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ABSTRACT

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Abstract: Both digital transformation and ESG (Environmental, Social, Governance) objectives are mainstream, yet critical to today's economy. Multiple studies argue that there is a connection between digital transformation and ESG within the business context, but what that connection precisely entails remains a black box. The insurance industry is lagging in both digital transformation and ESG, so it could be assumed that insurance firms also lag in the possible connection. Several important factors were discovered by conducting an extensive literature review, several semi-structured interviews with experts in the field of insurance, and a validating document analysis. There seems to be no direct influence between digital transformation and ESG if this is not included in the organization's business strategy. To have the most significant possible impact on ESG objectives after a digital transformation, a practical roadmap has been designed as a support for insurance firms, where the first step is to include ESG objectives into the business strategy, then to change the organizational structure and company culture, to lastly be able to make more sustainable decisions and to invest in a greener IT infrastructure.

Keywords	Digital Transformation, ESG, Sustainability, Insurance, Green Investments, Sustainable Investments

BRIDGING THE GAP BETWEEN DIGITAL TRANSFORMATION AND ESG OBJECTIVES IN INSURANCE FIRMS

Master's Thesis
in International Master of Management in Information Technology (IMMIT)

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PREFACE

By completing this thesis project, I am concluding my journey as a student. During the past few years as both a bachelor's and a master's student, I have gathered great knowledge on different subjects and gained professional experience by performing six internships and working as a student assistant. I am beyond grateful that next to my bachelor's degree in Tourism Management and my master's degree in Data Science and Society, I will receive three more master's diplomas from the International Master in Management of Information Technology (IMMIT) program. During IMMIT, I had the opportunity to study in Aix-en-Provence, France, Turku, Finland, Tilburg, the Netherlands, and to finish this study program with a thesis internship within the Technology Transformation team at EY Amsterdam.

I would like to thank my supervisor at Tilburg University, Prof. Dr. Carol Ou, for her encouragement and guidance, and her critical yet constructive feedback throughout the thesis process. This had a significant impact on the quality of my research. Furthermore, I would like to thank my supervisor and counselor at EY, Pepijn Lagerberg, for his support and experienced advice during my internship and for connecting me to the right people. Third, I would like to thank my fellow IMMIT'ers that have become good friends over the past two years, and the IMMIT program directors and other staff members at Tilburg University, University of Turku, and IAE Aix-Marseille University. Lastly, I would like to thank my family, friends, and roommates for their immense support during the last phases of my student life. I could not have done it without their enthusiasm and motivation throughout the thesis writing process.

Lisa Janssen

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1. INTRODUCTION

The first chapter of this research introduces the research topic and gives a brief description of its background. This is followed by a detailed problem statement, leading to the formulated research question and its subquestions, followed by a brief research design. Then, there is some context on the combined internship and information about the academic and business relevance of this project. Lastly, the research outline is presented.

1.1 Background

In any industry, economic development has always been one of the most critical factors, which indirectly influences social changes (Zaouia & Souissi, 2020). Digital transformation has become a very important subject industry-wise and has a considerable impact on specifically traditional businesses. The concept of digital transformation can be described in various ways, but in general, it refers to the integrative process of digital technologies, such as automation, data-driven decision-making, and the adoption of cloud-based technologies, into different areas of a firm (Zaouia & Souissi, 2020; Verhoef et al., 2021). The use of these digital technologies is meant to change the way an organization operates and is usually done to increase business value (Verhoef et al., 2021). Often, digital transformation requires a changing skill, not only for the transformation itself but also to normalize the way of doing business in the future (Matt, Hess & Benlian, 2015).

Research assumes a positive relationship between digital transformation and sustainability, in terms of ecological, economic, and socially sustainable development (Akande, Cabral & Casteleyn, 2019; Brenner & Hartl, 2021). Furthermore, research on digital transformation shows significant value in an enterprise's ability to fulfill

Environmental, Social, and Governance (ESG) responsibilities (Srivastava, Sampath & Gopalakrishnan, 2022). The ESG scoring system is a tool used to pinpoint significant sustainability indicators across three pillars: environmental, which focuses on reducing the company's impact on the environment; social, which concerns the well-being of the community; and corporate governance, which measures the transparency and ethical behavior of the company's governing body (European Banking Authority, 2020; Camodec, & Almici, 2021). This scoring system is often used to evaluate corporate valuation, or future financial performances (Li, Wang, Sueyoshi & Wang, 2021).

A sector that scores lower (e.g., compared to other industries) when it comes to ESG, is the insurance industry. Research by EY Parthenon suggests that insurers often have a low ESG performance compared to other industries because it is a reasonably traditional sector (Frohling & Vermeulen, 2021). Therefore, adjustments and changes in these organizations take a long time. Next to that, the same study shows that insurance companies should be more consistent in strategizing regarding the complexity of ESG. Another article by EY states that the gap between insurance companies and other industries when it comes to ESG performance still exists, but that the gap is getting smaller. However, insurers still need to be aware of the importance of good ESG scores (Frohling & Bakor, 2022).

1.2 Problem Statement

Next to the emerging importance of digital transformations in companies, ESG scores, metrics, and objectives have become incredibly important for large firms (Apergis, Poufinas & Antonopoulos, 2022). Firms with lower ESG scores are generally perceived as riskier, due to their heightened susceptibility to liabilities arising from environmental, social, and governance factors, which can increase their probability of default (Apergis, Poufinas &

Antonopoulos, 2022). Digital transformation can potentially impact a firm's ESG score because a digital transformation results in a firm's operations being transformed comprehensively. Therefore, the adoption of digital technologies could lead to, for example, more transparency in the firm and sustainable business practices, which then can influence ESG objectives.

Recent research has indicated that digital transformation can have a positive effect on a firm's ESG performance (Srivastava, Sampath & Gopalakrishnan, 2022; Wang, Wang, Lu & Luo, 2022; Zhong, Zhao & Yin 2023). However, the causal relationship between digital transformation and ESG factors is somewhat complex and remains a black box (Zhong, Zhao & Yin, 2023). There is limited research on this causal relationship, mainly focusing on the perspective of clients, customers, and investors (Arvidsson & Dumay, 2022). Next, there is a lack of standardization within measuring ESG performance, as there is no universally accepted set of metrics. Moreover, the impact of digital transformation on ESG performance is often measured solely in terms of financial performance (Li, Wang, Sueyoshi & Wang, 2021). Notably, firms with higher ESG scores tend to exhibit greater ESG consciousness and perform better on non-financial metrics (Zumente, & Bistrova 2021).

1.3 Research Question and Sub-questions

A research question is developed by combining the issues stated in the problem statement, together with the information from the context of the internship at EY. This study aims to answer the following research question:

RQ 1: "How can digital transformation in an insurance firm positively impact its ESG performance?"

Besides the main research question, some sub-questions can be answered during this research.

- *RQ 1.1 "What is considered digital transformation in the insurance industry?"*
- *RQ 1.2 "What are important ESG objectives in the insurance industry?"*

1.4 Research Context

Considering the research question, this study aims to find out how digital transformation impacts the performance of ESG, mainly focused on insurance companies. First, there is a literature review to research what a digital transformation entails exactly, which factors and objectives regarding ESG are critical and how ESG is typically covered in the insurance industry, and what possible impact digital transformation could have on ESG. Furthermore, by conducting interviews with experts at large insurers, this study intends to discover more about the relationship between digital transformation and ESG performance.

It is expected that expert interviews will provide valuable insights, primarily because of the expertise of interviewees, but also because of the flexibility and adaptability that comes with conducting interviews. The interviews can be tailored to specific expertise, and there is a possibility to have an in-depth exploration of the interviewee's responses. By also performing a document analysis after the expert interviews, the interview data can be validated and complemented. Furthermore, potential interview bias can be overcome, and patterns can be recognized and discussed. By combining a document analysis with interviews, the validity of the data can be increased and there could be a more comprehensive

understanding of the research. For a visual overview, the entire research process is displayed in Figure 1.

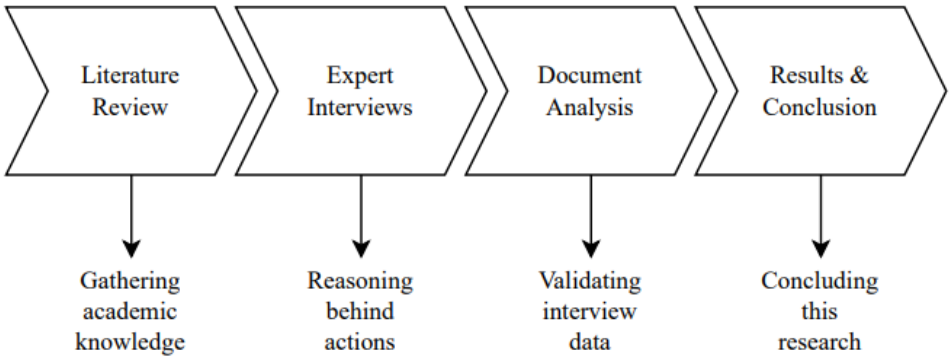

Figure 1. Compressed Research Process

1.4.1 Context on Internship

This master thesis project is written in collaboration with Ernst & Young (EY). During the research period, the research is combined with a thesis internship at EY, specifically within the Amsterdam office's technology transformation team. EY is an international, professional service firm that provides assurance, consulting, strategy & transactions, and tax services to its clients (EY, 2023). Within technology transformation, EY can support clients with elements such as technology strategy, next-generation technology operations, infrastructure & service resiliency, and architecture.

Since EY has a large client base, the interviewees are approached via the (senior) management of the technology transformation team within EY, or via (senior) managers and partners from other teams, that have close connections with the insurance industry. By doing this, there is a higher expected response rate, as interviewees will be more likely to participate

because of their relationship with EY. Furthermore, document analysis is also feasible by scanning relevant, available documents in the databases and registers at EY.

1.5 Research Relevance

It is extremely important that this research project contributes to science, and therefore is relevant to research. However, besides academic relevance, this research is also relevant to business, referred to as practical relevance.

1.5.1 Academic Relevance

Several studies have implied a positive relationship between digital transformation and a firm's ESG performance (Srivastava, Sampath & Gopalakrishnan, 2022; Wang, Wang, Lu & Luo, 2022; Zhong, Zhao & Yin 2023). There is a certain research gap, where it is unclear what the explicit consequences are after undergoing a digital transformation, and what exactly impacts ESG performance (Zhong, Zhao & Yin, 2023). Furthermore, the sub-questions are meant to develop further the knowledge of how digital transformation and ESG performances are measured in businesses.

1.5.2 Practical Relevance

As mentioned previously, research by Apergis, Poufinas, and Antonopoulos points out that firms with a lower ESG score, are more likely to be perceived as risky (2022). According to this finding, it should be necessary for firms to know what they can do to increase their ESG score. Furthermore, EY advises many large insurance companies, likely to have poor ESG scores (Frohling & Vermeulen, 2021). Therefore, it would be extremely useful for EY to

advise their clients, particularly insurers, better regarding ESG objectives and measurements after a digital transformation.

1.6 Research Outline

After this introductory chapter, a detailed literature review is presented in chapter two, where digital transformation, ESG performance measures and objectives, and their connection are explored further. Afterward, there is a methodology chapter, including research methods and strategy, data collection, and data analysis. This chapter is followed by results in chapter four, which leads to a discussion chapter. Here, the limitations of the study are also extensively discussed. Finally, a concluding chapter answers the research question and its sub-questions and provides practical advice for the insurance industry. This last chapter also suggests future research. A reference list and several appendices follow these six chapters.

2. LITERATURE REVIEW

This chapter explains the topics that have been briefly mentioned in the introductory chapter further. For each related topic to this study, mainly about digital transformation and ESG, there are definitions and there is detailed background information about their evolution, impact, and connection to insurance firms. Papers and articles included in the literature review are carefully selected based on relevance, quality, and significance to the research question and its sub-questions. Furthermore, papers and articles should be relatively recent and up-to-date to reflect the latest research developments. There should also be a variety of methodologies, perspectives, and theories to ensure a comprehensive understanding and nuances analysis of the literature. The goal is to provide an exhaustive and complete overview of the current state of knowledge in the fields of digital transformation and ESG objectives and performances, within the context of insurance industries.

2.1 Digital Transformation

Information and Communication Technology (ICT) and the Internet in general, are integrated more extensively into society, especially on the economic side of society (Hanna, 2016). Most businesses are embracing this digital revolution, but are also rethinking what their customers value the most and what can be done to benefit from it entirely. Digital transformation has been a term that has grown in popularity over the past years and is essential for several reasons.

2.1.2 Definition of Digital Transformation

Digital transformation can be defined as integrating digital technologies into all areas of a business, resulting in fundamental changes to how the business operates and delivers value

to customers (Papas & Berman, 2019). These digital technologies vary from the use of social media and mobile applications to the use of blockchain and artificial intelligence. Digital transformation involves using these digital technologies to reimagine business processes, enhance customer experiences, and create new business models (Fitzgerald et al., 2014; Papas & Berman, 2019). The main goal of digital transformation for businesses is to achieve goals and overcome challenges related to efficiency and effectiveness (Heavin & Power, 2018).

According to Rogers, digital transformation is not fundamentally about technology, but more about strategy as the management team must find a way to capitalize on new business models and innovative changes (2016). With a good strategy, digital transformation helps organizations to improve their efficiency and productivity and it can for example reduce the time and costs of manual tasks. Technology can be seen as the set of tools to achieve such a strategy. This results in organizations being able to innovate, create new revenue streams, and drive growth and profitability (Papas & Berman, 2019).

2.1.2.1 Key Characteristics

According to research by Westerman and colleagues, digital transformation consists of three key characteristics: digital capability, leadership, and a transformative mindset (2014). Digital technologies are critical to streamlining business processes and improving efficiency. Furthermore, digital technologies are leveraged by creating new business models, and leadership involves setting a vision and strategy for digital transformation, to achieve the most efficient and effective outcomes. By using the term ‘transformation’ and not solely a digital ‘change’, it shows that a digital transformation in a business goes beyond functionalities, and considers the comprehensiveness of actions that a business undergoes to

exploit opportunities from digital technologies (Sing & Hess, 2017). A transformative mindset, on the other hand, refers to the organization's willingness to embrace change and take risks.

Another characteristic of digital transformation is the focus on customer experience and customer journey. Digital technologies can personalize customer interactions, improve customer service, and enhance the overall customer journey. As noted by Janssen and colleagues, digital transformation can enable organizations to deliver a seamless and engaging customer experience across multiple touchpoints (2021). In today's digital environment, customers have come to expect seamless, personalized experiences across all touchpoints (Ranjan & Bose, 2020), which is something that digital transformation can achieve. Failure to meet these expectations can lead to negative customer feedback, decreased loyalty, and lost revenue. By focusing on customers' needs, preferences, and behaviors, businesses can create products and services that better meet their needs and expectations (Lusch & Nambisan, 2015).

Dynamic capabilities refer to the organization's ability to leverage technologies effectively (Westerman et al., 2014). It is a collection of skills, technology, and knowledge that an organization possesses. According to an article published by McKinsey and Company, there are six dynamic capabilities when pursuing a successful digital transformation (McKinsey and Company, 2018). These dynamic capabilities are shown in Figure 2. Dynamic capabilities are necessary to thrive in the current digital world. When an organization implements, understands, and enhances all these six dynamic capabilities, digital transformation could have the highest possibility of long-term success.

Figure 2. Digital Transformation Dynamic Capabilities. (McKinsey and Company, 2018)

According to McKinsey and Company, the starting point is always related to digital strategizing and establishing specific targets. Structuring the organization afterward is supposed to help with having clear responsibilities within business teams, and therefore more synergy and fewer possibilities to overlap. The test-and-learn approach can help mitigate errors and risks and adapt along the way continuously. When undergoing a digital transformation, it often happens that staff members do not possess the required technical skills and knowledge. Therefore, organizations must invest in talent and capabilities, and also educate and train current staff. Ecosystem leverage refers to working in new ways in this modern era and attracting the right partners and collaborators. Lastly, the culture within the organization will have to undergo various changes to adapt and accept the differences in the way of working, the management, and the new partnerships (McKinsey and Company, 2018).

2.1.3 Evolution of Digital Transformation

Digital technology, with its pervasive connectivity and advanced Artificial Intelligence (AI), represents the latest significant phase in the ongoing socioeconomic evolution of humanity (Hilbert, 2022). As digital transformation is nowadays a big part of digital technology, this emerging trend has evolved significantly over the years as well. Digital transformation is driven by technological advances and consumer behavior changes (Hilbert, 2022). In the early days of the internet, digital transformation was focused primarily on digitizing existing, manual processes and making these processes more efficient. However, with the rise of social media, mobile devices, and advanced analytics, digital transformation has shifted towards creating new business models.

According to Schwab (2016), there have been three industrial revolutions, and we are now in the midst of the fourth industrial revolution. The first industrial revolution began with steam, followed by the second with the introduction of electricity, mass production, and division of labor. While the third industrial revolution started with electronics and semiconductors, it ended with computing and the internet (Schwab, 2016; Schreckling & Steiger, 2017). However, this latest revolution is significantly different from its predecessors, as the convergence of digital technology, biological systems, and physical systems is driving it. This convergence is expected to impact both business and lifestyle significantly and could potentially require complete digital transformation across all industries to survive (Pflaum & Gölzer, 2018). As such, companies and organizations that fail to adapt to this new reality of digital transformation, may not be able to survive (Schreckling & Steiger, 2017; Kane, 2019).

Today, digital transformation is characterized by the use of technologies such as AI, big data analytics, and the Internet of Things (IoT) to drive innovation and create new sources of value. As noted by Lacity and colleagues (2020), digital transformation has become a strategic imperative for organizations across all industries as they seek to stay competitive and meet the changing needs of their customers. As digital technologies continue to advance, digital transformation will likely continue to evolve, with new opportunities and challenges emerging for businesses to navigate.

2.1.4 Impact of Digital Transformation

Digital transformation can lead to significant changes to the structure, processes, and culture of an organization. One of the main changes that a business may undergo after digital transformation is a shift toward a more customer-centric approach (Rogers, 2016). This may involve implementing new, emerging technologies and systems to better understand and engage with customers, enhance the customer experience and customer journey, and create new business models that prioritize customer needs, wishes, and preferences. Tolboom's research agrees that a digital transformation's most significant impact is the firm’s value proposition, including the identified customer segments, how they reach customers, and the resources used (2016).

Digital transformation may also lead to changes in how work is done within the organization, impacting an organization immensely structurally (Papas & Berman, 2019). Frequently, critical business operations, products, and processes are impacted. However, it also requires a substantial organizational change (Matt, Hess & Benlian, 2015). Automation and AI can reduce the need for manual tasks, and allow employees to focus on more strategic

and creative work. This may require reskilling, or upskilling employees to prepare them for new roles and responsibilities.

2.1.4.1 Opportunities

When done correctly, digital transformation can enable greater collaboration and communication within the organization, as well as with external stakeholders such as suppliers and customers (Tolboom, 2016). This may involve implementing new communication tools and platforms to facilitate information sharing and decision-making. Research by Mitrofanova and colleagues identifies three significant opportunities that result from digital transformation; digital workforce, digital workplace, and digital management (2018). Within the digital workforce, there is space for new methods for processing and contributing to the organization. Flexibility in working and using modern communication tools relates to the digital workplace. Digital management is used for finding solutions more efficiently, with room for experiments and innovation. Overall, digital transformation can bring about significant organizational change, and businesses that can successfully navigate these changes are likely to be more agile, innovative, and competitive in today's fast-paced digital environment.

2.1.4.2 Risks

Similar to all change processes, digital transformation poses some risks and challenges to businesses in all industries (Kraus et al., 2022). Businesses are generally slow to adapt to organizational change, especially regarding implementation (Wright, van der Heijden, Bradfield, Burt & Cairns, 2004; Deline, 2018). Furthermore, research by Barrett and Stephens shows that up to 70% of big organizational changes in firms fail because they are

not prepared sufficiently (2016). Thus, due to these slow responses of organizations toward change, the likelihood of firms adopting and implementing digital transformation is rather low (Barrett & Stephens, 2016; Kraus et al., 2022). As mentioned earlier, digital transformation is not only about the transformation itself, but it is a strategy that drives a digital transformation (Kane et al., 2015; Rogers, 2016).

Other than substantial challenges for firms individually, stakeholders are also concerned about a firm's digital transformation when it comes to establishing a roadmap, or a vision of how to move forward in the future (Zaoui & Souissi, 2020). Therefore, a digital transformation must require preparation and prior guidance, as the huge changes will be visible to stakeholders and could affect them. Thus, organizations could include transparency and collaboration with stakeholders up to a certain level in their digital transformation strategy (Kane et al., 2015).

2.1.5 Digital Transformation in the Insurance Industry

Digital transformation has been an emerging trend in most sectors, and for the insurance sector, it can even be seen as a business priority (Moturi, Okemwa & Orwa, 2022). Digital transformation is a major focus for insurance firms seeking to improve their operations and meet changing customer expectations (Gartner, 2020). Minimizing paper documents, narrowing down the distance between businesses, and using technology for various processes are just some examples of why digital transformation is important for insurers. The adoption of digital technologies such as AI, machine learning, and automation can help insurers to streamline their processes, reduce costs, and enhance the customer experience (Accenture, 2020).

However, the success of digital transformation initiatives depends on several factors, including leadership support, employee training, and effective change management strategies (McKinsey and Company, 2021). As such, insurance firms must carefully plan and execute their digital transformation efforts to realize the full benefits of these technologies. An organization requires some relevant dynamic capabilities to undergo a digital transformation successfully. What is most important is that insurers understand what the possibilities are and that taking action is important to ignite long-term growth. In Figure 3, the dynamic capabilities and critical skills that EY considers necessary to develop and improve a digital transformation in an insurance firm are shown.

Figure 3. Dynamic Capabilities for Insurers. (EY, 2020)

As can be seen in Figure 3, the most important dynamic capabilities for insurance firms going into a digital transformation are digitalization, working with the cloud, intelligent automation, and working with advanced analytics. This way, work is done more efficiently and there is less manpower required. Next to that, it is again stressed that a digital strategy

plays a large role in digital transformation and that this is a significant aspect of promoting innovation across the value chain. With the combination of these dynamic capabilities, an insurance firm can focus on a digital transformation that creates value and drives business growth (EY, 2020).

Nevertheless, the insurance sector has yet to keep pace with other industries, primarily due to the dominant market position of established insurance companies and the regulatory restrictions that prevent new players and disruptive forces from making a significant impact (Holland, 2022). As mentioned before, slow adoption is a considerable risk for digital transformation. According to Musaigwa and Mutulu, insurance firms are taking their first steps in incorporating digital transformation into their strategies. However, they are struggling to fully embrace the changes that come with digital transformation (2022).

2.2 Environmental, Social, and Governance Elements

As briefly mentioned in the introductory chapter, ESG stands for Environmental, Social, and Governance. These three elements are combined, as can be seen in Figure 4, and collectively represent the main elements in measuring the sustainability and ethical impact of companies (Kohvrak, 2020). The Corporate Finance Institute described ESG as “a framework for assessing the impact of a company's sustainability and ethical practices” (2022). It is argued that ESG has a holistic view of sustainability, stating that it extends beyond environmental issues. By evaluating these long-term sustainability and societal impacts of business practice, ESG factors can help identify potential risks and opportunities. ESG considers various topics, such as financial results and performances, transparency, social interests, and the natural world and environment.

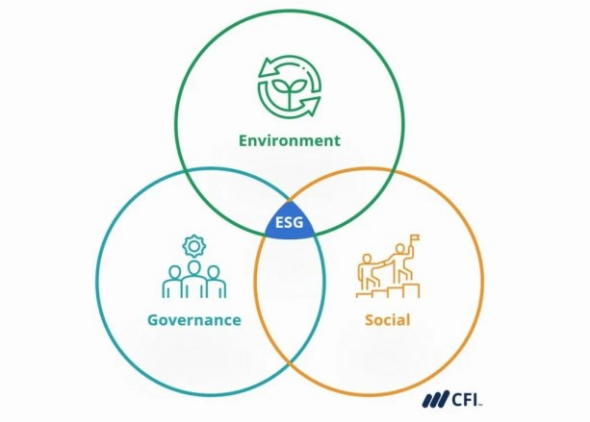

Figure 4. The elements of Environment, Governance, and Social are combined within ESG. (Corporate Finance Institute, 2022)

2.2.1. ESG factors

Each element within ESG has a different focus and different factors and objectives to be considered. These factors are not internationally set and vary over countries, regions, and industries, making it difficult for organizations to agree on a set of critical, relevant, and valuable factors for their business. The European Bank Authority published a set of factors that are common in internationally used frameworks and a set of factors according to EU legislation (European Bank Authority, 2020). Both sets of factors are visible in Table 1, divided into environmental, social, and governance dimensions, respectively.

ESG is rooted in responsible investing, which involves considering environmental, social, and governance factors in investment decisions and active ownership in organizations (PRI, 2023). ESG has become a standard strategy investors use to evaluate corporate behavior and future financial performance (PRI, 2023). The three basic dimensions of ESG are crucial considerations in the process of investment analysis and decision-making, as they help to measure the sustainability and social impact of business activities. ESG is a value that emphasizes sustainable and coordinated development that considers economic,

environmental, social, and governance benefits. It is an investment philosophy that seeks long-term value growth and is a comprehensive, tangible, and practical method of governance (European Bank Authority, 2020).

Table 1. **ESG with example factors according to international frameworks (European Banking Authority, 2020), and Regulation EU 2020/852 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 and Draft RTS under SFDR on sustainability-related disclosures in the financial services sector**

Dimension	International frameworks	European frameworks
E - Environment	- GHG emissions - Energy consumption and efficiency - Air pollutants - Water usage and recycling - Waste production and management (water, solid, hazardous) - Impact and dependence on biodiversity - Impact and dependence on ecosystems - Innovation in environmentally friendly products and services	- GHG emissions - Energy consumption and efficiency - Exposure to fossil fuels - Water, air, soil pollutants - Water usage, recycling, and management - Land degradation, desertification, soil sealing - Waste production and management (hazardous, non recycled) - Raw materials consumption - Biodiversity and protection of healthy ecosystems - Deforestation
S - Social	- Workforce freedom of association - Child labor - Forced and compulsory labor - Workplace health and safety - Customer health and safety - Discrimination, diversity, and equal - Opportunity - Poverty and community impact - Supply chain management - Training and education - Customer privacy - Community impact	- Implementation of fundamental ILO Conventions - Violation of UN Global Compact Principles - Inclusiveness/Inequality - Exposure to controversial weapons - Discrimination - Insufficient whistleblower protection - Rate of accidents and number of days lost to injuries, accidents, fatalities or illness - Human rights policy - Investment in human capital and communities - Trafficking in human beings
G - Governance	- Codes of conduct and business principles - Accountability - Transparency and disclosure - Executive pay - Board diversity and structure - Bribery and corruption - Stakeholder engagement - Shareholder rights	- Anti-corruption and anti-bribery policies - Excessive CEO pay - Diversity (unadjusted gender pay gap and board gender diversity)

2.2.1.1 Environmental Factors

The environmental dimension of ESG focuses on a firm's impact on the environment and the natural world. This includes factors such as gas emissions, water usage, waste management, and biodiversity conservation. However, it can also include a firm's resilience towards climate risks (Corporate Finance Institute, 2022). Investors and analysts may use various metrics and tools to evaluate a company's environmental impact, such as a carbon footprint analysis, water risk assessments, and life cycle assessments (European Banking Authority, 2020). Furthermore, they may also consider the company's environmental policies and initiatives and its track record in addressing environmental issues. Every company uses energy, and therefore each company affects the environment or is affected by the environment (McKinsey and Company, 2019). Companies that take steps to reduce their environmental impact, and promote sustainability, may be more attractive to investors and therefore be better positioned for long-term success (Hubel & Scholz, 2020).

2.2.1.2 Social Factors

The social factor of ESG focuses on a firm's impact on society and stakeholders. This part examines a business's relationship with its employees, customers, suppliers, communities, and other groups (McKinsey and Company, 2019). Various factors include labor practices, human rights, diversity and inclusion, community relations, and consumer protection. To evaluate a firm's social impact, investors and analysts use tools such as employee satisfaction surveys, supplier audits, and community impact assessments (European Banking Authority, 2020). They may also consider the company's social policies and initiatives, and its track record in addressing social issues. The social factor of ESG is an essential component in

evaluating a company's sustainability and long-term impact on society. Companies that prioritize social responsibility may be more attractive to investors and may be better positioned for long-term success.

2.2.1.3 Governance Factors

When it comes to the governance factor of ESG, there is a focus on how a firm is managed and governed, and how it balances the interests of its stakeholders (McKinsey and Company, 2019). Some examples of the factors that are examined in governance are board structure, executive compensation, risk management, shareholder rights, and corporate ethics and transparency (Corporate Finance Institute, 2022). To analyze these governance practices, metrics include board diversity analysis, executive compensation analysis, and corporate governance ratings (European Banking Authority, 2020). They may also consider the company's governance policies and initiatives, and its track record in addressing governance issues. Overall, the governance factor of ESG is an essential component of evaluating a company's sustainability and long-term impact on its stakeholders. Companies prioritizing good governance practices may be more attractive to investors and better positioned for long-term success.

2.2.4 Evolution of ESG

The concept of sustainable development goes back to the Brundtland Report of 1887, also known as "Our Common Future". The Sustainable Development Goals (SDGs) consist of 17 goals and 169 targets. These goals are divided into different categories: social development with five goals, environmental sustainability with seven goals, and economic growth with two goals, as well as poverty with two goals, and global partnership with one goal (Park &

Jang, 2021). The 2015 Paris Agreement is based on a unanimous agreement between 195 nations to reduce greenhouse gas (GHG) emissions (United Nations, 2016). The long-term objective of this agreement was to achieve a balance between greenhouse gas emissions and the Earth's absorption level by 2050, by limiting the temperature increase to below 2 ◦C above pre-industrial levels, but preferably at 1.5 ◦C (Chen et al., 2021).

Corporate ESG reporting provides insight into how a company conducts its environmental, social, and governance activities and is in line with the SDGs and the Paris Agreement. As a result, many ESG frameworks are designed with the SDGs and the Paris Agreement in mind. The United Nations is the biggest force in legislation on ESG disclosure and corporate adoption of ESG. In 2019, the United Nations Principles for Responsible Investment (PRI) announced that PRI signatories must disclose PRI climate indicators in four categories: governance, strategy, risk management, and metrics. The United Nations PRI was the first major organization to make ESG information mandatory in its reports. The European Union (EU) was the first economic community to introduce ESG requirements by implementing the EU Non-Financial and Diversity Information Directive. The original EU Directive only applied to large companies with over 500 employees, assets of at least €30 million, or a net turnover of at least €400 million. In addition, in April 2021, the European Union proposed a revision of the Directive, the Corporate Sustainability Reporting Directive, which applies to all large and listed companies (Gregory, Stead & Stead, 2021).

Nowadays, research about ESG and its metrics and scores mostly focuses on investments and capital expenditures (Aspergis, Poufinas & Antonopoulos, 2022). There is a big focus on whether new investments can be seen as ‘green’ and as sustainable as possible. However, there is little research about ESG and its measurements in other sectors, the

reasoning behind why certain industries score higher or lower when it comes to ESG performances, and what might influence these performances.

2.2.5 Corporate Sustainability Assessment

The Corporate Sustainability Assessment (CSA) is an annual evaluation of companies' sustainability performance owned and managed by S&P Global (S&P Global, 2021). Being a comprehensive evaluation tool, the CSA assesses companies' sustainability performance across several dimensions, including ESG factors (RobecoSAM, 2021; Zumente & Lãce, 2021). The CSA is also used to compile the Dow Jones Sustainability Indices (DJSI), which track the sustainability performance of the world's leading companies (S&P Global, 2021). The CSA evaluates companies based on a range of criteria, including greenhouse gas emissions, labor practices, supply chain management, and corporate governance, among others (RobecoSAM, 2021). The assessment process involves inviting companies to complete an industry-specific questionnaire focusing on 20-30 of the most significant ESG issues relevant to their particular industry. The questionnaire is tailored for 61 different industries, and the insurance industry is one of them. As such, the CSA provides a holistic assessment of companies' sustainability practices and can be used by investors to identify sustainable investment opportunities and promote positive change in corporate behavior.

As the CSA assesses companies' performance on key ESG factors and is used to create ESG-focused investment products, the outcome is an overall ESG score (e.g., ranging between 0-100 points) which is attributed to the firm (S&P Global, 2021). Companies have two options to provide evidence of their ESG performance: public information or confidential internal information. If a company decides not to participate in the assessment actively, S&P

Global will score it based solely on publicly available information, such as its annual report and corporate website.

2.2.6 Importance of ESG in Business

The adoption of ESG reporting by companies has several factors and expected results. First, management might view the adoption of ESG as a strategic decision (Rogers, 2016). When a firm makes sustainability efforts, this can have a lot of positive impacts. It could improve shareholder value and promote sustainability, bring differentiation and cost savings, positively impact employee engagement at work, and improve productive employee behavior and customer loyalty (Atan, Razali, Said & Zainun, 2016). More importantly, corporate adoption of ESG can benefit the company's stakeholders. ESG investing is attracting keen interest from institutional investors for two reasons. First, ESG investing actively promotes ethical investment practices. Second, ESG investing is seen as a means of improving the performance of managed portfolios, increasing returns, and reducing portfolio risk (Caplan, Griswold & Jarvis, 2013).

The introduction of ESG can contribute to risk and opportunity management, which in turn can benefit management, employees, supply chain participants, and customers (Friede, Busch & Bassen, 2015). Corruption threatens the survival of start-ups and can have a significant negative impact on profitability and share prices. Managing risk can be a proactive approach to improving the sustainability of companies. Management costs are reduced if they can solve or prevent potential problems. Risk management should also cover the area of corporate reputation (Friede, Busch & Bassen, 2015). Research by Giese and Lee found that a firm’s participation in ESG reduces its downside risk (2019). It is also argued that companies with poor ESG profiles have a higher tail risk due to high carbon emissions.

Studies over the period of the global financial crisis have shown that both financial and non-financial companies in the US with high ESG ratings performed better than others (Giese & Lee, 2019).

Furthermore, regardless of whether a company adopts ESG to comply with laws or regulations, it can be seen as a firm's duty as part of society. Adopting ESG disclosures alone would not make the company ethical, but it will make it more ethically selective when making relevant decisions. By assessing business practices, ESG rating agencies and other lenders themselves can be seen as agents of change (Escrig-Olmedo, Muñoz-Torres & Fernandez-Izquierdo, 2010).

2.2.7 ESG in Insurance Firms

As already briefly mentioned in the introductory chapter, insurance firms tend to perform poorly on ESG, compared to firms in other industries (Frohling & Vermeulen, 2021; Frohling & Bakor, 2022). With low ESG scores, insurers could face risks, such as being excluded from ESG funding. Furthermore, even ESG scores that are average or above average are not guaranteed inclusion in various high-profile sustainability funds (Frohling, & Bakor, 2022). However, according to a study by Capgemini, relatively few insurers have actually begun to include ESG in their business processes and underwriting practices (Aslani, 2023). Toward their customers, less than a third of insurance firms offer preferential conditions for clients that adopt sustainability initiatives (Aslani, 2023). Research by PwC found that 80% of global insurance firms aspire to develop mature or leading governance capabilities in the future, but only 68% of these insurers claim to have mature or leading capabilities today (Mitchell, Crepon & Carr, 2022). This gap is even larger for socially-related factors and governance-related factors, where 56% of the global insurers want to have a mature or leading role, but

only 32% of insurers have leading social capabilities, and only 24% have leading environmental capabilities (Mitchell, Crepon & Carr, 2022).

Improving the transparency and completeness of information, also regarding investments, related to implementing an ESG-driven approach is a crucial initial step toward ensuring the long-term sustainability of insurance firms (McBrayer, 2018). Research by Khovrak has analyzed non-financial reports of insurance firms and has identified some best practices for applying an ESG approach to enhance sustainable development and its management (2020). These best practices can be seen in Figure 5.

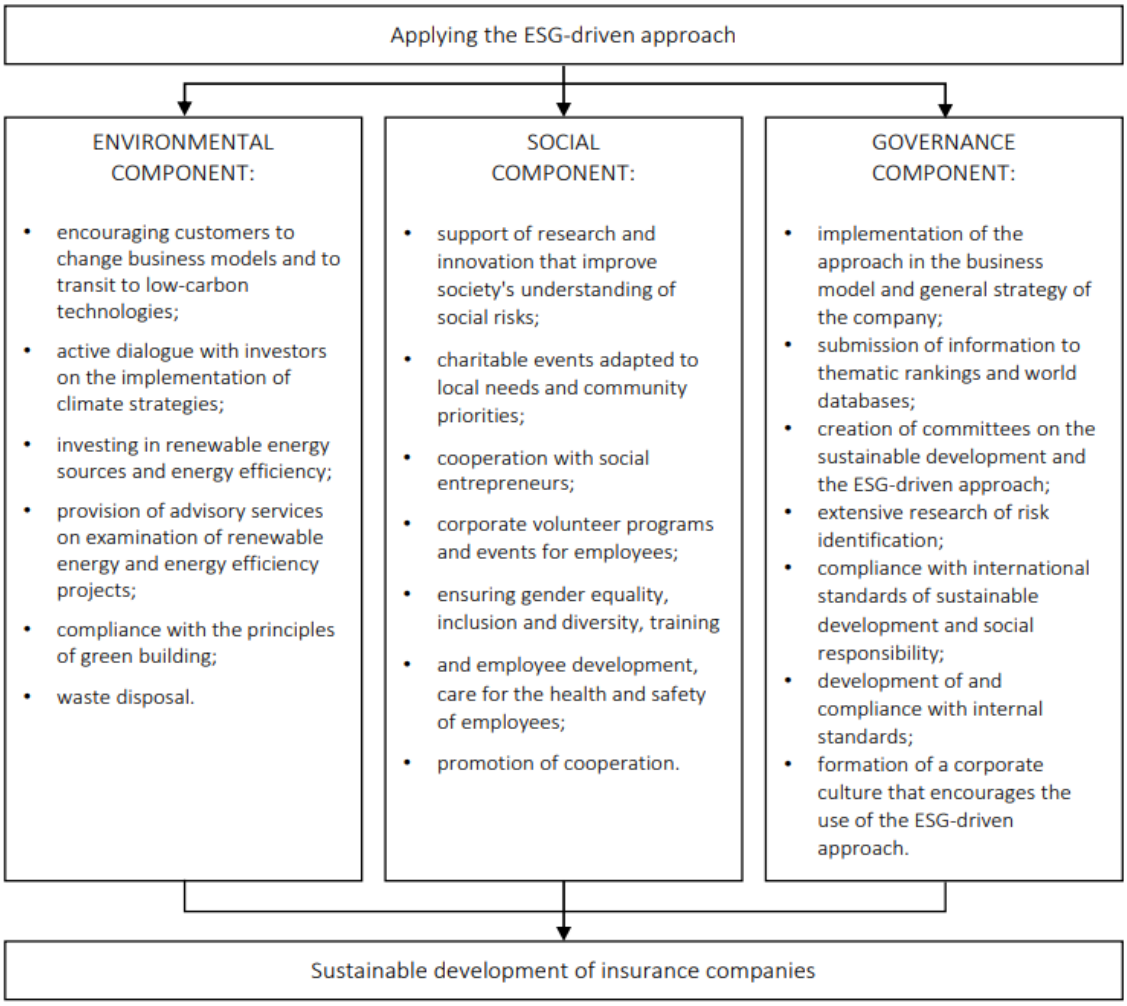

Figure 5. Best Practices of Insurance Companies for Applying the ESG-driven Approach to manage their Sustainable Development. (Khovrak, 2020)

Research by Sherwood and Pollard measured a positive impact of integrating an ESG-focused approach into investment strategies for companies (2018). Meanwhile, Hubel and Scholz demonstrated that incorporating ESG considerations into strategic risk management can lead to sustainable development and increased investor benefits (2020). Therefore, researchers emphasize improving insurance firms' investment strategies to consider the SDGs and ESG measurements (Kalkabayeva et al., 2020). Research by PwC shared some numbers and percentages on how global insurers view ESG and how they can benefit from it, which are visible in Figure 6 (Mitchell, Crepon & Carr, 2022). On the investment side, 75% say that insurers should focus on ESG issues, whereas even more investors, 80%, think that how an insurer manages ESG is critical to their investment decision-making. Of customers, 76% would discontinue their relationship with their insurer when they would not be focused on ESG issues. However, 36% of global insurers are said to have customers as their top priority when defining their strategy toward ESG (Mitchell, Crepon & Carr, 2022).

Figure 6. Importance of ESG for Global Insurers (Mitchell, Crepon & Carr, 2022)

To ensure the long-term sustainability of insurance firms and therefore achieve higher ESG scores, it is crucial to establish a clear mission and values. Next to that, identifying key stakeholders, their needs and interests, and maintaining continuous and open communication with them is also vital. Assessing risks and developing strategies to mitigate and eliminate risks plays a big part in the social component, as well as adhering to sustainable development and social responsibility standards outlined in the OECD Guidelines, UN Global Compact, and ISO 26000. It also includes enhancing the implementation of initiatives and projects encompassing all aspects of the ESG-driven approach, providing ESG training to employees, improving reporting and disclosure practices concerning ESG implementation, and considering the possibility of adopting Global Reporting Initiative (GRI) standards for non-financial reporting (Global Reporting, n.d.).

2.3 Relationship between Digital Transformation and ESG

Research has argued that digital transformation can positively impact sustainable development (Akande, Cabral & Casteleyn, 2019; Brenner & Hartl, 2021). By integrating digital technologies into their operations, and undergoing digital transformation, organizations can achieve greater efficiency, transparency, and innovation, which can enhance their ESG performance significantly (Alkaraan, Albitar, Hussainey & Venkatesh, 2022; Srivastava, Sampath & Gopalakrishnan, 2022).

2.3.1 Impact on Environmental Performance

Digital transformation can significantly impact environmental performance by enabling organizations to optimize resource use, reduce waste and emissions, and adopt clean energy sources (Ziadlou, 2021). For example, the use of IoT devices can enable real-time energy

consumption monitoring, allowing organizations to identify and address inefficiencies (Coroamă & Mattern, 2019). Furthermore, with IoT devices and AI, it is possible to optimize energy consumption in buildings and factories (Alkaraan, Albitar, Hussainy & Venkatesh, 2022). Similarly, using AI and Machine Learning (ML) algorithms can help organizations to optimize their supply chains, reducing waste and carbon emissions, as well as the environmental footprint (Ziadlou, 2021). Furthermore, it can help organizations to make more sustainable decisions when it comes to investments. Overall, digital transformation can contribute to more sustainable use of resources and a reduction in environmental impact.

2.3.2 Impact on Social Performance

In terms of social performance, digital transformation can contribute to stakeholder engagement, improve labor conditions, and promote diversity and inclusion (Bridoux & Stoelhorst, 2014). Social media and other digital platforms can enable companies to interact with customers, employees, and other stakeholders in real time, facilitating communication and feedback (Taneja & Wu, 2020). For example, social media platforms and digital communication tools can facilitate two-way communication between organizations and stakeholders, allowing them to understand better and respond to stakeholder needs (Bridoux & Stoelhorst, 2014). Digital transformation can also enhance worker safety and well-being by enabling remote work, training, and monitoring. Similarly, digital technologies can be used to monitor and improve working conditions, such as wearable technology that tracks worker safety and health (Rajeswari & Gomanthi, 2022.). Finally, digital technologies can help organizations to promote diversity and inclusion by reducing bias in hiring and promotion decision-making, and increasing the transparency of the hiring and promoting process (Horton, 2017; Avery, Leibbrandt & Vecci, 2023).

2.3.3 Impact on Governance Performance

On the governance front, digital transformation can enhance transparency, accountability, and ethical decision-making (O'Leary & Stewart, 2007). For example, blockchain technology can enable secure and transparent transactions, reducing the risk of fraud and corruption (Gururaj et al., 2020). Digital technologies can also enable data analytics and ML algorithms to support ethical decision-making, for example, by identifying potential conflicts of interest or environmental risks (O'Leary & Stewart, 2007). Furthermore, digital technologies can enhance corporate reporting and disclosure, improving the quality and comparability of ESG data (Mandl et al., 2018). Finally, digital technologies can help organizations to improve their cybersecurity and data privacy practices, reducing the risk of data breaches and other security incidents (Woods & Moore, 2022).

2.3.4 Research Gap

There is no doubt that there is a relationship between digital transformation and ESG objectives (Alkaraan, Albitar, Hussainey & Venkatesh, 2022; Srivastava, Sampath & Gopalakrishnan, 2022). However, a significant research gap lies in comprehending the connection between digital transformation and its initiatives, and ESG outcomes where the association between the two is still considered a black box (Zhong, Zhao & Yin, 2023). The underlying mechanisms and specific factors that influence this relationship, especially in the insurance industry, remain unexplored. Additionally, there is no accepted set of metrics when it comes to ESG, which makes it challenging to explore the influence of digital transformation on ESG. More alignment within ESG measurements would enable organizations to accurately assess their progress in integrating sustainable practices, through digital transformation. Addressing this research gap could contribute to creating more

comprehension and understanding of the relationship between digital transformation and ESG in the insurance industry to possibly facilitate the development of effective strategies and frameworks to maximize this positive impact of digital transformation on ESG that is suggested by research.

2.4 Critical Summary

Both digital transformation and ESG cannot be described as emerging trends anymore but as business requirements. According to the literature, digital transformation refers to the process of adopting digital technologies and tools to improve business operations and enhance the customer experience. This includes leveraging technologies such as data analytics, AI, and automation. Literature shows that digital transformation can lead to better internal processes, more flexibility, and transparency within the organization, and there is room for improvement and innovation (Mitrofanova, 2018). To achieve all these business goals, organizations should include dynamic capabilities such as the ones from the McKinsey and Company framework (2018), and the EY framework (2020). In insurance firms, the adoption of digital technologies can be slow and not fully embraced, but ultimately firms can profit from more created value and business growth (EY, 2020; Holland, 2022; Musaigwa & Mutulu, 2022).

ESG refers to environmental, social, and governance factors which evaluate a firm's corporate sustainability and ethical impact. Currently, insurers are not focusing enough on ESG objectives, even if they aspire to do so (Mitchell, Crepon & Carr, 2022; Aslani, 2023). Furthermore, research suggests that digital transformation can significantly enhance a firm's ESG score (Alkaraan, Albitar, Hussainey & Venkatesh, 2022; Srivastava, Sampath & Gopalakrishnan, 2022). Undergoing digital improvements enhances the firm's transparency and efficiency, influencing how a firm performs in ESG. In turn, a strong ESG score, and

therefore making a sustainable impact, could improve an organization's shareholder value, enhance its diversity and inclusion, and can lead to better employee engagement (Atan, Razali, Said & Zainun, 2016). To ensure the long-term sustainability of insurance firms and therefore achieve higher ESG scores, it is crucial to establish a clear mission and values.

In the insurance industry, both digital transformations and performance regarding ESG are of extreme value and could benefit specific insurance firms. For example, paying attention to ESG factors such as improving transparency and information completeness of certain implementations, could enhance the long-term sustainability of a firm (McBrayer, 2018). However, a lot about the influence of digital transformation on ESG remains understood. Nevertheless, it is incredibly relevant to investigate this research gap to see if there is a direct connection, and what this connection precisely entails. The insurance industry is lagging in digital transformation and ESG, probably because insurance firms are significantly large and reluctant to change. However, insurance firms could benefit immensely from discovering more about this possible association between digital transformation and ESG, as there could be critical long-term impacts.

3. METHODOLOGY

The methodology chapter describes which type of qualitative method is used in this study, and explains the research approach, how data was collected, and how this data was analyzed. There is also a subchapter about the quality of this research and further information on data management and data ethics.

3.1 Research Approach

According to research gathered in the literature review, it is clear that there is a relationship between digital transformation and ESG performance, also in insurance firms. However, the reasoning and logic behind this connection remain slightly misunderstood. To gather in-depth insights from different perspectives, qualitative research suited this study the most. Furthermore, this research can be described as a mixture of exploratory and descriptive research. Much research is on digital transformation and ESG objectives and outcomes, but limited research on how these two are connected. Thus, this study aimed to explore more about this relationship and tried to understand why there is a relationship. Additionally, it could also be essential to find out why this association between digital transformation and ESG could be meaningful for the insurance industry.

3.2 Data Collection

As previously mentioned, a qualitative approach suited this research study best. Therefore, interviews with experts in relevant positions were conducted. A document analysis was performed to validate the data from these interviews.

3.2.1 Expert Interviews

To explore more about how digital transformation impacts a firm's ESG performance, expert interviews were conducted. These interviews aimed to understand better what typically happens in an insurance firm during digital transformation, and what they think would influence ESG after digital transformation. Appendix I of this project contains a short research overview, which was used as an invitation to send to the (potential) interviewees with short yet detailed information about this research via email.

It was chosen to work with semi-structured interviews, which tend to be more suitable than structured and unstructured interviews (Magaldi & Berler, 2020). With semi-structured interviews, there is a focus on specific pre-developed topics, but there is also freedom for the interviewee to share other information and experiences with similar topics. Interviewees could motivate their answers using their own words, and there is more room for discussion. Another benefit of semi-structured interviews is that the interviewee can explore ideas that could come up during the interview, enhancing the understanding of the subject even further (Adeoye-Olatunde & Olenik, 2021). Furthermore, follow-up questions suited to the conversation could be asked, which can differ per interview.

3.2.1.1 Sampling

To get the best insights from the interviews, the interviewees had to be knowledgeable in specific topics related to this study. First, potential interviewees had to work in the insurance industry or closely with insurance firms, preferably in the Netherlands. If they worked in the Netherlands, it was assumed that they were either Dutch- or English-speaking. Furthermore, the ideal interview candidate has gone through a digital transformation within his/her current

firm or knew a lot about digital transformations in general. Ideally, the interview candidate also knew much about ESG, and its objectives and measurements.

Snowball sampling was used to reach people because the interviewees were unknown before the recruitment process. Interviewees were contacted via (senior) managers and other staff members of EY who were connected to them professionally, where it was expected that these potential candidates were suited for this study. These interviewees likely had other potential interviewees in their network as well, and therefore the 'snowball' became more extensive as it, so to say, was rolling through the snow (Parker, Scott & Geddes, 2019). Furthermore, interviewees were also recruited via the researchers' own professional network and the use of LinkedIn. New participants were no longer recruited when saturation had been reached, which is the point where no new information was added or observed in the gathered data (Guest, Bunce & Johnson, 2006).

3.2.1.2 Interviewees

The interviewees were contacted by email, as mentioned before, by EY employees they were already professionally in contact with, or via the researchers' personal email or LinkedIn account. Because the emails came from someone most candidates already knew, they were more likely to respond and participate (Robinson, 2014). In the introductory email, there was a short information sheet attached with more information on this research, as well as contact information of the researcher and other details (e.g., expected timeframe and example questions).

As mentioned previously, all selected interviewees were experts on either digital transformation or ESG in the insurance industry. Table 2 shows an overview of the

interviewees, their corporate function, and how their position relates to insurance. In a later stage, the interviewees are referred to as Interviewee A, Interviewee B, and so on.

Table 2. Overview of Interviewees and their Roles and Organizations

Interviewee	Name	Profession	Organization	Relation to Insurance Industry
A	G. de Steur	Senior Transformation Manager	Aegon	Insurance firm
B	M. Schut	Associate Partner	EY	Specializes in insurance
C	P. Plat	Associate Partner	EY	Specializes in insurance
D	S. van den Heuvel	Data Manager	Dela	Insurance firm
E	F. Boere	Sustainability Coordinator	ZLM	Insurance firm
F	B. van Ierschot	Head of (Digital) Transformation	Adecco	Specializes in insurance
G	M. de Jongh	Sustainability Officer	Aegon	Insurance firm
H	M. van Donge	Sustainability Officer	Aegon	Insurance firm

As briefly mentioned, there is a rule of thumb when conducting interviews that a researcher can stop recruiting more interviewees, once saturation is reached (Guest, Bunce & Johnson, 2006). Saturation is the point where there is no new information collected. Typically, this point is reached between 10 and 20 interviews (Alam, 2020). However, this can vary depending on the scope of the research. Furthermore, when interviewees have diverse experiences, six to ten interviews might provide enough information (Malterud, 2012). The interviewees did have diverse backgrounds and positions and they worked for various organizations at the time of the interviews. Therefore somewhere above six interviews was considered to be sufficient. Additionally, since there was a validating research method too, it was decided that eight interviews would be acceptable.

3.2.2 Interview Structure

As previously mentioned, the interviews were conducted using a semi-structured interview style. Before each interview, it is essential to note that all interviewees have been in contact with the researcher in advance, to create a more informal setting. When the interview setting is too formal, participants tend to respond differently based on what they think the researcher wants to hear (Adhabi & Anozie, 2017). The interviews all started with detailed information about the scope and purpose of the research, and the indicated expectations of the researcher. This was followed by some personal questions about the interviewee's background and experience, and their current position. Then, the topics of digital transformation and ESG were discussed in detail, with much freedom for the interviewees to give their personal opinions and interpretations.

With different opinions and interpretations, it could be insightful to see the differences and similarities in digital transformation and ESG approaches, therefore multiple

questions were dedicated to their views and approaches. Toward the end of each interview, the interviewees could emphasize discussed topics, provide comments, or ask questions. The researcher gave an expected delivery date of the interview transcript and the overall research project if participants were interested, and then interviewees were thanked for their time and effort. A detailed overview of the interview questions and context is found in Appendix II.

3.2.3 Document Analysis

Document analysis is a research methodology that systematically examines existing documents (i.e., reports, emails, memos, policies, and other written materials) to gather information on a particular topic or issue (Bowen, 2009). Furthermore, document analysis is often used in both exploratory and descriptive research. Document analysis can be a cost-effective and efficient way of collecting data, as it does not require primary data collection through interviews or surveys (Bowen, 2009). This can be particularly useful in situations where data may be limited, and this technique enables researchers to analyze substantial amounts of data quickly and effectively while providing access to data that may be challenging to obtain through other means. Furthermore, the method enables researchers to verify their findings, compare different sources, and triangulate data (Bowen, 2009). This study uses document analysis to validate and verify the collected data from the expert interview. The analyzed documents used in this study are displayed in Table 3.

The documents chosen for this analysis varied from business articles and web pages to press releases. Next to that, most documents are part of EY Global, and not a particular region, to enhance the transferability of this study. By analyzing various documents, it was assumed that there was a large variety of relevant information and data as well. Additionally, some documents focus on specific aspects of this research, such as digital transformation,

ESG, or insurance, while others focus on combining these aspects. This could lead to a more holistic set of information, necessary to validate the gathered data from the expert interviews.

Table 3. Analyzed Documents for Validating Interview Data.

Document Name	Document Type	Relation to Research
Digital Transformation Functional Blueprint (Shurer, 2023)	Blueprint	Digital Transformation
Digital Transformation in Insurance (Connolly, Peddangari & Webb, 2017)	Business Article	Digital Transformation + Insurance
Digital Transformation: the Key to Sustainable Development (Nguyen, 2022)	Business Article	Digital Transformation + ESG
Four Ways Technology can contribute to Business Sustainability Plans (Awada & Calisti, 2022)	Business Article	Digital Transformation + ESG
Industry Insights on ESG Data Collection (Kodi, Leopoldt, Kamranpour & Ps, 2022)	White Paper	Digital Transformation + ESG
ESG and acces to capital: Why insurers must stay focused on ratings (Frohling & Bakor, 2022)	Business Article	ESG + Insurance
What insurers can do now to monitor long-term value (Frohling & Vermeulen, 2021)	Business Article	ESG + Insurance
EY ESG Capability Maturity (EY, 2022)	White Paper	ESG
How investors can help finance a Green Recovery (Nelson, Bell & Kalia, 2021)	Business Article	ESG
ESG Sustainability (EY, 2023)	Webpage	ESG
Sustainability Reporting and ESG Controls Compliance Support (Carazzo et al., (2022)	Report Proposal	ESG
European Commission publishes proposal for a “Green Deal Industrial Plan for the Net-Zero Age” (EY Global, 2023)	Press Release	ESG

Document analysis is an effective research method to study digital transformation in insurance firms for a few reasons. Firstly, insurance firms are expected to generate several documents that pertain to their digital transformation, such as policies, reports, strategic plans, and business articles. These documents can offer meaningful insights into their digital transformation initiatives (Neuman, 2014). Analyzing these documents can enable researchers to comprehend the motivations, strategies, and difficulties of digital transformation in insurance firms.

For several reasons, document analysis can be an appropriate research approach for studying a firm's ESG performance and its determining factors in insurance. Firstly, insurance firms tend to produce various documents containing information about their ESG performance, such as sustainability reports, corporate social responsibility reports, and annual reports. By examining these documents, researchers can gain valuable insights into the insurance firm's ESG performance, including their objectives, policies, and approaches towards ESG. Secondly, document analysis can aid in recognizing the influencers of ESG performance in insurance firms by examining relevant documents (i.e., press releases, policies, and directives), that provide information about the company's decision-making processes concerning ESG matters.

3.3 Data Analysis

Once the data was collected, the data was analyzed and later shown in the next chapter; results. The expert interviews were audio recorded via either the researchers' laptop when the meeting took place digitally, or by the researcher's phone when the meeting took place in person. Either way, the audio recordings were later transcribed for a detailed overview of the interviews. During the literature review, there were several frameworks with dynamic

capabilities and best practices related to digital transformation, associated with and without the insurance industry, and ESG in insurance (McKinsey and Company, 2019; EY, 2020). All of these keynotes were transformed into corresponding codes, and a table with all of these codes can be found in Appendix III. If there were other emerging themes discussed during the interviews, these themes received a new, corresponding code

The interviews were coded accordingly with the help of the software program Atlas.ti. This software is used for the coding of qualitative data and helps create AI-generated codes and manually added codes. The program can also conduct co-occurrence and co-document analyses and can help interpret large amounts of texts such as interview transcripts (Muhr, 1991). Recurring codes in the transcripts were analyzed, and shown in the results chapter. There is an extensive discussion about the recurring codes in the discussion chapter, regarding their relationship with earlier found research from the literature review.

After collecting relevant and insightful documents on EY's intranet regarding digital transformation, ESG objectives, measurements, and performances, information was coded similarly to the interviews. Therefore, there was an aligned and more complete set of information, to see if there was an overlap between the two qualitative research methods. Moreover, most importantly, to check whether the gathered data from the expert interviews can be validated via document analysis.

3.4 Data Quality, Ethics, and Governance

3.4.1 Data Quality

The quality of the guideline that has been designed is dependent on the quality of the conducted research. Therefore, it is crucial to evaluate the quality of this thesis. Four

commonly used terms for evaluating the quality of non-quantitative research are credibility, transferability, dependability, and confirmability (Frambach et al., 2013; Korstjens & Moser, 2018). These terms will be explained and applied iteratively to assess the quality of this thesis.

Firstly, credibility refers to the accuracy of the research findings, particularly concerning interpreting the participant's original view. To enhance credibility, this thesis used multiple data sources, including a detailed literature review, and eight expert interviews. Most questions were based on the interviewee's interpretation of certain topics during the expert interviews. Additionally, at the end of each interview, the researcher summarized all points mentioned to the interviewee to avoid over-interpretation of the information. Furthermore, a document analysis of EY documents on the relationship between digital transformation and ESG was conducted to validate the collected data from the literature and expert interviews.

Secondly, transferability refers to how the findings can be transferred to other situations or participants in a different context (Korstjens & Moser, 2018). This research project focused on insurance firms and, therefore could be described as having low transferability, but transferability is still an important criterion. To improve transferability, interviewees were selected from different insurance firms, and each interviewee provided a thick description of their behavior, experiences, and the context of digital transformation and ESG in their professional and personal backgrounds. Furthermore, the interview questions contained general questions on digital transformation and ESG as well, and could therefore enhance transferability too.

Thirdly, dependability refers to the stability of findings over time and conditions. The findings are expected to be consistent (Korstjens & Moser, 2018). To increase dependability,

the collected data was thoroughly explained, and the method for analyzing it was described in detail. The research steps were also clearly explained in the study design. In addition, there could be new insights in the document analysis which took place after the expert interview, which could increase the dependability of this study (Frambach et al., 2013).

Lastly, confirmability refers to the extent to which other researchers can validate the findings of the thesis. The findings must be based on the research project's participants (e.g., interviewees) within the research project, not the researcher's bias (Korstjens, & Moser, 2018). A confirmable study finds its results from data rather than the researcher's interpretations. To enable other researchers to corroborate this research, the guideline has been viewed and validated by multiple professionals, both in the academic and professional fields. Additionally, all steps of the data analysis were explained to verify the confirmability of the results in the methodology chapter.

3.4.2 Ethics and Data Management

In Appendix IV, the data management plan can be found. The University of Turku provides this template and helps with planning the data collection and the rights regarding data collection (i.e. consent of the interviewee, and storage of the collected data during the research project, and afterward). The data management plan helps with guidance regarding the data management of this research and offers a detailed overview of the collected data. .

4. RESULTS

This chapter shows the results from the expert interviews and document analysis, in order to provide answers to the formulated research questions that can be found in the first chapter of this study. The main research question is "*How can digital transformation in an insurance firm positively impact its ESG performance?*", and there are two sub-research questions regarding digital transformation and ESG performances in the insurance industry.

4.1 Digital Transformation

Digital transformation is a broad term, to describe the automation of business processes, to strive for more efficiency. During semi-structured interviews, experts were asked about their definition of digital transformation, specifically in the insurance industry.

> *"Digital transformation is actually the digital component in a regular transformation, to see how you can use digital instruments, tools, applications, and data to improve your work processes internally, but also your relationship with customers, and in our case also employees as effectively as possible."* ~ Interviewee F

Most interviewees described a digital transformation in a similar manner as the literature, as the integration of digital technologies to enhance and modernize the organization's processes and operations. It is also often mentioned that digital transformation is a required process in their organization nowadays and that competing with other insurance firms is necessary.

4.1.1 Dynamic Capabilities

As discussed in the literature review, some dynamic capabilities are critical when executing a digital transformation (McKinsey and Company, 2018). These dynamic capabilities were

digital strategy, organizational structure, test-and-learn approach, talent and capabilities, ecosystem leverage, and cultural change. Furthermore, EY published their interpretation of dynamic capabilities for a digital transformation in the insurance industry (EY, 2020). These dynamic capabilities were cloud, intelligent automation, advanced analytics, digital strategy, next-gen-data, blockchain, cyber risk, and digital architecture. All these dynamic capabilities were set into a table, to count whether those were also frequently mentioned by the experts in the interviews. An overview of these frequencies can be found in Table 4.

Table 4. Dynamic Capabilities and Frequency Count

Dynamic Capability	**Frequency**
Digital strategy	24
Intelligent automation	19
Organizational structure	18
Cultural change	12
Advanced analytics	8
Digital architecture	7
Next-gen-data	5
Test-and-learn approach	3
Cyber risk	3
Ecosystem leverage	2
Cloud	1
Talent and capabilities	0
Blockchain	0

As can be seen in Table 4, the dynamic capabilities that are most frequently mentioned are digital strategy, intelligent automation, and organizational structure. When thinking about a digital transformation, also in the insurance sector, a digital strategy is considered critical.

> *"A real transformation is really linked to meeting or redefining strategic goals, and it can be done on the operational, company level."* ~ Interviewee C

Another interviewee states that the insurance firm he works for has digital policies and digital strategies for many different tasks.

> *"Many things are now automatically controlled, simply computer-driven, and are no longer done by people. In our organization that is accurate too, as we have digital policies and digital strategies for almost everything."* ~ Interviewee G

Intelligent automation is the second most mentioned dynamic capability by the experts, and interviewees stress that this goes hand in hand with digital transformation.

> *"Going towards a digital transformation is going towards a process that is as automated and digital-enabled as possible."* ~ Interviewee B

In addition, interviewee E also mentions that digital transformation, and therefore automation, results in a significant change in the workforce. There will be less manual labor, but the employees that stay with the firm or get hired later would require a more technical education or relevant experience.

> *"I expect them (employees) to be heavily impacted. Yeah. You know, if we automate more, first of all, we would get less personal contact. And by automating that, the line of work will change. So it's not just that their work will, or that the customer contact in their work will decrease, but the new level of automation would also mean that we're looking for different skill sets in the long term. More automation means more technical skills are required."* ~ Interviewee E

Organizational structure can be described rather broadly, and interviewee C sums up different aspects of an organizational structure in a digital transformation.

> *"When I look at the change, I look more at the prompt stage of the digital transformation, so basically more digitalization part, so basically streamline processes, automate, organize information, and then transform. There are things you do not really look at, just implement in the system, but I look deeper than the system. So I think looking at an organization, looking at the workforce, looking at your technology shift, looking at new possibilities for educational or maybe business models, and that it actually triggers or improves, or enhances your strategic outlook"*. ~ Interviewee C

Some dynamic capabilities that were not as critical are blockchain and talent and capabilities. These terms have not been mentioned by the experts a single time. Furthermore, some success factors, according to McKinsey and Company and EY have only been mentioned a few times in the interviews. Cloud has only been mentioned once, ecosystem leverage only twice, and (cyber) risk and the test-and-learn approach have come up three times.

4.1.2 Newly Created Dynamic Capabilities

Next to the dynamic capabilities that McKinsey and Company and EY already established, some interesting keywords were mentioned various times during the expert interviews. These new success factors in digital transformation and how often the experts have mentioned them are shown in Table 5.

Table 5. Newly Developed Dynamic Capabilities and Frequency Count

Dynamic Capability	**Frequency**
Customer experience	17
Process optimization	12
Data management	8
Regulation and compliance	6
Data availability	5
Stakeholder management	1

Two terms that came up many times during the expert interviews when talking about digital transformations in insurance were customer experience and process optimization. Firstly, it makes sense that customer experience is vital in insurance firms since they offer customer services. Therefore, the customer experience is one of the most important aspects of a digital transformation.

> *"Undergoing a digital transformation and getting towards a more digital position particularly, is not only important for the employees but also for the customer."* ~ Interviewee H

Next to that, the customers and their customer experience must be part of the strategy, some interviewees also state that it could be one of the reasons for having a digital transformation in the first place.

> *"While we have quite a large number of traditional, older customers, there is also an increasing customer share that just wants to do business digitally. So, a digital environment has been developed as a part of a digital transformation. Our customer satisfaction was, and remains very high."* ~ Interviewee D

One of the essential parts of any digital transformation is the optimization of processes. This is often mentioned together with automation because automation often leads to process optimization.

> *"I think that with a digital transformation, you totally work differently. It is not just about making something digital, it is about making an entire process more efficient and future-oriented. That goes beyond just 'the way of working,' and I think that is why it is called a transformation."* ~ Interviewee G

4.1.3 Slowly moving industry

The literature stated that the insurance industry was lagging a bit behind compared to other industries, also regarding digital transformation. When the experts were asked about how that is possible, most interviewees agreed that the insurance industry is relatively traditional, and is less innovative than for example the banking industry. One interviewee described that with a metaphor.

> *"So, the insurance branch is like an elephant. Meaning, it is large and complex to change. It moves slowly, yeah. But once you get it moving, it moves in a certain direction."* ~ Interviewee A

In the document analysis, it becomes clear that digital transformation is fundamental in the current economy, and the insurance industry is no different (Connolly, Peddangari & Webb, 2017). Furthermore, there is a recurring importance of having a good and clear digital strategy. Next to that, a fundamental action to success is the harmonized thinking towards a digital transformation, which can be compared to the codes of organizational change and cultural change (Shurer, 2023). Digital strategy, organizational change, and cultural change can be seen as crucial regarding a digital transformation.

4.2 Important ESG Factors in Insurance

In the literature review, a framework by Khovrak on the best practices for achieving sustainable development through an ESG-driven approach for insurance firms was analyzed (2020). To validate whether the interviewed experts also find those factors necessary for insurance, they were asked for their opinion on environmental, social, and governance factors.

4.2.1 Importance of Environmental Factors

All interviewees agreed upon the importance of involving ESG in their business strategies. Furthermore, most insurance firms now have people working on sustainability, precisely ESG measurements. When asked what they considered essential factors in their firm and the insurance industry in general, most interviewees mentioned environmental factors as being

the most valuable. In Table 6, an overview of the mentioned environmental factors is shown, and how frequently they were discussed.

When asked directly what essential factors are in the insurance industry, almost all interviewees stressed the importance of making sustainable and green investments, and also the importance of encouraging investors to do the same.

> *"Our greatest impact would be the impact of our investment portfolio. We have to look at the footprint of our investments, to see what the impact on the sustainability of those investments is."* ~ Interviewee G

Table 6. Environmental Factors and Frequency Count

Environmental factor	Frequency
Green investments	15
Energy efficiency	9
Encouragement of investors	7
Low carbon footprint	6
Waste disposal	5
Climate strategies	4
Green building	1

Interviewee C debates that it is almost impossible to still invest in specific companies, because of the presence of regulations and policies for investments in the Netherlands. Therefore, green investing can be seen more as a must, instead of something that might seem just important.

> *"You cannot invest in certain companies anymore these days. Everything needs to be scored and tracked. You have a responsible investment policy in the Netherlands. So, your investments must be responsible. The standard center is there to make sure that financial institutions have an impact on broad investing. So, imagine if an insurance firm, as a financial institution, would invest in oil, then they would never get a transition towards renewable energy. So, investing in all kinds of companies, which are being penalized by adding more capital or adding other requirements in reporting, leads you to have to be more disclosed. You need to have an investment policy that is green."* ~ Interviewee C

The use of energy in an efficient way is easily executable for insurance firms. This varies from the use of LED light bulbs to the use of renewable energy such as solar panels and efficient building designs. Often, a combination of various aspects that are small on its own, but powerful together is used.

> *"It comes down to the basic things. How do I use less paper? How is my office set up, and what is the energy consumption of my office? If employees are receiving a lease car, are those lease cars running on petrol or can they be electric, or at least hybrid?"* ~ Interviewee F

When analyzing the various documents for critical environmental factors in the insurance industry, there was mainly a lot of positive information on green investments (Nelson, Bell & Kalia, 2021; Kodi, Leopoldt, Kampranpour & PS, 2022; EY Global, 2023). For example, the number of investors pursuing green and sustainable opportunities is growing. Investors must develop long-term (digital) strategies, to play a role in the green recovery. Next to that, there are many documents about the importance of renewable energy, especially its

awareness (Carazzo et al., 2022; EY, 2022; EY, 2023; EY Global, 2023). Nevertheless, green investments were most critical for insurance firms (Nelson, Bell & Kalia, 2021; EY, 2022).

4.2.2 Importance of Social Factors

Social factors are perhaps more critical in the workforce, as they influence the way of working and the atmosphere among employees the most. In Table 7, an overview of social factors that came up during the expert interviews is shown.

Table 7. Social Factors and Frequency Count

Social factor	**Frequency**
Corporation promotion	10
Research and education on risk	8
Diversity and inclusion	5
Customer inclusiveness	4
Local partnerships	4
Transparency	3
Employee development	2

The most mentioned social factor is corporation promotion, which means that the organization promotes its corporation with ESG, such as actively promoting ESG events and workshops. This way, awareness about the topic is spread amongst the employees.

> *"Being aware of the importance of sustainability is at the top of the organization's lives. We also had workshops in this area, and we will host more activities in the future."* ~ Interviewee D

Next to raising awareness about the importance of ESG and sustainability in general, educating people on various risks is essential. Research on and education of potential risk has come up eight times during the interviews, and many interviewees talked about the importance of ESG standards to mitigate risks, some of the risks were not even considered as important yet, before the implementation of ESG measurements.

> *"The risks, especially in climate, vary in different locations worldwide. For example, now in the Netherlands, nitrogen is a big problem for farmers. It is important to research all the possible risks and educate people on them."* ~ Interviewee B

Another important social factor seemed to be diversity and inclusion. For most interviewees, it is important to feel included in their insurance workspace

> *"Our people are extremely important. Finding them and involving the right talent of course, but also the ratio between genders, and also paying them equally."* ~ Interviewee G

According to the document analysis, insurance firms focus mainly on spreading awareness of ESG, primarily by being transparent about what the firm is doing regarding ESG (Frohling & Vermeulen, 2021; EY, 2023). This trend could be linked to the codes of corporate promotion and transparency. Furthermore, many firms take diversity and inclusion of their employees very seriously, which is more included in their business strategies than ever before (Carazzo et al., 2022; Kodi, Leopoldt, Kamranpour & Ps, 2022). Seemingly, the promotion

of ESG and awareness of it within the organization's culture indirectly enhances the corporate culture (EY, 2022).

4.2.3 Importance of Governance Factors

During the expert interviews, 'governance' on its own was mentioned a lot, but not many different factors within governance were identified. As can be seen in Table 8, corporate culture was mentioned many times, which means that the mission and vision of an organization should be ESG-minded. This is sometimes the case, but not always. Interviewee H explains that there should be more attention towards ESG because organizations want to include it in their strategy, not because several regulations are pushing them.

> *"It (more attention towards ESG) should be included more in the strategy. Give it a higher priority. Also in the boardroom, it should be really included as an essential part of the strategy. And then, when it gets the attention and is being reported on, the organization is also forced to do so, by all kinds of regulations. There is much pressure from the regulations, but actually, it would be much better if there is pressure from the company itself, but that has to do with the culture, and the corporate culture is not very innovative yet in this sector."* ~ Interviewee H

Table 8. Governance Factors and Frequency Count

Governance factor	Frequency
Corporate culture	10
Compliance with standards	8
ESG / sustainability committee	6

Furthermore, another expert claims that if an organization only follows the regulations so that the organization would score well on ESG ratings, then this could cause other problems.

> *"As a financial institution, you have some factors and ratings that are important, and that makes steering sometimes a bit difficult. If you are only going to steer in the direction of these factors, then you will likely be steered yourself, in all directions."* ~ Interviewee B.

The comment by interviewee B as seen previously, is in line with the second most important factor regarding governance. Compliance with standards is one thing, but organizations should not move in a particular direction only to comply with the ESG standards. Furthermore, organizations must change their processes and business strategies to comply with ESG standards.

> *"Within our organization, we see a lot of compliance transformations now. This is handy of course, since being compliant is mandatory, but that must be really crazy considering all the processes."* ~ Interviewee B.

Lastly, a few experts stress the importance of an ESG or sustainability committee or team within the organization. People would work for that committee for around a few hours a week, and their tasks would include advising other employees or external parties, and ensuring that the organization is reporting well. Having such a committee can have a considerable impact on the organization.

> *"People are enthusiastic about ESG and sustainability. If you call some people today, you can have a powerful committee by tomorrow."* ~ Interviewee B

Being compliant with current standards and regulations is of extreme importance in the insurance industry, thus for ESG as well (EY, 2022; Kodi, Leopoldt, Kamranpour & Ps, 2022). The document analysis validates this and also shows that establishing an ESG or sustainability committee is an emerging trend in insurance firms (Carazzo et al., 2022; EY, 2022; Frohling & Bakor, 2022).

4.3 Influence of Digital Transformation on ESG in Insurance

When experts were directly asked whether a digital transformation can have a positive impact on the firm's ESG performance, everyone answered yes. A co-occurrence analysis was run on the interview data, to see which codes corresponding to digital transformation were mentioned together with codes related to ESG factors. There is a slight chance that some codes were flagged as co-occurring, but that these codes were not discussed in the same context. Therefore, each co-occurrence is double-checked. Only a few codes occurred together in a non-coincidental manner (i.e., co-occurred three times or more), and most of these were in combination with digital strategy. This was by far the most mentioned element. It was mentioned multiple times that the importance of ESG should be considered and included when developing a digital strategy, also before taking on a digital transformation. Organizational change is another dynamic digital transformation capability that was often mentioned concerning ESG. Most interviewees argue that to have a tangible impact on ESG factors and performance, the organization should focus on its organizational structure and processes as well.

On the ESG side, the most frequently mentioned theme during the expert interviews was green investments (i.e., also in combination with both digital strategy and organizational change). When analyzing the gathered documents, green investments are considered critical

and valuable in ESG. There is a growing global awareness amongst investors, also in insurance, to consider things such as climate and energy transitions when deploying capital. However, there are still some weaknesses and gaps regarding consistent and credible ESG data in insurance organizations. Therefore, it could be crucial that ESG is included in the organization's strategy.

Interviewees C, G, and H think there is a definite and direct impact on ESG factors, such as transparency and insights after having more accessible access to data because of a digital transformation. However, most experts argue that the impact of digital transformation on ESG factors, and therefore its performance, should be described as indirect side effects. In each interview, there was an open discussion about how these two themes are connected, especially within the insurance industry.

> *"Primarily, of course, it is certainly more efficient, and yes, if it is also more sustainable, that is, of course, a nice side effect. But that is usually not the intention with which such a process is started."* ~ Interviewee D

As mentioned before, the relatively traditional insurance industry intends to move slowly. Thus, the interviewees stressed that this is also the case with both digital transformation and involving ESG in their business, and that could also lead to a slighter, indirect influence between the two. Interviewee E argues that the insurance industry is not yet there, but that this direct influence will grow in future years.

> *"We have more options regarding ESG as well after a digital transformation, making better analysis on what the real sustainable investments are, or other things that are not just greenwashing or not just enhancing schools, but actually really making a*

> *change. I can imagine that, but also I don't think a lot of insurance companies are there yet. So at this moment, the biggest impact that I would expect, is that it opens conversations about a possible connection. It's maybe less explicit. It's more of an implicit impact that you would have or an indirect impact that you might have. But yeah, I do think that's the main outcome right now."* ~ Interviewee E

When scanning the various documents, it was clear that many insurance organizations are working on a better connection between digital transformation and ESG, especially on the investment side (Connolly, Peddangari & Webb, 2017; Awada & Calisti, 2022; Nguyen, 2022). Digital transformation will support insurance firms in making sustainable decisions about investments. In the long run, this would yield good results regarding ESG in those firms (Nelson, Bell & Kalia, 2021). However, most documents stressed that for digital transformation to have a tangible impact on ESG, there are some critical factors (Awada & Calisti, 2022; EY, 2022). Firstly, ESG objectives should be aligned with the business strategy. Secondly, ESG roles and responsibilities should be evolved. Moreover, lastly, firms should invest in a greener IT infrastructure (Nelson, Bell & Kalia, 2021; EY Global, 2023).

5. DISCUSSION AND LIMITATIONS

This chapter is devoted to a detailed discussion and contribution of the results that are shown in the previous chapter, in combination with its association and connection with relevant literature that has been discussed in the literature review of this research. Furthermore, a subchapter is dedicated to the limitations of this study.

5.1 Discussion and Contribution

The first sub-question of this study asks what is important regarding digital transformation in the insurance industry. The expert interviews gave some interesting insights and interpretations while discussing the already established dynamic capabilities of EY and McKinsey and Company. As mentioned in the methodology chapter, these dynamic capabilities were also used to code the interview transcripts, because these dynamic capabilities can be of substantial essence for specific subjects such as digital transformation and ESG. Furthermore, some themes that were not included in the mentioned frameworks were brought up relatively often during the interviews, and can therefore also be seen as critical to the success of a digital transformation in insurance.

In Table 9, an overview of the most relevant, crucial dynamic capabilities, and some essential dynamic capabilities for digital transformation in insurance firms is shown. There is a distinction between crucial dynamic capabilities and important dynamic capabilities here. The crucial dynamic capabilities can be seen as contributing factors to the success of a digital transformation. A good digital strategy, ensuring the organizational structure is suitable, and changing the organization's culture are all critical before digital transformation. As for the other important dynamic capabilities, these can be described as supportive of the crucial

dynamic capabilities. Intelligent automation and advanced analytics are both tactics used in a digital transformation. Furthermore, customer experience and process optimization can be seen as relevant outcomes after a digital transformation. These four factors are also important in a digital transformation, but not critical for success.

Table 9. Crucial Dynamic Capabilities and Important Dynamic Capabilities for Digital Transformation in Insurance Firms

Type of Dynamic Capability	Dynamic Capability
Crucial Dynamic Capabilities	Digital Strategy
	Organizational Structure
	Cultural Change
Important Dynamic Capabilities	Intelligent Automation
	Customer Experience
	Process Optimization
	Advanced Analytics

The most mentioned by far and, therefore, most critical, crucial dynamic capability is digital strategy, as it was mentioned several times by seven out of eight interviewees. This was also the only dynamic capability shown in both the framework by McKinsey and Company about dynamic capabilities for digital transformation and in the framework by EY about essential components for digital transformation in the insurance industry (McKinsey, 2018; EY, 2020). It also became clear that a firm's digital strategy is one of the most critical aspects of an excellent digital transformation in analyzing the gathered documents. Literature found that insurance firms struggle with incorporating digital transformation into their business

strategies (Musaigwa & Mutulu, 2022), and that a strategy drives a digital transformation (Kane et al., 2015; Rogers, 2016).

Organizational structure and cultural change were also a part of the dynamic capabilities framework by McKinsey and Company, and organizational structure was argued as an essential component for digital transformation in research by Matt, Hess, and Benlian (2015). Furthermore, research by Rogers states that changing a firm's culture is crucial for a successful transformation, but is also often a positive result afterward (2016), which is in line with answers from various interviewees where it was stated that these elements are not only critical before a digital transformation but also during and after a digital transformation.

Literature found that within the ESG factors, focusing on investments is crucial and relevant at this moment (Kalkabayeva et al., 2020; Khovrak, 2020; Aspergis et al., 2022). From the investment side, it is also significantly important to focus on ESG when considering investments, and literature found that this is critical for 80% of investors (Mitchell, Crepon & Carr, 2022). Furthermore, for insurance organizations, there is a growing importance of making green and sustainable decisions, including investments that are sustainable and ethical (Caplan et al., 2013). All the collected data points in that same direction, where investing in a green and sustainable manner is seen as most important regarding ESG objectives. Furthermore, multiple interviewees stated that their investment portfolio is critical in their insurance firms, which is backed by the study by Caplan and colleagues (2013). When it comes to realizing the need to have a better investment portfolio, having a good strategy that includes these goals is repeatedly critical (Rogers, 2016).

Other ESG factors that were flagged as crucial based on their mentioned frequency during the analysis of the expert interview besides green investments, were corporate promotion and corporate culture. Corporate promotion can for example be raising awareness

about ESG and its importance within a firm. This has been indicated as one of the more prominent factors in the social dimension of ESG (McKinsey and Company, 2019). Corporate culture is vital in ESG, as it defines where the firm itself and its employees stand in terms of ESG. There can be some overlap with the digital transformation crucial dynamic capability cultural change. Other dynamic capabilities of ESG that can be described as more supportive than critical were energy efficiency, the encouragement of investors, education and research on possible risks, and being compliant with the ESG standards. After the document analysis and when referring back to the literature (Atan et al., 2016; Horton, 2017), these factors were again distinguished between crucial dynamic capabilities and important dynamic capabilities, and are shown in Table 10.

Table 10. Crucial Dynamic Capabilities and Important Dynamic Capabilities for ESG in Insurance Firms

Type of Dynamic Capability	Dynamic Capability
Crucial Dynamic Capabilities	Green Investments
	Corporate Promotion
	Corporate Culture
Important Dynamic Capabilities	Energy Efficiency
	Encouragement of Investors
	Education and Research on Risk
	Compliance with Standards

It was often found in the literature that the insurance industry is a slowly moving sector regarding digital transformation and ESG. For example, 56% of global insurers claim that they want a leading status in ESG, specifically in environmental capabilities. However, only

24% of those global insurance firms are on the path to achieving that goal (Mitchell, Crepon & Carr, 2022). During the interviews, it was often mentioned that the insurance industry is fairly traditional and therefore moves slowly. Nevertheless, these insurers are moving in the right direction, and interviewees think that higher goals can be achieved in the future.

When running the co-occurrence analysis to check which codes linked to digital transformation co-occurred with ESG-related codes in the same interview, it was evident that digital strategy was often part of the outcome, as well as organizational structure. As these were also important factors in the framework by McKinsey and Company (2018), it makes sense that these factors co-occur with ESG objectives. The co-occurrence analysis mainly presented that green investments were mentioned multiple times combined with digital strategy and organizational structure. This aligns with research found in the literature review, where incorporating ESG objectives into investment strategies is demonstrated to be meaningful, and leads toward more sustainable development and increased investor benefits (Sherwood & Pollard, 2018; Hubel & Scholz, 2020). Furthermore, this is also in line with the results from the two sub-questions, about digital transformation in insurance and ESG objectives in insurance. Therefore, it seems logical that these are intertwined as well.

In both the expert interviews and the document analysis, it was found that having clear goals, objectives, and a clear strategy with ESG in mind, can influence a firm's ESG score (Awada & Calisti, 2022; EY, 2022). Because there is more attention towards and debate on ESG objectives and their relevance for the organization, the firm will either directly or indirectly enhance its ESG performance. Then, the organizational structure and culture can be adapted accordingly as well, which can lead to further enhancement of the firm's ESG performance by focusing increasing attention on ESG and discussing and dividing ESG-related tasks. As mentioned in the literature, ESG vigorously promotes green and ethical

investments, and the improvement of investment portfolios (Caplan, Griswold & Jarvis, 2013), which various interviewees also confirmed. Actively strategizing towards these green, ethical investments could improve the investment portfolio overall. Furthermore, structuring the organization so that there is an increased focus on ESG and green investments, could help significantly as well.

In the literature, it was found that there is a lack of roadmaps or visualizations of future steps regarding digital transformation in the insurance industry, and that is also the case for ESG in the insurance industry (Zaoui, & Souissi, 2020). This was mainly a concern from the stakeholders' and investors' sides, finding it difficult to further strategize without clear next steps and focus points. Therefore, sunburst charts have been created to show the important dynamic capabilities and the crucial dynamic capabilities of digital transformation and ESG in a visual overview. These sunburst charts can be seen in Figure 7 and Figure 8 respectively.

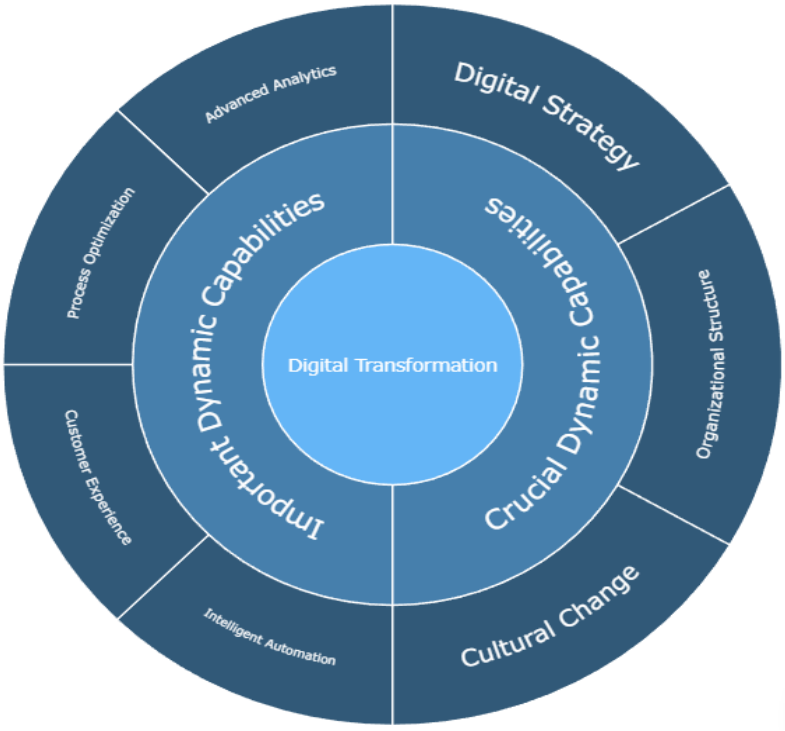

Figure 7. Sunburst Chart of Important and Crucial Dynamic Capabilities of Digital Transformation

Figure 8. Sunburst Chart of Important and Crucial Dynamic Capabilities of ESG

To combine these aspects, a visual overview is created that contains the important, supportive dynamic capabilities and crucial dynamic capabilities of both digital transformation and ESG in the insurance industry, in order of importance for the organization (i.e., the greener the component, the more important the dynamic capability). This visualization can be seen in Figure 6 and can be used for insurance firms to prioritize the focus points in their next steps toward the future, hopefully enhancing both digital transformation and ESG. it was chosen to start with the important, supportive dynamic capabilities, to show that these can assist in achieving the crucial dynamic capabilities.

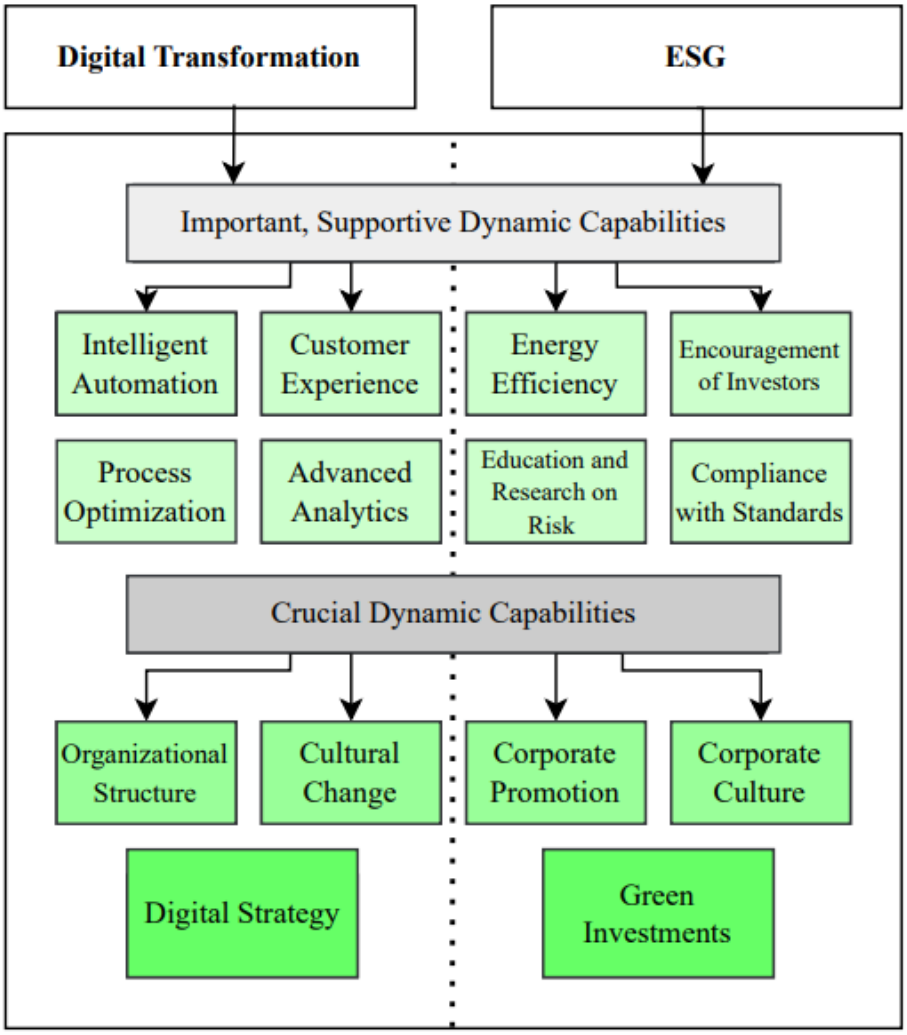

Figure 9. Visual Overview of Crucial Dynamic Capabilities and Important Dynamic Capabilities of Digital Transformation and ESG in the Insurance Industry

There appear to be a lot of different dynamic capabilities of great importance for both digital transformation and ESG, and there is an overall need for alignment between those two subjects. Interviewees have mentioned multiple times that the outcomes would be more relevant and significant when digital transformation and ESG objectives would align with the organization's strategy and that this would lead to a more streamlined process. Then, a streamlined process that considers the most crucial focus points of digital transformation and ESG, digital strategy, and green investments, can lead to better outcomes.

5.2 Limitations

There was limited time available for this research; therefore, the acquired data could have been greater. More expert interviews could have been conducted with more time, which might have led to slightly different results. Usually, there are multiple rounds of data collection, leading to more validation between these rounds. For example, validation interviews could have been held after the expert interviews, before moving on to the document analysis. This could have enhanced the quality of the gathered data. Furthermore, with more expert interviews, there would have probably been a greater variety of insurance firms included. This could have had an impact on the results, and therefore also on the discussion with literature. More data would enhance the reliability of the study as well.

Extensive literature has been reviewed to gather as much knowledge as possible about digital transformation and ESG in insurance firms, to ask the right questions during the expert interviews. However, since this is still an exploratory topic with limited research available, the interview questions and debates also remain slightly exploratory. The same study, in a few years, could have different outcomes due to the maturity of the subject's digital transformation, ESG, and also the impact of digital transformation on ESG. Next to that, external factors could have an impact on the results as well.

Data triangulation was used by analyzing both the transcripts of the expert interviews and relevant documents within EY. However, many other qualitative research methods could have been used and could have resulted in slightly different outcomes, such as a case study or a focus group. It could have also been interesting to use data triangulation with a combination of qualitative and quantitative methods, such as by collecting data from a survey and then validating those with expert interviews.

6. CONCLUSION AND FUTURE RESEARCH

The last chapter of this research project concludes this study by aiming to directly answer the research question and its sub-questions, based on the extensive discussion in the previous chapter on the literature review and the results from the expert interviews and document analysis. After a brief conclusion, there is a subchapter with advice specifically for insurers, in the form of a visualized roadmap. Lastly, there is a subchapter dedicated to future research recommendations.

6.1 Conclusion

Both digital transformation and ESG are becoming mainstream yet critical in today's economy. With the help of an extensive literature review, results from interviews with experts in the field, and an analysis of relevant documents, the research question and its two sub-questions are answered directly in this chapter. The first sub-question asks "*What is considered a digital transformation in the insurance industry?*". A clear digital strategy, including everything that the organization wants to achieve, is the key to success when undergoing a digital transformation in insurance. Furthermore, using intelligent automation to automate specific systems and, therefore, reducing the workforce can be significantly meaningful for insurance firms. Moreover, changing the organizational structure and company culture is also fundamental to success, because they enable the alignment between processes, roles, and responsibilities. Furthermore, a firm's investment portfolio is extremely important since it supports its stability and long-term growth.

The second sub-question asks "*What are important ESG objectives in the insurance industry?*". ESG and its risks and opportunities have risen to the top of the agendas for many insurance organizations. In insurance, the current most critical and valuable ESG factors are

green investments, and spreading ESG awareness within the organization by corporate promotion and making an effort to change the organization's culture. As mentioned before, the investment portfolio is crucial to insurance firms, and making sustainable and green decisions and investments is part of that. Now more than ever, investors are pursuing sustainable opportunities considering the climate and especially energy transitions. The possibility for digital technologies to help realize ESG priorities is more relevant and present than ever before.

The main research question of this study is "*How can a digital transformation in an insurance firm positively impact its ESG performance?*". Digital transformation can support organizations in becoming more sustainable and making greener decisions, but not without purposely combining the two elements and involving them in the organization's strategy. This is not a surprising outcome and is mostly in line with expectations from the literature review. Next to focusing on digital strategy alone, there is a general need for alignment between digital transformation and ESG objectives. This way, processes can be more streamlined, which is incredibly important for insurance firms as it creates long-term value and can mitigate risks and liabilities.

There are minor effects on ESG objectives when undergoing certain digital transformations, such as using less energy in a building due to a digital workspace or having a smaller carbon footprint due to paperless working in a digital environment. Therefore, it is very likely to have a better ESG performance as an organization. However, for an organization to make a real, impactful change in ESG, there are some things to consider. Insurers should develop long-term strategies, where ESG objectives must be aligned with the business strategy.

6.2 Advice for Insurance Firms

It can be meaningful for insurance firms to incorporate multiple dynamic capabilities from Figure 6, which can be found in the previous chapter, into their future business plans. This can create a more streamlined and aligned plan that can be included in an organization's digital strategy. Especially the crucial dynamic capabilities found for digital transformation and ESG, particularly digital strategy and green investments, could be vital for further development. Furthermore, to be able to give insurance firms some practical advice on how to be able to make greener and more sustainable decisions and investments, a practical roadmap has been created based on the critical success factors for both digital transformation and ESG objectives in the previous chapter. By following the steps displayed in Figure 7, organizations can achieve specific goals related to making sustainable and green decisions and investments.

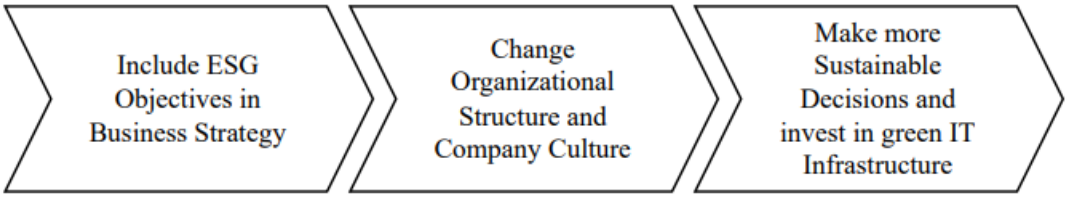

Figure 10. Practical Roadmap for Insurance Firms

The practical roadmap can function as a guideline for future steps in business plans for insurance organizations, to create more streamlined decision-making. Critical before a digital transformation, or any change in general within an organization, is having a clear business strategy. However, when an organization is also interested in having a sustainable impact or achieving certain ESG goals, ESG objectives should be aligned with the firm's strategy. Therefore, the first step for insurance organizations is to include ESG in the business strategy.

The second step is to change the organizational structure and company culture. These changes are not only important for a digital transformation but also for including ESG. Corporate promotion and raising awareness of ESG were considered important factors, and can both be meaningful for the changes within an organization's structure and culture. Furthermore, establishing a sustainability or ESG committee within a firm can also be of significant help in changing a firm's culture.

When ESG objectives are included in the business strategy, and a firm has successfully changed its organizational structure and culture, it is ready to make more sustainable, green decisions and investments. Moreover, the IT infrastructure can be further developed more sustainably. This is important for an organization and can have a significant impact on the organization's ESG performance.

6.3 Opportunities for Future Research

Without a good business strategy and a lot of corporate promotion towards ESG within organizations, it seems complicated to find a direct influence between digital transformation and ESG objectives at this moment. However, it has been mentioned before that this research might have been conducted too early, and that this will change in the upcoming years. Both digital transformation and ESG are growing in popularity and importance for many industries, including insurers. Today, not many insurers are making the required effort to embed ESG objectives into their business plans. Thus, in a few years, there would probably be more research, more experts, and more data available. Naturally, this cannot be said with certainty of success, but conducting a similar study at a later stage could be interesting.

The main research question is about the connection between digital transformation and ESG performance, but due to a shortage of time and the lack of research in this specific

area, there was no chance actually to measure ESG performances within insurance firms. For future research, it could be meaningful to actually measure a firm's ESG performance before a particular digital transformation, and then again afterward. Only then, could research demonstrate that there is actually a difference in a firm's ESG performance before and after digital transformation, and whether this difference is positive for the organization or not. Furthermore, this could better establish which factors play a significant role in this impact, and more importantly, how these specific factors impact performance.

The focus of this research was on the insurance industry, mainly because of its slow adaptation of both digital transformation and ESG objectives, and moreover, because EY works in close proximity to many insurance firms which makes it a relevant industry for the company. Because of this specificity, the outcomes are very industry specific. A similar study focused on a different industry, such as banking or something more distant from financial services, could yield very different outcomes and thus, a different contribution to research and a different advice for the businesses.

Lastly, this research had a qualitative research design, focusing primarily on interview and document analysis outcomes. This made sense, since there was a research gap between digital transformation and ESG in insurance, leading the study to be mainly exploratory and descriptive. However, looking at this research gap with a quantitative approach, such as a survey, would also be interesting. Once more research is conducted about this subject, conducting a design science study could also be insightful to conduct a design science study, where a more extensive roadmap or a framework could be developed.

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APPENDICES

Appendix I Interview Invitation for Potential Interviewees

Short summary of my thesis

I am writing my graduation thesis for the master's program in Information Management at Tilburg University, combined with a thesis internship at EY. My research project focuses on the relationship between digital transformation and ESG performance, specifically in insurance firms. The research argues that there is a positive relationship between them, but the reasoning behind this remains unclear. Therefore, I would like to interview experts in various insurance firms with some knowledge of ESG. It is also important that a digital transformation of any kind must have taken place in recent years, to discuss the differences.

Candidates

- Working for an insurance firm in the Netherlands
- Knowledge of either:
- ESG measurements
- Digital transformation, plus if this took place at the current organization
- Preferably both

Example Questions

Questions will be asked in an open-ended manner, leaving some room for discussion and gathering reasoning behind the answers. If another topic comes up this can be discussed.

- What sort of digital transformation did [company] undergo?
- How does [company] currently measure ESG performance, and does this differ from before the digital transformation?
- How did [company's] ESG performance change after the digital transformation?
- Would you say that digital transformation has any influence on [company's] ESG performance, and how?

Dates and further information

Preferably, the interviews will be held between the end of March and mid-April. Interviews can take place online or physically, this is up to the interviewee's preference. Interviews will take around 45 min - 1 hour, depending on the discussion. The interviews will also be recorded so that these can be transcribed and at a later stage can be analyzed by the interviewee.

Contact information

Lisa Janssen, reachable by phone: +316 53280292
Or by email: Lisa.Janssen@nl.ey.com / L.M.A.Janssen@tilburguniversity.edu

Appendix II Overview Interview Questions

Interviewer: Lisa Janssen

Interviewee: [name]

Introduction
Good morning/afternoon and welcome to this interview about digital transformation and ESG in [company]. My name is Lisa and I am currently finishing my master's in Information Management at Tilburg University. I am writing my thesis within the technology transformation team at EY in Amsterdam. To gather more insights on what a digital transformation entails in an insurance organization, and whether it could enhance the organization's ESG performance.

Formalities
This interview will take around 45 minutes in total, but it depends and may vary. Would you mind if I record this interview, for transcription purposes?

Questions
1. Could you briefly describe your current position and the company you work for?
2. How would you describe a digital transformation, and have you experienced a digital transformation during your time at [company]?
- Room for further discussion depending on answer
3. What would you say makes a digital transformation a 'transformation' rather than just a 'change'?
- Room for further discussion depending on the answer

If [name] has experienced a digital transformation, continue with question 4. Otherwise, continue with question 6.

4. Did you experience positive influences in [company] after the digital transformation? If yes, how would you describe these influences?
- Room for further discussion depending on answer
5. Was there an effect on sustainability or a sustainable way of working?
- Room for further discussion depending on the answer

If [name] has experience with ESG (as discussed before the interview), continue with question 6. Otherwise, continue with the conclusion.

6. What would you consider important ESG factors, in general in the insurance industry and in [company]?

- Room for further discussion depending on the answer

7. How could an ESG performance/score be improved according to you?

- Room for further discussion depending on answer

8. Do you think that a digital transformation could have an impact on ESG performance? Why?

- Room for further discussion depending on the answer

If anything comes up in the interviewer's mind that might be interesting or relevant during the interview, this can also be included in the interview.

Conclusion

Thank you for your time and for your honest and interesting answers. Is there anything else that came to your mind during the interview that you would like to share?

If there is something the interviewee wants to share, room for discussion. Otherwise, finish up.

Thank you once again. Once my thesis is finished, I could share the results if you are interested. Have a nice day.

Appendix III Coding Scheme for Data Analysis

Codes related to Digital Transformation	Codes related to ESG - E	Codes related to ESG - S	Codes related to ESG - G
Advanced analytics	Green investments	Corporation promotion	Corporate culture
Blockchain	Energy efficiency	Research and education on risk	Compliance with standards
Cloud	Encouragement of investors	Diversity and inclusion	ESG / sustainability committee
Cultural change	Low carbon footprint	Customer inclusiveness	
Cyber risk	Waste disposal	Local partnerships	
Digital architecture	Climate strategies	Transparency	
Digital strategy	Green building	Employee development	
Ecosystem leverage			
Intelligent automation			
Next-gen-data			
Organizational structure			
Talent and capabilities			
Test-and-learn approach			

Table 11. Pre-determined Codes from Frameworks and Best Practices for Data Analysis

Appendix IV Research Data Management Plan for Students

UNIVERSITY OF TURKU Library

This document will help you plan how to manage your research data. More detailed instructions for each section are available online in the Research Data Management Guide for Students.

1. Research data

Research data refers to all the material with which the analysis and results of the research can be verified and reproduced. It may be, for example, various measurement results, data from surveys or interviews, recordings or videos, notes, software, source codes, biological samples, text samples, or collection data. In the table below, list all the research data you use in your research. Note that the data may consist of several different types of data, so please remember to list all the different data types. List both digital and physical research data.

Research data type	**Contains personal details/information***	**I will gather/produce the data myself**	**Someone else has gathered/produced the data**	**Other notes**
Data type 1: *Expert Interviews*	x	x		
Data type 2: *Document Analysis*			x	

* Personal details/information are all information based on which a person can be identified directly or indirectly, for example by connecting a specific piece of data to another, which makes identification possible. For more information about what data is considered personal go to the Office of the Finnish Data Protection Ombudsman's website

2. Processing personal data in research

If your data contains personal details/information, you are obliged to comply with the EU's General Data Protection Regulation (GDPR) and the Finnish Data Protection Act. For data that contains personal details, you must prepare a Data Protection Notice for your research participants and determine who is the controller for the research data.

I will prepare a Data Protection Notice** and give it to the research participants before collecting data ☐

The controller** for the personal details is the student themself ☒ the university ☐

My data does not contain any personal data ☐

** More information at the university's intranet page, Data Protection Guideline for Thesis Research

3. Permissions and rights related to the use of data

Find out what permissions and rights are involved in the use of the data. Consult your thesis supervisor, if necessary. Describe the user permissions and rights for each data type. You can add more data types to the list, if necessary.

3.1. Self-collected data

You may need separate permissions to use the data you collect or produce, both in research and in publishing the results. If you are archiving your data, remember to ask the research participants for the necessary permissions for archiving and further use of the data. Also, find out if the repository/archive you have selected requires written permission from the participants.

Necessary permissions and how they are acquired

Data type 1: Expert Interviews

3.2 Data collected by someone else

Do you have the necessary permissions to use the data in your research and to publish the results? Is there copyright or licensing issues involved in the use of the data? Note, for example, that you may need permission to use the images or graphs you have found in publications.

Rights and licenses related to the data

Data type 2: Document Analysis

4. Storing the data during the research process

Where will you store your data during the research process?

In the university's network drive ☐

In the university-provided Seafile Cloud Service ☐

Other location, please specify: ☒ on the researcher's personal laptop, and a copy on the researcher's personal hard drive.

The university's data storage services will take care of data security and backup files automatically. If you choose to store your data somewhere other than in the services provided by the university, please specify how you will ensure data security and file backups. Remember to make sure you know every time where you are saving the edited/modified data.

If you are using a smartphone to record anything, please check in advance where the audio or video will be saved. If you are using commercial cloud services (iCloud, Dropbox, Google Drive, etc.) and your data contains personal data, make sure the information you provide in the Data Protection Notice about data migration matches your device settings. The use of commercial cloud services means the data will be transferred to third countries outside the EU.

5. Documenting the data and metadata

How would you describe your research data so that even an outsider or a person unfamiliar with it will understand what the data is? How would you help yourself recall years later what your data consist of?

5.1 Data documentation

Can you describe what has happened to your research data during the research process? Data documentation is essential when you try to track any changes made to the data.

To document the data, I will use:

A field/research journal ☐

A separate document where I will record the main points of the data, such as changes made, phases of analysis, and significance of variables ☒

A readme file linked to the data that describes the main points of the data ☐

5.2 Data arrangement and integrity

How will you keep your data in order and intact, as well as prevent any accidental changes to it?

I will keep the original data files separate from the data I am using in the research process, so that I can always revert back to the original, if need be. ☒

Version control: I will plan before starting the research how I will name the different data versions and I will adhere to the plan consistently. ☒

I recognize the life span of the data from the beginning of the research and am already prepared for situations, where the data can alter unnoticed, for example, while recording, transcribing, downloading, or in data conversions from one file format to another, etc. ☒

5.3 Metadata

Metadata is a description of your research data. Based on metadata someone unfamiliar with your data will understand what it consists of. Metadata should include, among others, the file name, location, file size, and information about the producer of the data. Will you require metadata?

I will save my data in an archive or a repository that will take care of the metadata for me. ☐

I will have to create the metadata myself because the archive/repository where I am uploading the data requires it. ☐

I will not store my data in a public archive/repository, and therefore I will not need to create any metadata. ☒

6. Data after completing the research

You are responsible for the data even after the research process has ended. Make sure you will handle the data according to the agreements you have made. The university recommends a general retention period of five (5) years, with an exception for medical research data, where the retention period is 15 years. Personal data can only be stored as long as it is necessary. If you have agreed to destroy the data after a set time period, you are responsible for destroying the data, even if you no longer are a student at the university. Likewise, when using the university's online storage services, destroying the data is your responsibility.

What happens to your research data, when the research is completed?

I will store all data for 5 years.

If you will store the data, please identify where: researcher's personal laptop.

Remember to keep the data management plan updated throughout the research project.