MASTER'S THESIS

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Name: Haldor Melby and
Thor Harald Hansen

What they say versus what they do: Explorative study of Sustainability reporting in aquaculture versus what is depicted through media

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Sammendrag

Denne masteroppgaven undersøker forholdet mellom kvaliteten på bærekraftsrapportering og medias oppfatninger, og belyser konsekvensene for selskapenes legitimitet og omdømme i offentligheten. Med bærekraftsrapportering som en stadig viktigere måte for selskaper å kommunisere sine miljømessige og sosiale initiativer, blir det avgjørende å utforske hvordan media oppfatter og fremstiller disse tiltakene.

Forskningen benytter en kombinasjon av kvantitativ analyse av bærekraftsrapporter og mediedekning, samt kvalitativ undersøkelse av interessenters perspektiver. Et omfattende datasett bestående av bærekraftsrapporter og mediedekning fra ulike selskaper blir brukt til å analysere sammenhengene mellom rapporteringskvalitet og medias oppfatninger.

Forskningen fremhever betydningen av nøyaktig og pålitelig bærekraftsrapportering, og understreker behovet for robuste kontrollmekanismer og uavhengig verifisering. Det etterlyser utviklingen av metrikker og evalueringssystemer som fanger opp både rapporteringskvalitet og etterlevelse av rapporterte handlinger, slik at gjennomsiktighet og tillit til bærekraftsrapporteringen kan styrkes.

Studien bidrar til den eksisterende litteraturen ved å gi empiriske bevis på forholdet mellom kvaliteten på bærekraftsrapportering og medias oppfatninger. Funnene gir praktiske innsikter for selskaper som ønsker å forbedre sin bærekraftsrapportering og effektivt samhandle med media. Målet med forskningen er å fremme økt bevissthet og forståelse for samspillet mellom bærekraftsrapportering og medias oppfatninger, slik at det kan legges til rette for bærekraftige praksiser og positive samfunns- og miljøresultater.

Preface

This marks the end of 2 years of Master in Science of Business at the Graduate School of Business in Bodø. Writing a thesis has been long, frustrating, challenging and fun. We want to thank the faculty for their excellent edge and for always being to up for discussions and providing feedback if needed. Secondly, we would like to thank our captain in this storm Professor Anatoli Bourmistrov, for always motivating us, being there, and having a smile when we have had troubles and challenges. A special thanks also to Petter Austli Berg and Marie Bergstrøm for sitting in the master room and writing our thesis together; without you guys, the process would not be as fun as it has been. Last but not the smallest, we would like to thank those at home for their support during this time.

"Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime,"
-old Chinese proverb

Thor Harald Hansen

Haldor Melby

Abstract

This master's thesis examines the relationship between sustainability reporting quality and media perceptions, shedding light on the implications for companies' legitimacy and public reputation. With sustainability reporting gaining prominence as a vital tool for companies to communicate their environmental and social initiatives, it becomes imperative to explore how the media perceives and portrays these efforts.

The research adopts a mixed-methods approach, combining quantitative analysis of sustainability reports and media coverage with a qualitative examination of stakeholders' perspectives. A comprehensive dataset comprising sustainability reports and media coverage of a diverse set of companies is utilised to analyse the associations between reporting quality and media perceptions.

The research highlights the significance of accurate and reliable sustainability reporting practices, emphasising the need for robust control mechanisms and independent verification. It calls for developing metrics and evaluation frameworks that capture reporting quality and adherence to reported actions, enhancing transparency and trust in sustainability reporting.

This study contributes to the existing literature by providing empirical evidence on the relationship between sustainability reporting quality and media perceptions. The findings offer practical insights for companies seeking to improve their sustainability reporting practices and effectively engage with the media. Ultimately, the research aims to foster greater awareness and understanding of the interplay between sustainability reporting and media perceptions, fostering sustainable practices and driving positive societal and environmental outcomes.

Index

Table list

Figure list

Abbreviation

Meaning	Abbreviation
Global reporting initiative	GRI
Corporate social responsibility	CSR
Global Salmon Initiative	GSI
Aquaculture Stewardship Council	ASC
Research and development	R&D
Sustainability reporting	SR
Norwegian accounting standard	NRS
European Financial Reporting Advisory Group	EFRAG
International Business Machine	IBM
Statistical Package for the Social Sciences	SPSS
Environmental Social Governance	ESG
Norwegian Agency for Shared Services in Education and Research	SIKT

Chapter 1. Introduction

1.1.Actualization

FIGURE 1: UN'S17 SUSTAINABILITY GOALS
SOURCE: THE 17 GOALS | SUSTAINABLE DEVELOPMENT (UN.ORG)

The world faces significant challenges such as climate change, raised pollution, CO2 emissions, garbage problems, and microplastics in the food cycle. *Our common future (1987)"* addressed the fact that there is a limited number of resources, and the behaviour must change. To help this, the United Nations (UN) established 17 sustainability goals, highlighting the importance of sustainability. Separately the European Union (EU) has introduced the corporate sustainability reporting directive (CSRD), when implemented is requiring companies to report their non-financial information more accurately and satisfactorily (EFRAG, 2022). By having such regulations, firms will play a more prominent role in the fight against climate change. Firms have already voluntarily reported their effect on the external environment. KPMG (2020) analysed the world's largest companies with a separate or integrated sustainability report in their annual report. Moreover, the result was an increase from 12% having it in 1993 to 90% of the largest companies having it in 2020. As there has been a raised awareness, there has also resulted in more research on it.

Companies are talking about their sustainability (via reports), but it still needs to be improved as both quality of those reports, and their assurance still needs to be higher. According to Adams (2004), the information provided through reports is biased, as companies may have an

intensive to publish reports when they are performing well. Moreover, this can be evidence of «greenwashing» They do this because it is cheap, easy and may help give them a better public image because they are at least reporting. «To *greenwash reflect concern with communication that misleads people into holding overly positive beliefs about an organisation's environmental performance, practices, or products"* (Lyon & Montgomery, 2015, p.225). According to Cheng et al. (2014), investors are aware of this and address the need for more relevant indicators to measure environmental and non-financial performance.

According to Fallan (2020), The general quality in Norway needs to be higher in sustainability reporting. Finanastilsynet (2020) derive at the same result, that there needs to be more extensive reporting. According to Fifka (2011), sustainability reporting is crucial for companies to communicate their social, environmental, and economic performance and impacts. If they choose to publish little and not relevant information, this can also be an instance of "greenwashing". The quality of reporting reflects the performance of the companies, meaning that higher quality reporting would mean better transparency from companies and the resurging of relevant information to the public and stakeholders. To explain this (Fallan (2020) say that when companies publish more than necessary, there is either an information-sharing or a justification purpose. Compliance with both implicit and explicit industry rules is crucial for companies. However, the quality of sustainability reports can vary depending on how these norms are implemented (Carmichael et al., 2023).

There is another source of evidence for the actions of companies - mass media, that can report and reflect companies' actions. Investigating this can find relevant information companies may not be interested in voluntary reporting. According to Lyon & Montgomery (2015), pressure from civil society and government restrictions are two measures to deter greenwashing. The media's interest is separate from that of companies. The journalist's role is to promote the personal view to balance, objectively report a case, and promote several sides (Ryan, 2001). They may publish articles of ethical concerns which may not have been regulated in law. The media can bring more information to light, making the case newsworthy. Here is where it would be interesting to see if there are links between what is reported in media and what is in companies' reports.

1.2. Problem statement and purpose

This study intends to analyse the relationship between sustainability reporting quality and media perception. Our investigation aims to evaluate the information quality provided in companies' annual reports while utilising media as an additional source of information and a controlling factor. Through this approach, we can categorise companies and create a matrix based on their combined scores from annual reports, ESG information, and media coverage. This analysis will help determine whether companies are genuinely aligning their actions with their stated commitments or if they are engaging in misleading practices. Thus, our problem statement can be formulated as follows.

«What is the relationship between the quality of sustainability reporting and media coverage?"

1.3. Structure of the master thesis

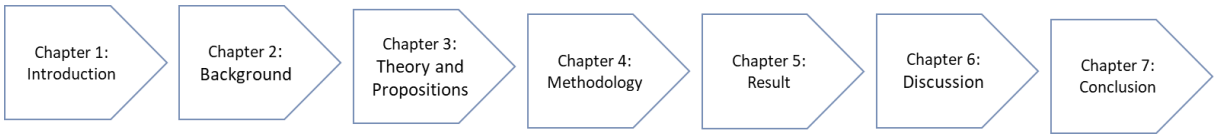

FIGURE 2: STRUCTURE ASSIGNMENT

The assignment is built on seven main chapters shown in Figure 2: Structure assignment. From Chapter 2, a figure is shown on where you are in the thesis. Chapter 1 introduces the thesis with actualisation and the problem statement we want to examine. Chapter 2 gives insight into the relevant background and does a literature review on the topic. In Chapter 3, we present the two leading theories and the concept to tie the thesis together; from this, we also present nine propositions we have created. Before Chapter 4 show our methodology. The result is shown in Chapter 5, which is discussed in Chapter 6. Moreover, finally, we have a conclusion for the thesis in Chapter 7, where we put forward implications and answer our research question.

Chapter 2. Background

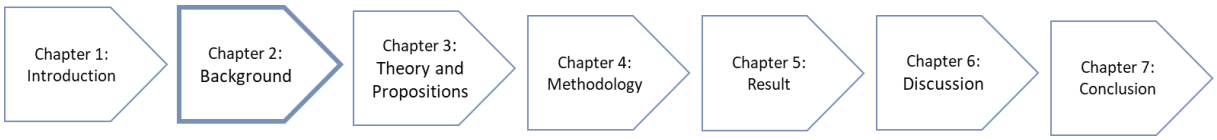

FIGURE 3: BACKGROUND

This chapter aims to explore sustainability reporting and how the media plays a role in shaping public perceptions of the industry, as well as the phenomenon of 'washing' within the industry.

In recent years there has been a growth in studies concerning sustainability research. (Meutia et al., 2021). However, corporate social responsibility reporting is not a new phenomenon. Guthrie and Parker (1989) examined the annual reports in a century from 1880 to 1980 of a mining company in Australia. What they did was report incidents, but primarily social concerns around employee strikes and union issues. Say that companies used reports like these to green themselves and only saw it as a potential sponsoring opportunity to get a better public image (Gray, Walters, et al.1995). Epstein and Freedman (1994) reveal that stakeholders want more information than there traditionally has been in the annual reports. There has also been a problem with the presentation of reports. Because when companies have published reports, these have either been on the firms' websites or have been difficult to navigate and find (Gray, Kouhy, et al., 1995a). Furthermore, according to Adams and Frost (2006) stakeholders still want performance beyond traditional financial performance. De Villiers and Van Staden (2010) 's research also supports that stakeholders indeed want firms to disclose environmental reports. The results indicated that many stakeholders wanted it, and websites have played a role in disclosing this information. However, when reports were published, stakeholders naively consumed the information in good faith(Adams, 2004).

According to Fifka (2011) reporting is a crucial tool for companies to communicate their social, environmental, and economic performance and impacts. The study provides an overview of the factors influencing corporate responsibility reporting, including sustainability reporting, by reviewing the existing empirical literature. Other studies have found a positive

correlation between publishing reports and financial performance, some of these are (Berthelot et al., 2012; Bannò et al., 2021). Clarkson et al. (2011) find that firms must invoke the changes and transition in their operation, but all firms may not have the capacity to do this. Then, according to Fallan (2020), companies that overshare information either have a justification or gain purpose. In his study, Fallan (2020) show that listed companies perform much better and may use sustainability reporting as a tool and a strategy to give a competitive edge towards those that do not report.

Fallan et al. (2021) and Nygård (2020) have both examined the role of sustainability reporting in Norway. Nygård (2020) examined the firms on the Oslo seafood index, where he tried to look at the value of the firms correlates with their sustainability reporting practices, the quality they disclose and if certification plays a role. While Fallan et al. (2021) focused on the quality of the reporting of listed firms and concluded that the quality was shockingly low even with the resources they have and the availability to change their behaviour.

Following this, Fallan et al. (2021) explain that the reason for bad-quality reporting is low repercussions of having low-quality reporting and minor penalties or fines. This means that companies can say they are reporting accordingly to a standard without doing so. Vormedal & Ruud (2006) assessed a need for more regulatory reporting practices as only 10% of the companies in their sample were deemed to follow the law on environmental reporting, while only half complied with the provisions on the working environment and gender equality.

Christensen & Johansen (2022) look to check the usage of the reporting standard, GRI among the top 200 listed companies in Norway to uncover if they were reporting correctly or just saying they were. Melting and Tungen (2012) look at the implementation of NRS-16 in 2007 as a tool for improving reporting practices that have had an effect. Nevertheless, in both cases, the conclusion and the answer is no.

To try and explain this, other studies have been on the internal factors for companies and what role these have. Hansen and Wenche (2022) study the internal context for companies to report well on sustainability. Solem and Islek (2022) Look at the governance characteristics of listed companies' relationship to their ESG performance. These findings highlight the growing attention and the lack of enforcement of sustainability reporting in companies to meet the information demands of their stakeholders.

While Framvik (2022) studied the role of assurance in reporting and its effect, the companies have gotten it assured to confirm that the report is correct. Braam, (2018) says companies with superior corporate social performance are more likely to employ third parties to assure their sustainability reports than companies with inferior sustainability performance.

Many terms and phrases are used to explain the misleading information: to talk about something and walk a different route. When a company tries to greenwash itself, three main strategies are deception, diversion, and discretion (Carmichel et al., 2023).

One form of washing is "grey washing," where companies do not necessarily strive to be the best but aim to avoid being seen as the worst in their industry (Oliver, 1991). Through benchmarking themselves against competitors, companies may realise that improving their sustainability practices and publishing detailed reports would be costly and time-consuming. As a result, they may choose not to invest in changing their public image, as they perceive the benefits to be insufficient compared to the resources required for the changes. As (Fernandez-Feijoo et al., 2013) find, pressure stakeholder pressure firm transparency and performance.

Another form of washing is "brownwashing," where companies may selectively report on their sustainability practices to maintain a positive public image (Montgomery & Robertson, 2022). Companies already perceived as sustainable may feel that they do not need to report on all aspects of their actions, as this could tarnish their reputation. Consequently, they may report only on their most positive sustainability practices and omit information on any hostile or questionable behaviours.

So if the quality is bad, could there be a way to uncover this without being directly involved within the companies? Femundshytten Nyvoll and Myhre Engelkor (2021) Study climate risk and how companies report according to them. Boichuck and Lyapustina (2014) examine climate risk and the environmental role of the biggest oil companies in Russia. However, they use media as another tool to rate the companies with positive and negative news using an index, and if this could uncover greenwashing. Apostol (2011) also investigated companies' corporate social responsibility and how they are depicted in the media in her PhD dissertation project. To look at media is interesting as “many people believe they “know” a business or a business leader based on what is presented in the news” (Carroll, 2010, p.153). The media

have long been regarded as the fourth estate, which describes their power and influence in society. While the origins of the term are disputed, it is generally understood to refer to the media's role as a check on the other three branches of government. The media exercise this power through their journalism, which can shape public opinion and hold officials accountable (Jazil, 2018). As such, media wield significant power through their ability to set agendas and shape public opinion on important issues (Govaerts, 2021). This can profoundly impact society, shaping public attitudes and influencing policy decisions. However, media companies face a conflicting imperative to balance their financial interests with their public duty to reveal information (Osmundsen & Olsen, 2017). The media can significantly impact companies, as positive or negative coverage can shape public perceptions and influence consumer behaviour. For example, if a company is portrayed negatively in the media, this could lead to a decline in sales or a loss of business.

> Positive financial results of Statoil and Hydro are considered newsworthy since this has a direct impact on the majority of the audience. Positive financial results from smaller companies are less likely to be covered. However, Norwegian business news coverage appears to be more negative than positive. From 2004 to 2006, for example, several Norwegian businesses experienced crises caused by corruption, food poisoning, strikes, and overbudgeting. Media coverage and focus on reputation issues in Norway have been substantial, and as a result, the general trust in business seems to be low among Norwegians. (Carroll, 2010, p.163).

Recent years have seen a shift in media towards focusing on infotainment – information published for entertainment purposes. This change is driven by a quantitative measurement of 'clicks' rather than a qualitative assessment of the quality of the published content. As a result, media coverage often tends to focus on problems rather than solutions (Bonfedelli, 2010). Journalists can be biased in their reporting, and the media's focus on specific topics, such as sustainability, can follow an issue attention cycle (Olsen & Osmundsen, 2017). This means a particular topic may receive much coverage before attention shifts to a new one. The media's ability to set agendas and shape public opinion underscores their power and influence in society. Thus, media is a source that can influence the company’s legitimacy - you can say it has the same function as sustainability reporting.

The media decide what is relevant to publish to the public and thus have the “gatekeeping effect” (Bonfedelli, 2010). Journalists face a lack of expertise on specific topics, as they are

reporters and not specialists in every area they cover. This can lead to questions about the newsworthiness of specific stories. However, as Bonfedelli (2010) notes, the substance of news articles can also suffer when they become widespread in daily newspapers. This underscores the importance of quality journalism and the role of trusted sources in shaping public opinion. Despite these challenges, the agenda-setting power of the media means that even high-quality sources are prioritise based on public interest. Media outlets vary in size and focus, covering different regions and cases. Local newspapers report to nearby stakeholders, while regional, national, and international specialist journals cover their niche and provide unique perspectives. This allows for critical information gathering, as media outlets may report on activities in districts that companies may not want to disclose. However, the objectivity of media sources varies, with some outlets being financed by the industry and presenting a favourable image, while others may have biases.

To our knowledge, the media profiles for firms in Norway have not been examined before with a direct link towards sustainability reporting. In conclusion, it can be challenging to understand the purpose of the firm's action without direct contact and being a part of the culture. However, we can use the annual report, sustainability reports, and media articles to triangulate the information and fully understand the actions. With this thesis, we wish to contribute to further developing this field.

Chapter 3. Theory and propositions

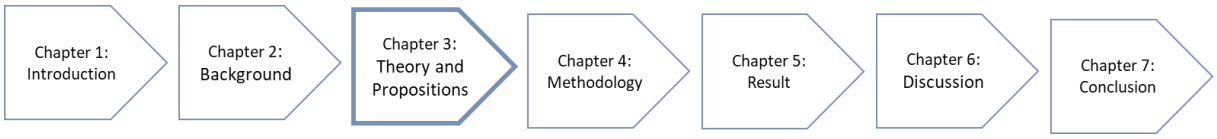

FIGURE 4: THEORY AND HYPOTHESIS

This chapter aims to explore the theoretical frameworks of legitimacy theory and signalling theory. Through our literature review, we choose to use these theories. Legitimacy theory is a broadly used concept used when studying sustainability reporting. It is the second most used theory used to support the hypotheses created and describe the behaviour of companies after stakeholder theory (Meutina, 2021). The chapter will delve into the key factors that may impact outcomes and make propositions on how independent variables are likely to affect dependent variables. Drawing on Legitimacy and Signalling theories, we can explain the factors influencing companies' behaviour in this context. Making it a valuable lens for this analysis.

3.1. Legitimacy theory

The basis for the theory is that a firm is operating in a contract with its surroundings, and to provide the needed information, one can achieve this by publishing reports. According to Schuman (1995, p.574) «Legitimacy is a generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed systems of norms, values, beliefs, and definitions». If a firm is not meeting society’s expectations, this will lead to negative repercussions. Following legitimacy theory, firms will create strategies to mitigate this risk. According to Dowling and Pfeffer (1975, p. 122) legitimacy is:

> A condition or status exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part. When a disparity, actual or potential, exists between the two value systems, there is a threat to the entity's legitimacy.

Schuman (1995) tries to categorise the different aspects of legitimacy theory as it does not have a clear definition and is a broad thermology used to explain different distinctions.

Furthermore, Schuman (1995) explains that there are two main directions: institutional legitimacy and strategic legitimacy. Institutional legitimacy is gained from observers "looking in," and strategic legitimacy is the company "looking out". Further there are three types of organisational legitimacy. **Pragmatic legitimacy:** To be viewed as a professional actor in an industry, a company must appear to be taking the right actions. The company does things in a way that is generally accepted as the right way, not because they necessarily see it as the way to do things, but because it is motivated by gaining legitimacy from this method of operating. **Moral legitimacy:** The company follow ethical and moral rules to gain legitimacy. Companies that do not follow laws or conduct business morality lose legitimacy. Sustainability reports would fall under this definition; it is a way for the company to show that they are morally conducting themselves and can gain legitimacy. **Cognitive legitimacy:** To be seen as a legitimate company, the observer must understand what the company does, and systems must be in place to express the idea and to assure its legitimacy. For example, there is a massive difference between the legitimacy of a new-age healer and a surgeon at a hospital. The surgeon gains legitimacy from the certification in the field, such as education, while the healer has no formal certification. Making the healer seem less legitimised than the surgeon. Sustainability reporting gains legitimacy from the standards that have been and are being developed, such as the GRI- standard.

Legitimacy theory is also commonly used to explain the behaviour of companies, using this gives a good indicator of how they legitimise their actions. Under categories of this is that companies use it to either seek validation or as a continuation of validation (Schuman, 1995).

According to Gillet-Monjarret (2015, p.101).), to also be good when one studies media: «Legitimacy theory is robust in predicting what is being said and more precisely as far as the media pressure is concerned»

Fallan (2020) argues that the reporting may have a resource allocation goal, and the reports are used to benchmark performance regarding KPIs. One method firms use to legitimise their operations is publishing reports outlining their activities and demonstrating their commitment to transparency and accountability. By doing so, companies can later reference the report and claim they have already disclosed information about their actions. This could shift the blame from the company to stakeholders who may have acted earlier if they disagreed with the company's actions. To summarise is a commonly used theory in explaining sustainability reporting for firms, it is well-known and broadly used to explain several aspects of

sustainability reporting (Tyson & Adams, 2019; Meutia et al., 2021).

3.2. Signalling theory

Like legitimacy theory, there is no standard description for signalling theory, but it is steadily used in different literature to describe different characteristics (Connely et al., 2011). Spence (1973) is often referred to when trying to describe it. Signalling theory is fundamentally concerned with reducing information asymmetry between two parties (Spence, 2002/ Connely et al., 2011.p.2). Spence started by exploring signalling when he described the signalling equilibrium between employees and employers when negotiating wages. Later the theory was explored more and made to include other forms of communication.

When two parties communicate, the sender of the information must decide how they want to send their message. A company may use several different forms of communication to share information with other parties. Explicit forms of communication are sustainability reports, financial reports, commercials, and direct contact with other parties. More implicit forms are how the company represents itself through symbolic means. Companies may try to convey a message of success and profitability by showcasing their impressive office spaces or investing in high-end uniforms (Connely et al., 2011).

The annual reports produced by companies serve as a means to disseminate knowledge regarding their activities and operational processes to the public. In essence, these reports act as signals from companies to stakeholders, conveying information about their operations. Stakeholders are tasked with deciphering the information presented in the reports and determining its reliability and relevance. It is worth noting that diverse recipients may interpret the data in distinct ways, with a finance and paper journalist potentially deriving a different understanding from a report compared to an environmental journalist.

Signaling theory helps explain how sustainability reporting serves as a mechanism for companies to communicate their sustainability commitment and influence stakeholders' perceptions and actions (Connely et al., 2011).

3.3. Variables

Dependent variables:

- Sustainability Reporting score
- Media score.

Independent Variables:

- Profitability
- Size
- Ownership concentration
- Age of the company
- Gender balance
- Third-party Assurance
- Oslo stock exchange/Euronext growth
- Bonus for reaching sustainability KPIs.
- Pages in the rapport

We did an extensive literature search and based our propositions of the variables on the findings in the studies.

DEPENDENT VARIABLE	STUDY	FINDINGS. SIGNIFICANT EFFECT ON THE DEPENDENT VARIABLE
SIZE	Hansen, Wesche (2022) Wickert et al. (2016) Nygård (2020) Bae Choi (2013)	Positive Positive Positive Positive
Profitability	Clarkson et al. (2011) Al Hawai (2022) Vormedal & Ruud (2006)	Positive Positive Positive
GENDER BALANCE	Bannò et al. (2021) Lapuente & Suzuki (2021) Liao et al. (2014) Uyar et al. (2020)	Positive Positive Positive Positive
THIRD-PARTY ASSURANCE	Braam (2018) Alon (2015) Framvik (2022) Dutta (2019) Baier (2020) Finanstilsynet (2020) Casey & Grenier, 2015	Positive Positive Positive Positive Neutral Neutral Neutral
AGE OF COMPANY	Masum et al. (2020) Dienes et al. (2016)	Positive Neutral
KPI BONUS	Clarkson et al. (2011)	Positive
LISTED	Fallan et al. (2021)	Positive
OWNERSHIP STRUCTURE	(Fernandez-Feijoo et al., 2013)	Positive

The model beneath shows what theory explain which variables.

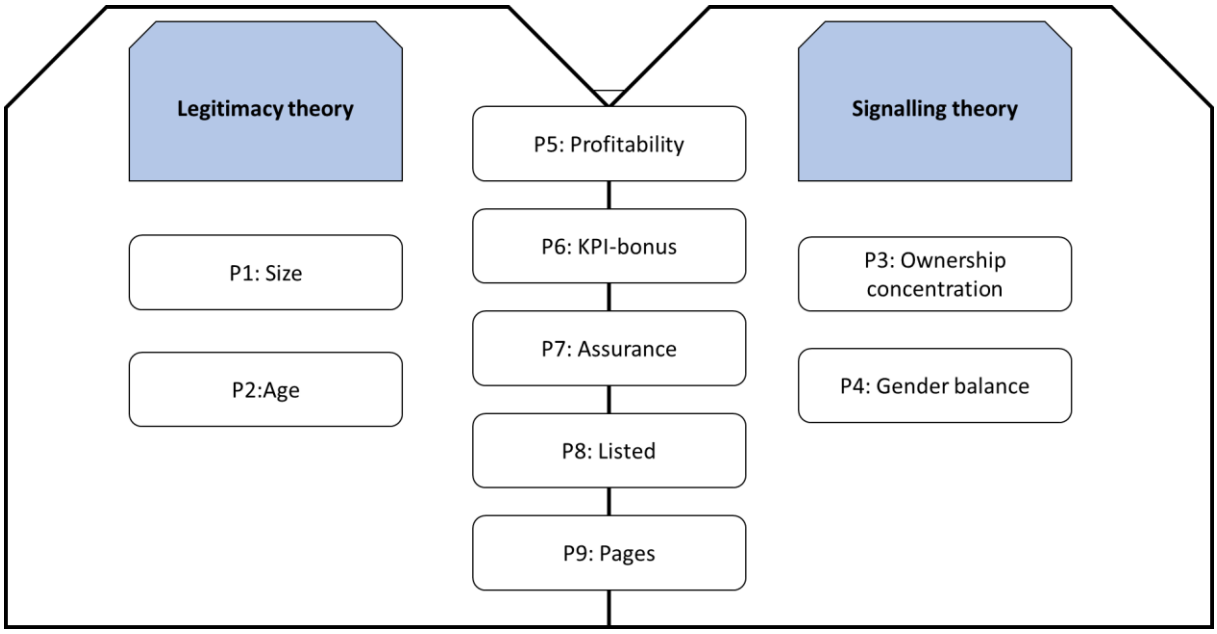

FIGURE 5: THEORY AND DEPENDENT VARIABLES

3.3.1. Size

According to Fifka (2011) the size of the company is one of the most researched aspects. From 185 analyses' on sustainability reporting, 57% used size as a variable. A reason for this extensive usage is further explained to be that it is easy to gather data about because companies publish this information, which is easily quantifiable (Fifka, 2011). Bae Choi et al. (2013) Analysed companies in Australia and made the findings relevant to legitimacy theory. Larger, more visible firms disclose more information about their operation to legitimise their actions through comprehensive carbon disclosures. Large companies have more stakeholders, and it is more critical for them to get information about how the companies operate. Furthermore, large companies have more resources, so they can dislocate and have a special division and more resources for reporting (Bae Cho et al., 2013).
«Furthermore, there is no study indicating a negative effect of firm size. In all the studies included, either a positive size effect on sustainability reporting behaviour was measured or no effect at all» (Dienes et al., 2016p.168).

Similarly, Wickert et al. (2016) makes the connection between smaller and bigger firms regarding their resources. The number of resources limits the action perspective contra the saying perspective as it will be costlier to implement the talk for more prominent firms. They

are making it so that they are more willing to talk with their reports instead of implementing actions (Wickert et al., 2016).

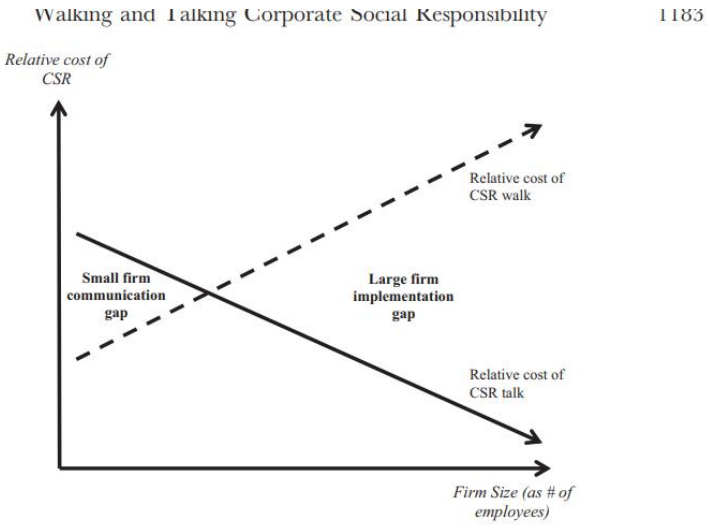

Figure 1. Relative organizational cost of CSR engagement (as relative share of the costs of CSR walk and CSR talk in total firm cost)
Notes: Black line: Relative cost of CSR talk; dotted line: Relative cost of CSR walk.
Source: Own illustration; developed from Baumann-Pauly et al. (2013).

Source: Wickert et al., 2016. P.1183

Overall, the financial disclosure analysis suggests that larger firms and firms in polluting industries tend to make more financial disclosures related to their environmental operations (Bewley & Li, 2000, p.17)

We determined the size of the companies based on the number of employees disclosed in their reports. However, we acknowledge that discrepancies may exist due to how companies report their employee numbers, such as whether part-time employees are included or not. While these discrepancies could potentially affect our results, we believe they have a minor impact and do not significantly alter the relative size differences between the companies.

Proposition 1: Bigger companies have better reporting quality.

3.3.2. Age of the company

Dienes et al. (2016) systematically reviewed sustainability reporting articles from 2000-2015. The result from the review says that company age does not offer or significantly affect sustainability reporting, as board composition, firm size, and profitability have been the factors which have had this effect.

Masum et al. (2020) studied corporate social reports and used evidence from Bangladesh. The firm's age had a significant positive result, meaning that older firms conducted reporting better than new ones.

Contrary to Maryana and Carolina (2021), which found that the firm's age significantly negatively affected sustainability reporting. When they measured the quality of the firm's performance using GRI indicators and the amount of information disclosed.

Studies show positive (Masum et al., 2020) and negative (Dieneset et al., 2016) correlations between sustainability reporting quality and the age of a company. It is worth noting that many of the firms listed on Euronext Growth are relatively young compared to most on the Oslo Stock Exchange. While the ages of most companies are disclosed in their reports, we also had to rely on secondary sources such as company websites or proff.no to determine the age of some firms.

Proposition 2: The age of the company does not contribute to the quality of sustainability reporting in a significant way.

3.3.3. Ownership concentration

Fernandez-Feijoo et al. (2013) conducted a significant study exploring transparency in reporting practices for stakeholder-oriented companies. The research demonstrated that the mounting pressure on these companies resulted in more extensive and definitive information being disclosed in their reports. Similarly, Adams (2002) concluded that reporting practices are influenced by company size and predominantly by internal and external organisational culture.

Companies with multiple owners have a greater reporting obligation than those with fewer owners. The presence of multiple owners often implies that they are not directly involved in the company's day-to-day operations. Therefore, it becomes essential to keep informing the company's activities and performance through reporting.

We added the ownership percentages of the four most significant shareholders to get data about owner concentration. This led to our proposition which says:

Proposition 3: Companies with many owners have high reporting quality.

3.3.4. Gender balance

Some studies have shown that companies with women in management or having the role of sustainability officers have better sustainability reporting than if there are only men (Bannò et al., 2021). Women are more dynamic, have better communication skills, are more risk orientated, and are more inclined to see sustainability reporting as a helpful tool. Furthermore, Uyar et al. (2020) also support the notion that women are philanthropy-oriented and more effective leaders.

Lapuente and Suzuki (2021). Support this by studying public managers and their gender. Through their study, women are more inclined to serve the public interests and show openness. Liao et al. (2014) measured the carbon disclosure effectiveness of the 329 largest listed firms in the UK. They concluded that boards with women represented gave far more detailed and extensive disclosure on the aspect of greenhouse gases.

This variable is dichotomic, meaning that the reports have either been made with women included in the prosses or without. Based on the previous literature, we derive to a proposition which states:

Proposition 4: If women are in management, sustainability reporting will have higher quality.

3.3.5. Profitability

According to Clarkson et al. (2011), when looking at heavily polluting firms in the chemical and oil and gas industries, there is a direct linkage between environmental performance and positive financial performance. Additionally, progressive firms perform better than regressive firms that do not dislocate their environmental performance.

Al Hawaj and Buallay (2021) Did a meta-analysis of 3000 companies in 80 countries and looked at different sectors and their ESG performance. Here they also found a positive correlation between ESG performance and profitability, and the cost of conducting reporting did not exceed the financial gain of having it.“Several studies show that company size/profit is likely to influence the level and extent of reporting in that reporting is generally more prevalent amongst larger firms” (Vormedal & Ruud, 2006, p.3)

In this thesis, we measured profitability using earnings per share (EPS). EPS is a relative measure that allows us to compare companies of different sizes. We used basic EPS and the EPS disclosed in the companies annual reports. In cases where companies did not disclose EPS, we calculated it from the financial statements in their reports. Most companies reported their financial statements in NOK, but some used EUR, USD, and DKK. To ensure comparability, we converted the foreign currency to NOK using historical currency rates as of December 31, 2021, which is the date that the companies used in their reports.

We excluded EPS results from two unlisted companies since their financial reports did not provide EPS data. By doing so, we ensured that our analysis was based on comparable data from all the companies in the sample.

Proposition 5: The better profitability, the better reporting quality.

3.3.6. Bonus for achieving sustainability KPIs.

Some companies give bonuses if sustainability-related KPIs are achieved, motivating the managers to follow strategies to reach the indicators set for the firm. The interest of the board

may not be on the same level as the manager. Park (2016) says KPIs are sometimes linked to sustainability performance. In some examples, shares are given as an incentive. As he explains that: "Boards should strive to identify the sustainability KPIs most crucial to their core business, assessing both currently used metrics and other available resources" (Park,2016, p.57)

In many instances, companies have not disclosed information about bonuses paid regarding KPIs, making it difficult to find relevant data for the analysis. However, because the literature states that this is a good thing to do, we derive to the proposition:

Proposition 6: Companies that give bonuses for achieving sustainability-related KPIs will have better sustainability reporting quality.

3.3.7. Third-party Assurance

The usage of assurance secures a degree of trust that the reported information is correct and can be trusted. Gillet-Monjarret (2015) explain that through the pressure from media and external stakeholders, more and more companies are undergoing and using a third party to give assurance to their reports. However, Finanstilsynet (2020) remarks that a third-party assurance in CSR reporting is fundamentally different from the assurance given in the annual account as it only gives "limited assurance" in the CSR but "reasonable assurance" in the annual accounts. Braam and Peeters (2017) explain this as a company strategic choice:" *by selectively choosing limited assurance on specific sections of their sustainability reports. The self-serving use third-party assurance as a tool to actively manage stakeholders' perceptions of the credibility of the CSP information disclosed, facilitate perceived legitimacy and enhance corporate reputation*. (Braam & Peeters, 2017, p.178)

The degree of third-party assurance usage is different from culture to culture. Kolk and Perego (2008) say that companies in shareholder-orientated countries are more likely to have external assurance, which usually consists of the few big accounting firms.

Casey and Grenier (2015) examined external assurance in the US and compared it to other countries. They concluded that even though the US is the world's largest capital market, the

usefulness of assurance was not prevalent when they looked at the use from the investor's side. They remarked, however, that industries with more resources and low leverage would spend money on reports and assurance in the CSR reports. The size of the companies also matters as «large companies are significantly more likely to have their sustainability reports assured compared with small companies» *(*Alon & Vidovic, 2015, p.345*).* If an accountant conducted the assurance, the report's legitimacy would also be higher (Casey & Grenier, 2015).
The usage of legitimacy theories contradicts this through as:

> Legitimacy theory, however, predicts that the companies with an inferior corporate sustainability performance may also benefit from third-party assurance. More specifically, these companies selectively and proactively employ third parties that provide assurance to signal that the disclosed information is credible (Braam & Peeters, 2017, p.168)

This does not seem to be the case in the real world. Alon and Vidovic (2015) stated that managers perceive assurance as a tool for confirming internal processes and is not used for signalling external stakeholders.

Dutta (2019) Looked at a sample of 176 Finish companies and found that companies which performed exceptionally well with sustainability also had an external assurance. «Conforming to legitimacy theory, the findings suggest that superior environmental performers provide information about their environmental performance in sustainability reports to show their commitment to environmental protection» (Dutta, 2019, p.1412). Supported by Alon and Vidovic (2015), which states that firms may use it to signal a commitment to sustainability.

One must be careful with what kind of information is assured thou; Baierer (2020) did an in-depth analysis of the perception of low-depth assurance to 150 business students and how they viewed an assurance. The study concludes and remarks to businesses to be careful of using graphs and statistics in the assurance as it may be confusing and thereby can lead to misinterpretation of the information, even though it was positive. Baier (2020) conveys that the information given should be written in an easy and understandable language.

Framvik (2022) checked the assurance of the 200 biggest companies in Norway. He found a positive correlation between the quality of assurance and the quality of sustainability reporting.

Proposition 7: Companies that had their sustainability reports third-party assured have higher quality.

3.3.8. Listed

The stock exchange on which a company is listed can affect its financial reporting requirements. For example, companies listed on the Oslo Stock Exchange are subject to more stringent regulations and must adhere to accounting practices applicable to larger firms. Conversely, companies listed on Euronext Growth are typically smaller and subject to less stringent reporting requirements. As a result, they may not view failing to report on sustainability as a significant legitimacy risk due to the limited negative institutional legitimacy consequences associated with their smaller size (Fallan et al., 2021). Because the guidelines are not enforced as strictly, companies may not see them as necessary. As a result, they may report on fewer sustainability indicators compared to companies listed on the Oslo Stock Exchange.

One example of how the need for regulations is being addressed in Norway was through the introduction of the NRS 16 accounting standard in 2007. This standard sets requirements for the content of annual reports, including the disclosure of information related to social and environmental issues, and was based on international reporting guidelines. By requiring companies to provide information on their environmental impact, health and safety, social responsibility, and other non-financial aspects of their operations, the standard aimed to increase transparency and accountability.

To support companies with regulatory laws, several guidelines are available. They are designed to promote good reporting behaviour by providing a framework for companies to measure their activities and report on their sustainability performance. Some examples of these guidelines include:

The Guidelines on Non-Financial Reporting from the European Union
The Task Force on Climate-related Financial Disclosures (TCFD)
The Carbon Disclosure Project (CDP)
The Sustainability Accounting Standards Board (SASB)
The Global Reporting Initiative (GRI)
ISO 26000 (Social responsibility)

TABLE 1: GUIDELINES

As it is a short list of examples, it helps to promote the idea that much material is available to help a company report on sustainability. The problem arises when there is no enforcement of the guidelines. This leads to companies can practice little changes in their actions but saying they are following the idea of reporting to create a positive image outward. Fallan (2020) have highlighted this as a problem because of the lack of enforcement of regulations.

Proposition 8: Companies listed on the Oslo Stock Exchange have higher quality reporting than those listed on Euronext Growth.

3.3.9. Pages in the reports

The number of pages in a report will also differ based on which stock the firms are listed in, as they follow different laws depending on which stock they are listed on. Also, some have the accounting of the whole business and include the accounting for the whole of the firm or separate for each sector. Some firms have chosen to have an accounting from the different areas they are operating in, and this may give the belief that the firm shows transparency but may also be a strategic tool to hide information by just publishing a lot.

> The presentation, within the same document or reporting process, of the financial on the one hand and the social and environmental on the other, becomes an important element in demonstrating the extent (if at all) to which the organization reconciles

these matters (Gray, Kouhy, et al. 1995a, p.5)

Proposition 9: More pages in the reports leads to better quality reporting and a better reputation in the media.

3.4. Summary

This section mentions the theories we will be using in the thesis. We showed the historical definitions and usage for them. Legitimacy is a contract between the firms and society and sustainability reporting to legitimise their operations. It is transparent and signalling theory to show the public the actions of the companies through strategic choices. They are also in connection with the media as this is the secondary stakeholders' method to gain information. From our literature search, we created nine propositions and described the possible outcomes for each proposition. We classed them accordingly to the literature on the subjects as these propositions are either directly under legitimacy theory, signalling or a combination of both. As shown in Figure 5: Theory and dependent variables.

Chapter 4. Methodology

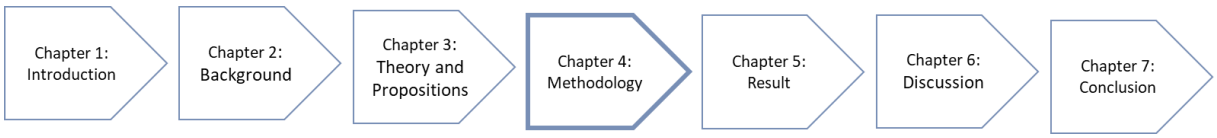

FIGURE 6: METHODOLOGY

This chapter will describe the methodology for investigating the relationship between sustainability reporting and media coverage. Specifically, we will outline the research design, sampling procedure, data collection and the analysis techniques we have used. Then we will say something about the validity and reliability aspects and the limitation of our design.

4.1. Scientific approach

Easterby-Smith et al. (2021) define the scientific approach as the way to gather data, test hypotheses and draw conclusions from empirical data gathering and testing. Depending on the methodology used, different conclusions can be made. Furthermore, Easterby-Smith et al. (2021) say that there is no correct way to do research, but the method used says something about what the point of the research is and in what direction the study is heading and best suited.

We have used deduction (from theory to data) as we set the theories before the data collection process. We were also using the falsification principle from Karl Popper (Easterby-Smith et al., 2021). Karl Popper said science is only if it can be tested through theories and testing. Using falsification help evolve science through experiences and the refinement of new information (Johannessen et al., 2020). Here the objective standpoint is essential. We are doing falsification, using «a research design that seeks evidence to demonstrate that current assumptions or hypotheses are incorrect» (Easterby-Smith et al., 2021, p.143). There are different ways to approach the collection of knowledge and conduct research. The use of falsification is closely tied to positivism. «The key idea of positivism is that the social world exists externally and that its properties should be measured through objective methods» (Easterby-Smith et al., 2021, p.77). We are using mixed methods, a combination of quantitative and qualitative methods (Easterby-Smith et al. (2021), because our research is

explorative in nature, and we want to raise the information in the field and contribute further to the progress of knowledge through testing our propositions.

4.2. Design

According to Easterby-Smith et al. (2021), it is an important choice before the start of a project for researchers to be aware of which direction the project is headed. The design of our thesis is based on the mixed-method approach. This is appropriate for this study as it allows for collecting and analysing qualitative and quantitative data and identifying relationships and patterns among variables. According to Easterby-Smith et al. (2021), «Mixed method throws light on new perspectives on research methods, to increase the credibility of results, generalisation ability, and give a deeper insight » (Easterby-Smith et al. 2021p. 137*).* Furthering this by using the exploratory design and creating a matrix in the result, which has not been done before in Norway, which is fitting because, according to Johannessen et al. (2020, p.258)

> Exploratory design involves a researcher gathering qualitative data to explore a phenomenon, followed by quantitative data to explore the relationships that exist. This design has clear connections to studies where the researcher wants to use qualitative methods to generate hypotheses that can be tested using quantitative research.

When we collected data, we used a qualitative approach to scoring companies after content analysis which is mentioned further in the chapter. Analysing the data, we quantified the result and utilised quantitative measures to group them into separate categories. This follows the model of Creswell and Clark (2011). Like fig 7 shows,

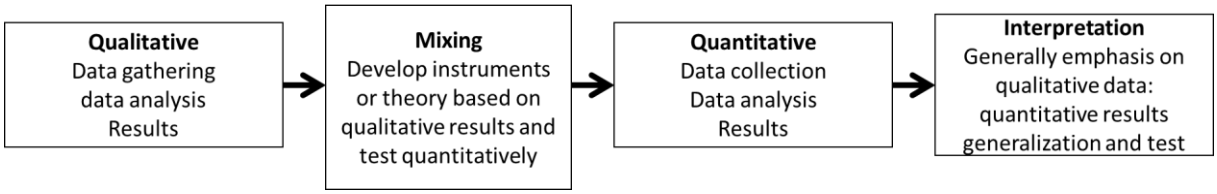

FIGURE 7: EXPLORATIVE DESIGN (CRESWELL & PLANO CLARK, 2011)

4.2.1. Research design

The thesis design gives a plan for how the research will be conducted. A good strategy for reviewing the literature, creating a problem statement gathering, reviewing and using the data is essential to secure a good process. (Johannessen et al, 2020) The research question that we wish to answer in this thesis is:

"What is the relationship between the quality of sustainability reporting and media coverage?"

To find a proper context for our thesis, we choose listed companies that publish sustainability reports or how the business affects the environment following Norwegian law.

Firstly, the objective is to look at the annual reports and score them accordingly using a well-established framework, scoring them after three categories: environmental, social and governance, yielding an ESG score. Secondly, relevant articles mentioning the firms are scored, whether positive, neutral, or negative. The use of this sentiment analysis is described further down in the chapter. Lastly, combining these scores would categorise which group the firms are in the matrix we have created.

4.3. Population and sample

When conducting research for a master's thesis, carefully considering the choice of sample and population is essential. According to Watkins and Gioia (2015), the sample size is crucial, as it can significantly impact the time required to complete the project. Additionally, researchers should determine whether a qualitative or quantitative approach is more appropriate, depending on the phase's size. For this thesis, the sample of interest is the aquaculture industry listed on the Oslo stock exchange and the Euronext Growth Oslo. We are researching a sample which is specified as the aquaculture industry. The sample is the 27 companies (see tab 7); this resulted in 27 annual reports for 2021 and 3,552 media articles regarding these. The reason for choosing listed companies is that they have a higher degree of interest for the public. They often have articles written about them due to the number of stakeholders they have; moreover, their reporting practices are typically more advanced (Fifka, 2011). The sample represents the population of listed companies in the aquaculture industry well because, as far as we know, these are all listed companies—the list the firms

was selected from *Selskaper på børs - Fisk.no* (13.02.2023). The sample represents salmon breeding and others, like cod, trout, juveniles, and krill.

When we were gathering data, we used already existing material. This is called naturally occurring data. This means the information already exists, but its publication's purpose was not primarily for the projects that study them (Johannessen et al., 2020). This data is easily accessible through the firms' websites; if some parts were missing, we got it through Brønnøysundregistret and Prof.no. Afterwards, we organised it in a shared spreadsheet in Excel and analysed it with IBM-SPSS according to and to test our propositions.

The aquaculture industry is an exciting empirical context because the resources they have at hand to implement change are high. One reason for this is the low percentage of leverage compared to equity; they are considered important for the future and widespread around Norway. Because it is the second largest industry in Norway, the combination of this will lead to more articles being published about them (Olsen & Osmundsen, 2017), as their action and failures can lead to catastrophes and affect the local environment negatively with their operations. Thus, following theory, they will report more to justify themselves and legitimise themselves through more coherent reports. Furthermore, they must report after environmental reporting requirements in section 3-3c of the Norwegian Accounting Act.

Our thesis is limited to one financial year and can thus be defined as a cross-section analysis, a widely used method in economic research (Easterby-Smith et al., 2021). This choice describes a population at a specific time (Johannesen et al., 2020) and (Easterby-Smith et al., 2021). Studying one year makes it easier to organise the data due to the limitation of the time aspect when writing the thesis. A potential future project could do a longitude analysis, which studies a population over some time and see differences and evolvement in the population. Our dataset is not large enough to make statistical generalisations.

As there are no personal data, there has not been a need to contact SIKT regarding personal information. Moreover, thus, ethical concern has been followed, securing the data in the joint teams' cloud, which are available through Nord University. To store the data, we used Excel to quickly past in the scores from the reports and weighting of the articles depending on if they were negative, positive or neutral. We are then using IBM SPSS to calculate results

concerning correlation and descriptive statistics.

4.3.1. Empirical context on attitudes toward the aquaculture industry

The aquaculture industry relies on resources that belong to everyone, so they must maintain a positive reputation among the general population. If public sentiment turns against them, it could result in increased regulations or even the revocation of their operating permits (Clarkson et al., 2011). The consequences of failing to follow environmental regulations can be seen in the Chilean fish farming industry, which was once the world's second-largest exporter. Due to poor environmental practices and numerous spills, the industry faced increased regulation, hindrances, and even closures (Fallan et al., 2021). As a result, Norwegian fish farms experienced a boost in market share, revenue, and profit. Which further reinforced the perception that they were environmentally responsible and sustainable.

Krøvel et al. (2019) found that attitudes towards the aquaculture industry and its challenges are somewhat differentiated. While the general population in Norway tends to be reasonably relaxed toward the industry, local communities show slightly more goodwill to the sector when it comes to cases regarding environmental issues. Goodwill towards the aquaculture industry is typically generated by what the community perceives as a fair exchange of benefits. If the community does not hold a favourable view, it may be because they feel that the aquaculture companies are not giving enough back (Krøvel et al., 2019). This is coherent with the views of the Canadian population in a study by (Kraly et al., 2022). However, the population are aware of the sustainable future of marine aquaculture, and a majority can agree that there is an overall positive image there (Flaherty et al., 2018). The German population supports this bit by having high trust in the industry because of its complexity and future orientation (Feucht & Zander, 2016).

Osmundsen & Olsen (2017) note that environmental issues are among the most prevalent challenges faced by the aquaculture industry, with concerns such as pollution, salmon lice, and fish escapes at the forefront in the mind of the general population. Sustainability reports allow aquaculture companies to demonstrate transparency in their operations and reassure the general population that they adhere to regulations and take steps to minimise their environmental impact (Fallan, 2020).

4.3.2. History of aquaculture industry and risk for loss of positive public image

When the early pioneers in the aquaculture industry started with the cultivation of Atlantic salmon in the late 1960s and early 1970s, it was seen as a small-scale and experimental activity with little real value. Society needed to be convinced of the feasibility of the concept. As the cultivation became more successful, it gained cognitive legitimacy as people could see the results and imagine the financial possibilities. As salmon farming gained legitimacy as a good business, it was important for the companies in the industry to follow the rules and do things per general business practices, laws and expectations from suppliers, as doing so would grant them pragmatic legitimacy. Now as the industry has grown into the second largest industry in Norway and is generating high revenues, it faces challenges with moral legitimacy. The industry uses our shared natural resources to generate e and has been criticised for its environmental impact. If they lose legitimacy in the eyes of politicians and the general population, sanctions and regulations may be introduced that could hamper the industry. The story of the aquaculture industry can, in many ways, be compared to the oil industry. It started with an outlandish idea; it generated revenue and was scrutinised for environmental issues. Historically, industries with large environmental impact industries, specifically mining, and oil/gas companies, have been at the forefront of sustainability reporting (Adams & Zutshi, 2004).

The aquaculture industry has faced the challenge of communicating its goals and viability to the broader world. In line with the legitimacy theory discussed in a previous chapter, the industry needed to demonstrate that fish farming was a feasible method of improving the food supply. The earliest mention of fish farming in Norwegian newspapers dates back to 1946 when scientists urged the government to undertake countrywide testing (Unknown, 1946). Subsequently, there was a significant increase in news articles about fish farming in the 1960s and early 1980s. Although there have been some fluctuations, media coverage of fish farming has generally continued to rise since that time.

The aquaculture industry is facing criticism from various sources, particularly regarding its environmental impact and the nutritional value of farmed salmon. Industry players use various signalling mechanisms to demonstrate their commitment to environmental, social, and governance (ESG) principles. These include publishing sustainability reports explicitly demonstrating their efforts to promote ESG practices. They also engage in less explicit

efforts, such as supporting local communities through donations and other initiatives(Connelly et al., 2011). Profitability is a significant implicit signal for the industry, but its impact is subject to varying perceptions (Connelly et al., 2011). While some view it positively for its ability to generate wealth, others see it as a negative, unfavourable concern of resource exploitation for the benefit of a select few owners.

4.4. Sustainability score

The method we used to get the sustainability reporting score is based on the Position Green (formerly known as The Government group) ESG 100 framework. The framework consists of 12 categories, where each can get a score from 0-4, resulting in a maximum total score of 48. The score is determined by how well the reports cover the categories.

Environment	**Social**	**Governance**
E1. GHG Emissions	S1. Human Rights	G1. Material Assessment
E2. Climate Risk	S2. Sustainability Competence	G2. Reporting Standards
	S3. Sickness, absence and injuries	G3. Supplier Monitoring
	S4. Equal Opportunities	G4. Whistle-blowing mechanisms
		G5. Corruption Risk
		G6. ESG-linked Executive Pay

TABELL 2: ESG CATEGORIES

0	1	2	3	4
Nothing	**Mentioned briefly**	**Lacks Substance**	**Good reporting**	**Complete reporting**
No information	The topic is barely mentioned, but no information is provided on how the company actually works with these topics or any quantitative data.	The topic Is mentioned, and the company writes simply about how they work with the topic and/or presents some basic quantitative data.	The company provides good information on how it works with the topic and presents relevant data that shows qualitative/quantitative results for the year. There are no quantified goals for the topic, and it's unclear how the topic is included in the company's plan strategies.	The company provides information about how the company work with the topic and presents quantitative/ qualitative data. Additionally, the company has established clear, quantified targets for the topic, and the topic is connected to plans/strategies.

TABELL 3: RATING SCORES

4.5.Media score

Our approach to assessing a company's performance on ESG issues involves analysing news articles related to the company's activities. To identify relevant articles, we use a combination of keyword searches and manual screening to focus on articles that specifically address ESG issues. We then discard articles that do not meet our criteria, such as those that only report on stock prices or general company information.

The relevant articles will be sorted based on their sentiment towards the company. We used a sentiment analysis algorithm to categorise articles as positive, negative, or neutral. Articles expressing a positive sentiment towards the company were assigned a score of 1, articles expressing a negative sentiment were assigned a score of -1, and neutral articles scored zero.

To ensure that our analysis of a company's ESG performance reflects a balanced view, we use a scoring system that assigns equal weight to positive and negative articles. This approach helps prevent bias towards either positive or negative articles and comprehensively evaluates

the company's ESG performance. After scoring all relevant articles, we add the scores together to generate a total score for each company.

4.6.Content analysis

To collect the data, we needed to quantify them and code them accordingly; this was done with content analysis, the frequently most used method for research on annual reports (Fifka, 2011). With this method, one is available to code text into quantifiable numbers.
In content analysis, it is common to create a coding framework before the data are gathered (Drisko & Maschi, 2016). The coding procedure is often connected with finding meaning in the data gathered and then categorising the meaning into sections. In this thesis the given framework already exists, which gives reliability to our research.

We read and scored the reports independently and then compared the results, and if there were discrepancies in the scores we discussed, we settled on a score that we both agreed with. Although using spreadsheets to organise data is a well-established practice, potential issues may arise, such as errors and misprints in tables. To mitigate this risk, researchers can use the "eyeballing" technique to manually review and clean the data (Watkins & Gioia, 2015, p.81), the first thing we did when scoring. Most discrepancies were minor with only a few points in difference. By first scoring independently and then comparing, we could conclude that we scored the companies similarly and that the framework was used in the intended way.

The data collection process was done fast and effectively; the companies publish the reports on their websites which are thus easy to gather. We got the reports from there while also downloading them and saving them in our shared teams' room to ensure we read the identical versions. The media articles were gathered using the program Retriever Atekst, a news article database, and using the company's names and keywords gave a fruitful result in the number of articles for our sample.

As we use the data, the companies must publish according to Norwegian law; we are not stamping on any feet. At the same time, the articles are also in the public domain and available for everyone to see. However, we must also mention that there can have been a mismatch between what the people doing the reports are feeling and what we score the

companies according on. We score the companies over fixed criteria in the framework, which may feel unjust if they get a low score. Nevertheless, it secures a great score regarding the objectivity of the research. The firms do not have any way of having a conviction on the result of the data, and they can, because of that, be put into a category they do not recognise themselves. According to Thagaard (2018, p.196), our interpretation of the research can then be provoking for them and out of context.

4.7. Sentiment analysis

We utilised qualitative sentiment analysis to categorise the news articles in our dataset. Sentiment analysis is also known as *subjectivity analysis, opinion mining,* or *appraisal extraction*. Sentiments can be explicit, where a statement directly states the sentiment, or implicit, where the sentiment is implied in the text (Bing Liu & SpringerLink (Online Service, 2011).

We sorted the texts by their sentiment polarity, whether positive or negative. Texts can also be categorised on a scale (Pang & Lee, 2008).

4.8. Legitimacy Matrix

The legitimacy matrix categorises companies into four groups based on their sustainability reporting scores and media coverage (see Fig 8). The sustainability quality is plotted on the horizontal axis, while media coverage is plotted on the vertical axis. Companies with a sustainability reporting score above 24 are considered high quality, while those with a 24 or below are considered low quality. Companies with positive media coverage are categorised g

a positive score, and those with negative media coverage are categorised as having a negative score.

The four quadrants of the matrix represent the following:

1. Low sustainability quality and positive media coverage
2. High sustainability quality and positive media coverage
3. Low sustainability quality and negative media coverage
4. High sustainability quality and negative media coverage

		Quality of sustainability reporting	
		Low	High
Media coverage	Positive	Legitimacy lagger	Legitimacy leader
	Negative	Legitimacy loser	Legitimacy legal

FIGURE 8: LEGITIMACY MATRIX

4.9. Justification

Explorative research can measure a lot of data and propositions. Also, with a limited time aspect, it will be more effective to get a more reliable result by analysing the variables to a greater degree to confirm or reject the propositions. Transforming the information in the reports and the media, taking meaning from text and interpreting are qualitative approaches. Looking at a sample of 27 reports and over 3000 articles, it was efficient to do quantitatively when coding the text into numbers. Afterwards, we can test the propositions derived from our

literature review and try to understand the meaning of each independent variable.

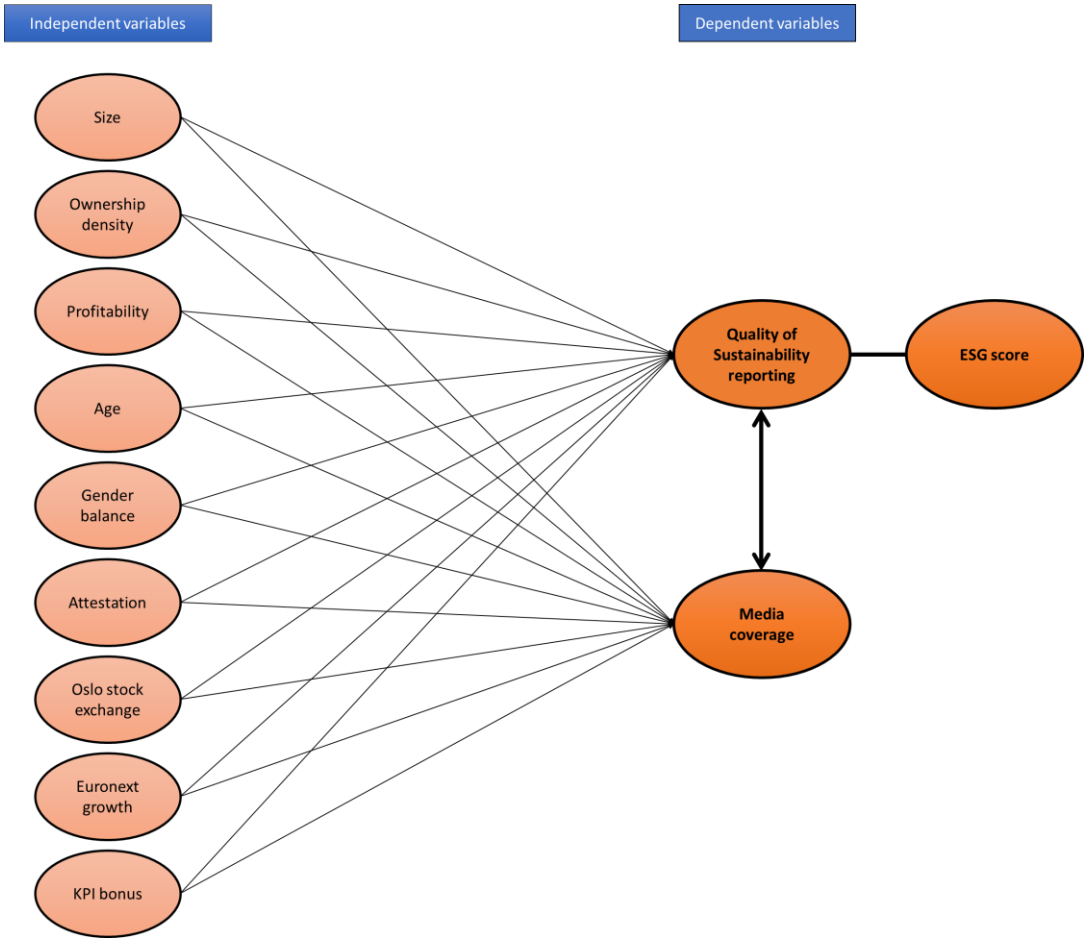

FIGURE 9: RESEARCH MODEL

The figure shows the dependent and the independent variables. Where ESG score is linked/interconnected with the quality level of reporting. Our model aims to identify the relationships between several variables and predict the impact of independent variables on two dependent variables, as well as the mutual influence of the dependent variables on each. Preciselyally, we measure a company's ESG performance using an ESG score, which reflects its actions related to environmental, social, and governance issues. Our model examines how this ESG score impacts the company's sustainability reporting, as well as how the sustainability reporting, in turn, impacts the ESG score.

Our data are primarily gathered from annual reports written and published by the companies, and they contain both primary data that the company has collected themselves and secondary data that comes from other sources. The primary data in the reports are financial statements, performance metrics and worker satisfaction survey results. The secondary data in the reports

are industry benchmarks and other information, such as the nutritional content of salmon or the comparative feed conversion rate for different animals.

The data for this study was obtained through content analysis of sustainability reports and news articles, a commonly used method in sustainability reporting research. (Fifka, 2011).

Furthermore, suppose the company refers to its sustainability report or a separate ESG report within the annual report. In that case, we consider it. However, it is important to clarify that voluntary reports published separately have not been considered in our evaluation and scoring of the firms.

The media sources we use are these:

TABLE 4 MEDIA SOURCES

Source	Geographical Area	Political Profile
NRK	National, with local branches	
Dagbladet	National	Liberal, Tabloid
Dagens Næringsliv	National	Business oriented
Klassekampen	National	Left-wing, socialist profile
Bergens Tidene	Regional - West	
Adresseavia	Regional - Middle	
Avisa Nordland	Regional - North	
Finnmarken	Local - Finnmark	
Sunnmørsposten	Local - Møre og Romsdal	
Lokal avisa Nord-Salten	Local - Nordland	
Intrafish	National	Aquaculture oriented

We have chosen national, regional, and local sources for a different company perspective. Moreover, we have chosen national media with different political views. The political profile of a source could influence how they view the actions of companies.

We used a qualitative approach to grading and scoring when we gathered data. When analysing the data, we quantified the result and utilised quantitative measures to group them into separate categories.

We chose to combine the methods because one did not yield the result we wanted before we started the thesis. According to Easterby-Smith et al. (2021), taking a hybrid approach is not uncommon, but one should be aware of the dangers when mixing the approaches. The choice of combining is supported by the fact that no researchers follow one direction and method periodically (Easterby-Smith et al., 2021). Furthermore regarding the choice of the the design:

> Those who see it as a positivist side of the spectrum use the mixed method. Who holds at least an internal realistic view of the world on the grounds that added data and more perspectives will enable them to get closer to intangible objects of their enquiries. (Easterby-Smith et al. 2021 P.139).

4.10. Validity and Reliability

"Validity: the extent to which measures and research findings provide an accurate representation of the things they are supposed to be describing" (Easterby-Smith et al., 2021, p.108). Because the data is publicly available, the data allows for greater transparency and accountability in the research process. It is important to note that the reliability of the data provided in an annual report may be limited because the company may choose not to disclose all information or convey the information in a subversive way.

Construct validity is ensured by employing the Position Green ESG 100 framework to score the companies' annual reports across the 12 categories. By utilising this methodology, our research maintains a high level of validity. Since the annual reports are not limited to specific time changes, they accurately reflect the voluntary disclosures made by the companies. Additionally, conducting sentiment analysis contributes to the validity of our findings due to its efficient scoring of text and the utilisation of a substantial dataset.

Internal validity: "assurance that results are true, and conclusions are correct through

elimination of systematic sources of potential biases" (Easterby-Smith,2021, p. 109). According to Johannesen et al. (2020, p.332), it is not necessary to evaluate internal validity in designs like a cross-section analysis. We scored the performance of the same reports separately; when we were done, we collaborated and looked at the results. In most cases, the scores were found to be similar. However, occasional deviations occurred due to typos or oversight. Through open discussions, we identified and rectified these small mistakes. Collaboratively, we arrived at a consensus on the final scores. Although this collaborative approach took longer, it significantly enhanced the validity of the results by incorporating multiple perspectives.

External validity: conducting the methods in other periods and with a different sample. We are specifically looking at the phenomena of reporting quality contra media coverage with aquaculture as the empirical context. However, we would like to address the size of the dataset is not large enough to generalise the population through bivariate testing. Other industries may have different articles written about them, and they do not need to report as much information through their reports because they may not be in heavy-polluting industries. When said, the findings may apply to firms in industries which may cause large environmental disasters if something bad happens.

Reliability means that the research is done in a way others can recreate. It is the trustworthiness "reliability" of the research conducted. P.187 The result can be recreated with further research. (Thagaard, 2018) Using statistical analysis, one can reset quantitative research (Johannessen et al., 2020). The reliability will be lowered because our thesis combines qualitative and quantitative research. Nevertheless, by using an established scheme followed during the grading of the reports, we secure that other researchers can come and test our results. This also gives a good inter-reliability score. A problem of only studying a given point in time is that we cannot measure the effect of the independent variables over time, but only in the given point. To our knowledge, the entire set of listed companies in aquaculture on the Oslo stock exchange and Euronext growth Oslo within this population is included in the sample, increasing the reliability.

4.11. Limitations

While the sample is small when conducting a correlation analysis, it is representative and generalised to the aquaculture industry as every firm listed gets its data analysed. However, the conclusion for the aquaculture phenomena may not apply to other industries. One of the significant factors usually being examined; is the industry when doing sustainability analyses on annual reports(Fifka,2011; Christensen & Johansen, 2022).

This thesis covers the companies on the Norwegian stock exchange in the aquaculture sector but also includes the companies listed on the Oslo Euro next growth. We only looked at one industry since the data-gathering prosses and scoring is labour intensive.

The technical issue should be mentioned as there are many data to process with a limited time. Another big factor is the availability of getting and ranking of relevant articles through a scorecard. To solve this practical problem, we use the Retriever Atekst, which covers the Norwegian media but is also limited to the Norwegian region. We could have used it to get a bigger sample, but we found that using the country of Norway was adequate. Other studies have also examined how the media perceive aquaculture (Govaerts, 2021 ; (Osmundsen & Olsen, 2017; Schlag, 2011;) and sustainability reporting (Alon & Vidovic, 2015; Al Hawaj & Buallay, 2021; Fallan 2021). The companies are operating in other countries worth mentioning: Chile, Iceland, Canada, USA, China, Korea, and Japan. The validity of the scores when the local, regional, and national articles are weighted the same may not be adequate, and the articles may have also had different scores. As a national press source reaches a larger population, its information may be more valid than a regional news outlet.

Chapter 5. Results

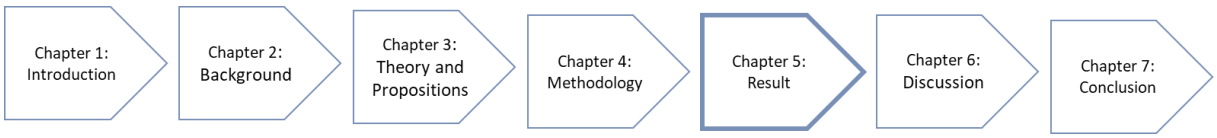

FIGURE 10: RESULT

This chapter will present our findings and analyses based on our collected data. We utilised IBM SPSS software to conduct various statistical analyses. Firstly, we computed descriptive statistics to provide a summary of the dataset. Next, we examined the sustainability scores and media scores of the companies. We performed a bivariate correlation analysis to explore the relationship between these variables. Lastly, we manually sorted the companies into groups based on their position in the legitimacy matrix.

5.1.Descriptive statistics

We had 12 on Euronext Growth (0 as value) and 13 Companies on Oslo Stock (1 as value) exchange, and 2 unlisted. These companies ranged in age from 5 to 84 years. The number of employees in the smallest company was 5, while the largest had 11,800. As for ownership concentration, it varied greatly, with the four largest stockholders of each company owning between 26% and 97% of the company.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age of Company	27	5,00	84,00	27,2222	20,38728
Size	27	7,00	11800,00	1408,1481	2782,28154
Ownership consentration	27	,2600	,9707	,622248	,2148857
Profitability (EPS)	25	-13,480	22,610	3,03104	7,651304
Gender	27	,00	1,00	,8889	,32026
Thirdparty Certified	27	,00	1,00	,2963	,46532
Bonus for reaching sustainabiliti KPIs	27	,00	1,00	,2222	,42366
Number of Pages in raport	27	36,00	316,00	113,6296	58,64833
Sustainability reporting score	27	1,00	44,00	24,8148	13,11205
Media Score	27	-17,00	7,00	-1,8148	5,80475
Stock Exhange	25	,00	1,00	,5200	,50990
Number of articles	27	3	960	131,56	211,754
Valid N (listwise)	25				

FIGURE 11 DESCRIPTIVE STATISTICS

Almost 90% of companies had one or more women on the board of directors or managerial positions. Approximately 30% of companies had sustainability reports that were third-party assessed, and 22% offered bonuses for achieving sustainability key performance indicators. The length of the annual reports varied significantly, ranging from a minimum of 36 pages to a maximum of 316 pages. The earnings per share ranged from -13,5 to 22,6. We excluded the two companies unlisted on stock exchanges from profitability results as they operate differently than listed companies and would not give comparable data.

5.2. Sustainability reporting score

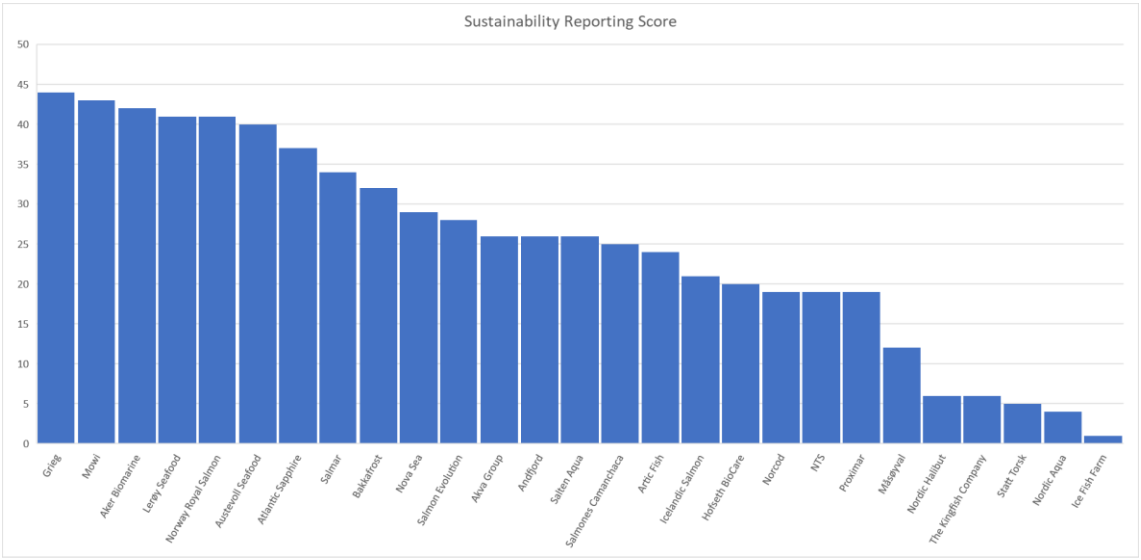

FIGURE 12 SUSTAINABILITY REPORTING SCORE

The sustainability reporting scores ranged from 1 to a maximum of 44, indicating a wide variation in the sustainability reporting performance of the companies (see Fig, 12). The distribution of the scores appeared to be relatively evenly spaced out from the best to the worst, with a mean score of 24,8.

Out of all the categories in the position green framework evaluated, the S4 category in the ESG 100 system received the highest overall score, indicating that the organisations are performing well in providing equal opportunities. The average score for this category was 2.56 points. On the other hand, the G6 category, which is related to ESG-linked executive pay, received the lowest score, with an average of only 1.15 points. This suggests that few firms are using this method to improve their sustainability.

On average, companies on the Oslo Stock Exchange received higher scores than those listed on Euronext Growth. Specifically, the average score for companies listed on the Oslo Stock Exchange was 34.15 points. In contrast, those listed on Euronext Growth had an average score of 14.25 (see Fig. 20 in the appendix), which could suggest that companies on Oslo Stock Exchange put more effort into their sustainability reporting than their counterparts on Euronext Growth.

On average, third-party certified reports received higher scores than non-assured reports, with a mean score of 37.75 compared to an average score of 19.37 for unassured reports (see Fig. 21 in appendix).

Even though we did not consider visual design when scoring the reports, we found it interesting to note the difference in layout and design. We observed that the reports with higher scores generally had better designs than those with lower scores. The designs ranged from professionally designed documents with colour-coded chapters and intricate infographics to basic, text-heavy Word documents.

5.3.Media Score

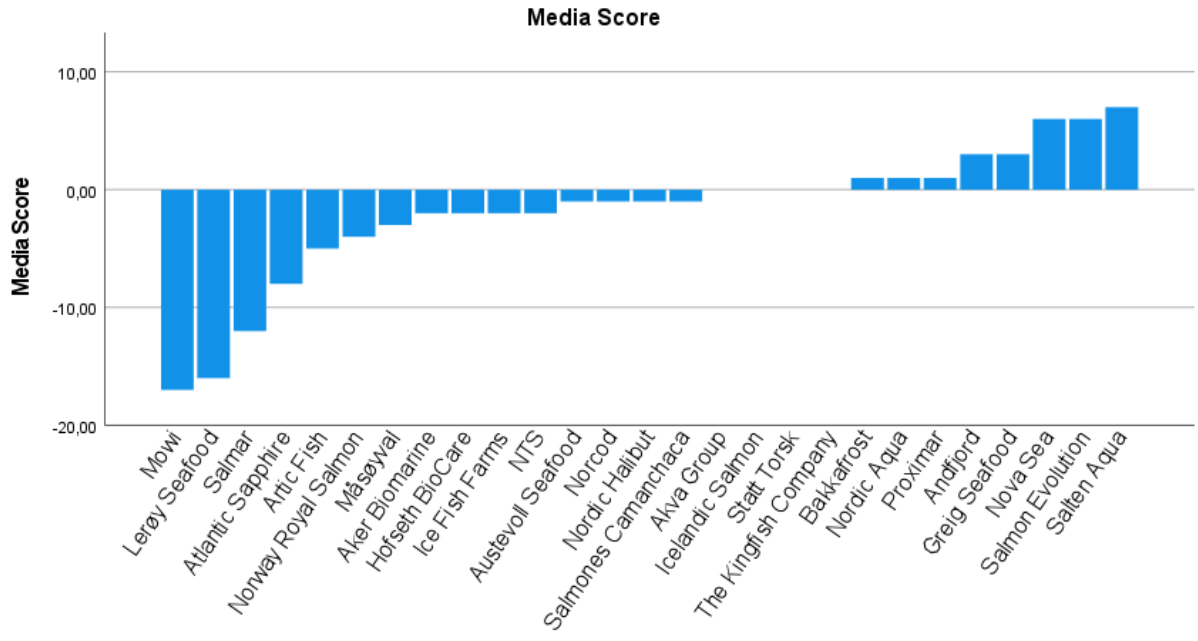

FIGURE 13 MEDIA SCORE

Of the 3,552 articles reviewed, 100 were positive, and 149 were negative. The remaining 3,303 were either neutral or not applicable to the topic. Most of the disregarded articles were financial and followed companies' stock movements. There was a vast difference in the number of articles each company had, ranging from 3 to 960, with an average of 131,5 articles per company. The scores for each company ranged from -17 to 7; the average score was -1.81 (see Fig. 13). Salten Aqua had the best score of 7, and Mowi scored the lowest, with -17.

Most articles were written about companies listed on the Oslo Stock Exchange, with 2,942 articles. 610 articles were written about companies listed on Euronext Growth. Companies

listed on the Oslo Stock Exchange had an average score of -4.69, while those listed on Euronext Growth had an average score of -0.08 points.

Gender had no significant impact on media scores. The companies that had been third-party assured scored lower on average than assured companies, with an average score of -6, while the assured had an average of -0,05.

5.4. Bivariate correlation analysis

Correlations

		Age of Company	Size	Ownership consentration	Profitability (EPS)	Gender	Thirdparty Certified	Bonus for reaching sustainabiliti KPIs	Number of Pages in raport	Sustainability reporting score	Media Score	Stock Exhange	Number of articles
Age of Company	Pearson Correlation	--											
	N	27											
Size	Pearson Correlation	,657**	--										
	Sig. (2-tailed)	<,001											
	N	27	27										
Ownership consentration	Pearson Correlation	,094	-,275	--									
	Sig. (2-tailed)	,642	,166										
	N	27	27	27									
Profitability (EPS)	Pearson Correlation	,493*	,409*	,029	--								
	Sig. (2-tailed)	,012	,042	,890									
	N	25	25	25	25								
Gender	Pearson Correlation	,039	,097	-,251	,192	--							
	Sig. (2-tailed)	,846	,629	,207	,359								
	N	27	27	27	25	27							
Thirdparty Certified	Pearson Correlation	,516**	,430*	-,069	,609**	-,029	--						
	Sig. (2-tailed)	,006	,025	,733	,001	,887							
	N	27	27	27	25	27	27						
Bonus for reaching sustainabiliti KPIs	Pearson Correlation	-,028	-,121	,156	,307	,189	,434*	--					
	Sig. (2-tailed)	,889	,546	,437	,136	,345	,024						
	N	27	27	27	25	27	27	27					
Number of Pages in raport	Pearson Correlation	,429*	,610**	-,316	,345	,231	,538**	,259	--				
	Sig. (2-tailed)	,025	<,001	,108	,091	,246	,004	,192					
	N	27	27	27	25	27	27	27	27				
Sustainability reporting score	Pearson Correlation	,457*	,505**	-,136	,430*	,389*	,652**	,395*	,534**	--			
	Sig. (2-tailed)	,016	,007	,500	,032	,045	<,001	,041	,004				
	N	27	27	27	25	27	27	27	27	27			
Media Score	Pearson Correlation	-,494**	-,591**	,201	-,259	-,030	-,477*	-,080	-,627**	-,334	--		
	Sig. (2-tailed)	,009	,001	,315	,212	,882	,012	,692	<,001	,089			
	N	27	27	27	25	27	27	27	27	27	27		
Stock Exhange	Pearson Correlation	,610**	,488*	,005	,429*	,138	,659**	,352	,595**	,745**	-,427*	--	
	Sig. (2-tailed)	,001	,013	,981	,032	,511	<,001	,084	,002	<,001	,033		
	N	25	25	25	25	25	25	25	25	25	25	25	
Number of articles	Pearson Correlation	,412*	,440*	-,160	,646**	,205	,499**	,319	,664**	,414*	-,621**	,439*	--
	Sig. (2-tailed)	,033	,022	,425	<,001	,305	,008	,105	<,001	,032	<,001	,028	
	N	27	27	27	25	27	27	27	27	27	27	25	27

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

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

FIGURE 14 BIVARIATE CORRELATION ANALYSIS

Our study investigated the correlations between several variables related to sustainability practices in companies. Our bivariate correlation analysis revealed several interesting findings. Figure 14 Bivariate correlation analysis

Bivariate correlation analysis is a statistical technique that examines the relationship between two continuous variables. The Pearson correlation coefficient, commonly known as Pearson's r, is a widely used measure of bivariate correlation that shows the strength and direction of the linear relationship between the variables.

The Pearson correlation coefficient ranges from -1 to +1. A value of -1 indicates a perfect negative correlation, meaning that as one variable increases, the other variable decreases. A value of +1 indicates a perfect positive correlation, meaning that as one variable increases, the other variable also increases. A value of 0 indicates no correlation, meaning the variables have no relationship.

It is important to note that correlation does not imply causation. A high correlation between two variables does not necessarily mean that one variable causes the other, as other factors could affect the relationship.

When interpreting the correlation coefficient, the strength of the relationship can be assessed based on the absolute value of r, where a value closer to 1 or -1 indicates a stronger correlation. In comparison, a value closer to 0 indicates a weaker correlation. Additionally, the statistical significance of the correlation can be assessed by calculating the p-value, which indicates the probability of obtaining the observed correlation by chance.

Firstly, we found a strong, positive correlation between companies' size and profitability (r=0,409 p=0,042). Additionally, larger companies were more likely to have had their sustainability reports certified by third-party organisations. These certified reports tended to be longer and have higher sustainability reporting scores.

On the other hand, the age of companies had a negative correlation with their media scores (r=-0,494 p=0,009). This suggests that older companies may not be as effective at communicating their sustainability practices to the public through media channels.

We also observed a positive correlation between the age of companies and their size (r=0,657 p= <0,001), which is not surprising given that older companies have had more time to grow. Furthermore, older companies tended to have higher profitability and were more likely to have their sustainability reports certified.

Ownership concentration did not significantly correlate with the other variables we examined. The ownership degree of the four largest shareholders ranged from 26% to 97%

Regarding gender, we found a weak positive correlation with sustainability reporting scores (r=0,389 p=0,45).

The number of articles written about each company exhibited a notable positive correlation with all variables except for ownership concentration, gender, and bonus for meeting KPIs.

Additionally, the number of articles had a negative correlation coefficient with a media score ($r = -0.621$, $p < 0.001$).

Lastly, we found that third-party certification was positively correlated with sustainability reporting scores (r=0,652 p=<0,001) but negatively correlated with media scores (r=-0,477 p=0,012). This same pattern was observed with the number of pages in the reports. However, we found no significant correlation between media scores and sustainability reporting scores.

Our findings suggest that larger companies are more profitable and have higher sustainability reporting scores, while older companies are more likely to have their sustainability practices certified. Additionally, third-party certification appears to be an important factor in improving sustainability reporting scores but may not necessarily lead to better media coverage.

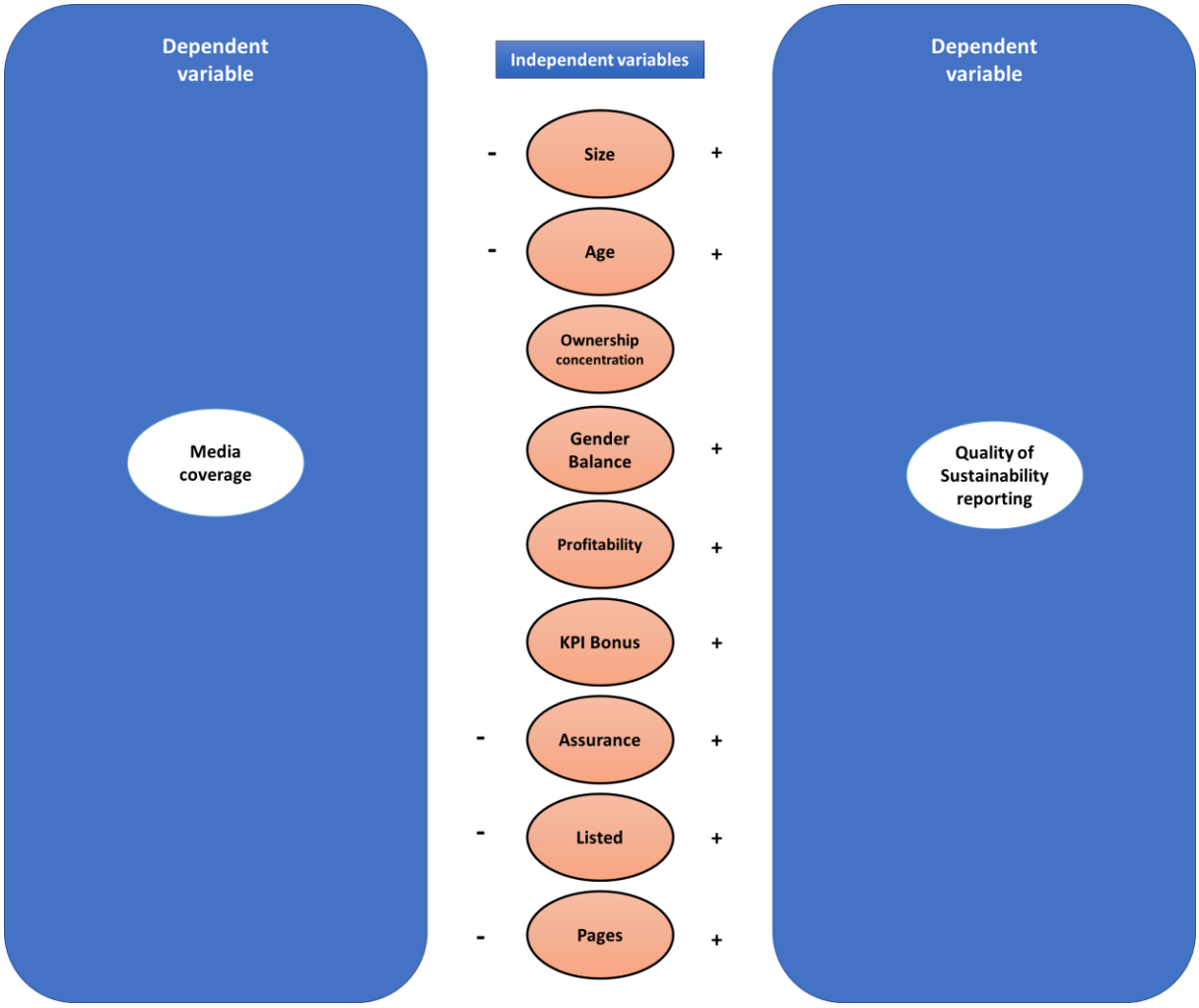

FIGURE 15: INDEPENDENT VARIABLES IMPACT ON DEPENDENT VARIABLES

This model shows how the different independent variables impact the dependent variables (see Fig, 15).

5.5. Legitimacy Matrix

The matrix evaluates each company's sustainability reporting quality and media sentiment to determine its overall performance. By examining specific factors such as the length and third-party certification of sustainability reports and the volume and sentiment of media coverage, the matrix enables us to group companies into four categories based on their performance (see tab 5). By analysing the average results of these factors, we identified commonalities among companies in each group, such as a lack of third-party certification or negative media coverage. The discussion chapter will provide more detailed insights into these findings and what they suggest about the relationship between sustainability reporting and media perception.

TABLE 5 LEGITIMACY MATRIX WITH COMPANIES

	Low	High
Positive	Icelandic Salmon (21, 0)	Greig Seafood (44, 3)
	Proximar (19, 1)	Bakkafrost (32, 1)
	The Kingfish Company (6, 0)	Nova Sea (29, 6)
	Statt Torsk (5, 0)	Salmon Evolution (28, 6)
	Nordic Aqua (4, 1)	Akva Group (26, 0)
		Andfjord (26, 3)
		Salten Aqua (26, 7)
Negative	Artic Fish (24, -5)	Mowi (43, -17)
	Hofseth Biocare (20, -2)	Aker Biomarine (42, -2)
	Norcod (19, -1)	Lerøy Seafood (41, -16)
	NTS (19, -2)	Norway Royal Salmon (41, -4)
	Måsøyval (12, -3)	Austervoll (40, -1)
	Nordic Halibut (6, -1)	Atlantic Sapphire (37, -8)
	Ice Fish Farms (1, -2)	Salmar (34, -12)
		Salmones Camanchaca (25, -1)

Upon analysing the average values of the variables (see tab, 6), it becomes evident that distinct groups have formed, each with unique characteristics that set them apart. Further

elaboration on these groupings can be found in the discussion chapter, providing additional details and insights.

TABLE 6 LEGITIMACY MATRIX AVERAGE VALUES

Group	Age	Size	Ownership concentration	EPS	Third-party Assurance	Pages	Sustainability reporting score	Number of articles	Media score
Loser	25	257	73%	0,88	0%	91	14	88	-2,29
Lagger	9	62	53%	-0,72	0%	86	11	18	0,4
Legal	39	3722	60%	5,64	75%	157	38	281	-7,63
Leader	30	977	55%	4,69	33%	111	31	92	3,16

Chapter 6. Discussion

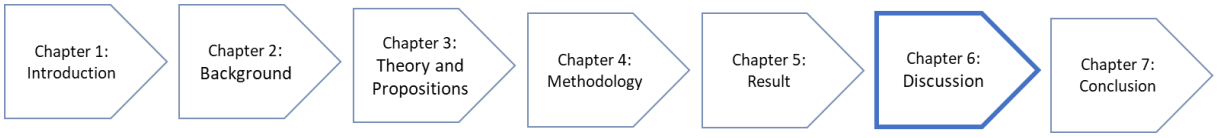

FIGURE 16: DISCUSSION

This chapter aims to connect the major findings of our master's thesis with the problem statement and research questions we opened while also discussing our main contributions and outlining potential directions for future research. The chapter will provide a clear and formal summary of our research, highlighting the most significant insights we gained and how they relate to our original research questions.

«What is the relationship between the quality of sustainability reporting and media coverage?"

6.1. Accord between media and sustainability reports

Our study found results consistent with previous research on various factors we studied. In the following parts, we will provide a detailed explanation of these findings and their implications.

Our study found that, while there was no direct correlation between media and sustainability reporting scores, several predictors emerged that influence a company's scores in these areas. Large and older companies tended to score higher on sustainability reporting but lower on media scores than smaller, younger companies. Profitable companies were more likely to invest in reporting, resulting in higher sustainability scores.

Certain variables were particularly important for achieving a high sustainability reporting score, including the stock exchange on which the company is listed (with companies on the Oslo Stock Exchange scoring higher on average), whether the sustainability report is assured or not, the number of pages in the report, size, age, and gender balance.

Our study investigated the factors associated with Media score, which reflects a company's public perception of environmental and social issues. We found several variables negatively correlated with Media score, listed in descending order of impact: number of pages in the sustainability reports, company size, age, assurance, and stock exchange.

These findings suggest that companies with more comprehensive sustainability reports, larger size, older age, unassured reports, or listed on certain stock exchanges may be more likely to receive negative media attention related to sustainability issues.

The data suggests that some companies may be engaging in greenwashing practices. However, we cannot definitively conclude this based on our one-year analysis alone. It is possible that negative media scores were due to a one-time event or unexpected circumstance. There could also have been positive one-time events that skeeved the media score positive, but this is less likely since the media primarily focuses on negative events (Bonfedelli, 2011).

Intrafish emerged as the clear leader regarding article contributions, accounting for approximately 75% of all articles. This indicates that Intrafish plays a significant role in shaping the discourse on the topic under investigation. Our analysis shows that local newspapers tend to portray companies more positively than national papers, with the latter adopting a relatively neutral stance. Local publications often highlight companies' contributions to society, such as sponsoring sports clubs and other community initiatives,

while national papers overlook these aspects. Some have criticised this practice, including John Gustavsen in an article published in Klassekampen on 5 March 2022. Gustavsen referred to it as 'sport washing' and argued that companies use this approach as a cheap way to appear more socially responsible than they are.

When using a qualitative approach to categorise companies in the legitimacy matrix, we found some factors common for the four groups, which can predict how the companies will perform regarding sustainability reporting quality and media attention.

6.1.1. Legitimacy Loser

The Legitimacy Loser group comprises seven companies that received low scores on sustainability reporting and media reputation. These companies seem to lack attention to sustainability reporting and have a negative media reputation. On average, these companies are 25 years old, have 257 employees, and are owned by the four largest shareholders, who control 73% of the company. The companies have low profitability, with an average of 0.88 earnings per share, and none of them have had their sustainability reports certified by a third party. The average length of their reports is 91 pages, with a score of 14 for sustainability reporting. On average, 88 articles were written about these companies, with a media score of -2.29. Two of the seven companies were listed on the Oslo Stock Exchange.

The companies in this group are relatively well-established, typically falling within the medium-sized range compared to other groups. However, it is important to note that their reporting quality is subpar and has a negative media score. This raises concerns as it suggests that these companies may not perceive poor reporting quality as a significant risk in maintaining legitimacy.

6.1.2. Legitimacy Lagger

The Legitimacy Lagger group comprises five companies with a positive media reputation but low sustainability reporting scores, indicating a lack of prioritisation for sustainability reporting. Despite this, they still received favourable media attention. On average, these

companies are nine years old, have 62 employees, and are owned by the four most prominent stakeholders, who control 53% of the company. The companies have negative profitability with an average of -0.72 earnings per share, and none of them had their sustainability reports certified by a third party. The average length of their reports is 86 pages, with a score of 11 for sustainability reporting. On average, 18 articles were written about these companies, with a media score of 0.4. All the companies are listed on Euronext Growth.

The companies within this group were the youngest and smallest, struggling with negative profitability, which may have contributed to their lower reporting quality. Due to limited resources, these companies were unable to prioritise sustainability reporting. However, they received a positive media score. This could be attributed to their relative obscurity in the media landscape, as they did not garner significant attention due to their smaller scale and relatively short time in the industry.

6.1.3. Legitimacy Legal

The Legitimacy Legal group comprises eight companies with a negative media reputation but high sustainability reporting scores, indicating that they prioritise sustainability reporting. On average, these companies are 39 years old, have 3722 employees, and are owned by the four most prominent stakeholders who control 60% of the company. The companies have good profitability with average earnings per share of 5.64, and six out of eight had their sustainability reports certified by a third party. The average length of their reports is 157 pages, with a score of 38 for sustainability reporting. On average, 281 articles were written about these companies, with a media score of -7.6. All the companies are listed on the Oslo Stock Exchange.

The companies in this group comprised the oldest and largest entities, boasting impressive profitability and sustainability reporting scores. However, they also received the worst media score. As mentioned earlier, larger companies tend to attract more media attention, often negatively (Bonfedelli, 2010). These companies appear to allocate resources towards improving their sustainability reporting to enhance their public image, indicating a potential presence of greenwashing within the group. These companies also exhibit the highest percentage of third-party assurance, which suggests their intention to legitimise their reporting and establish themselves as sustainable entities. By seeking external validation, they aim to

enhance their credibility and reputation in sustainability. Interestingly, the group with the highest sustainability reporting scores received the lowest media score, highlighting the limitations of solely relying on sustainability reporting scores to assess a company's performance. This emphasises the need for an additional metric that combines reporting quality and media coverage to provide a more comprehensive understanding of a company's sustainability practices.

6.1.4. Legitimacy Leader

The Legitimacy Leader group comprises six companies with high reporting quality and positive media scores, indicating favourable sustainability reports and a positive image in the media. On average, these companies are 30 years old, have 977 employees, and are owned by the four largest stockholders, who control 55% of the company. The companies have good profitability with average earnings per share of 4.69, and two out of six had their sustainability reports certified by a third party. The average length of their reports is 111 pages, with a score of 31 for sustainability reporting. On average, 92 articles were written about these companies, with a media score of 3.2. Half of the companies are listed on the Oslo Stock Exchange.

The companies in this group are large and well-established; they scored well both on sustainability reporting and media coverage. This indicates their strong commitment to sustainable practices and proactive approach to transparently communicating about them. In other words, these companies ‘talk the talk’ and 'walk the walk,' actively implementing and promoting sustainability initiatives.

6.2. Propositions outcome

6.2.1. Size

Proposition 1: The bigger the company, the better the reporting quality is.

Size does matter. Our study found a statistically significant positive correlation between company size and sustainability reporting scores. Specifically, we observed a Pearson correlation coefficient of 0.46 with a significance level of 0.016. This is consistent with previous research on the topic. Fifka (2011) argued that it is an accessible variable to research since the size is public information and is also one of the most used variables.

Larger companies have a greater need to legitimate their companies as they have more stakeholders than smaller companies. They can use sustainability reporting to gain legitimacy by showing the stakeholders that they are doing business pragmatically. They also have more formal regulations, which makes them report more. They can also show that they are doing what is morally right and gain legitimacy that way.

Larger companies generally have greater resources, allowing them to report on sustainability more effectively. For instance, they may employ staff members responsible for overseeing sustainability reporting. In contrast, smaller companies may not have the financial means to create such a position and instead rely on existing employees to manage this task alongside other duties.

This can be observed with a positive correlation between the size of the company and EPS, Size and Sustainability reporting score and lastly, between EPS and sustainability score. All of these have a positive correlation with each other.

Larger companies tend to receive more media coverage due to their higher visibility, and journalists often focus on reporting problems rather than solutions, which can result in negative news stories (Bonfedelli, 2010). This could explain why we observed a negative correlation between size and media score and a negative correlation between media score and number of articles.

6.2.2. Age of the company

Proposition 2: The age of the company does not contribute to the quality of sustainability reporting in a significant way.

There is a positive correlation between the age and size of a company, indicating that as a company ages, it tends to become more prominent. We also found that many of the same correlations observed between size and other variables were also present with age. For example, we observed a moderate positive correlation between a company's age and its sustainability score, with a correlation coefficient of 0.50 and a significance of 0.007. This finding is consistent with Masum's (2020) study. However, we also found a negative correlation between a company's age and media score, with a correlation coefficient of -0.59 and a significance of 0.001. This could be attributed to the tendency for older companies to be larger, resulting in more articles written about them. Furthermore, such articles tend to be negative (Bonfedelli, 2010).

6.2.3. Ownership concentration

Proposition 3: Companies with many owners have high reporting quality.

Our proposition was based on the idea that companies with several owners must report on more than companies that fewer people own. As with several owners, they may not be involved in the company's daily operations and need to be informed about what is happening.

Our analysis yielded unexpected results regarding the relationship between ownership concentration, sustainability reporting, and media scores. Contrary to our initial proposition, we did not find a significant correlation between a higher number of owners and the quality of reporting. Similarly, when categorising companies using the legitimacy matrix, ownership concentration did not appear to have a notable impact on their placement within the matrix.

These findings deviate from earlier studies such as Fernandez-Feijoo et al. (2013) and Adams (2002), which observed a correlation between ownership and transparency in reporting. Our research suggests that ownership concentration may not directly influence the level of

transparency and quality of sustainability reporting as previously indicated. This could result from earlier studies focusing on reporting in general, while our study focused on sustainability reporting.

6.2.4. Gender balance

Proposition 4: If women are involved with sustainability reporting, it will have higher quality.

We saw a positive correlation between sustainability reporting scores and gender. The correlation coefficient was 0,39 with a 0,0045 significance. This is in accordance with the findings Bannò et al. (2021) presented. Almost 90% of the companies did have women in the management. The companies that did not have female representation in management or on the board were mostly small companies that operated outside Norway. There was no correlation with media scores.

6.2.5. Profitability

Proposition 5: The better profitability is, the better reporting quality.

This study used earnings per share (EPS) to measure profitability. EPS is a relative measure that enables comparing companies of different sizes. We found a positive correlation between sustainability reporting and EPS. (r=0,43 p=0,032)

Balancing profitability and resource costs associated with sustainability reporting has been a concern in the past. However, with the recent guidelines and focus on sustainability reporting, firms have started reallocating resources to address these challenges. As the sample size of companies adhering to these guidelines increases, the need to maintain a positive image also grows. Therefore, profitability has become an important factor in the score of sustainability reporting quality, and firms have begun to see that being sustainable can give them a marked advantage and may impact their bottom lines. An alternative argument is that companies with better profitability have more resources to allocate towards sustainability reporting, which

could lead to higher scores in this area. A study by Al Hawaj and Buallay (2021) supports this argument, showing a correlation between a company's profitability and sustainability reporting score. The study also found that the costs associated with reporting did not outweigh the benefits, indicating that sustainability reporting can be a profitable investment for companies.

6.2.6. Bonus for achieving sustainability KPIs.

Proposition 6: Companies that give bonuses for achieving sustainability KPIs will have better sustainability reporting quality.

Our findings revealed a positive correlation coefficient of 0.40, with a significance of 0.041, between sustainability and bonuses tied to key performance indicators (KPIs). However, despite the potential benefits of this approach, it had the lowest mean score among the sustainability categories we measured, indicating that few companies utilise it. This is concerning because KPIs offer a concrete way to measure sustainability in practice and can impact a company's sustainability.

6.2.7. Assurance

Proposition 7: Companies with their sustainability reports attested will have higher quality.

According to signalling theory, companies that obtain attestation for their sustainability reports signal to stakeholders that they commit to producing high-quality reports. As a result, stakeholders may view these companies as more trustworthy and reliable sources of information. Therefore, signalling theory predicts that obtaining attestation for sustainability reports will likely increase the perceived quality of the reports (Framvik, 2022). Our results mirror this sentiment and show that companies with their Sustainability reporting attested had higher sustainability reporting scores on average than non-assured companies. There was a positive correlation coefficient with a sustainability reporting score of 0,65 with a significance of under 0,001 and a negative media score correlation coefficient of -0,48 with a significance of 0,012.

Attestation also adds legitimacy to the reporting, as stakeholders perceive it as proof that the information is accurate and credible.

6.2.8. Listed

Proposition 8: Companies listed on the Oslo Stock Exchange have higher quality reporting than those listed on Euronext Growth.

As propositioned, companies on the Oslo Stock Exchange exhibited higher sustainability scores than those on Euronext Growth. Our analysis revealed a positive correlation between a company's stock exchange listing and its sustainability score ($r=0.75$, $p<0.001$), as well as a negative correlation with media score ($r=-0.427$, $p=0.033$).

One possible explanation for these correlations is that companies listed on the Oslo Stock Exchange are generally older and larger than those on Euronext Growth and are subject to more stringent reporting requirements. As previously mentioned, larger and older companies tend to have more articles written about them, and these articles may hurt their media score. In contrast, companies listed on Euronext Growth may not feel the same level of pressure to report on sustainability indicators, which could contribute to their lower reporting scores.

6.2.9. Pages

Proposition 9: More pages in the reports leads to better quality reporting and a better reputation in the media.

The sustainability score tended to increase with the length of the reports ($r = 0.53$, $p = 0.004$), likely due to the ability to provide more detailed and comprehensive coverage of various topics. However, a negative correlation was observed between the media score and report length ($r = -0.63$, $p < 0.001$). This suggests that more comprehensive reports may be less appealing to readers and less likely to be read, resulting in a lower media score.

Conversely, a positive correlation was found between the number of pages in the report and the number of articles about the company ($r = 0.664$, $p < 0.001$). This implies that companies

with longer reports may receive more media attention; alternatively, companies with negative media reputations write longer reports to greenwash their image.

6.2.10. Summary

Our research aimed to investigate the relationship between media coverage and the quality of reporting, which we considered a significant phenomenon. Although the bivariate correlation analysis yielded some intriguing findings, it is essential to acknowledge that the accuracy of these results may be compromised due to the limited sample size.

The most noteworthy discoveries emerged when we employed the legitimacy matrix to categorise the companies. This approach revealed that evaluating a company's sustainability should not solely rely on the quality of its sustainability reporting. It became apparent that incorporating an additional metric as a control measure is essential for a more comprehensive evaluation. Introducing an index that rates companies' sustainability reporting and actions would prove invaluable to stakeholders while mitigating the incentives for greenwashing, as it would facilitate detecting such practices.

Chapter 7. Conclusion

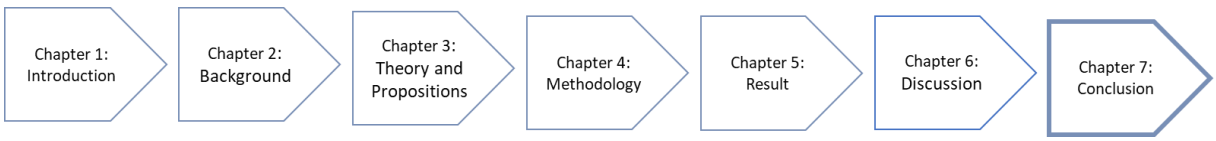

FIGURE 17: CONCLUSION

This explorative study of the relationship between sustainability reporting quality and media reputation has never been done in Norway. Given the significance of sustainability reporting as a means for companies to communicate their sustainability actions to the public and the media's role in holding companies accountable, it is essential to ensure that sustainability reports have the necessary quality to be useful for stakeholders.

Sustainability reporting should not solely serve as a means for companies to boast about their sustainability efforts. Instead, the reports should provide a fair and honest depiction of how

the company operates sustainably and can be helpful in resource allocation within the company to achieve its sustainability goals. It is vital to implement control mechanisms to verify whether what companies report accurately reflects their actions. Such control mechanisms would enhance reporting quality and motivate companies to focus on sustainable business practices.

7.1. Implications

This study highlights an important finding: Companies with high-quality sustainability reporting do not necessarily exhibit the best practices. Our study revealed that the companies scoring the highest in reporting quality had the lowest media scores. This observation emphasises the necessity of not solely relying on sustainability reporting to measure a company's sustainability. It becomes evident that incorporating a control metric is crucial to verifying companies' claims' accuracy. Without such measures, it becomes alarmingly easy for companies to engage in greenwashing, manipulating their public image.

Ensuring high-quality sustainability reporting and establishing a metric to validate a company's adherence to the reported information is crucial for the company's legitimacy and credibility of sustainability reporting. Moreover, it will give stakeholders valuable information for investors and society. It would also benefit legislators regulating the industry to have accurate information showing how regulations work in practice.

Establishing a comprehensive index is crucial to ensure fair and accurate ratings of company sustainability and minimise the risk of greenwashing. Implementing standardised criteria and formalising this index would add legitimacy to the evaluation process. Such an index would incentivise companies to prioritise sustainability, as the consequences of neglecting it would be evident to the public, potentially leading to a loss of legitimacy and public trust.

7.2. Suggestion for further research

While this study provides initial insights into the connection between sustainability reporting and media coverage in the aquaculture industry, there is a need for further research better to understand the correlations between these factors in other industries. As sustainability

continues to be a critical concern for consumers and companies, gaining a more comprehensive understanding of this phenomenon is essential. Future research should use larger datasets and longitudinal study designs to investigate how sustainability reporting and media coverage interact over time in different industries. Specifically, longitudinal studies can provide a clearer picture of how the relationship between sustainability scores and media scores changes over time and how this relationship varies across industries. Such studies can help inform the development of effective sustainability strategies and enhance our understanding of the factors contributing to sustainable practices in different sectors.

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Appendix

Descriptives

	Thirdparty Certified			Statistic	Std. Error
Sustainability reporting score	No	Mean		19,3684	2,56633
		95% Confidence Interval for Mean	Lower Bound	13,9768	
			Upper Bound	24,7601	
		5% Trimmed Mean		19,2427	
		Median		20,0000	
		Variance		125,135	
		Std. Deviation		11,18635	
		Minimum		1,00	
		Maximum		40,00	
		Range		39,00	
		Interquartile Range		20,00	
		Skewness		-,053	,524
		Kurtosis		-,712	1,014
	Yes	Mean		37,7500	2,37359
		95% Confidence Interval for Mean	Lower Bound	32,1374	
			Upper Bound	43,3626	
		5% Trimmed Mean		38,1111	
		Median		41,0000	
		Variance		45,071	
		Std. Deviation		6,71353	
		Minimum		25,00	
		Maximum		44,00	
		Range		19,00	
		Interquartile Range		10,25	
		Skewness		-1,121	,752
		Kurtosis		,257	1,481

FIGURE 18 DESCRIPTIVE STATISTICS THIRD-PARTY CERTIFIED

Descriptives

	Stock Exhange			Statistic	Std. Error
Sustainability reporting score	Euronext Growth	Mean		14,2500	2,78014
		95% Confidence Interval for Mean	Lower Bound	8,1310	
			Upper Bound	20,3690	
		5% Trimmed Mean		14,2222	
		Median		15,5000	
		Variance		92,750	
		Std. Deviation		9,63068	
		Minimum		1,00	
		Maximum		28,00	
		Range		27,00	
		Interquartile Range		18,00	
		Skewness		,042	,637
		Kurtosis		-1,736	1,232
	Oslo Børs	Mean		34,1538	2,47771
		95% Confidence Interval for Mean	Lower Bound	28,7554	
			Upper Bound	39,5523	
		5% Trimmed Mean		34,4487	
		Median		37,0000	
		Variance		79,808	
		Std. Deviation		8,93352	
		Minimum		19,00	
		Maximum		44,00	
		Range		25,00	
		Interquartile Range		16,00	
		Skewness		-,641	,616
		Kurtosis		-1,129	1,191

FIGURE 19 DESCRIPTIVE STATISTICS STOCK EXCHANGE

TABLE 7 COMPANIES

Aker Biomarine ASA

AKVA group ASA

Atlantic Sapphire ASA

Austevoll Seafood ASA

Grieg Seafood ASA

Hofseth Biocare ASA

Lerøy Seafood Group ASA

Mowi ASA

Norway Royal Salmon ASA

NTS ASA

P/f Bakkafrost

SalMar ASA

Salmones Camanchaca S.A

Andfjord Salmon AS

Arctic Fish Holding AS

Ice Fish Farm AS

Icelandic Salmon

Måsøval AS

Norcod AS

Nordic Aqua Partner AS

Nordic Halibut AS

Proximar Seafood AS

Salmon Evolution ASA

Statt Torsk AS

The Kingfish Company N.V

Laggers 5										
	age	size	owners	EPS	certified	pages	score	mediascore	stock	articles
Icelandic Salmon	14	135	0,6749	0,8	No	108	21	0	Euronext	27
Proximar	8	7	0,312	-0,65	No	55	19	1	Euronext	21
The Kingfish Comp	7	112	0,503	-0,9	No	120	6	0	Euronext	14
Statt Torsk	9	25	0,5033	-0,194	No	76	5	0	Euronext	21
Nordic Aqua	7	30	0,6544	-2,67	No	72	4	1	Euronext	5
	9	61,8	0,52952	-0,7228	0	86,2	11	0,4	0	17,6
lossers 7										
Artic Fish	12	63	0,9098	4,97	No	114	24	-5	Euronext	49
Hofseth BioCare	14	63	0,6172	-0,35	No	89	20	-2	Oslo Børs	9
Norcod	5	30	0,57	-4,41	No	85	19	-1	Euronext	41
NTS	53	1326	0,6738	5,82	No	152	19	-2	Oslo Børs	353
Måsøyval	50	221	0,8508	1,52	No	102	12	-3	Euronext	141
Nordic Halibut	28	45	0,696	-1,79	No	38	6	-1	Euronext	18
Ice Fish Farms	11	51	0,7735	0,37	No	58	1	-2	Euronext	3
	24,7142857	257	0,7273	0,87571429	0	91,1428571	14,4285714	-2,28571429	0,28	87,7142857
Leaders 6										
Greig Seafood	31	753	0,6133	10,7	Yes	176	44	3	Oslo Børs	206
Bakkafrost	55	3306	0,2823	17,95	Yes	120	32	1	Oslo Børs	74
Nova Sea	38	325	0,961		No	38	29	6		107
Salmon Evolution	6	47	0,26	0,11	No	126	28	6	Euronext	83
Akva Group	41	1414	0,754	0,34	No	170	26	0	Oslo Børs	56
Andfjord	9	18	0,417	-0,99	No	36	26	3	Euronext	24
	30	977,166667	0,54793333	4,685	0,33	111	30,8333333	3,16666667	0,5	91,6666667
Legal 8										
Mowi	59	11800	0,2654	9,42	Yes	316	43	-17	Oslo Børs	611
Aker Biomarine	17	429	0,8196	-0,79	Yes	118	42	-2	Oslo Børs	40
Lerøy Seafood	84	5475	0,6272	4,42	Yes	129	41	-16	Oslo Børs	197
Norway Royal Salr	31	273	0,7484	14,3	Yes	114	41	-4	Oslo Børs	231
Austevoll Seafood	42	7932	0,6357	9,82	No	87	40	-1	Oslo Børs	67
Atlantic Sapphire	13	166	0,2644	-13,48	No	171	37	-8	Oslo Børs	126
Salmar	32	1828	0,5974	22,61	Yes	186	34	-12	Oslo Børs	960
Salmones Camanc	36	1875	0,8456	-1,15	Yes	132	25	-1	Oslo Børs	12
	39,25	3722,25	0,6004625	5,64375	0,75	156,625	37,875	-7,625	1	280,5

FIGURE 20 MATRIX DATA