams are cross-functional. To bring in specialist knowledge, subject matter experts can be brought into the teams. Activity owners sometimes collaborate with different teams if they develop parts of an initiative.

SPP has made a migration towards an agile and customer driven approach within the last ten years. While before they worked in a more linear fashion, they are currently iterative in their development processes. They find that this is important in order to be resource efficient. Without iteration and testing, they risk working on developing products for several months only to find out afterwards that they are not relevant.

"We developed it [Sajna] first for our own sales teams, where we initially involved a limited superuser team so they could test it and give feedback. Then we developed on the basis of that feedback and then we moved on to the next step to test it on three insurance brokers to get their feedback. So, we are fairly iterative in those innovation processes. While if you go back maybe five years it was much more that someone did a business case and designed the delivery and put a bunch of people on working on it for 6 months or a year – or in the worst case, one and a half years – and then in the worst case you get a product that is not usable, or of limited relevance." – Per Lindberg, SPP.

4.1.4. External Collaboration

What seems to be quite popular for both organisations is external collaboration in innovation projects. The motivation for such external collaboration varies between accessing the right competences, exchanging knowledge and know-how and finding unique business opportunities.

Länsförsäkringar G&B commonly integrates both employees and external partners into their teams and finds that collaboration is very important.

"Collaboration is very important, in order to get something done in a good way, we need to work with those who know and understand, many want to collaborate. Sometimes it is just those who want to help us, or more formal collaboration partners. We then exchange knowledge, technology and know-how." – Justus Alholt, Länsförsäkringar G&B.

SPP works with start-ups and tries to find mutually beneficial partnerships. They press that the main reason for collaboration is that they can reach results they cannot on their own and that all collaborations are based on business factors.

"We work with start-ups because we believe we can increase our market strength through collaboration. We do it in areas where both of us are prepared to take risk to reach benefits that would otherwise not be possible. When we decide on partnerships it is a pure business decision, rather than, for example, trying to acquire a special competence." – Monika Rappe, SPP.

4.1.5. Types of Innovation

Länsförsäkringar G&B and Lfant drive innovation in several different areas. They take inspiration from technologies and investigate how they can be applied to their business, for example AI. They work with digitalisation of services. Helena Wallskog, Lfant, has for example driven a voice control project with the purpose of making it possible for customers to do their insurance claim via voice control.

They try to develop products that they can attach to their business in different ways. For example, Lfant has driven a project called Bopulsen, which is an app for home insurance customers. It gives control over their homes for increased safety. This is a product that gives the customers control for their own sake, but that Helena Wallskog, Lfant, finds can be attached to their main business. Another example is RideSafe, that Justus Alholt, Länsförsäkringar G&B, has worked on which aims to reduce the use of smartphones during driving. Since they found that this is a common reason for automobile accidents, they found that this app can reduce accidents and as a consequence reduce their costs, so that Länsförsäkringar G&B can lower their prices for their customers.

For Länsförsäkringar G&B, ideas come from employees and from environmental scanning for new technologies or solutions. In the case of developing RideSafe, they found a company that had developed interesting technology that they could test for this purpose. Länsförsäkringar G&B also takes inspiration in certain technologies: In the case of artificial intelligence, they mapped out the area and created an understanding of how it could be relevant for their operations.

Lfant, Länsförsäkringar G&B's innovation company, has an open approach to ideation:

"To generate ideas, we usually gather thoughts and ideas from the organisation that we can workshop around, we look at business plans of the different companies and try to ideate around that, we invite suppliers to do some kind of an idea workshop where we can find ideas. Then there are a lot of start-up companies that reach out to us, to present their idea, that want to connect with an insurance company to make it happen. Ideas come from many different sources." – Helena Wallskog, Lfant.

Länsförsäkringar G&B works consciously with including employees from all areas and levels in ideation and innovation projects.

"The model we have worked out and that has worked very well is to involve employees in a large scale, these people have initiative power and ideas, so we have created opportunities to get the conversations started. We have worked in small groups, very small groups and large groups in order to identify problems, and then clustered these ideas, which has created examples of solutions to reach." – Justus Alholt, Länsförsäkringar G&B.

They have found that employees both have a lot of ideas, especially related to their own work field, but also that working bottom-up with different types of ideas for improvements is effective from a change management perspective, which is also seen as highly beneficial for succeeding with innovation.

"We have had a consultancy agency here, documenting where we can improve, but we have made sure that it is the employees that have given the suggestions for improvements. In a few weeks we identified 70 different improvements. This is better than if it comes right from the management team. So, we work with bottom-up." – Ricard Robbstål, Länsförsäkringar G&B.

SPP works mostly with IT development and has for the last years been focused on replacing their core systems in order to create better opportunities for digitalisation. During the last four years 60-70% of SPP's development capacity has been consumed by the core system change.

"When we have come through the system change we can innovate and develop new solutions without it becoming a huge task of development of core systems. If I have the wrong platform, something that was built during the eighties or nineties, it is very difficult to build a streamlined web or app experience based on that." – Per Lindberg, SPP

SPP has developed a product allowing their customers to claim their pension digitally as well as Gajda, a robot guiding occupational pension beneficiaries through decisions about their pension. SPP felt that the industry needed to change, and that they were required to upgrade and renew their IT-solutions in order to be able to offer better services and lower prices.

"A few years ago we decided to change our ambition. With old IT solutions, in an industry where the product is fundamentally an IT-solution, we decided to digitalise ourselves and be frontrunners in that. For many years, the IT department had wished to switch system. That does not add any value in itself. However, looking from a customer perspective, we could build a better offer based on digital solutions. So, the journey we started aimed to raise customer satisfaction through quality improvements, speed, availability and a closer dialogue to support them in their mission. Also, to decrease our cost base, to follow the expected price reduction in the market." – Monika Rappe, SPP.

SPP finds ideas from employees or in the market, one example is Fintech Speeddating, where they invited participants of Stockholm Fintech week to pitch their ideas. Per Lindberg at SPP states that they try to work as broadly as possible when it comes to generating solutions to described needs, and that it is important to test ideas as early as possible on the target group. They work with customer insights and customer-driven innovation.

SPP also works with involving employees in idea generation. They often receive suggestions, for example from the sales department when they have noticed recurring customer requests. Monika Rappe, SPP, describes that their forum, Tratten, consisting of product owners for the different development teams and our enterprise architects are connecting the rest of the organisation to the innovation activities:

"[Members of the forum "Tratten"] have their tentacles in the rest of the organisation, and listen to what sales, product, or administration want to do. We have discussions every week where new initiatives are brought up." – Monika Rappe, SPP.

4.1.6. Views on Regulation

Even though the regulations can create obstacles, the companies are accepting of their reality. Justus Alholt, Länsförsäkringar G&B, finds that there is potential to do a lot within the current regulations, and highlights that they aim to keep a positive mindset toward the regulations.

"We try to see the regulations not as our opponents, but as our co-players and teammates. We need to interoperate them so that we can continue our operations." – Justus Alholt, Länsförsäkringar G&B.

Ricard Robbstål, Länsförsäkringar G&B, made similar comments and was accepting of the regulations.

“The former secretary general of FI once said ‘if you can’t get what you love, you need to love what you get’ and that is a funny way to implement laws and regulations, but there is some truth in that, whether you like it or not, you are in a regulated industry.” – Ricard Robbstål, Länsförsäkringar G&B.

SPP expresses similar thoughts, concluding that regulations have to be taken into consideration and be handled. However, they also point out that even though the regulations are always to be adhered to, they take decisions based on business factors.

”You just have to handle regulations. Some regulations we wish we could simplify because it would benefit the customer, but we are required to do it. It also depends on how you view regulations. Regulations are important and we always have to adhere to them. But it is not regulations that in the end decide which way to go, it is the business that decides.” – Monika Rappe, SPP.

Magda Nyberg Rosloniec, SPP, finds that the regulations may be difficult to understand for customers and that the regulations may not contribute with as much safety as they intend to, since she believes that the trust for their industry is low.

”I don’t think that customers understand the regulations. I am not sure it makes them feel more secure. We are one of the most regulated industries, and still I believe the trust is low. It is very strange that it is that way. There is a gap and suspicion around it.” – Magda Nyberg Rosloniec, SPP

4.2. Concepts and Themes

The results of this study are presented and summarised according to the first level themes found through thematic analysis. In total, nine such themes were identified. In Table 6, the first-level themes are presented, along with the concepts they are based on.

Concepts	First-Level Themes
Non-permissible activities clause restricts innovation	Regulations can restrict innovation
Concession boundaries restrict innovation	
Regulations can close off avenues of innovation	
Regulations can be an obstacle to innovation	
Regulations decrease risk-taking	Regulations lead to incremental innovation
Lack of radical innovation	
Incremental innovation is common	
Regulations increase costs for customers	Regulations can have a negative effect on customers
Regulations close off opportunities to serve customer needs	
Compliance is time consuming	Regulations increase resource consumption
Compliance is expensive	
Compliance requires additional competences	
Regulations impact innovation priorities	Compliance as project management activity
Compliance before and during selection	
Constraints can be obstacles to creativity	Regulations present boundaries for creativity
Separation of creativity and compliance	
Unsuccessful innovation is demotivating	Regulations are negative for motivation
Successful innovation is motivating	
Regulations can be an obstacle to innovation	
Regulations can increase competition	Regulations create opportunity and incentives for innovation
Regulations can change market dynamics	
Regulations force innovation	Compliance-driven innovation
Regulations change the direction of innovation	

Table 6. Concepts and First-Level Themes

4.3. Regulations Can Restrict Innovation

This section describes the interview data supporting the first-level theme *Regulation can restrict innovation.* An overview of the theme and concepts is provided in Table 7.

Concepts	First-Level Themes
Non-permissible activities clause restricts innovation	Regulations can restrict innovation
Concession boundaries restrict innovation	
Regulations can close off avenues of innovation	
Regulations can be an obstacle to innovation	

Table 7. Overview of first-level theme: Regulations can restrict innovation.

Regulations are seen by both companies to be restrictive in some respects. SPP finds that their concession can force them to close off some alternatives of innovation and that ideas that conflict with regulations often are cancelled.

"We had an idea and then very quickly we got the response that 'Magda this is not within our concession, we are a pension company, this would demand a whole other permit from FI.' This is very easy for us to identify I believe. What happened is that we dropped the idea. It is a huge job to get permission for something else, so I would say that we do not do that. We very seldom arrive there. We don't think it's a problem." – Magda Nyberg Rosloniec.

A rule which heavily influences innovation is the law of non-permissible activities which can create obstacles for many types of innovations. Helena Wallskog, Lfant, even finds that practically all innovation she engages in clashes with this regulation since they often cannot be considered a part of their core business.

"[…] all innovation we do is non-permissible because it is not a concrete insurance product, but rather a service that increases security, and then it becomes a non-permissible activity and then we end up in a lot of rules and regulations around that. […] [Länsförsäkringar] Gothenburg Bohuslän has worked with an innovation called RideSafe and then they had to create a new company for that, and it's a great product because it decreases accidents and increases safety in traffic. But it becomes difficult to say is a part of our core business" – Helena Wallskog, Lfant.

The regulation around non-permissible activities has created challenges for Länsförsäkringar G&B. They believe they have found a way to work with it now, through implementing innovations in a separate company that is not an insurance company with concession from FI. However, they find that regulations change all the time, especially considering they face regulations from EU that then become even stricter in Sweden.

"[…] the insurance licence we have from FI does not allow non-permissible activities, for example RideSafe which is a damage-preventive operation, it is a very good operation, however compliance saw this as a non-permissible activity and it took us a year to

understand what we needed to do in order to work with this. It turns out we can start new companies and have all innovation in these companies instead" – Ricard Robbstål, Länsförsäkringar G&B.

Lfant has the advantage of being able to work with more freedom than Länsförsäkringar G&B since they are an external company and not under the same level of regulation. This is also named as a main reason for why Lfant was born in the first place.

"When it comes to innovation projects, we can circumvent some rules because we are an external company. And that is the largest difference and one of the reasons why this company was born. So, it is one way of attacking the intricacies of working with innovation in a regulated industry." – Helena Wallskog, Lfant.

The companies find that regulations can close off some avenues of innovation. For example, Justus Alholt, Länsförsäkringar G&B, found that GDPR can counteract initiatives that include a lot of personal data. For example, they wish to use AI and data in order to counteract attempts of insurance fraud. However, GDPR makes this very difficult since personal data is involved.

Regulations can close doors already at an early stage of an innovation project since they can restrict opportunities, e.g. for testing. Helena Wallskog, Lfant, finds that, in order to get an increase of innovation, the regulations need allow testing to a higher extent. As it is now, the regulations do not make a difference between a finished innovation and a product under development, which makes it difficult to work iteratively.

"[…] it's not reasonable that it is the same regulations as in a scaled-up product. Because we lose speed and pace. There are more regulations than there needs to be, since the customers are on board. It becomes more expensive. And we lose things because we realise that we will never get it through. It's a shame that a great idea has to stop because we can't make it work from a GDPR perspective." – Helena Wallskog, Lfant.

4.4. Regulations Lead to Incremental Innovation

This section describes the interview data supporting the first-level theme *Regulations lead to incremental innovation.* An overview of the theme and concepts is provided in Table 8.

Concepts	First-Level Themes
Regulations decrease risk-taking	Regulations lead to incremental innovation
Lack of radical innovation	
Incremental innovation is common	

Table 8. Overview of first-level theme: Regulations Lead to Incremental Innovation.

Incremental innovation is seen to be the most common type of innovation for the studied organisations. It seems to be difficult to conduct radical innovation, however they have shown both interest and belief that working with that is important. Länsförsäkringar has however expressed that they do this to a larger extent than SPP has.

"We work mostly with incremental innovation. But I strongly believe we need to do all types of innovation. I mean, what is insurance today is not necessarily insurance in the future. If Amazon comes tomorrow and decides to include insurance, we will see a radical shift in the industry." – Justus Alholt, Länsförsäkringar G&B.

"I think we are quite at the forefront within the Länsförsäkringar group, not many work with AI and robotisation. I believe we will most certainly face changes in the industry where all actors need to change and adapt." – Ricard Robbstål, Länsförsäkringar G&B.

When asked if she felt SPP could innovate to the extent they wished, Magda Nyberg Rosloniec, SPP, replied:

"Yes, I think so. But it has also to do with that we don't think enough outside the box. […] We don't innovate on that level yet. Now we are raising the lowest level and a lot of innovation connected to digitalisation of processes. Innovation is really "the sky is the limit". Today we don't encounter problems with regulations, but we are not there either that we need to take that step. We improve and digitalise but we as an organization have more to give. At the same time, we have to innovate within our concession. […] The next step might be that we need to expand our business or challenge more." – Magda Nyberg Rosloniec, SPP.

4.5. Regulations Can Have a Negative Effect on Customers

This section describes the interview data supporting the first-level theme *Regulations can have a negative effect on customers.* An overview of the theme and concepts is provided in Table 9.

Concepts	First-Level Themes
Regulations increase costs for customers	Regulations can have a negative effect on customers
Regulations close off opportunities to serve customer needs	

Table 9. Overview of first-level theme: Regulations can have a negative effect on customers.

It has been brought up that the regulations can sometimes create opposite forces between customer benefits and customer safety. Opportunities to improve for customers are thereby closed off by regulations. Costs for customers can also be increased.

"This is just how I think of it. It is always a possibility to overly analyse what the legislators first thought with the regulations, to the point where the results become worse for the insurance holder. For example, we are regularly affected by attempts of insurance fraud, and

we could use AI and data to fight this, however it is not very easy to do this – you have to navigate personal data which is hard. However, on the other end, we also have the responsibility to fight insurance fraud. This can create a clash between strong forces where you cannot solve it. The regulations can create opposite forces here." – Justus Alholt, Länsförsäkringar G&B.

Ricard Robbstål, Länsförsäkringar G&B, explains that regulations that are meant to be beneficial for customers, in fact can have a negative effect in the end, by increasing costs for the customers.

"The regulations are there to protect the customers, but Länsförsäkringar is a fully customer owned company, those regulations in place were not designed for us. We don't have any complicated economic models or products that are dangerous for the customers, we only have good stuff […] That makes me frustrated sometimes, that the regulations are said to focus on consumer protection but end up being a disadvantage for the customers, a bank meeting becomes 10 times more complicated now because it has to be, and the customer must pay everything we have invested in compliance in the company – we need to take it from the customers." – Ricard Robbstål, Länsförsäkringar G&B.

SPP works systematically with customers and try to find out their challenges and how they can potentially meet those needs within their core business. Magda Nyberg Rosloniec, SPP, describes that they have made a move towards innovation based on customer insights instead of basing it on guesses of what customers want. They then *"adapt to the given boundaries of [their] organisation, system support and regulation compliance and so on."*

SPP sometimes finds that regulations can close off the opportunities to increase customer benefit.

"Some regulations we wish we could simplify because it would benefit the customer, but we are required to do it." – Monika Rappe, SPP

"Even if we try to do things that are beneficial for customers, the regulations can sometimes be in the way." – Per Lindberg, SPP.

4.6. Regulations Increase Resource Consumption

This section describes the interview data supporting the first-level theme *Regulations increase resource consumption.* An overview of the theme and concepts is provided in Table 10.

Concepts	First-Level Themes
Compliance is time consuming	Regulations increase resource consumption
Compliance is expensive	
Compliance requires additional competences	

Table 10. Overview of first-level theme: Regulations increase resource consumption.

Time and investment are of high importance to both companies in connection to innovation. SPP has started working with Google Design Sprints[4] to find and also test ideas. One of the main benefits of the method is the results that can be reached in a short amount of time. However, it does require some additional resource allocations as well.

"[…] what is so amazing with that is that you lock yourselves in on Monday and when you leave on Friday you have a customer tested prototype. That is what I would say beats everything. […]. It takes a lot of time from the business to lock up that many people. But the result is really good." – Magda Nyberg Rosloniec, SPP.

Länsförsäkringar G&B has also taken measures to increase speed and they work with innovation in different constellations. Lfant is able to work faster than the rest of the group, because they are an external company, and not an insurance company.

"We work with innovation on different levels within the organisation, we both work with innovation in the Länsförsäkringar group [LFAB], which acts as an innovation company for the 23 local companies […] There we have a development unit and an innovation unit […] Then we have […] Lfant, which we locally started with 2 other local companies. We started this because we thought that the pace of the innovation was too slow in the LFAB group, so it works like a blowtorch for them to increase the innovation speed. Then we also have local innovation in our local companies." – Ricard Robbstål, Länsförsäkringar G&B.

It can consume a lot of time to understand and work with the regulations. For example, it took Länsförsäkringar G&B a year to figure out how to work with innovation despite the non-permissible activities clause in FRL. SPP also found regulations to be time consuming and constraining, however, Per Lindberg, SPP, did not perceive it as too big of an obstacle.

"The regulations are basically there to protect people from companies to a large extent. I don't experience it as a large obstacle. It can take some time and to a certain extent it is constraining. But it is not a vast obstacle." – Per Lindberg, SPP.

[4] The sprint is a five-day process for answering critical business questions through design, prototyping, and testing ideas with customers. https://www.gv.com/sprint/

He found that regulations had an impact on time since interpretation and compliance are time-consuming.

"I think it's mostly that it takes time. It takes time to interpret the regulations and judge if we are inside or outside." – Per Lindberg, SPP.

Even if the regulations do result in roadblocks and require additional effort, both organisations seem to be able to work around them and successfully innovate. Helena Wallskog at Lfant says they *"tend to find ways around the regulations".* Knowledge about the regulations and creating tools for working with them are mentioned as ways of handling difficulties.

"We have a very clear routine with this. All projects have some sort of data; therefore, we need a model to work around. Not only for those working in the project, but also for those making the decisions…A year ago, I would say that GDPR[5] created blockades in my process, it is very hard when something is new. We need to focus on risks associated with each person that is involved, and then how we document it and finally how we take decisions on it. Today the model is very clear and how to follow it." – Justus Alholt, Länsförsäkringar G&B.

Ricard Robbstål, Länsförsäkringar G&B, finds that they can't innovate as much as they want to because of the speed they lose thanks to regulations:

"…we have to work with the regulations, we would really much like to work faster, but it is not possible." – Ricard Robbstål, Länsförsäkringar G&B.

Lfant similarly found that there are many times that the regulations cannot be ignored and can act as roadblocks in the innovation process for the organisations. Bureaucracy and contracts are also found to be making the process more difficult and time consuming. Lfant works with three compliance departments, three DPO's (each owner company has their own) and the central unit (LFAB). This makes Länsförsäkringar "heavy" (Helena Wallskog, Lfant). GDPR is found to be a significant hurdle in Lfant's innovation work, not in the least when applying agile methods.

"For me, the regulations around GDPR have created a big hassle. And that is about that we want to test on our customers, on real customers, and not on a focus group, we want to go out on the market. Then we often handle a lot of personal data, and the regulations don't make a difference between a test and a scaled up product, so we have to go through the entire GDPR framework, which is super difficult in test mode when you don't even know what the product will be, since that is what we are testing […] So, there is no agile way to work with GDPR" – Helena Wallskog, Lfant.

[5] Directive 95/46/EC (General Data Protection Regulation)

She elaborates that she believes there may be more regulation than needs to be in order to be able to carry out safe testing, and that it becomes very expensive to carry out tests. She finds that this can decrease the amount of innovation and that many good ideas can be stopped.

"I think that what you have to do to get an increase of innovation – we should of course do right by laws and regulations and so on – but to be able to see the difference between innovation and development. So that we might need to take part in GDPR regulations and get consent and all that, but it's not reasonable that it is the same regulations as in a scaled-up product. Because we lose speed and pace. There is more law than there needs to be, since the customers are on board. It becomes more expensive. And we lose things because we realise that we will never get it through. It's a shame that a great idea has to stop because we can't make it work from a GDPR perspective." – Helena Wallskog, Lfant.

Resources are also consumed in the form of the specific knowledge and competences needed to perform compliance in the organisations. Compliance becomes present early, even immediately, in the process for SPP, where they make sure their ideas are compliant with regulations. They employ compliance officers that carry out compliance checks.

"It is very important that what we innovate is compliant with regulations of course. And that is integrated in the innovation process as well as everything we do within our daily business. […] they [the legal department] are an important check within that process, before going forward." – Magda Nyberg Rosloniec, SPP.

Länsförsäkringar G&B has had experience with compliance traditionally being involved too late and now have the habit of including compliance earlier in the process. In order to be able to be successful in the innovation process, the right competences are needed from the beginning, so compliance is one competence which is mentioned as important from the start. They include specific employees who have expertise and can be helpful in ensuring that all necessary stages are done correctly, for example, that the GDPR checklist is filled out correctly. They use the same framework for all regulations and have worked out a process.

"We are trying to include central positions early in the innovation process so that we do not come to the end of the project and everything takes a stop, so now they come in earlier and asses from a regulation perspective. – Ricard Robbstål, Länsförsäkringar G&B.

Justus Alholt, Länsförsäkringar G&B, finds that knowledge of regulations is an important factor for being able to innovate as much as they want as long as they are proactive.

"I think we can innovate as much as we want. It is all about the knowledge of the regulations, if you know them, we can do it as we want. If we work with people who know these areas, we will never end up being stopped, so you need to be proactive" – Justus Alholt, Länsförsäkringar G&B.

However, there isn't always a compliance officer who takes care of ensuring projects are compliant. At SPP, product specialists and other employees also have the competence to make such a judgement. They always make sure that their products are compliant before they are developed, in order to make sure they can actually launch them.

"[…] it depends on whether you are junior or senior in your role and I have worked here for so long that I can foresee if we will have legal difficulties implementing something. […] We don't develop something and then find that 'oops' we cannot launch this." – Magda Nyberg Rosloniec, SPP.

They do not wish to send in a compliance officer to audit every project, since that reduces the sense of ownership the specialists are supposed to have over the project. Per Lindberg, SPP, also points out that he imagines that truly innovative start-ups leave compliance issues for a later stage and solve any issues after the product is developed.

"The matter of regulatory compliance is usually included very early. I would say that it is an integral part of the whole process, in that we have product specialists with strong regulatory competence. It is not like we send in a compliance officer to audit each delivery, because then we risk losing the sense ownership with the team specialists. But I can imagine that if you take a truly innovative user focused start-up, I would expect them to build digital customer journeys first, and only thereafter move into the compliance issues to close any gaps. " – Per Lindberg, SPP.

4.7. Compliance as Project Management Activity

This section describes the interview data supporting the first-level theme *Compliance as project management activity.* An overview of the theme and concepts is provided in Table 11.

Concepts	First-Level Themes
Regulations impact innovation priorities	Compliance as project management activity
Compliance before and during selection	

Table 11. Overview of first-level theme: Compliance as project management activity.

Both companies have expressed a clear focus on the formal selection criteria on which innovation projects they select for further development. SPP has a clear order of prioritisation where what is compulsory by law is at the top.

"When we prioritize, it is firstly what is enforced by law or critical to the business. For example, GDPR directives, or new demands from FI. That is always first. Secondly, we have "Future Core" – the work with changing system platform. […] After that there are the "must win battles" which is the kind of things that we need to do in order to reach our objectives, KPIs and sales objectives. If there is any time left, the rest comes. […] But there is very little

other than the first three that gets done at the moment due to the tight roadmap within Future Core. There is a very clear order of prioritisation." – Magda Nyberg Rosloniec, SPP.

The selection criteria are seen to be in direct connection to the organisation's overarching strategic initiatives. Compliance considerations are present when comparing different priorities.

"We look at strategic goals, our financial plan and the focus areas we have for the year. It is those three parameters that are most important. Besides that, we look at compliance" – Monika Rappe, SPP.

At Lfant, projects are chosen on the basis of business case, brand and gut feeling. Check-ups are continuous during the project. However, Lfant as an innovation company has a clearer division between creative work and regulatory compliance in that they formally separate ideation and regulation. Länsförsäkringar G&B themselves take regulations into consideration more explicitly and must resolve regulatory issues before the management board decides on the project:

"The management board takes the decisions, so we need to have solved the regulation-issues before we go to them, for example, can we minimise the data involved in order to limit the risk? Many times, we need to collaborate and therefore share data, and we need good data, and that makes it little difficult. We want to do something but sometimes we cannot do it because of the regulations, mostly sharing data". – Justus Alholt, Länsförsäkringar G&B.

4.8. Regulations Present Boundaries for Creativity

This section describes the interview data supporting the first-level theme *Regulations present boundaries for creativity.* An overview of the theme and concepts is provided in Table 12.

Concepts	First-Level Themes
Constraints can be obstacles to creativity	Regulations present boundaries for creativity
Separation of creativity and compliance	

Table 12. Overview of first-level theme: Regulations present boundaries for creativity.

Länsförsäkringar G&B and Lfant have mentioned creativity most explicitly, however, SPP also seem to find that regulations create boundaries for creative ideas but that they seldom experience problems with regulations since they do not innovate enough "outside the box" yet.

Lfant deliberately excludes the topics of regulations and compliance from the creative part of the innovation process, in order to make sure that the creative work is not disturbed. This applies both to ideation and to early development.

"...we try to keep the innovation in a creative sphere so that we don't have to think about all the regulations and rules that we have to consider when scaling up." – Helena Wallskog, Lfant.

This separation is also one of the reasons for the creation of Lfant in the first place: Länsförsäkringar G&B wanted to create a creative sphere for innovation. For this reason, the creative work is done in one section and as the project moves along, a product manager assumes responsibility for the innovation at a later stage. However, even though compliance issues are formally separated from the creative work, regulations are to some extent considered during ideation anyway.

"This is in order to be able to keep being creative, not think about laws and rules, GDPR and everything, which is very easily done. And to some extent we have to think about that nowadays, because if we want it to really happen, we have to think about that. But the point is that we have to know about them and that they don't get to restrict us in the creative part. When the project ends up with a product manager, we end up in a development process where we go through all our [compliance] processes" – Helena Wallskog, Lfant.

The combination of the chaotic nature of an innovation process, with the structure that regulation requires, has been challenging and sometimes frustrating for Länsförsäkringar G&B and Lfant.

"The risk is that you too quickly eliminate the creativity, and too quickly put people into frameworks and templates, and lose some part of the height you can get with some of the Lfant people, such as Helena, who has enormous creative height and can think of things we cannot possibly think of since we are limited by our business models, and this is something I do not want to eliminate." – Ricard Robbstål, Länsförsäkringar G&B.

4.9. Regulations Are Negative for Motivation

This section describes the interview data supporting the first-level theme *Regulations are negative for motivation.* An overview of the theme and concepts is provided in Table 13.

Concepts	First-Level Themes
Unsuccessful innovation is demotivating	Regulations are negative for motivation
Successful innovation is motivating	
Regulations can be an obstacle to innovation	

Table 13. Overview of first-level theme: Regulations are negative for motivation.

The regulations also have an impact on the motivation of the employees when regulations put a stop to innovation.

"There are of course examples of people who have worked really hard and found an amazing business model and then at the end you run into a brick wall, of course it is tough for that person. But we now try to help to include regulations earlier so we can get through the walls at the end. It is really just a motivational question. […] People lose the motivation all the time, so we need to lift them up" – Ricard Robbstål, Länsförsäkringar G&B.

SPP also finds that successful innovation is an important motivator for the company and employees.

"[…] we received an award in December in competition with IKEA, Skatteverket and JM. Which was nice, because it was not just in competition with our own industry. We talked a lot about Gajda, which also has received an award, and I think that gives the organisation a boost […] something I believe is necessary." – Monika Rappe, SPP.

4.10. Regulations Create Opportunity and Incentives for Innovation

This section describes the interview data supporting the first-level theme *Regulations create opportunity and incentives for innovation.* An overview of the theme and concepts is provided in Table 14.

Concepts	First-Level Themes
Regulations can increase competition	Regulations create opportunity and incentives for innovation
Regulations can change market dynamics	

Table 14. Overview of first-level theme: Regulations create opportunity and incentives for innovation.

Regulations can increase competition in the market. Per Lindberg, SPP, explains that approximately 12 years ago it was not even possible for customers to move money between pension suppliers and that clients were completely locked in. This is not the case anymore – due to changes in regulation, competition increased as an effect. This also requires that companies are able to differentiate based on new types of offers.

"The regulations are so narrow that it was a long time ago we could find something to product develop. The winners are those that can bring forward exciting innovations or make it easier for the user or deliver good customer experience." – Magda Nyberg Rosloniec, SPP

Other regulatory changes also seem to have the potential to change market dynamics and areas of innovation:

"But then there are more opportunity-oriented areas, […] if you take insurance distribution, there was an EU directive enforcing insurance companies and distributors to be more transparent in respect of costs associated with insurance products. There we saw it as an opportunity, because we saw that it will make the costs for occupational pension visible for the customers and we saw an opportunity that we will be successful in that scenario. We took

a position towards that this will lead toward the margins being squeezed." - Per Lindberg, SPP

There are signs that the insurance industry has managed to stay quite unthreatened and has not been required to innovate to survive to the same extent as other industries.

"The entry barriers for new actors to establish themselves is pretty high. Thus, our industry hasn't needed to be very innovative to avoid competition from new entrants." – Per Lindberg, SPP.

4.11. Compliance-Driven Innovation

This section describes the interview data supporting the first-level theme *Compliance-driven innovation.* An overview of the theme and concepts is provided in Table 15.

Concepts	First-Level Themes
Regulations force innovation	Compliance-driven innovation
Regulations change the direction of innovation	

Table 15. Overview of first-level theme: Compliance-driven innovation

SPP works with regulation-driven innovation, that is, regulation compliance is the basis for innovation:

"Innovation comes in many forms; while most times it is considered opportunity driven, it can also be driven by challenges. The new regulatory solvency capital model referred to as Solvency II, was introduced about 5 years ago, closely following a paradigm shift in respect of interest rates. Initially, that rose quite substantial challenges in respect of generating returns in a capital efficient manner. Over time we allocated cross functional teams of really intelligent people with the clear goal of improving risk management, capital management, restructuring the group to make it capital efficient and we ended up moving mountains." – Per Lindberg, SPP.

Justus Alholt, Länsförsäkringar G&B, also experienced that GDPR played a role in the development of one of his products, RideSafe, and how they could perform tests.

"We tested this on our three groups, and got surprisingly good results […]. Then we decided to move on to test number two, we released this product together with a partner, and focused on the commercial vehicles, […] because it was easier from a regulation perspective. When focusing on private individuals we would clash with GDPR for example, so it was easier to administrate with companies." – Justus Alholt, Länsförsäkringar G&B.

SPP take regulations in account when considering where the market is going next. Regulations can affect the direction they choose to take.

"But envisaging a few future scenarios and finding that it could go like this, this or that and preparing for those results and do tests of business or product offers that are moving in one direction or other and see what is successful. We try to do that evaluation continuously. We weigh together a range of information and regulations are a part of it." – Per Lindberg, SPP

5. ANALYSIS/DISCUSSION

The analysis chapter is structured according to the second-level themes found through thematic analysis, along with the first-level themes they are based on. First, how regulation can prevent innovation and reduce customer value. Second, regulations' resource requirements. Third, how regulations are negative for creative performance. Last, how regulations can shape innovation. In Section 5.5. inconsistencies with previous studies are discussed.

Four second-level themes are identified. The themes are based on theory and empirical findings. Elements of all second-level themes are found in both empirical data and in previous literature, however, some concepts or first-level themes were identified in the interview data gathered in this study and incorporated in the analysis as the study is conducted inductively.

Concepts	First-Level Themes	Second-Level Themes
Non-permissible activities clause restricts innovation	Regulations can restrict innovation	Regulations can prevent innovation and reduce customer value
Concession boundaries restrict innovation		
Regulations can close off avenues of innovation		
Regulations can be an obstacle to innovation		
Regulations decrease risk-taking	Regulations lead to incremental innovation	
Lack of radical innovation		
Incremental innovation is common		
Regulations increase costs for customers	Regulations can have a negative effect on customers	
Regulations close off opportunities to serve customer needs		
Compliance is time consuming	Regulations increase resource consumption	Regulations require additional resource investments
Compliance is expensive		
Compliance requires additional competences		
Regulations impact innovation priorities	Compliance as project management activity	
Compliance before and during selection		
Constraints can be obstacles to creativity	Regulations present boundaries for creativity	Regulations are negative for creative performance
Separation of creativity and compliance		
Unsuccessful innovation is demotivating	Regulations are negative for motivation	
Successful innovation is motivating		
Regulations can be an obstacle to innovation		
Regulations can increase competition	Regulations create opportunity and incentives for innovation	Regulations can stimulate and shape innovation
Regulations can change market dynamics		
Regulations force innovation	Compliance-driven innovation	
Regulations change the direction of innovation		

Table 16. Summary of Thematic Analysis: Concepts, first-level themes and second-level themes.

5.1. Regulations Can Prevent Innovation and Reduce Customer Value

This section analyses the findings under the second-level theme *Regulations Can Prevent Innovation and Reduce Customer Value.* An overview of the second-level theme, first-level themes and concepts is provided in Table 17.

Concepts	First-Level Themes	Second-Level Themes
Non-permissible activities clause restricts innovation	Regulations can restrict innovation	Regulations can prevent innovation and reduce customer value
Concession boundaries restrict innovation		
Regulations can close off avenues of innovation		
Regulations can be an obstacle to innovation		
Regulations decrease risk-taking	Regulations lead to incremental innovation	
Lack of radical innovation		
Incremental innovation is common		
Regulations increase costs for customers	Regulations can have a negative effect on customers	
Regulations close off opportunities to serve customer needs		

Table 17. Overview of second-level theme: Regulations can prevent innovation and reduce customer value.

5.1.1. Regulations Restrict Innovation and Lead to Incremental Innovation

Both organisations have shown they consider regulations as selection criteria when evaluating innovation ideas, as seen by Asante et al. (2014). This is not only a strategy the organisations use in order to have an efficient selection process; it is often seen as necessary for ensuring a successful outcome for the project. Without the inclusion of regulation in the selection criteria, the organisation risks developing a product or service that later cannot be commercialised due to incompliance with regulations, such as the rule forbidding insurance companies from engaging in non-permissible activities. An example from SPP shows that the regulation of non-permissible activities and the boundaries of the concession from FI directly affects idea generation and commercialisation. An idea was cancelled very early because it was considered outside of SPP's concession as a pension and insurance provider. The regulations did not allow for that type of project within the organisation and their current concession.

Both companies have expressed an awareness of the inevitability of changes in the industry, and the need to be more radical in their thinking. However, at the moment, both organisations work mostly with incremental innovation. A possible reason for this is that radical innovations likely are seen as non-permissible activities and/or outside of the organisation's concession, resulting in radical innovation ideas being discarded in the selection stage, if they are even submitted as ideas in the first place. As mentioned, at SPP, when an idea clashes with their concession, it gets cancelled. Ultimately, the customers may be negatively influenced by the cancelation of an innovation project, as further discussed in Section 5.1.2. It needs to be said that incremental innovation is the most common type of innovation across all industries (Goffin

& Mitchell, 2017) thus, a predominance of incremental innovation is common also in unregulated industries.

Magda Nyberg Rosloniec, SPP, speaks of employees who have long experience in the industry who can have an early sense of if an idea falls inside or outside the concession. Therefore, they may think so much inside the box that no radical ideas are even created. Thus, SPP does not find that concession boundaries present a significant problem for their innovation projects today as they do not pursue innovation on that level that they risk falling outside the scope of their concession. SPP does indeed engage in innovation more closely related to their core business which are commonly accepted by the regulations according to Eckerberg (2011), e.g. digitalisation of processes or offers. Länsförsäkringar G&B has found it is more of a problem with the regulations around non-permissible activities, probably because the kind of innovation they engage in is more distant from pure insurance products, e.g. damage-preventive apps like RideSafe.

Helena Wallskog, Lfant, seems to consider the regulations as more problematic for innovation in comparison to the other respondents. She is also the only interviewee who does not work at an insurance company per se, but at an innovation company. As Ricard Robbstål, Länsförsäkringar G&B, stated, she has "an enormous creative height". Thus, it seems that most regulatory problems arise where ideas are more "outside the box". Employees at insurance companies may be restricted by the logic of their own industry and adapt to their regulated reality to a higher degree, not entertaining the creative ideas that external actors may be able to (Schilling, 2013).

Länsförsäkringar G&B may be in a better position to pursue radical innovation since they have found a solution to commercialise innovations. Their solution is to transfer any non-permissible innovation product to a separate company which is not affected by the concession and regulation of non-permissible activities since it is not an insurance company (note that finding this solution took over a year's time, indicating that although solutions can be found, it often requires a lot of resources to do so). Although RideSafe itself may not be considered radical according to the definition applied in this thesis (Goffin & Mitchell, 2017; Green & Cluley, 2014; Srinivasan et al., 2002; Story et al., 2011; Tellis et al., 2009), it is an example of a product which was commercialised in such a way since it was considered a non-permissible activity.

5.1.2. Regulations Have a Negative Effect on Customers

Innovation has been shown to be beneficial for generating consumer value (Prieger, 2002), thus, regulations preventing innovation may result in a reduction in innovation and ultimately in customer value. On the other hand, it can be assumed that the regulations have put a stop to harmful innovation as well, and they are often sprung from past crises. A good example of this is the 2008 financial crisis. It was the customers and society as a whole who were affected by the few powerful companies and their financial innovations. Therefore, it is very logical that the regulations are there to protect the public and the customers from it ever happening again,

even if this means enforcing very strict regulations. However, the other side of the matter is that regulations are negatively affecting customers due to increased cost through increased compliance, resulting in removal of incentives to innovate and therefore an absence of innovation (Alesina et al., 2005; Blind, 2012).

SPP and Länsförsäkringar G&B have expressed that they have a distinct customer focus in their innovation and that they often try to identify customer pains, and deliver beneficial solutions, either through products, services or processes. Both organisations also show understanding that the regulations are largely there for the customers and their safety, and they are generally accepting of their reality. However, there is a clear point of frustration: from their perspective, the regulations can in the end reduce customer value. Ricard Robbstål, Länsförsäkringar G&B, finds it especially frustrating since Länsförsäkringar G&B is a fully customer-owned company and argues that there is no risk of a conflict of interest in their case. Instead he finds that the end result can be that they must raise prices for customers in order to cover the costs incurred from compliance or because processes are complicated by regulated requirements. SPP expresses similar sentiments and found that solutions they thought could be beneficial for customers, could be effectively stopped by the regulations.

It also seems that the regulations can create contradictions in certain areas, for example Justus Alholt, Länsförsäkringar G&B, finds a contradiction between the responsibility to fight insurance fraud and the difficulties of using technologies that can do so by processing personal data. Decreasing insurance fraud would be beneficial for (honest) customers since fewer pay-outs would enable a lower insurance premium.

Thus, the regulations are shown to have a direct negative monetary impact on customers in terms of higher priced products, which makes sense according to the literature which predicts increased costs (Alesina et al., 2005; Blind, 2012; Loayza et al., 2005). The regulations result in innovation projects requiring additional resources in terms of regulation compliance, a cost which is transferred to the customers through higher prices. This is a direct monetary cost which is directed at the customers. Compliance cost cannot easily be eliminated, resulting in more expensive insurance solutions for the end client. Cost can also be incurred for the customers if the companies are prohibited from implementing cost-reducing innovation. One such example is RideSafe, which is damage-preventative: with reduced accidents, they can reduce the cost of the insurance and the price to the customer. Yet, Länsförsäkringar G&B found that even though RideSafe is a beneficial product from an insurance point of view, it would not be possible to commercialise it within the insurance company due to the rule on non-permissible activities. In this case Länsförsäkringar G&B did find an alternative solution to commercialising their product. The point is that regulations can reduce customer welfare in several ways.

In previous literature, safety regulations have mostly been viewed as beneficial for customers (Blind, 2012) and studies focusing explicitly on the negative relationship between regulations and customer benefit have not been identified. However, studies on innovation in general indicate that innovation is beneficial for society, the economy and customers (Prieger, 2002). They also show that regulations have a negative impact on innovation (Loayza et al., 2005).

Therefore, it seems logical that regulations would have a partially negative impact on customers (although the net effect of regulations on customers is not necessarily negative as there are certainly positive impacts as well (see Blind, 2012)). On the other hand, the financial industry has a large impact on society and there are definitely convincing arguments for why innovation must be regulated in this context (Calomiris, 2009; Erkens et al., 2012). It can therefore be difficult to directly translate the findings on innovation in general to the insurance industry when considering customer benefit.

Furthermore, another dimension is present here as well. An isolated safety regulation may be beneficial for customers, but in certain contexts they can, combined, create contradictions that negatively impact customers. GDPR has good intentions, but when colliding with the responsibility to fight insurance fraud or the possibility to develop and introduce damage preventive solutions, the overall impact may be negative. It seems that the interviewees find especially GDPR to create such difficulties when they work with innovation, since they are operating in an industry that handles a lot of personal data.

Both SPP and Länsförsäkringar G&B seem to perceive themselves as honest companies who would not deceive or harm customers with their products. This can be one reason why they perceive regulations as having a large negative effect on customer benefit: They feel that they would only do "good" innovation and that they are restricted by the regulations aiming to stop "bad" innovation for harming customers. On the other hand, it cannot be guaranteed that actors in the insurance market would not produce innovations that are dangerous for customers and the society. One of the main reasons for the level of regulations within the financial industry is protection of the consumer (FI, n.d.-e) and society due to the large impact the financial industry has on both (Erkens et al., 2012). The 'right' level of regulations is difficult to identify, and standardised legislation often fails to differentiate between "good" and "bad" innovation (Moloney et al., 2015). That is, regulation that finds a balance between customer protection and innovation. What is seen is that SPP and Länsförsäkringar G&B see the current level of regulations as too strict in some areas because they may be negative for customers in some respects. One problem in this discussion is that we will never know about any financial crises that were prevented, thanks to the high level of regulations. And as stated by Ricard Robbstål, Länsförsäkringar G&B, the "honest" companies pay for the mistakes of "dishonest" ones.

In summary, it seems that regulations can and do prevent innovations and ultimately reduce customer value. The law of non-permissible activities and the concessions for insurance companies have a significant influence on what can be commercialised and what gets prevented. Due to clashes with regulation (actual and anticipated) the companies engage mainly in incremental innovation. A lack of innovation and increased costs of innovation lead to a customer disadvantage. However, this is not always the case, the same regulations are also likely to have prevented harmful innovation from being commercialised.

5.2. Regulations Require Additional Resource Investments

This section analyses the findings under the second-level theme *Regulations require additional resource investments.* An overview of the second-level theme, first-level themes and concepts is provided in Table 18.

Concepts	First-Level Themes	Second-Level Themes
Compliance is time consuming	Regulations increase resource consumption	Regulations require additional resource investments
Compliance is expensive		
Compliance requires additional competences		
Regulations impact innovation priorities	Compliance as project management activity	
Compliance before and during selection		

Table 18. Overview of second-level theme: Regulations require additional resource investments.

5.2.1. Regulations Increase Resource Consumption

Innovation is costly and requires thoughtful consideration when resources are to be allocated. Thus, two resources that are notoriously scarce in organisations, time and money, are important for innovation. It is also found, both in previous studies (Alesina et al., 2005; Blind, 2012; OECD, n.d.) and in the empirical material that regulations negatively impact both those resources by incurring compliance cost. Länsförsäkringar G&B even finds that the pace they lose due to the regulations prevents them from innovating as much as they would like, thus losing speed is clearly an important consequence of working with innovation in a regulated industry. Regulation is one of the main reasons Ricard Robbstål, Länsförsäkringar G&B, mentions for not being able to innovate in the same pace as they wish to.

The level of regulatory scrutiny in the insurance industry is often higher than in other industries (Erkens et al., 2012), making the many times complicated regulations an additional aspect insurance companies need to take into consideration. This results in organisations requiring additional competences and expertise on these regulations to judge if the innovation projects are in compliance with them. Some regulation even mandates specific human resources, GDPR for example requires that companies appoint a data protection officer under certain circumstances (Directive 95/46/EC (GDPR) Section 4, Article 37).

Helena Wallskog, Lfant, explained that some regulations are overly strict in some circumstances. For example, GDPR mandates that the whole compliance and risk assessment procedure needs to be completed even for a prototype test or pilot. This may result in cancelation of some projects since the testing stage is effectively made impossible by regulations, or in the least very slow and expensive (see Blind, 2012; Vera & Crossan, 2004). They have to invest both time and money at an early stage of development. Helena Wallskog, Lfant, finds that some lenience would be beneficial for increasing innovation since it would make it possible to carry out more prototype testing. More tests could be done, and the testing that is already possible today could be made less expensive and require less resources. She

found that GDPR reduced the possibility to work in an agile way since testing possibilities are reduced. This is supported by findings in previous studies (Blind, 2012; Vera & Crossan, 2004). Less regulations in the testing stage could result in speeding up the innovation process and allowing for more innovation projects to be developed and tested. The ability to work in an agile way was also perceived as a way to ensure resources are used in the best possible way, since without testing, there is a risk that a project that has been worked on for several months, or even years, is unusable as stated by Per Lindberg, SPP.

It is also clear that regulations often put up demands that reduce the incentives to carry out innovation (Blind, 2012). When SPP ran into a problem with their concession, they chose to kill the idea. Since it was considered "a huge job" (Magda Nyberg Rosloniec, SPP) to get a widened concession from FI, it was not done. Thus, it seems the regulations reduce the incentives for innovation by putting up certain requirements and that the possibility to meet them is so resource intensive it is not deemed proportionate or doable.

5.2.2. Compliance as Project Management Activity

SPP uses prioritisation for choosing innovation projects. Among the top priorities is development required by law, and only after resources for this purpose are allocated, SPP can allocate resources for the following priorities (developing and changing their core system and innovation required for reaching objectives and KPI's). There is potential for regulations to consume a large amount of resources (however in SPP's case, the core system project has been consuming 60 - 70% of their development capacity during the last four years). SPP states that there are hardly ever any resources left over for doing any other innovation than their first three priorities.

As stated by Justus Alholt, Länsförsäkringar G&B, knowledge is key in order to work with innovation in a regulated industry. They have therefore brought in competences and spent resources on developing tools for working with regulations (e.g. checklists for GDPR and other regulatory frameworks), that are incorporated in their projects.

It is crucial that these extra competences are present early in the innovation process. As discussed in the section above, innovation ideas or projects will often be cancelled if they do not comply with the concession or are considered non-permissible activities in line with FRL and TPL. If compliance is not present early in the process, it may result in the organisation investing resources in a project only to find out that it cannot not be commercialised at a later stage. Therefore, compliance is integrated in the selection criteria for both companies, either explicitly or implicitly. Compliance checks are sometimes carried out by specific compliance staff, but often during early stages, members of the innovation teams can do their own compliance checks, thanks to knowledge they have incurred from experience. Lfant is working differently; they choose projects based on business case, brand and gut feeling. However, Lfant as an innovation company has a clearer division between creative work and regulatory compliance, where they first exclude regulations and at a later stage move into compliance. On

the other hand, Helena Wallskog, Lfant, does admit that they keep regulations at the back of their mind, because they have to if they really want to make it happen. Thus, it does seem that keeping potential issues in mind during ideation does increase the amount of usable ideas (Goffin & Mitchell, 2017).

Compliance becomes an additional step to the innovation process, something that is both time and cost consuming and results in decreasing the pace of the innovation process. The extra expertise required is a direct cost for the organisation, both in terms of salaries and time. Both organisations employ people with compliance-related titles, e.g. compliance officers and data protection officers (required by GDPR). Per Lindberg, SPP, speaks about the compliance process taking time for SPP. Lfant who has three owners and no internal compliance, deals with three compliance departments and three DPO:s from their respective owners which creates costs both in terms of time delays and salaries (although it must be pointed out that this also seems to be a result of the size of the Länsförsäkringar group, bureaucracy thus seems to be a contributor to resource consumption according to Länsförsäkringar). Compliance in the innovation process can therefore be costly for insurance companies through the increased requirements of additional man-hours, in comparison to similar innovation processes in other industries which are not under the same level of regulatory scrutiny. Thus, rather unsurprisingly, both organisations experience that regulations require more resources and investment with an increase of investment cost. This is supported by Alesina et al. (2005) and Blind (2012) and their findings on regulatory impact on innovation.

In summary, it seems that one of the biggest impacts' regulations have on insurance companies and their innovation objectives is the increase of resources required. In order to understand the regulations and ensure compliance with the regulations, compliance expertise is required in the innovation process, something that has a direct impact on costs. Another resource which is affected is time: Compliance takes time and the project development time needs to be extended. The final result is a more expensive innovation process and increased costs for policy holders.

5.3. Regulations are Negative for Creative Performance

This section analyses the findings under the second-level theme *Regulations are negative for creative performance.* An overview of the second-level theme, first-level themes and concepts is provided in Table 19.

Concepts	First-Level Themes	Second-Level Themes
Constraints can be obstacles to creativity	Regulations present boundaries for creativity	Regulations are negative for creative performance
Separation of creativity and compliance		
Unsuccessful innovation is demotivating	Regulations are negative for motivation	
Successful innovation is motivating		
Regulations can be an obstacle to innovation		

Table 19. Overview of second-level theme: Regulations are negative for creative performance.

5.3.1. Regulations Present Boundaries for Creativity

Creativity is often characterised as being exercised in autonomy, with weak rules and few boundaries. Studies have shown that constraints have a negative impact on individuals' motivation and creativity through having an impact on their autonomy (Aasen & Amundsen, 2013; Caniëls & Rietzschel, 2015; Roskes, 2015). Therefore, it is no coincidence that regulations have been seen to have an impact on the innovator's creativity within both organisations. The regulations act as a static framework binding all actors in the industry, creating boundaries to relate to and work within – a box. The result is that employees who are to be creative in the innovation process are directly restrained in their creative space.

There are further indications of regulation being an obstacle to radical innovation and that the companies consider most radical innovation to fall outside the scope of what the law permits. As was discussed under 5.1, radical innovation seems to be an ambition, however, the companies have not launched any radical innovations as of yet. All respondents have the regulations in mind to some extent during ideation. As concluded from previous literature, including regulations in selection criteria may have the impact that ideas are of higher quality, i.e. usable (Goffin & Mitchell, 2017), but on the other hand, the effect can be that less, or even no radical ideas are brought forward. Thus, regulations' impact on creativity can also be contributing to the lack of radical innovation – it may not be only explicit prohibitions that restrict the companies in the quest for radical innovation. It is conceivable that radical ideas are filtered out very early due to the perception that there is no point of even entertaining "crazy" ideas, even though solutions might have been found with some effort.

Per Lindberg, SPP, seems to find a contradiction between early compliance and creativity and/or level of innovation. He speculates that a truly innovative user-focused start-up probably builds solutions first and deals with compliance issues later. The interpretation of this statement is that innovative solutions are better reached without thinking about compliance too early. However, it also seems that this is a resource-heavy way of working, and SPP always works with clearing compliance before the development has gone too far, often immediately. As stated by Magda Nyberg Rosloniec, SPP: *"We don't develop something and then find that 'oops' we cannot launch this"*. They do try to be balanced so that the specialists do not lose ownership through overbearing compliance procedures. Thus, such a separated approach may require even more resources to be truly innovative and successful. The way that Lfant works is supported by the same logic. By separating regulation and ideation, creativity is conceived to increase. This is also closely connected to the discussion in Section 5.1.1 – being too restricted by the existing logic of the industry and conceding to their regulated reality to a higher degree can decrease the likelihood of finding creative ideas (Schilling, 2013). Thus, a mixed organisation (e.g. Lfant and Länsförsäkringar G&B), or collaboration with external actors, may be beneficial for creativity.

If it is difficult to combine regulations (constraints) and freedom (Brown & Eisenhardt, 1997; Caniëls & Rietzschel, 2015; Tatikonda & Rosenthal, 2000) in the current company structure, companies such as Lfant can be a valuable complement to the main insurance organisation.

They attempt to create a mix between structure and wildness according to Ricard Robbstål, Länsförsäkringar G&B. One effect is that innovation work can be carried out in a freer environment, unbound by the existing logic and structure at Länsförsäkringar G&B, at a greater creative height. Lfant tries to eliminate the aspect of regulation in the creative process in order to not risk losing any innovative ideas, the intended result is that more innovative ideas are generated and that the organisation works around any regulation later in the development phase. One benefit with this strategy is that there may be radical innovative ideas being generated when eliminating the regulation aspect, and that the organisation can later on handle the regulations in aspect to the innovation. These radical ideas may never have been generated with the regulations in focus. On the other hand, there is a risk that the organisation spends resources on a project which in a later stage need to be cancelled due to regulation concerns, as discussed in Section 5.1.

Thus, there may be an opportunity to raise creativity through further collaboration and partnerships with start-ups who have a more innovative culture and mindset than traditional insurance companies may have. This makes sense when comparing to previous literature and studies: Open innovation is often motivated by the need to access necessary capabilities, skills and resources that are important for innovation (Schilling, 2013). Both companies engage in collaboration with external actors, not in the least start-ups. Thus, open innovation may be a mechanism for insurance companies to raise their level of innovation and for start-ups to enter the market, implying a mutual benefit from collaborations, either if the start-ups deliver partial solutions or because they are hindered from entering the market due to high entry barriers (Blind, 2012).

This is something that could be an interesting avenue for further research. No start-ups have been interviewed in this study, and none of the respondents have explicitly stated that entry barriers hinder start-ups from entering the market. Both companies engage actively in open innovation with start-ups when collaboration can lead to mutual benefit. Start-ups may need an established actor as a partner in order to be able to enter the market if they cannot surmount the entry barriers on their own. However, it can also be that they supply a partial solution and have no interest in becoming an insurance company itself.

5.3.2. Regulations are Negative for Motivation

Previous research suggests that regulations do not necessarily only have a negative impact on innovation. The constraints that come with regulations can also have a positive impact on individuals and organisations through increased creativity or through providing a positive challenge for employees (Caniëls & Rietzschel, 2015). Neither SPP nor Länsförsäkringar have explicitly expressed that they use regulations as a motivator. Mostly the respondents have shown signs of acceptance of the regulations, but they have not expressed anything that could lead to the interpretation that they find them energising (see Caniëls & Rietzschel, 2015). The only hint at such a mindset was found at SPP who indicated that the regulations sometimes act as an opportunity creator for innovation. Regulation requiring more cost transparency

prompted SPP to work on innovation that could result in a lower cost base and therefore also lower prices for customers. SPP saw this as a positive challenge – an opportunity. However, it is unclear whether creativity was in fact increased through this.

Länsförsäkringar G&B sees that loss of motivation is a recurring phenomenon among their employees. It is most prominently seen when an employee has worked with an innovation project for some time and it is cancelled in the later stages due to regulation issues. At SPP, a successful innovation project was seen as a boost for the organisation. If regulations commonly put a stop to innovation projects, or create obstacles, it is possible that the opposite effect is achieved instead, and motivation is diminished. This line of reasoning is supported by the progress principle (Amabile & Kramer, 2011). Regulations that stop innovation, causing employees to run into "a brick wall" as stated by Ricard Robbstål, Länsförsäkringar G&B, can thus act demotivating. It is then likely that this affects creative performance in the long run (Amabile & Kramer, 2011).

A high level of creativity is needed in order to come up with ideas and solutions for radical innovation especially (Goffin & Mitchell, 2017). Thus, demotivation from lack of progress could be contributing to the lack of radical innovation in the industry. Additionally, running into regulatory obstacles too often may lead to a mentality of there being "no point" in trying to think radically, since ideas will not pass compliance anyway. Therefore regulatory challenges may be viewed in a negative, rather than a positive light (Amabile & Kramer, 2011).

Regulation of the insurance industry seems to have mainly negative effects on innovation. Perhaps it is because of the propensity of financial regulation to issue forbiddances instead of raising minimum standards (safety standards or quality standards). Instead of creating regulations as challenges to push innovation forward in order to find even better solutions, the regulations usually put a stop to ideas. However, it could also be a matter of mindset: According to the empirical results the respondents were accepting of the regulations, realising they are necessary. There were no statements indicating that the respondents found it invigorating to work with innovation "against all odds" in a regulated environment.

In summary, we can see that regulations reduce employee creativity and motivation, and that regulations are mostly seen as negative challenges. The regulations act as a framework which creates boundaries in the innovation process for organisations and employees. Regular setbacks decrease motivation. Breaking free from the existing logic in the industry may be necessary in order to increase creativity.

5.4. Regulations Can Stimulate and Shape Innovation

This section analyses the findings under the second-level theme *Regulations can stimulate and shape innovation.* An overview of the second-level theme, first-level themes and concepts is provided in Table 20.

Concepts	First-Level Themes	Second-Level Themes
Regulations can increase competition	Regulations create opportunity and incentives for innovation	Regulations can stimulate and shape innovation
Regulations can change market dynamics		
Regulations force innovation	Compliance-driven innovation	
Regulations change the direction of innovation		

Table 20. Overview of second-level theme: Regulations can stimulate and shape innovation.

5.4.1. Regulations Create Opportunity and Incentives for Innovation

Both organisations have a track record of innovation in the current environment and have successfully implemented and commercialised new products and solutions. We are not able to comment on whether this is in spite of, or thanks to, the regulations. However, regulations can be an influential factor and regulations could potentially lead to innovations, although, it would seem, mostly incremental innovation. It is more likely to be that the regulations do not lead to innovation per se, but that they rather focus or steer which innovation projects become relevant. Regulations can also facilitate and give the necessary preconditions for innovation (Blind, 2012).

Regulations have been found to have an important positive impact on environmental innovation, even being named as the main stimulus for eco-innovation (Leitner et al., 2010). It seems that within the environmental sphere, regulations are more often considered an important driver of innovation, rather than an obstacle. Porter (1990) argues for a similar positive impact of regulations. The empirical findings in this study show very limited indications of regulations being a positive impact on innovation as a whole. Once again, this may refer to the propensity of financial regulation to issue forbiddances instead of raising minimum standards (safety standards or quality standards). It seems that competition-enhancing or market condition-altering regulation may have a positive effect on innovation because of the way that innovation is considered by the case companies as a main source of competitive advantage.

SPP has indicated that regulations may sometimes act as an opportunity creator for innovation. For example, regulation can create new market dynamics that require new solutions. One such example was regulation stating that pension companies must clarify any costs connected to their products to their customers. As SPP found that increased transparency would change market conditions and create price competition, they started to work on innovation that could result in a lower cost base and therefore also lower prices for customers.

The insurance industry is protected by high entry barriers. It seems the industry has not been as focused on innovation in the past as it has now started to become. SPP comments that there has not been a need for the industry to be innovative historically since the industry incumbents have been protected by high entry barriers (Blind, 2012; OECD, 2017) and customer expectations have been very low. Ricard Robbstål, Länsförsäkringar G&B, finds that there is *"a low sense of urgency"* in the industry and that insurance companies feel *"invincible"*. So,

it does seem plausible that entry barriers indeed give little incentive to invest in innovation. In spite of a low innovation rate, companies have been doing well and have been profitable.

However, the perception is that the industry is starting to change and puts more focus on innovation. In spite of there being no signs of lowered entry barriers (rather, they have been raised, Solvency II came into effect in 2016), the industry has increasingly seen new entrants who are tapping into customer needs that used to be ignored and didn't need to be addressed since the status quo was upheld by the entry barriers. As Per Lindberg, SPP, stated *"you expect forms, telephone queues, and quite boring things in your contact with an insurance company. The bar has actually been raised".* A possible explanation for this is that other types of non-regulatory entry barriers have been lowered. For example, more and more sophisticated AI solutions and internet-based business models have the potential of decreasing fixed costs, making insurance a lucrative business even for small players. Before, significant economies of scale may have been necessary for insurance companies to be profitable. This creates a need for incumbents like Länsförsäkringar G&B and SPP to increase their innovation rate. Thus, the effects of regulations are not static, and their effects seem to vary over time depending on how the industry evolves.

Besides seeing it as a positive challenge (see 5.3), it seems regulation can change market conditions and points of competitive advantage (OECD, n.d.), shaping innovation and the direction it takes. For example, SPP finds that, with the ease of changing pension providers and as the market is saturated with good occupational pension insurance options, actors must differentiate based on add-on products.

5.4.2. Compliance-Driven Innovation

Regulations can also force innovation. When Solvency II came into effect, SPP put a lot of effort towards finding improvements and increasing efficiency in order to be able to keep generating returns while meeting the demands set by the regulation, as identified in the literature (Caniëls & Rietzschel, 2015; Swann, 2005). This innovation was crucial for the Storebrand group in order to become capital efficient. A parallel can be drawn to what Swann (2005) found in the chemical industry, necessary innovation in order to comply with regulation pushed innovation efforts.

Regulations have been shown to shape innovation. When developing RideSafe, Länsförsäkringar decided they would test the product on professional drivers, rather than civilians, partly because it would be easier from a regulation perspective. Länsförsäkringar did not indicate that they chose professional drivers due to business factors, such as margins or profits, but mainly from a regulatory perspective. Other support for this notion is that some regulations, such as GDPR, require extensive paperwork also for a test. Since many of their projects use data, Lfant finds that tests and pilots are affected by GDPR. This implies that the companies to a certain extent are forced to choose a direction for the idea and project in an early stage. They then have to invest time and, consequently, money into making sure the

product is compliant with regulations by filling out checklists or forms. The consequence is that they to a certain extent are forced to choose a direction for the idea and project at an early stage in order to be able to fill out risk-assessments for example. Aside from the additional resources demanded, it is possible that this has a negative impact on the possibility to be iterative and do extensive testing, as is suggested by previous studies (Blind, 2012; Tidd & Bessant, 2013; Vera & Crossan, 2004). Regulations therefore seem to steer the direction a project takes, and also force early decisions since it aggravates iteration. The innovation may have taken a different (perhaps better) direction if a few more iterations had been possible. On the other hand, the regulations are likely also preventing projects from becoming harmful in certain situations.

In summary, it seems the insurance industry has not enjoyed the same effect as the environmental industry, rather, their innovation seems to be mostly negatively affected. Regulations can however act as opportunity creators where regulations force a change in the market dynamics and require new solutions. Regulations are also shown to impact innovation through forcing change, as in the case of Solvency II where actors were required to innovate in order to be compliant with regulation. Finally, regulations can have a role in spearing the direction of innovation projects, for better and for worse.

5.5. Inconsistencies with Previous Studies

This section considers the parts of theory that were not confirmed by the empirical findings. Unsurprisingly, there is not perfect correspondence between the empirical findings and the analytical framework. While such inconsistencies may not be able to be the basis of conclusions in this study, they can nevertheless point towards interesting further research. As inspiring further research is a main purpose of this study, a brief discussion on inconsistencies with what previous literature suggested is offered in the following sections.

5.5.1. Predictability in Regulations

According to previous studies, predictability of regulations is highly important in order for companies to consider risk of innovation (Marcus, 1981) and for fostering innovation (Kolady & Herring, 2014). Ricard Robbstål, Länsförsäkringar G&B pointed out that the regulations change all the time, and that current solutions may not be possible to use in the future. However, as he was the only one mentioning it, and did not put much emphasis on it, it was not deemed strong enough to justify a theme on its own. Thus, the conclusion drawn from this study is that the companies do not perceive a great issue with unpredictability of regulations. One possible explanation for this is that Sweden is a country with a high level of regulatory predictability and consistency. Sweden is ranked number nine in the world on political environment, and number 13 in the world on regulatory environment (10th in regulatory quality and 3rd in rule of law) according to the Global Innovation Index. This indicates that there is a sound political and regulatory foundation for innovation in Sweden (Cornell University, INSEAD, & WIPO,

2019). And while regulations may be subject to change over time, that may not necessarily mean they are unpredictable.

5.5.2. Creativity

On the topic of creativity, the clearest findings were regulations' effects on motivation, primarily due to frequent setbacks and clashes with regulations. The notion that constraints can increase the efficient use of cognitive resources has not been touched upon. Roskes (2015) does however not specifically mention regulation as a constraint. Neither company has mentioned that they feel regulations help steer away from obvious solutions. So, while there are findings supporting that constraints can negatively affect creativity, it has mostly had to do with the possibility to succeed.

The findings on employee-driven innovation are inconclusive. A decrease of autonomy can decease employee-driven ideation according to Aasen and Amundsen (2013). It is unclear how much autonomy is affected by regulations according to the empirical results of this study. Both companies do work with including employees in ideation and incorporate them in innovation projects. Länsförsäkringar G&B seems to involve employees to a larger extent than SPP. Neither company connected employee-involvement to regulations, so they do not seem to perceive that employee-engagement in innovation is affected by regulations, at least not significantly enough for them to bring it up during the interviews. Statements made by Länsförsäkringar G&B rather hint at employee-involvement is a cultural consideration, rather than it being governed by regulations. It is also possible that autonomy (Aasen & Amundsen, 2013) is affected more by other constraints than regulations.

5.5.3. Project Management

Both companies used to employ different kinds of staged models, which would be in line with previous studies (Asante et al., 2014). However, neither company connected waterfall models to regulations per se. Thus, the choice of project management model can also refer to organisational circumstances such as organisational structure, level of bureaucracy, types of innovation etc. (Goffin & Mitchell, 2017). Regular compliance may contribute to increased bureaucracy; however, such details are outside the scope of this thesis. Both case companies did seem to find that agile methods increase innovativeness. SPP has already gone over to use agile project methods and Länsförsäkringar G&B is currently making a change towards a lean-agile way of working. Staged models were considered time-consuming and restrictive of creativity. On the other hand, Lfant made it clear that certain regulations made agile methods difficult to apply. GDPR made it very difficult to be iterative and test prototypes since it was time consuming and expensive to go through the whole GDPR framework for each test. In contrast to what was argued by Asante et al. (2014), there does not seem to be any evidence of specific tools or mechanisms the case companies use in their specific context. Rather, it seems the companies use generally applicable models and methods, adding steps, such as compliance where they deem suitable. On the other hand, these findings must be considered inconclusive,

since there is not enough previous data or studies to compare our findings with. Clearly, more research is necessary in this area.

5.5.4. Incremental and Radical Innovation

While it was clear that the companies were not engaging in radical innovation to a significant extent it was not clear to what extent inflexibility of their organisations due to regulations was to blame. Neither company indicated that so was the case. SPP seems to be more fixed in their way of working, they have fixed agile teams that specialise in different areas. Sometimes they bring in subject matter experts who can influence a project, but mostly the teams are static. Länsförsäkringar G&B's teams are put together in a more ad hoc manner. This implies that they may have better preconditions to organise flexibly than SPP. Lfant is also separated to a certain degree from Länsförsäkringar G&B's insurance organisation. According to previous studies, this separation and flexibility of Lfant could imply that they would have a higher probability for radical innovation than SPP (Olson et al., 1995), however, there is no empirical data in this study that confirms if this is actually the case. SPP engages more in innovation with a clear insurance connection than Länsförsäkringar G&B and Lfant does. However, none of the innovations mentioned by the companies can be considered radical according to the definition used in this study (Goffin & Mitchell, 2017; Green & Cluley, 2014; Srinivasan et al., 2002; Story et al., 2011; Tellis et al., 2009).

Liability regulation was not explicitly discussed by the respondents either. Some indications were made that the margin of error for any innovative product is very small. Customers expect products to work perfectly from the start and some activities that are carried out can have great impact on customers if not done correctly. So, both companies expressed a sense of responsibility to deliver well-functioning products. Customer expectations and customer service interests also seem to encourage the companies to make sure that the products they launch are safe. This may decrease radical innovation since it is inherently more risky than incremental innovation. The risk that something goes wrong is therefore more likely in radical innovation than in incremental. However, according to the data in this study it seems more likely that regulation effectively hindering radical innovation (e.g. the non-permissible activities clause) is more responsible for the lack of radical innovation than liability conditions.

5.5.5. Market Conditions

There are no indications of the positive impact of high entry-barriers – that increased expected returns on investment in a low-competition market can give incentives to innovate. Theory does however state that on the whole, the effects of entry barriers are negative for innovation (Blind, 2012), so these results are not surprising.

Regulation also has an impact on the incentives to innovate and is sometimes a crucial component which allows for innovation. A good example of this is patent protection which may produce positive incentives to invest in R&D (Blind, 2012). Without this security,

organisations may not find it attractive to invest in innovation which immediately can be imitated and replicated by competitors. However, neither company have mentioned patent protection, so it is possible that they do not engage the type of innovation that qualifies for patent protection. Another possibility is that IP-rights are so general and obvious they do not think of them in the context of this study.

Yet another regulatory facilitator of innovation, which is that regulation can create fair market rules (OECD, n.d.), was not mentioned by either company. The likely explanation for this is that it is taken for granted (see Cornell University et al., 2019, which indicates Sweden has a sound innovative environment.) and that it may not appear in obvious linkage to innovation during the interviews since fair market conditions are a more indirect facilitator of innovation (e.g. Blind, 2012).

5.5.6. Adoption

Lastly, theory predicted that adoption could be affected by safety regulations and liability regulations (Blind, 2012). It seems logical that customers feel safe to purchase insurance products since the industry is so heavily regulated. However, the companies themselves did not perceive that trust for them is high. For example, Magda Nyberg Rosloniec, SPP, found that there was a lot of suspicion towards the insurance industry in spite of the substantial regulation they are under. There seems to be a small margin of error; Ricard Robbstål, Länsförsäkringar G&B, explained that customers require products to be basically flawless when they are launched. On the other hand, measurements suggest that the trust for Swedish insurance companies have risen in the later years, and SKI found that the customer satisfaction index in the insurance industry for 2019 was 71.1[6], which is fairly good (SKI, 2019, n.d.). Taken together, this could suggest that the trust for insurance companies, while it is fairly high in general, is fragile and can be threatened by mistakes from insurance companies. It is also possible that the dissatisfied voices are the loudest, creating a bias in the companies' own perception of customer trust.

[6] The index can take on values from 0 to 100. Indices over 75 are very good while indices below 60 indicate a large dissatisfaction among customers (SKI, 2019, n.d.).

6. CONCLUSION

In this chapter conclusions will be drawn from the findings in this study. Lastly, avenues for future research are discussed.

6.1. Regulations' Impact on Insurance Companies' Innovation Work

The purpose of this study is to gain insights into how insurance companies perceive, work with and are affected by regulations in relation to innovation activities. Since the topic has not been researched previously, we adopted an exploratory approach which enabled a broad image of how innovation is affected by regulations in insurance companies. We can conclude that regulations have a major impact on insurance companies' innovation work. When studying Länsförsäkringar G&B and SPP, we have identified four main areas in which the regulations show their presence.

(1) Firstly, regulations can prevent innovation and reduce customer value. It is clear that the regulations many times put a stop to innovations, often due to a clash with the non-permissible activities clause, or because of the boundaries of the concession. SPP often cancels such ideas, while Länsförsäkringar G&B have worked out a solution for some innovations. GDPR was frequently mentioned by the companies as an obstacle, thus is seems most industries and companies who would like to use personal data in innovation should be affected similarly.

There is also a frustration from the companies who see that it is ultimately the customers who are negatively impacted by the lack of innovation through lower customer value. Deselected innovations could have benefitted customers through lower prices or better services and products. On the other hand, it is probable that the regulations also have protected customers from harmful innovation.

The perception of regulations as problematic in terms of stopping innovation seems to be contextual, and dependent on the types of innovations the companies pursue. SPP experienced the least problems, Länsförsäkringar G&B experienced more problems, and Lfant the most problems. This finding implies that the more outside of the regulatory "box" innovation is, the more problematic the regulations are perceived.

(2) Secondly, regulations require additional resource investments for innovation. Regulations are often complicated and in order to guide an innovation project through the difficult and often comprehensive regulations, organisations need to invest in compliance expertise, extra development time and development of tools. The results are increased costs for innovation projects, and ultimately increased prices for customers. It also results in organisations not being able to conduct innovation development in the pace as they may want to. The more regulations there are, the more resources are required in order to succeed with innovation. This reduces incentives for innovation, as well as increases costs for customers.

(3) Thirdly, regulations are negative for creative performance. Firstly, by presenting boundaries for creativity: By keeping regulatory issues in mind during ideation, it seems that many innovative ideas may be discarded at an early stage. There are also findings that suggest that the companies believe there are creative benefits to separating regulations and ideation. However, this increases the risk of setbacks. Secondly, through a loss of motivation: It was clear that frequent setbacks in innovation projects risked demotivating employees, and that successes could increase motivation.

(4) Fourthly, regulations can stimulate and shape innovation. While academic literature has shown that regulations can have a positive impact on some innovation areas, e.g. eco-innovation, that does not seem to be the case in the insurance industry, where regulations are mostly shown to have a negative innovation impact. Regulations are also shown to act as an opportunity creator since market conditions are affected by changes in the regulations. Mainly, it seems that regulation that has increased competition or created new points of differentiation has sparked innovation. Both case companies see competitive advantage as a main reason for engaging in innovation. In such situations the regulations have also, to a higher degree, been perceived as positive challenges, rather than obstacles, which is also closely related to creativity and motivation.

Furthermore, regulations can force innovation when innovation is necessary in order to comply with law. Regulations can also shape innovation, that is steer projects into certain directions, both directly and indirectly. Once again, GDPR was mentioned as such regulation. According to the findings in this study, the regulations seem to be unable to efficiently differentiate between "good" and "bad" innovation. Thus, while in all likelihood "bad" innovations have been avoided through strict forbiddances, a lot of "good" innovation has probably been stopped as well.

As can be expected in such an unresearched area as this, there was not complete conformity between the analytical framework and the data collected as could be seen in Section 5.5. While we could not draw conclusions based on that discussion, it further highlights the need to further research this topic (suggestions are made in Section 6.2). The main contribution of this study has hence been the broad view attained of innovation and regulation in the insurance industry. It is our hope that the findings in this study will contribute to future research, that can develop deeper theory on how regulated companies best work with innovation and how effective regulation may be developed in order to find a balance between protection and innovation that best benefits society and the economy. It is clearly possible to innovate inside the box that regulation draws the boundaries of, but this study has also showed the need for further innovation management research on this topic.

6.2. Future Research

The main contribution of this study has been to give insights into insurance companies innovation initiatives and how the regulations affect their work. The study has focused on one specific industry in Sweden where two case companies have been studied. We have identified both challenges and opportunities these companies perceive when innovating around or within these regulations. We see that there is large potential for future research within this topic and hope that our study will both inspire and contribute to further research within the area. As the purpose of this study is to explore the topic of regulation and innovation, it is our hope that the findings of this study can be used as inspiration for finding interesting areas for further inquiry.

For example, quantitative studies on creative performance in regulated industries could be conducted. Other possibilities are to conduct specific studies of the relationship between incumbents and start-ups in environments with high entry barriers. Illuminating how radical innovation can be successfully pursued in regulated industries with high safety standards is another interesting avenue of further research. It would be interesting to conduct research on how to best manage innovation in a regulated industry and how different tools and methods work in that context.

Since this study is industry specific, it is not representative of how other regulated industries' innovation work is affected. Therefore, it is a natural area of future research to conduct the same type of study on other industries. A next step could be to consider the banking industry since its operations are closely related to the one of insurance, however, they are affected by slightly different laws and regulations.

The study also highlighted that there are several topics that the analytical framework, constructed out of previous studies, predicted that were not touched upon in the interviews, those areas are interesting for further research. E.g. more detailed research on how creativity is affected in regulated industries, how project management differs, and whether certain project management models and methods are more suitable than others in order to foster innovation when working in regulated industries.

Furthermore, regulations in the insurance industry seem to assume that innovation is generally more negative than positive for customers (in comparison to the risk it entails). An interesting area for further research would therefore be to measure the consumer impact of regulations in the insurance industry in order to identify effective regulation that allows "good" innovation but stops the harmful. Furthermore, the impact of regulations on customer benefit would be very interesting to investigate.

Another interesting focus for future research would be to conduct the same study, in another country. Regulations are national and would differ between countries. In order to understand how and why specific regulations do affect innovation, benchmarking this study with other national markets would be interesting in order to receive even more detailed contextual insights.

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APPENDICES

Appendix 1: Interview Guide

1. Can you please describe your role at the company?

2. Can you give us an introduction to the company and what it does?

3. Can you tell us about your one of your latest innovation projects and how you worked with it?
    - Goal with the project
    - Time plan
    - Process
    - Project members
    - Competences

4. How does your company see innovation as a part of your strategy and your operations?
    - Goal
    - Purpose
    - How did it start?
    - How important is it?

5. Can you tell us how the company works with innovation?
    - Standardised processes?
    - Mandatory moments (Stage-gate?)
    - Special task force/development groups?
    - Part of culture – is everyone encourage to participate?
    - What types of innovation (incremental/radical)?
        i. Why certain types?

6. How do you work with idea generation in new innovation projects?

7. How are the ideas and the innovation projects selected which you later continue to develop?

8. Who is involved in the innovation projects?
    - How does the development team look?

9. Does the innovation process include any debrief with employees who are not part of the development team? E.g. does it require acceptance from a manager?
    - Who are involved in these reconciliations?

10. How do you work with compliance?
    - Hard/easy
    - Processes/routines?
    - Responsibilities within the company?
    - How do you integrate it in the innovation and development process?

11. How do you work with commercialisation and implementation of a new project?

12. How do you work with follow up of an innovation project?

13. What types of challenges and risks do you see with working with innovation?
    - Do you experience that it is hampered?
    - Are there restrictions for certain types of innovation?
    - What is difficult?
    - Speed?
    - Risks?

14. What possibilities and opportunities do you see with working with innovation within your industry?

15. How do you work with customer insights in your innovation projects?

16. How do you work with creativity in the company?
    - Special methods?
    - How do the regulations affect it?
    - How do you think motivation is affected by regulations?

17. What do you think of the existing regulations?

18. What laws and/or regulations are the ones that affect you the most in your innovation work?

19. Do you experience that you are able to innovation to the extent that you want with regards to the regulations?

20. What parameters decide how the development portfolio looks like?

21. If you could wish, how would you have wanted the regulations to look like in your industry?
    - More/less?

22. To what extent do you experience that FI and other regulating authorities are working with facilitating and supporting innovation?

23. How do you work with co-operation within the industry in order to innovate?

Appendix 2: Selection of Case Companies

In Table 21 is the full list of Swedish insurance companies retrieved from FI's company database. This provided information on company names, main types, concession status and city. Age of the companies and number of employees was retrieved from each respective company's annual report or website. The first grey marking in a row indicates where in the funnel a company was filtered out due to the criterium not being fulfilled. Abbreviations are explained in Table 22.

Company Name	(Main) Type	Concession	City	Age	Employees
Alecta pensionsförsäkring, ömsesidigt	NL	Yes	Stockholm	103	367
Länsförsäkringar Göteborg och Bohuslän	LL	Yes	Göteborg	175	381
SPP Pension & Försäkring AB (publ)	NU	Yes	Stockholm	103	384
Folksam ömsesidig livförsäkring	NL	Yes	Stockholm	112	788
Folksam ömsesidig sakförsäkring	ND	Yes	Stockholm	112	788
Livförsäkringsbolaget Skandia, ömsesidigt	NL	Yes	Stockholm	165	1920
AFA Livförsäkringsaktiebolag	NL	Yes	Stockholm	58	575*
AFA Sjukförsäkringsaktiebolag	ND	Yes	Stockholm	58	575*
AFA Trygghetsförsäkringsaktiebolag	ND	Yes	Stockholm	58	575*
Försäkringsaktiebolaget Skandia (publ)	NL	Yes	Stockholm	165	6
PP Pension Fondförsäkring AB	NU	Yes	Stockholm	138	31
Sveriges Ångfartygs Assurans Förening	ND	Yes	Göteborg	115	117
Handelsbanken Liv Försäkringsaktiebolag	NL	Yes	Stockholm	170	175
Stockholms Stads Brandförsäkringskontor	LL	Yes	Stockholm	274	-
Allmänna Änke och Pupillkassan i Sverige	NL	Yes	Stockholm	280	-
Försäkringsbolaget PRI Pensionsgaranti, ömsesidigt	ND	Yes	Stockholm	59	101
Bliwa Livförsäkring ömsesidigt	NL	Yes	Stockholm	72	142*
Bliwa Skadeförsäkring AB (publ)	ND	Yes	Stockholm	72	142*
KPA Livförsäkring AB (publ)	NL	Yes	Stockholm	98	0
KPA Pensionsförsäkring AB (publ)	NL	Yes	Stockholm	98	65
Idun Liv Försäkring AB	NL	Yes	Stockholm	6	
Länsförsäkringar Fondliv Försäkringsaktiebolag (publ)	NL	Yes	Stockholm	9	
LMG Försäkrings AB	ND	Yes	Stockholm	9	
Brummer Life Försäkringsaktiebolag	NU	Yes	Stockholm	9	
Medicover Försäkrings AB (publ)	ND	Yes	Stockholm	14	
Svenska Läkemedelsförsäkringen AB	ND	Yes	Stockholm	14	
Tre Kronor Försäkring AB	ND	Yes	Stockholm	14	
Nordnet Pensionsförsäkring AB	NL	Yes	Stockholm	15	
S:t Erik Livförsäkring AB	NL	Yes	Stockholm	15	
Svensk Handel Fondförsäkring AB	NU	Yes	Stockholm	15	
Försäkringsaktiebolaget Agria (publ)	ND	Yes	Stockholm	16	
Unionen Medlemsförsäkring AB	ND	Yes	Stockholm	19	
Försäkringsaktiebolaget Avanza Pension	NU	Yes	Stockholm	19	
Saco Folksam Försäkrings AB	ND	Yes	Stockholm	20	
Futur Pension Försäkringsaktiebolag	NL	Yes	Stockholm	21	
IF Livförsäkring AB	NL	Yes	Stockholm	21	
If Skadeförsäkring AB (publ)	ND	Yes	Stockholm	21	
Folksam LO Fondförsäkringsaktiebolag (publ)	NU	Yes	Stockholm	22	
Gamla Livförsäkringsaktiebolaget SEB Trygg Liv (publ)	NL	Yes	Stockholm	23	
Holmia Livförsäkring AB	NL	Yes	Stockholm	24	
Folksam Fondförsäkringsaktiebolag (publ)	NU	Yes	Stockholm	25	
Dina Försäkring AB	ND	Yes	Stockholm	30	
SEB Pension och Försäkring AB	NU	Yes	Stockholm	30	
Gar-Bo Försäkring AB	ND	Yes	Stockholm	31	
Sirius International Försäkringsaktiebolag (publ)	ND	Yes	Stockholm	31	
Nordea Livförsäkring Sverige AB	NL	Yes	Stockholm	32	
Länsförsäkringar Liv Försäkringsaktiebolag (publ)	NL	Yes	Stockholm	35	
Försäkrings AB Suecia	ND	Yes	Stockholm	35	
AMF Pensionsförsäkring AB	NL	Yes	Stockholm	47	
BNP Paribas Cardif Livförsäkring AB	NL	Yes	Göteborg	47	
BNP Paribas Cardif Försäkring AB	ND	Yes	Göteborg	47	
Länsförsäkringar Grupplivförsäkringsaktiebolag	NL	Yes	Stockholm	-	

Maiden Life Försäkrings AB	NL	Yes	Stockholm	-	
Maiden Life Försäkrings AB	NL	Yes	Stockholm	-	
Swedbank Försäkring AB	NL	Yes	Stockholm	-	
Anticimex Försäkringar AB	ND	Yes	Stockholm	-	
ERIKA Försäkringsaktiebolag (publ)	ND	Yes	Stockholm	-	
Landstingens Ömsesidiga Försäkringsbolag	ND	Yes	Stockholm	-	
Länsförsäkringar Sak Försäkringsaktiebolag (publ)	ND	Yes	Stockholm	-	
Maiden General Försäkrings AB	ND	Yes	Stockholm	-	
Nordisk Marinförsäkring AB	ND	Yes	Stockholm	-	
Euro Accident Livförsäkring AB	NL	Yes	Other		
Svenska Fribrevsbolaget Försäkring AB	NL	Yes	Other		
Accept Försäkringsaktiebolag (publ)	ND	Yes	Other		
Falck Försäkringsaktiebolag	ND	Yes	Other		
ICA Försäkring AB	ND	Yes	Other		
Kyrkans Försäkring AB (publ)	ND	Yes	Other		
Nordic Guarantee Försäkringsaktiebolag	ND	Yes	Other		
Solid Försäkringsaktiebolag	ND	Yes	Other		
Sveland Djurförsäkringar, ömsesidigt	ND	Yes	Other		
Vabis Försäkringsaktiebolag	ND	Yes	Other		
Åkerbo Härads Brandstodsbolag	LL	Yes	Other		
Bohusassuransen Försäkringsbolag Ömsesidigt	LL	Yes	Other		
Bohuslänska Strandlägenas Brandförsäkringsförening	LL	Yes	Other		
Brunskogs Försäkringsbolag	LL	Yes	Other		
Dalarnas Försäkringsbolag	LL	Yes	Other		
Dina Försäkringar Göta Ömsesidigt	LL	Yes	Other		
Dina Försäkringar Mitt, ömsesidigt	LL	Yes	Other		
Dina Försäkringar Nord ömsesidigt	LL	Yes	Other		
Dina Försäkringar Syd	LL	Yes	Other		
Dina Försäkringar Väst ömsesidigt	LL	Yes	Other		
Länsförsäkring Kronoberg	LL	Yes	Other		
Länsförsäkringar Älvsborg	LL	Yes	Other		
Länsförsäkringar Bergslagen ömsesidigt	LL	Yes	Other		
Länsförsäkringar Blekinge	LL	Yes	Other		
Länsförsäkringar Gävleborg	LL	Yes	Other		
Länsförsäkringar Göinge - Kristianstad	LL	Yes	Other		
Länsförsäkringar Gotland	LL	Yes	Other		
Länsförsäkringar Halland	LL	Yes	Other		
Länsförsäkringar Jämtland	LL	Yes	Other		
Länsförsäkringar Jönköping	LL	Yes	Other		
Länsförsäkringar Kalmar län	LL	Yes	Other		
Länsförsäkringar Norrbotten	LL	Yes	Other		
Länsförsäkringar Östgöta	LL	Yes	Other		
Länsförsäkringar Skåne - ömsesidigt	LL	Yes	Other		
Länsförsäkringar Skaraborg - ömsesidigt	LL	Yes	Other		
Länsförsäkringar Södermanland	LL	Yes	Other		
Länsförsäkringar Stockholm	LL	Yes	Other		
Länsförsäkringar Uppsala	LL	Yes	Other		
Länsförsäkringar Värmland	LL	Yes	Other		
Länsförsäkringar Västerbotten	LL	Yes	Other		
Länsförsäkringar Västernorrland	LL	Yes	Other		
Nordmarks Härads Försäkringsbolag	LL	Yes	Other		
Orusts Försäkringsbolag	LL	Yes	Other		
Förenade Liv Gruppförsäkring AB (publ) Återkallat tillstånd	NL	No			
Trygg-Hansa ömsesidig livförsäkring i likvidation	NL	No			
Cosa Försäkrings AB i likvidation	ND	No			
Eir Försäkring AB	ND	No			
SABO Försäkrings AB (publ)	ND	No			
Frykeruds sockens nya hästförsäkrings- förening	CI				
Alsens hästförsäkringsförening (i likvidation)	CI				
Bredaryds nötkreatursförsäkringsförening	CI				
Gunnarskogs hästförsäkringsbolag	CI				
Ringarums hästförsäkringsförening	CI				
Leksands hästförsäkringsförening	CI				
Långseruds sockens hästförsäkrings- förening	CI				
Kila och Tveta socknars hästförsäkrings- förening	CI				
Kårsta hästförsäkringsförening	CI				
Nyhammars svinförsäkringsförening	CI				
Österåkers Hästförsäkringsförening	CI				

Tuna svinförsäkringsförening	CI				
Bergs kreatursförsäkringsbolag	CI				
Boxholms med omnejd hästförsäkrings- förening	CI				
Eringsboda med angränsande socknars hästförsäkringsbolag	CI				
Gotlands södra härads Kreaturförsäkringsförening	CI				
Mattmars hästförsäkringsförening	CI				
Skogs sockens hästförsäkringsbolag	CI				
Sturkö kreatursförsäkringsförening	CI				
Sundborns hästförsäkringsförening	CI				
Sunne hästförsäkringsförening	CI				
Säbrå hästförsäkringsförening	CI				
Torestorps ömsesidiga nötkreatursförsäk- ringsförening	CI				
Torsåkers sockens hästförsäkringsbolag	CI				
Valls och Hogräns Kreatursförsäkrings- förening	CI				
Villstads, Båraryds och Våthults socknars hästförsäkringsbolag	CI				
Västanbergs kreatursförsäkringsförening	CI				
Ölmstads enskilda hästförsäkringsbolag	CI				
Örkelljunga, Rya, Fagerhults och angränsande socknars hästförsäkringsförening	CI				
Färila assuransförsäkringsförening för svinkreatur	CI				
Gärdsjö hästförsäkringsförening	CI				
Hamrånge församlings kreatursförsäkringsförening	CI				
Arnäs ömsesidiga hästförsäkringsförening	CI				
Siljansnäs hästförsäkringsförening	CI				
Lidhults hästförsäkringsförening i lik- vidation	CI				
Nöttja hästförsäkringsförening i likvidation	CI				
Norra Mellby och Tjörnarps häst och nötkreatursförsäkringsförening	CI				
Södra Hestra Pastorats hästförsäkrings- bolag	CI				
Västra Rättviks nötkreatursförsäkrings- förening	CI				
Västra Vingåkers sockens hästför- säkringsföreningförening	CI				
Åsenhöga m fl socknars hästförsäkrings b olag	CI				
Färila hästförsäkringsförening	CI				
Gnarps ömsesidiga hästförsäkrings- förening	CI				
Gunnarps med angränsande socknars försäkringsförening för häst och nötkreatur	CI				
Floda Husdjursförsäkringsförening	CI				
Acklinga m fl socknars hästförsäkringsfö rening	CI				
Segersta och Hanebo socknars häst- försäkringsförening	CI				
Hova m fl socknars hästförsäkrings- förening	CI				
Husby hästförsäkringsförening i likvidation	CI				
Häverö hästförsäkringsförening	CI				
Mjöbäcks pastorats ömsesidiga häst- försäkringsbolag	CI				
Lau sockens Kreatursförsäkringsförening i likvidation	CI				
Nordanåsbo hästförsäkringsförening	CI				
Stentorps och Häggums m fl socknars hästförsäkringsförening	CI				
Stutt och Knås nötboskapsförsäkrings- förening	CI				
Väster-Färnebo sockens enskilda häst- försäkringsförening	CI				
Älvdalens hästförsäkringsförening	CI				
Dala-Järna svin försäkringsförening	CI				
Bonäs och Våmhus hästförsäkringsförening	CI				
Förlanda sockens nötkreatursförsäkrings- förening	CI				
Heds hästförsäkringsförening	CI				
Högsäters Kommuns hästförsäkringsbolag	CI				
Madesjö hästförsäkringsförening	CI				
Nora Häst- och nötboskapsförsäkrings- förening i likvidation	CI				
Offerdals hästförsäkringsförening	CI				
Lina tings kreatursförsäkringsförening	CI				
Veddige pastorats hästförsäkringsbolag	CI				
Västra Rättviks hästförsäkringsförening	CI				
Älvsåkers hästförsäkringsbolag	CI				
Stockholms läns Fiskebåtsförsäkrings- bolag	SL				
Södermanlands Läns Fiskebåtförsäkringsbolag	SL				
Inlands Försäkringsbolag	SL				
Kulltorp, Bredaryd och Forsheda Hästförsäkringsbolag inom Västbo och Östbo härader i likvidation	SL				
Stångenäs Försäkringsbolag	SL				
Stavnäs-Glava Försäkringsbolag	SL				

Högsjö, Hemsö och Gudmundrå socknars brandförsäkringsbolag i likvidation	SL				
Oxie-Skytts Djurförsäkring	SL				
Torups Försäkringsbolag i likvidation	SL				
Gotlands läns fiskeriförsäkringsbolag	SL				
Bohusläns Allmänna Sjöförsäkringsförening	SL				
Donsö-Vrångö Båtförsäkringsbolag	SL				
Ramsele Försäkringsbolag	SL				
Lysviks Försäkringsbolag	SL				
Österfärnebo Sockens Brandförsäkringsbolag	SL				
Stöde sockens Försäkringsbolag	SL				
ÅB Lokala Försäkringar Ömsesidigt Försäkringsbolag	SL				
Öckerö Sockens Ömsesidiga Båtförsäkring sbolag	SL				
Alfa Laval Försäkrings AB	NC				
Assa Abloy Försäkrings AB	NC				
Återförsäkringsaktiebolaget SKF	NC				
Bohlinsgruppen i Sverige Försäkring AB	NC				
Dirual Försäkrings AB	NC				
Electrolux Försäkringsaktiebolag	NC				
Ericsson Insurance (Försäkring) AB	NC				
Essity Försäkringsaktiebolag	NC				
Förenade Småkommuners Försäkrings (FSF) Aktiebolag	NC				
Försäkrings AB Göta Lejon	NC				
Försäkringsaktiebolaget Portea	NC				
Försäkringsaktiebolaget Skandinaviska Enskilda Captive	NC				
Försäkringsaktiebolaget Vattenfall Insurance	NC				
Handelsbanken Skadeförsäkrings AB	NC				
Industria Försäkringsaktiebolag	NC				
Kommunassurans Syd Försäkrings AB	NC				
Kommungaranti Skandinavien Försäkrings AB	NC				
Lansen Försäkringsaktiebolag	NC				
LKAB Försäkring AB	NC				
NCC Försäkringsaktiebolag (publ)	NC				
Peab Försäkrings AB	NC				
Praktikertjänst Försäkring AB	NC				
Preem Försäkrings AB	NC				
Principle Försäkring AB	NC				
S:t Erik Försäkrings AB	NC				
Sandvik Försäkrings AB	NC				
Sappisure Försäkrings AB	NC				
Skanska Försäkrings AB	NC				
Sparbankernas Försäkrings AB	NC				
Sparia Group Försäkrings AB	NC				
Stockholmsregionens Försäkring AB	NC				
Sveaskog Försäkringsaktiebolag	NC				
Svenska Kommun Försäkrings AB	NC				
Sydkraft Försäkring AB	NC				
Telia Försäkring AB	NC				
Twincap Försäkrings AB	NC				
Visenta Försäkringsaktiebolag	NC				
Volvo Car Försäkrings AB	NC				
Volvo Group Insurance Försäkringsaktiebolag	NC				
HSB Försäkrings AB (publ)	NC				
Fiskarnas Pensionskassa, försäkringsförening	SA				
Donsö Fiskares Pensionskassa, försäkringsförening	SA				
ASB-ABBpersonalens Försäkringsförening	SA				
Sjökaptenernas i Göteborg pensionskassa, understödsförening	SA				
Pensionskassan SHB, Försäkringsförening	SA				
PP Pension Försäkringsförening	SA				
Försäkringsbranschens Pensionskassa, försäkringsförening	SA				
Bryggeritjänstemannaföreningen (understödsförening)	SA				
AI Pension, försäkringsförening (i likvidation)	SA				
Understödsföreningen PROMETHEUS	SA				
Försäkringsföreningen Livkronan Trygghet i likvidation	SA				
Sjömannaföreningen, försäkringsförening	SA				
Ljunga Verks anställdas försäkrings- förening i likvidation	SA				
Svenska kyrkans pensionskassa, försäkringsförening	SA				
Understödsföreningen 500-550 i likvidation	SA				

Volvo LO-klubbars Försäkringsförening	SA				
Göteborgs Fartygsbefälhavares Begravningskassa (Understödsförening)	SA				
FGDO:s (Förenade Gamla Druid-Ordens) i Sverige Understödsförening	SA				
Sparinstitutens Pensionskassa, försäkringsförening	SA				
Katrinefors och Tidans sjukkassa	SA				
Klippans pappersbruksarbetares sjuk- och begravningskassa i likvidation	SA				
Bolidengruvornas arbetares understödsförening	SA				
PostNord Försäkringsförening	SA				
Siriusbrödernas enskilda understödsförening i likvidation	SA				
Kåpan pensioner försäkringsförening	SA				
Ignis försäkringsförening	SA				
Odd Fellowlogernas i Borås Understöds- förening Brödragåvan	SA				
Svensk Handel Pensionskassan, försäkringsförening	SA				
VFF Pension Försäkringsförening	SA				
Örebro Stads Hantverksidkares sjuk- och begravningskassa	SA				
Dramatiska och Musikaliska Artisternas Pensionsförening (understödsförening) i likvikdation	SAL				
Understödsföreningen Skånska Husarregementets underofficerskårs enskilda pensionskassa	SAL				
Borgerskapets i Karlskrona Pensionskassa (Understödsförening)	SAL				
Köpmansgillet i Visby (understödsförening)	SAL				
Stockholms Polisbefälssällskaps sjuk- husvårds och begravningskassa (understödsförening)	SAL				
Torekovs enskilda änkekassa (understödsförening)	SAL				
Understödsföreningen Oriongåvan i likvidation	SAL				
Conrad Nordqvists fonds begravnings- och understödsförening	SAL				
Sjökaptens-Societeten understödsförening	SAL				
Kommunalarbetarnas i Malmö Olycks- falls- och Begravningskassa (understödsförening)	SAL				
Understödsföreningen Likbärarelaget Enigheten i Malmö	SAL				
De Handlandes i Karlskrona Enke- och Pupillkassa, understödsförening	SAL				
SIEMENS, Finspång anställdas Läkarvårds- och Medicinfonds understödsförening	SAL				
Kungl. Hovkapellets Enskilda sjuk- och begravningskassa	SAL				
Svenska Sockerfabriks AB:s Tjänstemäns Understöds- och Kamratförening	SAL				
Borgerskapet De Äldeste Carlskrona Försäkringsförening (I likvidation)	SAL				
Begravningsunderstödsföreningen Wilh. Laurentz	SAL				
Fårö pensionsinrättning (understödsförening)	SAL				
Fabriks- och hantverksidkares i Visby pensionskassa (understödsförening)	SAL				
Pensionsföreningen mellan yngre lärare och tjänstemän vid Lunds Universitet	SAL				
S.H-n-Brödernas i Norrköping Begravningskassa, understödsförening	SAL				
Odd Fellow-logen n:r 84 Österskärs understödsförening "Brödrahjälpen"	SAL				
Ortvikens arbetares begravningskassa (understödsförening)	SAL				
Sällskapet Vänskap och Välgörenhet (understödsförening)I likvidation	SAL				
Skepparegillet i Visby (understödsförening)	SAL				

Table 21. Selection of case companies, complete list.

Abbreviation	Explanation
NL	National company, life insurance
LL	Larger local insurance companies
NU	National companies, unit-linked
ND	National companies, damage insurance
CI	Cattle insurance
SL	Smaller local insurance company
NC	National company, damage captive

SA	Subsidies association
SAL	Subsidies association, limited supervision
-	No data found

Table 22. Abbreviations for (main) type of insurance company.