The Effects of ESG Score on Goodwill
A Quantitative Study on Swedish Listed Companies

Asif Sarker, Md. Ruhul Amin Sarker

Department of Business Administration
Master’s Program in Accounting & Finance
Master’s Thesis in Business Administration, 15 Credits, Spring 2020 Supervisor: Jesper Haga
[THIS PAGE IS LEFT BLANK INTENTIONALLY]
Acknowledgments

We would like to express our gratitude and thank our supervisor Jesper Haga for his continuous feedback and suggestions which enabled us to upgrade the quality of our thesis. We would also like to thank our family and friends who supported us inspired us to complete this project.

Umea 2020-05-28
Asif Sarker & Md. Ruhul Amin Sarker.
Abstract

Sustainability of businesses, if not more, is equally important as profitability. As a means of measuring sustainability, the ESG score has solidified its acceptance among firms as well as other stakeholders all over the world. In the world of business, the only permanent thing is evaluation. Like sustainability, the paradigm has also been shifted from tangible to intangible assets like goodwill, patents, trademark, etc. In recent years, ESG as a sustainability performance evaluation system has drawn the attention of many academics and students as a topic of research. There have been many studies highlighting the relationship of firms’ sustainability performance with their economic outcomes and risks. However, no study has been conducted on the impact of ESG scores on goodwill. Our study evaluates the relationship between ESG scores and firms’ goodwill.

Sweden is chosen as the research area which is the highest-ranked country in terms of sustainability in the years 2017 and 2018. There is a high probability of getting a dependable result where ESG is given proper importance. Rifinitiv datastream is used as the source of data for this study. We have considered the listed companies of OMX Stockholm 30 (except 4 banks) as a sample from the year 2010 to 2019. We have considered shareholder theory, stakeholder theory, legitimacy theory, goodwill, and merger and acquisition to analyze and interpret the underlying significance of our study. The result of our study shows that there is a significant negative impact of ESG score on gross goodwill/ total asset. Similar results have been found between the individual E, S, and G scores and gross goodwill/ total assets.

Keywords: ESG score, Goodwill, Sustainability, Shareholder Theory, Stakeholder Theory, Legitimacy Theory, Merger & Acquisition,
Acronyms

CVaR = Conditional Value at Risk
CEO = Chief Executive Officer
CSR = Corporate Social Responsibility
ESG = Environmental, Social and Governance
FCA = Fiat Chrysler Automobiles
OLS = Ordinary Least Squares
SRI = Social Responsibility Investment
TBL = Triple Bottom Line
ROE = Return on Equity
# Table of Contents

1. **Introduction** 1
   1.1. Problem Background 1
   1.2. Problem Discussion and Research Gap 2
   1.3. Research Purpose and Research Question 4
   1.4. Delimitation 4

2. **Theoretical Framework** 6
   2.1. Shareholder Theory 7
   2.2. Stakeholder Theory 8
   2.3. Legitimacy Theory 8
   2.4. Critiques on Shareholder, Stakeholder, and Legitimacy Theory 10
   2.5. Goodwill 11
      2.5.1. The Concept of Goodwill 11
      2.5.2. Mergers & Acquisition (M&A) 13
      2.5.3. Critique on Goodwill 14
      2.5.4. Relationship Between Goodwill and ESG 14

3. **Scientific Method** 16
   3.1. Research Strategy 16
   3.2. Research approach 17
   3.3. Research Design 18
   3.4. Research Philosophy 19
      3.4.1. Ontological assumption 20
      3.4.2. Epistemology 21
   3.5. Literature Search 21
   3.6. Source Criticism 22
   3.7. Social and Ethical Consideration 22

4. **Research Method and Data Collection** 25
   4.1. Population and Sample Construction 25
   4.2. Variables 26
      4.2.1. Dependent Variable 26
      4.2.2. Independent Variables 26
      4.2.3. Controlled Variables 28
   4.3. Regression Analysis 28
   4.4. Theoretical Regression Model 29
4.5. Regression Model 30
4.6. Statistical Hypothesis 30
4.7. Sources of Data Collection and Data Processing 31
4.8. Data Processing 31

5. Empirical Results 33
5.1. Descriptive Statistics 33
5.2. Multicollinearity 34
5.3. The Relationship Between ESG Score and Goodwill 36

6. Discussion 40
6.1. Empirical Results and Discussion 40
   6.1.1. Impact of Individual E, S, and G Scores 40
   6.1.2. Impact of Average ESG Scores 41
   6.1.3. Impact of Control Variables 41
6.2. Discussion Alongside Previous Studies 42
6.3. Discussion of Results Based on the Aforementioned Theories 43
6.4. Result Analysis 43

7. Conclusion and Suggestions 45
7.1. Conclusions 45
7.2. Societal and Ethical Implications of the Research 46
7.3. Theoretical and Practical Contribution 46
7.4. Limitations and Suggestions for Future Studies 47
7.5. Generalizability 47

8. The Credibility of Research Findings 49
8.1. Reliability 49
8.2. Validity 49

9. References 50

List of Tables
   Table 1: Descriptive Statistics 33
   Table 2: Correlation Matrix for variables 35
   Table 3: OLS regression between Dependent and Independent variables. 36
   Table 4: OLS regression between dependent, Independent and Controlled 37
1. Introduction

This introductory chapter opens the study with a problem background which will be followed by problem discussion and research gap. Thereafter, the research question will accompany the purpose of the study and this chapter will end with the delimitations of our study.

1.1. Problem Background

Environmental social governance (ESG) is a topic of much attention since its introduction and today its significance is felt more than ever in the business world. Not only the environmental organizations and governments are aware of sustainability and sustainable business, but also the people from all walks of life are getting more conscious about the environment and society and being considerate about the business footprint. Both the individual and institutional investors are electing to invest in businesses that are not only profitable but also conscious about their surroundings and stakeholders. This issue is so prominent that world leaders met in Paris in 2015 and most of them signed an agreement to keep the world average temperature below two degrees than that was in the pre-industrial level and drive business activities towards low emission (United Nations, 2015, p.3). Since the agreement was signed by countries but not business organizations, countries encourage or forced their businesses to adopt sustainability in their activities. In this research, we will study the ESG score of the Swedish listed companies and their goodwill and try to find out if there is any impact of ESG scores on goodwill.

The term ESG stands for Environmental, Social, and Governance according to MSCI (n. d. a) an index provider defined ESG as “… the consideration of environmental, social and governance factors alongside financial factors in the investment decision-making process.” Sustainable investors consider ESG factors before investing and the factors are Environmental – climate change, natural resources, pollution, and waste, environmental opportunities, etc. Social – human capital, product liability, stakeholder opposition, social opportunities, etc. and Governance – corporate governance, corporate behavior (MSCI, n. d. a).

Though sustainability reporting is nothing new, ESG has received much attention from January 2004. According to KPMG (n.d.), the then Secretary-General of United Nations, Kofi Annan urged the CEOs of major financial institutions for participating in a mission to integrate ESG into the capital market and today 80% of world’s largest corporations use Global Reporting Initiative Standards. In sustainability reporting, companies disclose nonfinancial matters which are under greater scrutiny than ever as more and more companies are publishing such reports to attract stakeholders and the score of these reports are important for their business success.

The report that contains more disclosure gets higher disclosure score and the matric is not used for measuring performance rather show the devotion towards transparency and accountability (Tamimi and Sebastianelli, 2017, p. 1661). MSCI (2019, p. 7) explained how the best ESG performers are rated AAA and the CCC is
awarded for the worst contributors. Refinitiv (2020, p. 4-6), another index provider, rates ESG score form 0-100 also mentioned ESG score is provided in line with the public disclosure of companies’ ESG data. These ratings are now one of the most important aspects to the millennials. According to Morgan Stanley (2017), 75% of the 1000 active investors participants of a survey are interested in sustainable investment and adopting it as their strategy. “In the last 35 years, the market value of organizations has slowly shifted from a price based largely on tangible assets to a greater emphasis on intangible assets. The concept of value has fundamentally changed and with it the dynamics of the global economy” (EY, 2016, p. 1). At present, it is not very unusual for a company without a huge amount of physical assets or which cannot produce any consumer goods to be sold for an enormous amount of money for having patents, copyrights, goodwill, brand, etc. MacMillan and Downing (1999, p. 18) explained that the market value of most of the company is related to goodwill.

Goodwill is the difference between the purchase price of a company and the fair value of its assets, and its value cannot be recorded until control of the company is changed during purchased by another entity (Vance, 2010, p. 93).

According to IFRS 3 (2017, para. 32) Goodwill is measured as the difference between:

1. The aggregate of (i) the value of the consideration transferred (generally at fair value), (ii) the amount of any non-controlling interest, and (iii) in a business combination achieved in stages, the acquisition-date fair value of the acquirer's previously-held equity interest in the acquiree, and
2. The net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed

Understanding the stakeholders’ perceptions is very vital for top executives and the board of directors. With the growth of environmental, social, and governance concerns, people are getting more and more sensitive about their social responsibilities. Therefore, ESG reporting is a good way for the firms to communicate their sustainability performance which investors think has a strong linkage with financial performance (Unruh et. al. 2016). They also stated that investors care about sustainability, but the intensity is more than their anticipation. Since goodwill is related to financial performance and firms’ value, it will be interesting to see the impact of ESG score on it.

**1.2. Problem Discussion and Research Gap**

As mentioned before, sustainability has now become a matter of consideration for the general mass as well as the governments and business world. With the advancement of information technology, the actions of the business organizations have become more exposed to the world than ever before. The millennial generation is proactive regarding sustainability. They are considerate both as an investor and as a consumer. Therefore, sustainability has been a major concern for CEOs. Moreover, sustainability reporting acts as a new philosophy for disclosure that focuses on creating value as a result of business policy (Buallay, 2019, p. 99). According to Reynolds and Yuthas (2008, p. 60), these types of reports provide crucial signals
about the interest and priorities of the organization. Sustainability reporting such as ESG reporting is a functional way of communicating an organization's commitment to sustainability. Even if organizations hide or lie about their inconsiderate or greedy activities, they eventually come to light through media, rival firms, or other stakeholders.

Though sustainability is needed to be prioritized all over the world, no other region is as conscious as Sweden regarding this issue. Investors, debt providers, consumers, government all come forward to implement sustainability in each possible way. Swedish government (2003, p. 22) has stated that they have included five green indicators (energy consumption, acidic substances emission, CO2 emission in the atmosphere, level of benzene in urban air, and release of nitrogen and phosphorus into the sea) in the budget statement since 1998. During the review of the national strategy for sustainable development, government authorities, individuals, and municipal and country councils were invited to express their opinions (Swedish government, 2003, p. 22). Sweden is among the first to institutionalize sustainability in their business and investment. Nasdaq Stockholm is the world’s first stock exchange to establish a sustainable bond market and in 2017 it prescribed companies to report their non-financial actions regarding environmental, social, and governance (Höiseth, 2018). Höiseth (2018) interviewed Lauri Rosendahl, the CEO of Nasdaq Stockholm, where he stated that companies will achieve competitive advantage through sustainable actions since investors progressively pursue companies to maintain sustainability, and soon, they will only opt to invest in such investments.

The ESG investment has its roots from the 1960s while investors started discarding shares of tobacco producers or apartheid regimes such as South Africa from their portfolio (MSCI, n.d. b). Since then, a lot of researches has been done on the topic of ESG and it has been indicated that ESG reporting has some linkage with a firm’s value and performance indicators. For example, Capelle-Blancard and Petit (2017, p. 557-558) have concluded in their research that, shareholders react to ESG news, but the market reaction is more significant to the negative news than the positive ones. Fatemi et al. (2018, p. 58); Li et al. (2018, p. 73) found that ESG strengths helped raise the value of the firm and the concerns decreased it. De la Cuesta and Valor (2013, p. 236); Tamimi and Sebastianelli (2017, p. 1674) indicated that the aim of ESG discloser is to gain or maintain validity, competitive advantage, and investment decision making. Buallay, (2019, p. 111) has found out that ESG results have a significant positive impact on the performance of European banking sectors. On the other hand, MacMillan and Downing (1999, p. 17), argued goodwill is, where the shareholder value is mostly found. They (1999, p. 19) also indicated that it is really a key driver of shareholder value.

Our previous discussions indicate that there may be some sort of relation between the ESG scores and the goodwill of the firms but there is no solid research on that topic to provide us a clear picture. All these previous studies encouraged us to see if there is any relationship between the ESG score and goodwill since goodwill is also a financial indicator and can create shareholder value and to testify this we have chosen the Swedish market (listed companies) where sustainability is given a higher priority than anywhere else. However, to the best of our knowledge, no research has been done on the impact of ESG scores on goodwill. All these unanswered questions and research gaps are worth fulfilling.
1.3. Research Purpose and Research Question

From our previous discussion, we can say that sustainability has established its place in the minds of the stakeholders’ and its reflections can be noticed in different financial indicators. This concept has been so deeply rooted in our financial system that investors cannot overlook the issue of sustainability despite such disclosure is not mandatory. Amel-Zadeh and Serafeim (2018, p. 101) concluded that mainstream investors do not use ESG data for moral reasons but financial reasons. Moreover, the number of companies who disclosed their ESG information has increased to about 9000 in 2016 from less than 20 during the early 1990s (Amel-Zadeh and Serafeim, 2018, p. 87).

This study aims to search the relationship between two previously discussed issues. The former one is ESG score which is the ratings of a firm’s sustainability disclosure of environmental, social, and governance. Firms get this rating in exchange for their transparency and volume of their non-financial disclosures (Refinitiv, 2020, p. 3). The later one is goodwill which is the residuum of the price and the fair value of the firm paid by the acquirer to the acquiree. We aim to relate these two issues which translate into studying the relationship between ESG scores and goodwill. For studying this potential relationship, we will analyze the impact of firms’ ESG scores in generating or increasing goodwill in Swedish listed companies. In order to fulfill our aim, we wish to answer the following research question:

*Is there any impact of the firm’s ESG score on its goodwill among the Swedish listed companies?*

The results of the study will give us a clearer picture if ESG scores would help to generate more goodwill than usual in our chosen country Sweden which is the most sustainable country in the world in 2017 and 2018 (RobecoSAM, 2018, p. 2). We will use the quantitative method for our study because this method will help us analyze a larger sample and will give us a more generalized idea if there is any relationship between the firms’ ESG score and goodwill.

1.4. Delimitation

There are some delimitations of our research which are evident in our study and degree project thesis. The aim of delimiting our study is to make the research appropriate and reliable on the relationship between ESG score and goodwill. We have specified these delimitations below:

Our study is limited to the Swedish listed companies. We also explained the reason that it is the most sustainable country which has a high ESG disclosure rate than other countries. The stakeholders of this market are more concerned about sustainability, and they are more influential than that of other countries in compelling the companies to ensure transparency. All these things give the research topic and research area more credibility.
Subjective estimation is the base of goodwill valuation and usually, companies determine goodwill during acquisitions rather than internally generated goodwill. They are motivated to do so since internally generated goodwill is difficult to evaluate and therefore, they are hardly included in financial reports.

The study has been carried on a period of fewer than 2 months which may reflect that it lacks the depth required to make the research more informative and insightful. If the study would have been conducted over a longer period, we could have been able to get a deeper understanding and test a larger data sample from a larger region.
2. Theoretical Framework

The idea of ESG was first introduced in a monumental study titled “Who Cares Wins” in 2005 and its fast-growing popularity is based on SRI (Social Responsibility Investment) which is a much older term regarding sustainability (Kell, 2018). Though SRI represents the morality and ethical factors that are used to demoralize unethical behavior for example investment in harmful firms such as alcohol, arms, tobacco, etc. ESG, on the other hand, provides the investors with information about corporate strategy, management process, etc. In the recent past, we have experienced a remarkable increase in the number of investors who are willing to consider sustainability while investing in a firm (Romero et al., 2018, p. 38). ESG factors discuss various issues that are not usually considered as part of financial analysis. Reasonable investing is commonly interpreted as the integration of environmental, social, and governance (ESG) factors in the process of decision making and investment (Kell, 2018). They include how conscious the firm is in its energy consumptions, natural resource management, response to climate change, how safe the working condition is, product safety, trust among the consumers as well as other stakeholders.

Sahut et al. (2015, p. 41) also stated that sustainability bases are commonly formed around three factors: environment, society, and corporate governance which are the opposite of traditional investment that only concentrate on financial criteria. To measure this sustainability bases of American corporations, John Elkington tried to draw a new accounting framework which was later named Triple Bottom Line (TBL) and was beyond the historical performances measuring yardsticks such as profit, shareholder value, return on investment, etc. (Slaper and Hall, 2011, p. 4). They also described that TBL, as an accounting framework, is used to measure performance in three dimensions: environmental, social, and financial, and described these dimensions as three Ps: people, planet, and profit. TBL has environmental and social measurement alongside traditional financial measurement and the newly added yardsticks are difficult to measure.

Norman and Macdonald (2004, p. 246), described that there are three probable motivations for measuring, calculating, and reporting the environmental and social performance in addition to financial performance. They are:

1. Measuring social accomplishment which helps to improve them and improved social performance, in the long run, can make the organization profitable.
2. Organizations have a commitment of maximizing net social impact and TBL can be a good way to judge if they have performed their obligation fully.
3. The firm is obliged to its stakeholders to display information about its sustainability and TBL helps to show its performance regarding stakeholders.

Our study is motivated by sustainability. Since ESG and TBL discuss the same issues and have the motive to disclose similar kind of information alongside the
traditional financial reporting, we will review some theories which are related to the ethical and fiduciary duty of business. For this purpose, we will discuss shareholder theory, stakeholder theory, legitimacy theory, and will try to find out how far they persuade ESG scores. We will also discuss goodwill, how it is measured, what factors affect it, and our views on why it can be affected by the ESG score of the firm.

2.1. Shareholder Theory

Shareholders are the nucleus of the corporations since they provide the funding which is necessary to operate. The principal aim of the shareholders is to maximize the return on their investment or the value of their shares. Moore (1999, p. 119) described shareholder theory as the fiduciary duty of the management to run the business for the interest of the shareholders. Since investors buy shares to increase their wealth, it is the duty of the board of directors to ensure that outcome otherwise the investors will move their resources to other companies. There are two main assumptions involved in this theory: first, shareholders are the owners of the firm, and second, shareholders’ focus is to maximize the value of the firm (Fontrodona and Sison, 2006, p. 35). Therefore, according to the shareholder theory, the primitive aim of any corporation is the maximization of shareholder value through profit maximization (Moore, 1999, p. 118-119).

Moore (1999) also pointed out that, this theory belittles the interest of other stakeholders for the sake of its objective though it acknowledges the significance of their contribution and uses this acknowledgment as a tool to hide this overriding intention. Though investors, as well as other stakeholders, are adopting sustainability and consider the triple bottom line in their activities more than ever, shareholders’ interest still dominates the organizational agenda. Shareholders’ interest is necessary since it creates a natural urge in business operations to be successful. Boatright (1994, p. 402) commented appropriately that, “…corporations ought to be run for the benefit of shareholders, not because they "own" the corporation, or because of some contract or agency relation, but because all other constituencies are better off as a result.”

However, executives working in these organizations, have some responsibilities towards other stakeholders besides serving the shareholders. Government regulations, public demand, employee satisfaction, and publicity for promoting sustainability are the motivations behind adopting ESG disclosure despite shareholders' pressure. Friedman (1970) displayed that the executives have their own motivations for adopting sustainability, but the owners of the business carry the expense. To testify Friedman’s statement, McWilliams and Siegel (2001) performed a study on two different firms, one having sustainability and one without sustainability in their consideration in their activities. They used a “cost-benefit” analysis to determine the suitable level of CSR and found that the profitability of both companies is the same (McWilliams and Siegel, 2001, p. 125). The authors have explained that the company, which does not have any CSR activities in their operations, generates less return than a company having adopted CSR activities. Since the profitability of both companies is the same, shareholders will not have any objection to the executive decision of adopting CSR.
Moore (1999, p. 119) has also supported the idea that shareholder theory will try to please the stakeholders (other than themselves) but they will only do that until this is commensurate with the fulfillment of the overriding goal.

### 2.2. Stakeholder Theory

The idea of stakeholder theory immerged when the idea that corporations should only pursue the aim of maximizing shareholder value was rejected and it may be the most admired way to handle the issues that deal with the responsibilities of business in a broader sense (Wijnberg, 2000, p. 329-330). Stakeholders are thought to be the motivated party having a stake in the business (Johnson et al., 2017, p. 134). Therefore, everyone who has some connection with a business is its stakeholder. Most notable stakeholders of a business are its customers, employees, government authorities, investors, money landers, people living around a business.

Donaldson and Preston (1995, p. 70) explained how the stakeholder theory has been presented from three different perspectives. They are descriptive/empirical, instrumental, and normative. Descriptive/empirical theory is used to explain something or specify the characteristics and behaviors of the corporation (Donaldson and Preston, 1995, p. 70). Instrumental stakeholder theory is used to find out the connections or lack of it amongst stakeholder management and the execution of usual corporate goals (Donaldson and Preston, 1995, p. 71). The normative theory is more classic in nature which explains the role of corporation containing the identification of ethical or philosophical guidelines for corporations’ function and their management (Donaldson and Preston, 1995, p. 71).

The stakeholder theory translates sustainability through its accountability towards everyone in the society. That is why stakeholder theory offers more extensive scenery of the firm than shareholder theory which considers various participants such as owning labor, investment, etc. (Fontrodona and Sison, 2006, p. 36). This theory aims at setting up a relationship among all the stakeholders. Moreover, maintaining these relationships helps some or all the stakeholders to get a higher return and as a result, organizations achieve greater wealth and proper distribution and will benefit the total society (Moore, 1999, p.120). In these senses, stakeholder theory is closer to the aim of ESG than shareholder theory.

### 2.3. Legitimacy Theory

The legitimacy theory is one of the most relevant and effective theories regarding CSR and corporate representation. The theory is built on the faith that there are some social norms and values of what is legitimate or accepted and expected behavior for business. A legitimate business can be described as an organization whose pattern of behavior is according to its group of spectators who support such behavior. According to Burlea and Popa (2013, p.1579), the organization takes into account the symbolic representation of its image with its philosophy and scrutinizes its necessity to improve its culture to promote such activities in the surrounding environment. They also mentioned (2013, p. 1579), the organization also justifies its presence through ecological and social activities that do not jeopardize the existence of the society where it operates. The nature of legitimacy
is abstract that is why it is hard to find a way for the business organizations to be motivated for willingly disclosing social and environmental information.

The legitimacy theory is seen as a systematic theory that explains the entity’s behavior within a society that requires the involvement of organizations with CSR in its operating areas (Hoque, 2006, p. 166). Haque (2006, p. 162) also added from a wider point of view that, the concept of legitimacy is dependent on time, place, and situation since what is legitimate today may not exist in the future due to the change in societal view. A similar rule applies to the change of place. The study also (Haque, 2006) highlighted that time and place are crucial when explaining about legitimacy.

In other words, the legitimacy theory is regarded as an instrument which helps businesses to execute and update social and environmental disclosures voluntarily to fulfill their social obligations by recognizing their goals and surviving in a bumpy and turbulent environment (Burlea and Popa 2013, p. 1579.) According to Suchman (1995, p. 574 and 586), it is usually generalized or assumed that the activities of a business organization are attractive, orthodox, or appropriate within a system of social norms, principles, faiths, and definitions and the general challenges of this legitimacy theory are gaining legitimacy, maintaining legitimacy and repairing legitimacy.

It is important to create an evolved and updated organizational vision where an equation of measurable financial resources is equally valued as intangible legitimacy resources. However, Archel et al. (2009, p. 1286) describe that when the management of a business discovers a legitimacy gap, they try to enact different strategies such as:

1. To rectify the behavior of their organization matching it with the society’s desire.
2. To change the perception of society to accept their behavior without changing that behavior.
3. To change their existing image in the society about their behavior by manipulating, deceiving, or simply distracting its attention.
4. To indoctrinate society with a view to changing its desires and accommodate them to the end of the organization.

Suchman (1995, p. 577), has mentioned about three types of legitimacy in his study and they are pragmatic legitimacy, moral legitimacy, and cognitive legitimacy. He (1995, p. 578) described pragmatic legitimacy as voluntary disclosures to organizations' most immediate audiences which directly affects the audience's well-being. Moral legitimacy is sociotropic which means it evaluates if any activity is the right thing to do or not instead of judging the action if it is useful to the audience (Suchman, 1995, p. 579). Cognitive legitimacy is described as a tool that judges the organization by its accomplishment (Suchman, 1995, p. 580).
Legitimacy theory encourages business entities to disclose their non-financial acts voluntarily. This theory also discusses different types of legitimacy, and how the perception of legitimacy can change with time, place, and situation. Managements motifs for non-financial disclosure are also discussed which is very important. All these reasons encouraged us to include legitimacy theory in our theoretical framework since it will help us get a better understanding if there is any relationship between ESG scores and goodwill.

2.4. Critiques on Shareholder, Stakeholder, and Legitimacy Theory

Supporters of the free-market allow corporations to chase after its own objective which is profit-maximizing. Their argument has been traced by both querying its authenticity of stakeholder theory and displaying the normative base of the shareholder theory of the firm. They argue that shareholder theory is equal to stakeholder theory in importance if not superior (Moore, 1999, p.119). However, the biggest criticism of shareholder theory is the emergence of stakeholder theory since the aforementioned theory failed to address the interest of all the related parties except the owners.

Though the purpose of shareholder theory is the profit and value maximization of the firm, Mansell (2013, p. 597) mentioned it is possible for the managers to aim for the betterment of related parties alongside the owners without compromising the ethical rules of shareholder theory. On the other hand, Fontrodona and Sison (2006, p. 41) has considered the firm as a human institution and has no single owner but has many stakeholders who pursue both economic and noneconomic interest. They also pointed out that, the firm aims to provide the stakeholders with the opportunity to develop themselves both materially and morally through founding the relationship besides maximizing shareholders' wealth.

The most common criticism of stakeholder theory is that the demands of the stakeholders are not clear or well defined. Since stakeholders’ needs are charismatic, latent, or hard to define the theory cannot respond to all of them (Voss et al. 2005, p. 1133). Though academics in the field of ethics, hesitate to attribute moral responsibilities for all, most of the parts of the theory emphasize on the responsibility of the whole corporation rather than individual decision-makers (Wijnberg, 2000, p. 340). He also added that stakeholder theory comes with ethical principles that are difficult to specify what the norms contain in order for a firm to lay the foundation of corporate behavior. That is why Antonacopoulou and Me´ric (2005, p. 29-30) concluded that stakeholder theory is more of an ideological product than a scientific theory.

Like stakeholder theory, legitimacy theory is also blur in nature. It also lacks the formal models and is abstract. Mangers sometimes wonder about the legitimacy of their actions and can easily manipulate or divert society. Owen (2008, p. 248) described “… we are simply offered plausible interpretations of managerial motivations for disclosure with no attention paid as to how such disclosure may, or may not, promote transparency and accountability towards non-capital provider stakeholder groups.” The significance of legitimation efforts varies from entity to entity since organizations hunt legitimacy for various reasons. The social
message, cause, and effect may vary according to the motives of seeking legitimacy. Suchman (1995, p. 574) has described two very specific significant dimensions and they are (a) the distinction between stalking perpetuity and credibility, and (b) the distinction between seeking passive preference and active preference. These dimensions can change the outcome of nonfinancial disclosure under the legitimacy theory. Haque (2006, p. 162) argued that the concept of legitimacy is dependent on time, place, and situation therefore, legitimacy changes in different, time, place, and situations.

Suchman (1995, p. 585-586) has also pointed out that an organization can fully satisfy all its audiences and no managers can step outside of the cocoon made from his own belief and perception. However, he also described managerial enterprise can make the difference significant enough to such an extent where the entity’s activities are regarded as attractive, specific, and relevant in any cultural backdrop.

The role of independent media is very noteworthy in chasing the legitimacy of business organizations. They can play an even better role if stakeholders, community, and different regulating authorities accompany the free media. In modern times, the role of stakeholders has become even more important in the preservation and reduction of illegitimate activities by business entities. On the other hand, organizations will have more opportunity to draw the attention of the stakeholders by following their legitimate duties since the stakeholders now monitor the activities even more closely than ever. In this situation, the faith of stakeholders can help to shape organizational legitimacy and it will be visible in organizational behavior.

### 2.5. Goodwill

Goodwill is regarded as an intangible asset and is considered after a business combination. Like other intangible assets goodwill also plays an important part in management’s decisions. EY (2016, p. 1) has highlighted “In the last 35 years, the market value of organizations has slowly shifted from a price based largely on tangible assets to a greater emphasis on intangible assets. The concept of value has fundamentally changed and with it the dynamics of the global economy”. Besides the growing importance of goodwill, the accounting practice of it has changed over time.

#### 2.5.1. The Concept of Goodwill

There are noticeable changes of goodwill both according to accounting practice and accounting law and the change over time has been quite substantial (Carlin and Finch, 2011, p. 370). The definition of goodwill has confusingly changed over time. Wen and Moehrle (2016, p. 11) described goodwill as the fair value of the excess amount paid of the identifiable net assets during a business acquisition and it is a prominent intangible asset having the largest amount in the balance sheet.

According to IFRS 3 (2014, para. 32) Goodwill is measured as the difference between:
(a) The aggregate of:

(i) the fair value of the consideration transferred,
(ii) the amount of any non-controlling interest in the acquiree, and
(iii) in a business combination achieved in stages, the acquisition-date fair value of the acquirer's previously-held equity interest in the acquiree, and

(b) The net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed.

In a study by Dicksee and Tillyard (1906, cited in Ratiu and Tiron, 2012, p. 58) described that “...where the locality of the business makes the trade, Goodwill as a disposable asset represents the advantage derived from the chance that customers will continue to frequent the premises in which the business has been carried on; that where the business is one which depends upon the reputation of a firm, the Goodwill consists of the advantage which the owner (whether original or by assignment) derives from being allowed to represent himself as such; and that where the value of the business depends on its business connection, the Goodwill on sale consists of the right to be properly introduced to those connections.” One of the modern-day definitions of goodwill is from Ratiu and Tudor (2013, p. 788). They said, “When goodwill is regarded from the position to generate super-profits or to offer acquiring companies a push which supports the company in its future development when it is divided into components until it almost disappears as a sole concept, then the choice of how to recognize it in the balance sheet, to write it off, or amortize it steadily begins to make sense.” Ratiu and Tiron (2012, p. 58) also described that there are two perpetual important aspects of many goodwill definitions and they are: (a) advantage and (b) expectation of profit.

According to Wen and Moehrle (2016, p. 13), there are two types of theoretical approaches for goodwill measurement:

(a) the excess profit approach which is similar to the economic nature of goodwill, and
(b) the residuum approach which is the difference between the purchase price and the fair market value of an acquired company’s assets.

According to IFRS 3, there are two methods of measuring goodwill, (a) partial goodwill method when only the majority’s share of goodwill is recognized, and (b) full goodwill method when both majority and minority’s share of goodwill is included. Moreover, goodwill must be impaired instead of amortized and it must be recognized in its fair value according to IFRS 3 (2017). However, when we see goodwill in a balance sheet, it represents what the companies have spent while acquiring subsidiaries. During our data analysis part, we will find such examples of gross goodwill which is the same as the full goodwill method (ACCA, n.d.).

In our study, goodwill is a significant theoretical issue. We need to define goodwill elaborately to better explain if there is any impact of ESG ratings on goodwill. We have defined goodwill from different perspectives and its related accounting to get a better understanding according to IFRS and other related articles. Later in the study, we will relate goodwill with shareholder theory, stakeholder theory, and legitimacy theory.
2.5.2. Mergers & Acquisition (M&A)

Goodwill has a significant association with mergers and acquisitions. Wen & Moehrle (2016, p. 11) has outlined the relationship between goodwill and business acquisition. That is the motivation for including mergers and acquisitions in our theoretical framework. The reasons for mergers and acquisitions are to gain crucial advantages such as prompt market access, reduction of competitors, faster expertise development, improved public image in terms of larger market shares, etc. However, mergers and acquisitions, as an instrument of corporate development are rather risky because of a higher failure rate (Kreitl and Oberndorfer, 2004, p. 691). Sehleanu (2015, p. 596) said that mergers and acquisition transactions can cause conflict between shareholders and agents whereas the former, the shareholders, aim to maximize their gains but the later craving for risk minimization and empire building.

Svetina (2012, p. 537) described acquisition is an effective way of gaining synergies and reallocating resources. Andrade et al. (2001, p. 118) described merger is used not only as a strategy for growth and success, synergies, grater efficiency in managing assets but also a tool of empire building for some managers. Since the public companies have different organizational and ownership structures, while acquiring a target they need to pay more than a private equity firm and this extra payment can be rational for the value of the synergies (Svetina, 2012, p. 538).

Fatemi et al. (2017, p. 177), concluded in their study that, the merger has no improvement in firms’ ESG performance. They also mentioned that “Indeed, the improved bargaining position of the surviving firm may be one factor motivating the so-called “activist” investors (those seeking to enhance shareholder returns) who nudge the firm to increase its scale and extract rents otherwise inaccessible.” The motivation for mergers and acquisitions is to raise the economic performance of the firm but in actual cases, these operations fail to achieve desired performance (Sehleanu, 2015, p. 596).

The success of a merger and acquisition is dependent on its strategy before and after the acquisition. The acquirer needs to think before the acquisition of how the target will be integrated with the group. The acquirer needs to think about the financial cost of acquisition and the reaction of the acquired firm. Beitel et al. (2004, p. 138) suggested that acquirers are more successful when they take over comparatively better-managed targets and at the same time give enough synergy and profit efficiency potential and therefore, successful bidders do not care for turnaround targets. They also suggested that, when corporate control turns towards better management from a bad one, the shareholders approve and get benefited from the merger.
2.5.3. Critique on Goodwill

Goodwill is one of the most important intangible assets which has always been a topic of debate amongst the accountants and scholars of accounting since its introduction in the 1880s (Ratiu and Tiron, 2012, p. 54). Many questions which scholars raised during the primary age of goodwill is still being answered today. Goodwill is a topic that is at the same time challenging, contemporary, ambitious, and it is significant not only to scholars but also to stakeholders.

The rule for the accounting of goodwill has been changed from amortization to impairment tests which will enable the financial statement users to get better understanding of the financial condition of the company. This reform of IFRS has added more significance of goodwill to the analysts since it displays more information to the stakeholders for making a more accurate acquisition decision. According to the conceptual framework (2018, para 1.2), financial statements must represent the financial condition of the company faithfully to all its users. To ensure this faithful representation the entity shall use fair value measurement (IFRS 13, 2017). Though fair value measurement is considered accurate for disclosing economic performance, Sundgren (2013, p. 250) concluded that the scholars are not unanimous about the fairness of fair value.

Though impairment of goodwill is related to efficient governance and eagerness of management for disclosing information regarding the financial performance of the firm, this goal is not always achieved (AbuGhazaleh et al., 2011, p. 196). Moreover, ethical corporate governance will encourage reporting impairment which reflects clearer economic performance (AbuGhazaleh et al., 2011, p. 197).

2.5.4. Relationship Between Goodwill and ESG

At present, the regulatory bodies around the world are much more aware of the impacts of business on the environment, society, and governance. European Commission is one of the strictest bodies when it comes to sustainability. According to European Commission (n. d.) from 2021, (phased in from 2020) every automobile manufacturing groups must keep the emission below 95g CO₂/km in average for each new car sold in the continent and if the target exceeds the company has to bear €95 penalty for each g/km. This regulation stipulates how serious the issue of sustainability is for the authorities and companies as well. Many companies worldwide are spending huge resources to be able to fit inside these types of regulations and many are earning a lot by being sustainable or selling sustainable products. CEO of Tesla, Inc. Elon Musk said they are making money from their rivals selling nothing but their EV credits by forming a pool with FCA in the European market (Attwood, 2019). Because of Tesla’s being electric, their cars do not produce any CO₂ whatsoever and when they formed a pool with FCA, Tesla has helped to reduce the average emission of the pool. In 2018 Tesla, Inc has earned two-thirds of its profit amounting to $ 190 million only from selling those credits. Though Tesla is not doing a great job in social and governance sectors like environmental aspects, still they are earning a lot from sustainability initiatives (O'Mahony, 2019). Therefore, the impact of a good ESG rating is not very hard to speculate.
Sahut et al. (2015, p. 42) compared ESG with an advertising campaign since adopting sustainability can both cost and provide benefits. He also said ESG is helpful in building firms’ image and labeled it as ESG advertising. Moreover, Scales also (2019) described how ESG reporting can be effectively used as a publicity instrument. The importance of sustainability reporting does not end here. MIT Sloan (2017, p. 4) mentioned in their 2016 report that, 60% of the executives agree with the idea that, sustainability is significant to investors and 74% think it is more important now than it used to be three years before and its significance is more to the investors than managers have anticipated. Moreover, investors want to increase their reputation and create a better image by choosing to merge with an entity with a better ESG reputation (Mergermarket, n.d., p. 13). Therefore, it will encourage smaller companies to be merged with larger holding companies who have better ESG score than those do not. In our study, we will observe, in the event of merger and acquisition, if smaller companies are willing to be acquired by a company with better ESG even if they pay less amount as goodwill than an unsustainable company.

Sahut et al. (2015, p. 42) explained how ESG implementation costs of a firm can be compensated by its effect through stable revenues from customer loyalty, employee motivation, and a possibility of a lower cost of capital since investors prefer a sustainable firm with slightly lower profitability. They also mentioned that companies can perform better by reducing their risk. Jennings et al. (1996, p. 530) pointed a strong cross-sectional positive relation between the amount of recorded goodwill and equity value when other components of net assets are controlled.

We have previously mentioned that, as per our knowledge, there is no study on the impact of ESG score on goodwill. However, ESG score has positive impacts on various performance indicators according to many previous studies. Verheyden et al. (2016, p. 54) concluded that ESG screening improves risk-adjusted returns, from a risk viewpoint, ESG reduces volatility, CVaR (Conditional Value at Risk), and drawdowns, and it also lowers the possibility of negative daily return. Romero et al. (2018, p. 38) concluded that companies having sustainability scores, favor higher ROE, and higher value for the corporation. On the other hand, MacMillan and Downing (1999, p. 18) stated that the market value of most of the company is related to goodwill. Therefore, both the ESG score and goodwill have a relation with the market value of the company. Freeman mentioned that (1989, cited in Sahut et al. 2015, p. 60) ESG ratings can increase firms’ performance. Thus, ESG scores can draw the attention of the investors since maximizing ROE is the primary aim of investors. S&P Global. (2019, p. 1) reported that, “Companies focusing on ESG issues have achieved reduced costs, improved worker productivity, mitigated risk potential, and created revenue-generating opportunities.” All this evidence indicates that ESG scores have similarities with the aspects of goodwill mentioned by Ratiu and Tiron (2012, p. 58): advantage and expectation of profit. Moreover, goodwill is the surplus amount paid over the value of the firm during acquisition, and ESG scores have a positive impact on different performance indicators which increase firms’ value, we suspect that there may have some impact of ESG scores on goodwill.
3. Scientific Method

In this chapter, we are going to discuss which strategy and approach are suitable for our research, what is our research philosophy and how we are going to design our research. In research, it is very important to use strong research literature that is available in many different sources including library sources. At the same time, there is a discussion on different literature sources and using secondary data in our research. After this, we are going to discuss social and ethical viewpoints in academic research to present a fair and sustainable report based on our research questions.

3.1. Research Strategy

In research, identifying a research strategy is considered a very crucial and important part of the research process. There are two methods or research strategies researchers can use to conduct research; ‘Qualitative and Quantitative’. Researchers can either choose one strategy or can combine both the strategies which fulfill the research requirement most. Choosing a research strategy, in most of the time, is influenced by the nature of one’s research project and philosophical preferences (Collis and Hussey, 2014, p. 6). According to Collis and Hussey (2014), “qualitative research is done through collecting new data and analyse them using interpretive methods.” Researchers search for new data and have participants based on the social world and the research is influenced by research participants and observations. “By its nature qualitative research generates new data and information and the aim is to bring new theory in research, this research is connected to an inductive approach” (Collis and Hussey, 2014, p. 6). According to Russell and Schutt (2009), “methods for qualitative research includes observation, intensive interviewing, and focus groups to illustrate them with research.” It should include careful observation of the research problem, followed by a systematic question and interview process to get a strategic response from respondents through experiments or surveys. Moreover, it emphasizes on the natural behavior of social life and the viewpoint of participants and their real-life experience. But there are some pitfalls while choosing to conduct a quantitative research method e.g., sometimes a much narrower data is collected from external data sources, the explanation of the results is limited since it uses numerical data, and tends to limit human perceptions on studied phenomena.

Quantitative research is designed to collect quantitative data using statistical methods and most often they are designed not to collect new data preferably using statistical tools to analyze data from existing databases, archived, or published sources (Collis and Hussey, 2014, p. 5-6). In a quantitative study, the researcher first looks into quantifying the problems related to research questions to establish a mechanism where one or more variables can influence dependent variables (Kjerstensson and Hanna, 2019, p. 25). In our research, we are going to follow a quantitative research method with an ontological and epistemological approach. The role of quantitative research is to quantify attitudes, opinions, behaviors, and defined variables. Since our research is neither going to observe social phenomena nor there will be any participants to survey, the quantitative research method is better suitable for our study. In our research, we will collect statistical data of OMX Stockholm 30 and ESG scores to see if there is any relation between the ESG scores and goodwill. We will use a secondary source of data named Refinitiv datastream and then we will
use statistical tools to test the data in order to explain and come to a conclusion about the research population if ESG affects the company's goodwill. Mainly, we are going to collect numerical data from the database which will later be processed and tested in statistical tools in relation to our research question. “Any reasoning that uses numbers is quantitative and any reasoning that does not use numbers, but is based on judgment and opinions, is qualitative” told Waters (2008, p. 4). Saunders et al. (2007 p. 145) distinguished “One way of distinguishing between the two is the focus on numeric (numbers) or nonnumeric (words) data.”

In addition to this, our research is going to analyze those numerical data into statistical tools in order to solve or reach a conclusion of our studied phenomena. That fulfills another purpose of choosing quantitative research methods in our research. According to Waters (2008, p. 5), “quantitative methods use different numerical approaches for analysing and solving problems.” Finally, the quantitative research method examines relationships among variables through statistical analysis, observations, and testing theories which we will do by using statistical tools in data analysis with regression tests and analysis.

3.2. Research approach

Finding an appropriate research approach is one of the most crucial parts to consider despite being clear about the theoretical aspect of the research. Research approaches represent explicit findings and help to reach a true conclusion using either an inductive or deductive approach. When a logical conclusion is derived among a set of hypotheses, the conclusion becomes true if those studied hypotheses are true (Saunders et al., 2007, p. 144).

“Deductive Research is a study in which a conceptual theoretical structure is developed and then tested by empirical observations; thus particular instances are deducted from general inferences” (Collis and Hussey, 2014, p. 7). This is to test or conduct research to collect specific data related to research questions and variables. In our research, we are going to follow these steps. “Deductive research approach is a type of research in which a specific expectation is deduced from a general premise and is then tested” (Russell and Schutt, 2001, p. 21). In our project, we are going to develop population and sample strategy and collect relevant variables data so that we can test our research hypothesis to come to a conclusion through statistical analysis, and for this, we have chosen to follow a deductive approach in our research project. According to Saunders et al. (2007, p. 117), “deductive approach, in which one develops a theory and hypothesis (or hypotheses) and designs a research strategy to test the hypothesis.” Several studies explaining deductive research explains the relationship between theory and practice (Liselotte and Yodit, 2017, p. 9). The deductive approach is also considered as an act of reviewing existing research theory before actual research is conducted. Saunders et al. in their book mentioned 5 sequential steps for the deductive approach (2009, p. 117). They are:
Step 1: Deducing a hypothesis form the theory which is testable in between two or more variables
Step 2: Express hypothesis in operational (measuring concepts of variables) term
Step 3: Test the operational hypothesis
Step 4: Examine the specific outcome of the analysis
Step 5: Reject or modify if the test result is not satisfactory or false

To verify and revise the findings researchers should go through the process again. In our research, we are going to analyze our secondary data following deductive approaches to see and test the relationship between studied variables and research hypotheses. As because, the deductive approach explains the causal relationship between concepts and variables at the same time this approach allows control or change in the process of hypothesis testing (Saunders et al., 2007, p. 118). Generalization (using the quantitative method) is considered to be the final characteristic of the deductive approach. Specifically, in a deductive approach, the hypothesis is deduced to process data for research purposes.

The inductive approach, in contrast, follow a specific case of studies that later resolved into a theory and aim to create a new theory from the observation of the empirical reality. “The process moves from individual observation to general statement and or inductive approach is referred to as moving from the specific to general” (Collis and Hussey, 2014, p. 7). There are still a lot of discussions ongoing for an inductive approach. As an alternative to the deductive approach, one can start with an interview rather than collecting data or depending on theory. “In inductive approach which researchers collect data and develop theory as a result of data analysis” (Saunders et al., 2007, p. 118). So the purpose is to get a better understanding of the nature of the problem. Which is not relevant to the purpose of our research. The researcher may end up with similar results but the approach makes it distinguishable then one another. Researchers in this approach are more likely to follow a qualitative approach to establish different views of phenomena (Saunders et al., 2009, p. 147). Since we will be conducting quantitative research and not going to build up a new theory, a deductive approach is suitable for our project.

3.3. Research Design

“The starting point in research design is to determine research paradigm” (Collis and Hussey, 2014, p. 7). The purpose of the research design is to guide and use the most suitable methods for identifying and answering research problems (Liselotte and Yodit, 2017, p. 11). According to Collis and Hussey (2014), there are four types of research, They are exploratory, descriptive, analytical (explanatory), and predictive.

In explorative research, the researcher undertakes such a project where information of a situation is not available or have not done similar kind research, or not much about the subject is known, or have not solved a similar kind of problem previously. In the study made by Robson (2002, cited in Saunder, 2007, p. 133), “An exploratory study is a valuable means of finding out ‘what is happening; to seek new insights; to ask questions and to assess phenomena in a new light’.” If there are fewer studies in the
field of research, the researcher tries to develop a new hypothesis which may have a chance either to be accepted or get rejected. In the study made by Robson (2002, cited in Sauneder, 2007, p. 133), “In descriptive research one tries to identify and gather information on particular issues and later explains it.” Sometimes a researcher tries to go beyond the descriptive research and dig into further analysis to reach a solution and establish a causal relationship between variables which is considered as analytical or explanatory research (Sauneder, 2007, p. 134). It identifies the most control variable of research and the process is done through analyzing and measuring casual cause and effect relationships. Predictive research on the other hand goes beyond explanatory or causal research. Here, a researcher aims to explain more details and generalize a particular studied phenomenon.

Our research project is to see if there is any correlation between ESG scores and goodwill which will be discussed in the quantitative study part in detail. To do this we have taken into consideration some major variable that reflects goodwill. In that case, our research design is suitable for both explanatory and analytical studies. In the study made by MacIntosh and Gorman (2015, cited in Kjerstensson and Hanna, 2019, p. 25), “Explanatory theory is the best approach while testing theories and conducting quantitative research.”

3.4. Research Philosophy

“Research philosophy consists of a different philosophical framework that guides how scientific research should be conducted based on the fundamental nature of knowledge, reality and existence” (Collis and Hussey, 2014, p. 10). Research philosophy discusses in details about the sour and nature of data, and develop the knowledge about studied phenomena. It also epitomizes the research framework and helps to understand the research paradigm of studied phenomena. According to Collis and Hussey (2014, p. 10) “the way one chose to investigate the research questions will be driven by research paradigm.” Research philosophy is considered a guideline on how the research should be conducted. The result may not be as dramatic but throughout the multistage process, one can develop new knowledge answering specific questions. In research, it applies as, during the research, a number of assumptions are made based on our knowledge, Experience or realities, social norms and values, ethics and laws, and from surroundings. It is never easy to adopt any particular philosophy for a studied phenomenon as there are self-belief and knowledge that may clash in between. Toselect one for the research purpose we have to set our belief that there is always a philosophical disagreement and it is a part of business research. The other philosophical paradigms are considered as a mixture of social sciences (e.g., sociology, phycology, economics), natural science (chemistry, biology), applied science (engineering, statistics), humanities (literary theory, history, linguistics, history, philosophy), and organizational privative such as Starbucks 2003 (Saunders et al., 2015).

Positivism: One of the philosophical systems that can only be proven with the scientific method and logical explanation (Collis and Hussey, 2015). This philosophy rests on the assumption that social reality is always singular and objective to society and therefore is not affected by the act of investigating it. This philosophy is assumed to be comprehensible and provides explanatory theories to understand the social phenomena of the research.
Interpretivism or Anti-positivism: It opposes the positivism of natural science. This philosophical framework is an approach to social science and based on the assumption that social reality is in our mind, multiple and subjective, and therefore social reality is affected by the act of investigating it. This philosophy interprets the understanding of social phenomena rather than the natural science of the research. Interpretivism tends to follow a descriptive way of research than measuring in order to conduct and explore the complexity of social phenomena.

3.4.1. Ontological assumption

“Ontology refers to assumptions about the nature of reality” said Saunders et al., (2007, p. 108). Ontology is a way of study that shapes the ontological assumptions of research objectives. In business, those objectives may refer to its management, individual working lives, and organizational events and affairs. Saunders et al.also mentioned (2007, p. 108). “The first aspect of ontology we discuss is objectivism”. It confirms the existence of social reality and the relation with social actors. The second aspect is subjectivities where social phenomena are considered to be the perception of social actors and their connection with social existence.

This, therefore, is based on the pure assumption on how one sees the world and its objective of research phenomena of business research, and at the same time, it also helps to determine the choice of research. This statement strongly emphasizes the ontological philosophy of research whereas imagination and the natural argument are present. In ontology, an individual describes how an object interprets the belief in order to explain. Alternatively, ontology creates a straight line in between central questions and perceived social entities. Since it is based on assumptions and beliefs whether it’s the researchers or the reader, this assumption specifies the reality which is considered to be real (Saunders et al., 2007, p. 108). Scholars identified ontological assumptions are mostly concerned with the nature of reality where positivists exist and it’s a viewpoint that social reality is observable and external to the researcher (Kjerstensson and Hanna, 2019). To distinguish between positivism and interpretivism, positivism believes that there is only one reality available in society.

On the other hand, In a study made by Collis and Hussey (2014, cited in Kjerstensson and Hanna, 2019), “interpretivism argues that social reality is subjective and socially constructed whereas multiple realities are existing.” Saunders et al. (2007 p.108), in his study, mentioned that if more than one ontological assumptions are present on a studied phenomenon mean those philosophies can focus on the resistance of ontology and that can be best suited to benefit the researcher.
3.4.2. Epistemology

According to Collis and Hussey (2014), “Epistemology is concerned with what we accept as valid knowledge.” “Epistemology concerns assumptions about knowledge, what constitutes acceptable, valid and legitimate knowledge, and how a researcher communicates knowledge to others” (Saunders et al., 2007, p. 127). Epistemology initially may seem to be abstract. Epistemology offers a wide range of choice of methods which has appeared in many academic researches. At the same time, it is very important to know how to implement those assumptions to relate with the chosen method.

Positivists believe that in epistemology, the knowledge should come from objective evidence and that evidence is measurable and observable. It, therefore, separates the researcher from the phenomena of the study to appropriate the knowledge that derived from the reality (Collis and Hussey, 2012). Saunders et al. (2007, p. 127) stated that, for epistemology, positivists’ assumptions can offer the best scientific evidence for quantitative research methods. Provided with the successive objective and generalizable research findings, in contrast, it may be less effective for a complex view of organizational realities. Here, positivists believe this assumption is significantly based on what is objectively observed (Tuli, 2010, p. 100). From the nineteenth-century, positivists seem to have a more advanced philosophical approach whose main purpose is to conduct scientific research and the social reality is based on empirical facts and personal thoughts (Tuli, 2010, p. 99).

Interpretivism, on the other hand, is an assumption that states that the knowledge should come from subjective evidence from the participants. The researchers themselves interact with phenomena under study. It seems that interpretivism tries to minimize the distance between researchers and what has been researched (Kjerstensson and Hanna, 2019 p. 23). The subject matter under this phenomena varies and this approach gives different human thoughts and action which explains human behavior in-depth rather than a simple discretion. The theory is considered to be so simple and focused on narrative stories (Saunders et al., 2007, p. 136). For both positivists and interpretivism, it is considered that human behavior is patterned and repeating (Tuli, 2010, p. 100).

3.5. Literature Search

The literature search for both qualitative and quantitative research is one of the core elements to conduct the research where one will look into the existing theory and review literature from a wide range of journals, electronic sources, and literature. This literature search is very important throughout the research process as it provides a wide range of sources to support the research phenomena. “The literature is all sources of published data on a particular topic” (Collis and Hussey, 2014, p. 10).

During the research, we are going to look for reliable sources from different articles that are relevant to the research thinking and hypothesis. There are different techniques to answer the research questions and it depends on which suitable method the researcher is going to choose.
In order to collect data and process them, we will use quantitative methods of research and mostly rely on secondary sources of data from the database. To answer our research question we will mostly rely on our university research resource center. We will consider and take help of some electronic books and articles. Our primary source of the literature search is the Umeå university library database system. From there we will use Ebsco (Academic Search Premier, Business Source Premier, Cinahl), and Web of Science. In addition to our primary and major source of literature search, we are going to use google scholars, various E-Journals, and authentic websites that provide authentic and logical information related to ESG and goodwill. For our literature search, we will use some keywords that are identified and mentioned previously.

3.6. Source Criticism

We are using secondary data in our quantitative research and in this section, we are revising and finding out possible cons for using secondary data. There are certainly some advantages and disadvantages of using secondary sources in research. When it comes to considering the secondary source of data collection, the cost is significantly lower than the primary source of data collection, as there is no fieldwork required to collect secondary data. Previous studies have found that using secondary data is useful in saving resources, in particular time and money (Saunders et. al., 2007, p. 257). Despite using readily available secondary data it must be kept in mind that those data should meet researchers’ specific purpose and objectives of study related to the research questions (Saunders et. al., 2007, p. 260).

Scholars also agreed that overall suitability and precise suitability of data collection sources could be another big disadvantage while choosing secondary sources to conduct the thesis it is also suggested that secondary data could be inappropriate to the research questions and researchers should carefully think when collecting secondary source data as the data may be too old to use or may not be up to date (Saunders et. al., 2007, p. 260-265). Sometimes access to a big number of commercial data could be difficult and costly but as our research project required by the university, the data we are using is without any cost and as students, we are allowed to use full facilities of the university library. But while choosing to use secondary data the only con is, we do not have any control over those data but the assurance is that those secondary data did not affect our initial purpose of the project.

However, in our thesis Refinative datastream is the prime source to collect raw data for ESG scores. We are also going to use university library resources to study related journals and articles which were published and reviewed before and therefore, we found openness to use all other secondary sources in our research project. At the same time to test the hypothesis and answer our research questions, we have used most current suitable data for ESG, goodwill, and other related variables along with Umeå university library resources.

3.7. Social and Ethical Consideration

Social and ethical considerations: It is an important issue for conducting research. Researchers from an ethical point of view have to consider several points as it
concerns moral values, principles, and code of conduct (Collis and Hussey, 2015, p. 30). There are several guidelines which a researcher should follow during the phase of the study.

**Harm to Participants:** Researchers need to ensure physical and psychological safety to the participants or other related parties who have a direct or indirect connection to the research approach. In our case, as we do not have any participants (since we will be doing quantitative research) there will be no concern for this.

**Dignity:** Researchers should respect the dignity of the participants and should avoid any anxiety or discomfort for them. For instance, researchers should not ask anything that lets the interviewees feel discomfort or anxiety. At the same time during the research, an interviewee should know about the consequence of the research and give permission to use information.

**Privacy & Anonymity:** In our research, there is no interview and therefore there is no aim to prevent the privacy of the interviewees. In qualitative research, most of the time an interview is required. Researchers should protect the privacy of the research subjects. We do not have any interviews and will be using secondary data to conduct the thesis and less risk of breaking anonymity and privacy policy.

**Confidentiality:** In research, it is very important to understand and maintain confidential data about a particular group, institution, or individual. In our research, we will collect data from university library web pages and different statistical tools. We will collect publicly available data which is approved and the university has permission to use those data for research purposes.

**Deception:** Misleading information or deception through lies or behavior can potentially occur at any point in time throughout the research process. We will present our thesis as transparent as possible to avoid any deception for the reader whether we receive and include data using any primary or secondary source. Research should not be misguided or include any information that deceives the reader.

**Affiliation:** Research can sometimes be influenced by affiliations that include sponsors of any related parties to the thesis otherwise there may be a conflict of interest between funding of the sponsorship and the researcher. In that case, the author always needs to declare if they have used any personal or professional affiliation. We are conducting the research without the influence of any personal or professional affiliations and have no connection to those parties as it is our university degree project.

**Honesty and Transparency:** As described before that during the research we will be transparent and at the same time we will be honest to represent any information related to our project.

**Reciprocity:** The purpose of any research is to benefit both the researcher and the participants. As our research is quantitative and we do not have any participants we will go through every step carefully. As we are students, we will try to conduct the research in a manner so that students from Umeå university can benefit from our
study in the future.

**Misrepresentation:** Researchers need to avoid any misrepresentation of information that misguides the reader or misrepresents the studied phenomena. In our research, we will use scientific methods and interpret data and information and less likely to break the code of research ethics.
4. Research Method and Data Collection

In this chapter, we are going to explain our research methodology in relation to ESG and goodwill and the method of data collection. Here at the beginning, we are going to discuss the research population and sample construction, why and how they are constructed. After this, there is a discussion on variables that are continued with regression analysis to test the relationship. Since there is no interview and our research is based on the quantitative study and to continue our research, at the end of this chapter we are going to formulate a research hypothesis which is going to be tested and analyzed via STATA followed by regression analysis. In quantitative research, the main source of data collection is secondary tools which are later processed through statistical analysis.

4.1. Population and Sample Construction

The population is a collection of all items or substances with unique or special characteristics that is related to the interests of the study. The subset of this population is known as a sample. According to Saunders et al. (2007, p. 205) “In a given case study the population is a set of cases from which the sample size is taken is called the population and this set of cases need not necessarily be only people.” To simplify the term “population is a group of people, items or units under investigation” (Coldwell and Herbst, 2004, p. 73). On the other hand, “sample is obtained by collecting information about some members of a population” (Coldwell and Herbst, 2004, p. 73). Sampling could be the entire population if manageable or portion of a given population from where the census can be validated. In our study, we considered companies that were listed in NASDAQ Stockholm. From this special set of cases, we have chosen OMX Stockholm 30 (excluding banking sectors) as our sample.

The reason for choosing OMX Stockholm 30 is that those are the companies considered performing well in the stock market. Another reason to choose OMX Stockholm 30 is that Sweden is ranked third according to the Environmental Performance Index (EPI 2020). It would have been a good work if our sample were taken and compared with other top-ranked countries. As we have some limitations, we only have considered OMX Stockholm 30 as our sample to answer the hypothesis. We assumed that these companies with higher ESG scores compared to other low ESG ratings should have lower gross goodwill in the balance sheet. We will observe this sample size and statistically test the hypothesis to see if ESG scores impact our chosen sample. If our assumption becomes positive and finds a relationship between ESG scores and goodwill, we believe this sample will represent other indexes or populations in similar countries. As many researchers argued that using a sampling method then the overall census can possibly bring high accuracy in studied phenomena (Saunders et al., 2007, p. 206).
4.2. Variables

Variable is a set of characteristics or anything that has quantity or quality that differs in size. It is to understand the impact of one variable on another. In our research, we have identified a few variables to test statistical hypotheses which will help to identify and make conclusions to our studied phenomena. According to Collis and Hussy (2014, p. 2011), variables in research give the opportunity to make conclusions on potential relationships. To proceed with our research each variable will be tested and the relationship to our hypotheses will be evaluated through a regression model.

4.2.1. Dependent Variable

Gross goodwill over total asset: Sustainability has become an important issue in the corporate world especially after 2000. In modern business, firms are immensely pressurized to include sustainability in their business policy and strategies (Kruusman and Afrooz, 2013) As we have mentioned about our variables earlier but for the data collection purpose we have considered ESG factors individually, for example, Environmental pillars, Social pillars, and Government pillars to test the hypothesis. Refinitiv has one of the largest up to date ESG content collection operations in the world from publicly available sources. Refinitiv collects data from a variety of both internal and external sources.

4.2.2. Independent Variables

Individual ESG scores and average ESG scores: Sustainability has become an important issue in the corporate world especially after 2000. In modern business, firms are immensely pressurized to include sustainability in their business policy and strategies (Kruusman and Afrooz, 2013) As we have mentioned about our variables earlier but for the data collection purpose we have considered ESG factors individually, for example, environmental pillars, social pillars, and government pillars to test the hypothesis. We have collected the data of our independent variables from Refinitiv which has one of the largest up to date ESG content collection operations in the world from publicly available sources.

Understanding ESG Scores and data collection: ESG score is the way to measure firms' performance based on sustainable activities practiced by an organization. Refinitiv defines ESG score as the measure of performance based on verifiable data reported in the public domain. The major source of Refinitiv’s ESG data collection was Annual reports, company websites, NGO websites, stock exchange filings, CSR reports, and news sources (Refinitiv, 2020, p. 4). To calculate the ESG scores Refinitive followed five critical stages to make scores accurate and acceptable for its users. Those stages are;

Stage 1: ESG Category scores -Boolean (yes/no) and Numeric (relative percentile)
Stage 2: Materiality matrix (Average weight of the data)
Stage 3: Overall ESG score calculation and Pillar scores
Stage 4: Controversies Score Calculation (Based on 23 controversy topics, without any controversy company will score 100)

Stage 5: Final Combined ESG score

The measurement of data, its impact, and comparability vary across the industry groups. To measure the ESG scores Refinitive considers 10 categories which reformulate three ESG pillars. ESG scores are evaluated by a few agencies and each agency has its own criteria to evaluate. According to Refinitiv, those ten categories are subdivided into three pillars.

**Environmental Pillar**

Environmental pillar is one key and vital element when it comes to considering sustainable issues. Not all the pillars carry similar importance to every company, it varies from business to business. Environmental pillar concerts show how a company uses its resources, takes into account the level of emission, and considers new innovation concerning sustainability issues.

**Social Pillar**

The business has a greater impact on our society and to keep society safe and secure businesses should be aware of the issues that have negative or very bad pressure on society. It is how a company manages its activities within the organization to its people, to the society considering sustainability issues in order to operate the business. Refinitiv considers four categories and each category is then subcategorized to get a better view of the company’s activity in order to score social pillars individually. Firstly, the responsibility to the social community which is important to all companies. Secondly, product responsibility (responsible marketing, quality of the product, and data privacy). Human rights and workforce diversity are the last two categories where companies should have a better working condition, career development program, and health and safety concerns.

**Governance Pillar**

To calculate the score for the governance pillar of a company, Refinitiv uses some categories and subcategories. Based upon these categories a company is scored. Companies have to follow certain laws set by the government. CRS (Corporate Social Responsibility) strategy is one of the main issues that consists of a company’s transparency while reporting activities related to ESG. Management structure, the inclusion of independent board members, and the diversity of the committee are taken into account to score social pillars. Shareholders' right is another category to score a company’s governance pillar along with takeover defense policies.
4.2.3. Controlled Variables

Asset Turnover: Asset turnover is the way to measure companies' sales revenue to their asset. It is one of the ways to measure a company's efficiency. In general, the higher the turnover ratio is, the more likely to generate revenue from a company's assets. It is calculated as:

\[
\text{Asset Turnover} = \frac{\text{Total Sales}}{\text{Total Assets}}
\]

Return on Equity (ROE): ROE is one of the key indicators of whether a company is profitable or not. ROE typically measures how effective the management uses its assets to create profits in the form of investment. Investors commonly look for the company that generates profit efficiently before taking the investment into consideration. The result could outrange the estimates and may be affected by the ESG scores or any change in gross goodwill. The study finds that there is a relation between ESG and choice of shareholders' investment. Besides, results for different groups can vary and may not be related to one another. For example, ROE for communication sectors with airline sectors can't be relevant because one has a greater amount of tangible assets than another. However, in terms of individual sectors like the airline to airline or telecommunication to telecommunication sectors can be compared and will provide a better understanding for the investors. ROE is calculated as:

\[
\text{Return on Equity} = \frac{\text{Net Income}}{\text{Shareholders’ Equity}}
\]

In the process of our research, we have identified some other variables which might be affected by the ESG scores. In our study OMX Stockholm 30 (Banks are excluded) are a mixed group of companies and therefore, results in our regression model are combined results based on combined ESG score.

4.3. Regression Analysis

Before going into an in-depth analysis of the hypothesis and publishing new theory researchers use regression as a starting point of the analysis to test if the model is functional. The regression analysis method is used by most econometricians to make quantitative estimates of economic relationships to conclude if there is any potential relationship between variables (Kjerstensson and Nygren, 2019, p. 34). “Econometricians use regression analysis to make quantitative estimates of economic relationships that previously have been completely theoretical in nature” (Studenmund, 2013, p. 5). Regression analysis is a key part to assure the quality of findings. For big projects and to claim new theory it is needed to test beforehand and regression analysis helps to implement and leads throughout the process to test, to detect problems, to resolve over previous studies. A simple regression model must have at least one dependent or continuous variable and one or more independent variables. Most (not all) econometrics consider such regression analysis as an example of the project work and also is widely used in research work.

Studenmund (2013, p. 6), explains that the purpose of all regression analysis is to test whether or not a quantitative relationship exists, which clearly aligns with the
aim of our project work where we will test if any quantitative relation is there in between the variables (ESG scores and any undulation in goodwill).

4.4. Theoretical Regression Model

Finding a useful regression model is not an easy job as there are many variables to consider in cause and effect regression analysis. The regression model can be expressed as \( Q = f(P, Ps, Yd) \). Where, Q is the dependent variable and P, Ps, and Yd are the independent variable for the function ‘f’ (Studenmund, 2013, p. 5-6). When a regression model has one independent variable, it is known as a single regression model. On the other hand, multiple regression models include two or more regression models. Generally, regression is estimated using OLS (Ordinary Least Squares) and explains the movement of dependent variables as a function of independent variables through quantification or equations. Researchers should have ideas about the theory and characteristics of previous studies to use regression models (Studenmund, 2017). Studenmund (2013, p. 5), mentions that regression is useful to predict the direction of any change and to do this one need knowledge about previous theory, need a sample of data, and need to find a way to evaluate the relationship and for this one of the best suitable methods in econometrics is regression analysis.

It is also considered as a natural tool for most economists because of its simplicity and single equation function in cause-effect analysis between dependent and independent variables, which is explained as a single-equation linear regression model; (where, Bo is the coefficient, B1 is the slope coefficient which then indicates the amount of change in Y because of change in X ) (Studenmund, 2013, p.6). Technically this cause-effect theory is so subtle and can not confirm causality as discussed earlier; regression analysis can only test the strength and direction of the quantitative relationship involved (Studenmund, 2013, p. 6). The stochastic error term is another reason as this term is added to a regression model to introduce all of the variations in Y that can not be explained by Xs (Studenmund, 2013, p.7-8).

**Ordinary Least Squares (OLS):** OLS regression is mainly used for its simplicity and reasonable findings which gives as close as possible to observe the data compared to estimated regression data (Kjerstensson and Nygren, 2019, p. 35). Many scholars believe that OLS regression is one of the best-unbiased estimators to test the relationship between variables. Studenmund (2013, p. 36) mentions OLS is bread and butter regression analysis to estimate coefficients of econometrics models. “Ordinary Least Squares (OLS) is a regression estimation technique that calculates the \( \beta s \) to minimize the sum of the squared residuals” (Studenmund 2013, p. 36). Although OLS is the most used regression model, this is not the only one. Studenmund (2007) mentioned three major causes of using OLS as a regression model. First of all, OLS is relatively easy to use, OLS’s goal is to minimize the sum of the squared residuals which is quite appropriate from a theoretical point of view and lastly, OLS estimates produced a number of useful characteristics or have at least two useful characteristics e.g., The sum of the residual value is exactly zero and OLS is the best estimation (estimator is a mathematical technique) under a set of specific assumptions (Studenmund, 2013, p.38).
4.5. Regression Model

In our study, we will observe the cause and effect between the variables in order to test the relationship and any change in the gross goodwill. Studenmund (2013), also finds that there are at least four sources of variation that must be present in regression models. Firstly, Minor influenced missing data on Y are omitted from the equation. Secondly, it is virtually impossible to avoid some sort of measurement error in the dependent variable. Thirdly, variation in the functional form between theoretical framework and chosen regression model. Finally, the existence of unpredictable or purely random variation in generalizing human or object behavior.

In regression analysis, there are other models used to test the quantitative relationship and bring a conclusion regarding possible cause and effect relationships. We also test the dependent variable gross goodwill with individual E, S, G, and average ESG scores to answer the research question. We are going to analyze and compare the environmental score, social score, and governance score in our regression model to test the impact of every individual pillar of ESG to the movement of gross goodwill. We have used the general single regression formula with one independent variable;

\[
\text{GrossGoodwill} = \beta_0 + \beta_1(\text{ESG}) + \beta_2(\text{LogTA}) + \beta_3(\text{Turnover}) + \beta_4(\text{ROE}) + \text{Error}
\]

Where,
Gross goodwill = Dependent variable
Average ESG = Average Environmental, Social and Governance scores
LogTA = Log (Total Asset)
ROE = Return on Equity

4.6. Statistical Hypothesis

Scientific research assumption is made on the basis of studied phenomena to understand the nature of the population and its objectives. A statistical hypothesis is all about considering two assumptions for a certain population or group of the population that derived from the theory to test with some evidence and literature which at the end may be or may not be true. It is sometimes mentioned as a confirmatory data analysis method of statistical inference. Two statistical hypotheses are null hypothesis (H0-Currently accepted established value of a parameter) and the alternative hypothesis (HA- research problem hypothesis that claims to be tested ) and these hypotheses are expressed as a relationship between two or more variables. In our study, we will test our hypothesis in relation to ESG scores and goodwill. Those hypotheses are:

H0: There is no relationship between ESG scores and goodwill.
HA: There is a relationship between ESG scores and goodwill.
4.7. Sources of Data Collection and Data Processing

In quantitative research, a cross-sectional study is presented with a description and the purpose of the study is to describe something about a certain population or characteristics of a particular group (Bertosso et al., 2016, p. 497; Malhotra, 2012, p. 61). To describe our research problem we obtain data for OMX Stockholm 30 using the Refinitiv datastream tool later processed them onto statistical software namely ‘STATA’. Before selecting a secondary data source we think about its acceptance, accuracy, and suitability of the database in order to process those data into the STATA program that fulfills our study objectives. There are so many available sources to collect secondary data from published sources, government surveys, and raw data from databases. As we rely on secondary data to process our project, for certain types of research projects for instance national or international comparisons secondary data will probably provide the most suitable answers to those research questions (Saunders et al. 2007, p. 247). Saunders et al., (2007 p. 249), provide a list of collecting secondary, and based on one’s research types researcher can collect data that is better suitable for the project and those secondary data can be used in both quantitative and qualitative research methods. There are lists of sources (internet, organizational bodies, private organizations, etc. for each and every country) to collect secondary data. In our project, as we are conducting quantitative research and collecting secondary data from a Rifinitiv datastream, we believe this process will fulfill our study objectives. Datastream (Refinitiv) is useful to get historic information for trading ideas and market viewpoint and it upholds approximately 35 million individual instruments and indicators. It also stresses data from over 175 countries and gives access to the data of the past 65 years for the researchers. We are going to collect ESG scores from Refinitiv. Refinitiv mentioned (April 2020), “Refinitiv recognizes the increasingly critical importance of transparent, accurate, and comparable Environmental, Social, and Governance (ESG) data and analytics for the financial industry.” It is considered as one of the most trusted and preferred one to collect ESG and sustainable financial data for research. Which is in our case variables information of OMX Stockholm 30 and ESG scores for our chosen sample. We have collected variable data which is relevant to our research question. Those variables e.g., gross goodwill, common equity, total asset, total sales, and net income were collected using Refinitiv datastream tools. We input those data manually in the Excel sheet for statistical analysis and decision making purposes in STATA.

4.8. Data Processing

As discussed earlier in the data collection that we have selected OMX Stockholm 30 as because Sweden is considered one of the most sustainable countries in the World. After sampling and collecting data the most important and statistical part is to process the data into the program to analyze, test, and explain the output in STATA. STATA is a statistical or econometrics software that runs through a program where researchers can do statistical analysis, edit, program, modify, log files the collected data, analyze, and summarise those data that has been collected for the purpose of econometrics analysis. More specifically, STATA allows researchers in the process of statistical analysis such as t-test and regression analysis. In our study,
as mentioned earlier we are going to use STATA (one of the most commonly used statistical tools in research) to test the hypothesis concerning different variables. To do this, we have used prepared Excel sheets to organize those data manually which had been collected earlier with an aim to process them in STATA. All the data is then structured to ease the process of observation. There are lists of econometrics models and regression models. We are going to use STATA to test and analyze the coefficient significance in order to see if there is any relationship between dependent and independent variables. To process the data we are going to follow up testing assets, create a log of total assets, create a summary of tables, E, S, and G scores individually and then arranging average ESG scores in STATA. Moreover, due to organized and ease presentation of data it allows us to process those data smoothly in order to progress our project work as because we are using quantifiable and precise data which allow using a wider range of statistical tools ((Saunders et al., 2007, p. 409)
5. Empirical Results

The focus of this chapter is to present our empirical results derived from statistical tests. The primary goal is to display the findings underpinned by our previously established methodological decisions and in the forthcoming chapter, it will help us describe our analysis and discussions. The chapter contains the unveiling of descriptive statistics, multicollinearity, and the relation between ESG score and goodwill.

5.1. Descriptive Statistics

Table 1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross goodwill/ Total asset</td>
<td>214</td>
<td>0.189</td>
<td>0.162</td>
<td>0.000</td>
<td>0.518</td>
</tr>
<tr>
<td>E score</td>
<td>214</td>
<td>66.082</td>
<td>26.306</td>
<td>0.000</td>
<td>98.120</td>
</tr>
<tr>
<td>S score</td>
<td>214</td>
<td>74.648</td>
<td>15.675</td>
<td>28.950</td>
<td>95.750</td>
</tr>
<tr>
<td>G score</td>
<td>214</td>
<td>61.798</td>
<td>20.675</td>
<td>14.990</td>
<td>95.600</td>
</tr>
<tr>
<td>Average ESG score</td>
<td>214</td>
<td>67.571</td>
<td>16.797</td>
<td>29.670</td>
<td>94.053</td>
</tr>
<tr>
<td>log (Total Asset)</td>
<td>214</td>
<td>18.155</td>
<td>0.782</td>
<td>16.429</td>
<td>19.826</td>
</tr>
<tr>
<td>Turnover</td>
<td>214</td>
<td>0.835</td>
<td>0.471</td>
<td>0.023</td>
<td>2.063</td>
</tr>
<tr>
<td>ROE</td>
<td>214</td>
<td>0.081</td>
<td>0.478</td>
<td>-3.450</td>
<td>0.676</td>
</tr>
</tbody>
</table>

In table 1, the data of the descriptive statistics are presented. In this table, we have our dependent variable Gross goodwill/ Total asset, independent variables E score, S score, G score, and Average ESG score. Moreover, we have our control variables log (Total asset), Turnover, and ROE. We have 214 observations from OMX Stockholm 30 firms (we have the data from 26 firms excluding 4 financial companies from the list) and presented the mean, standard deviation, minimum, and maximum values.

Based on the information presented in table 1, we find the mean value for the Gross goodwill/ Total asset is 0.189 and within our sample, it varies between 0 and 0.518. In terms of independent variables, the E score of the observed firms varies from 0 to
98.12 with a mean of 66.082. S score of the firms ranges from 28.95 to 95.75 having a mean of 74.648. Whereas, the G score extends from 14.99 to 95.6 with a mean of 61.798. Of these individuals E, S, and G scores the standard deviation of E score is higher which is expected after we have observed the variable having the longest range. In terms of the Average ESG score, we can see the mean is 67.571 and the lowest point is 29.67 and the highest point is 94.053. Amongst the standard deviation of the individual E, S, and G score and Average ESG score, E score has the highest standard deviation of 26.306, and the S score has the lowest figure of 15.675.

If we look at our control variables, we observe that the highest value of log (Total asset) is 19.826 and 16.429 with a mean of 18.155. Turnover has a mean of 0.835 and the value ranges from 0.023 to 2.063. Whereas, the ROE varies from -3.450 to 0.676 and the mean is 0.081. However, the standard deviation of the control variables should not be compared since these variables represent very different things from each other.

5.2. Multicollinearity

We need to observe and evaluate our independent variables and control variables if they correlate with each other in order for us to interpret our data and formulate a regression model. We need to see if there is any strong correlation with one another or not before conducting the regression analysis. Alin (2010, p. 370) described multi-collinearity as “… linear relationship among two or more variables, which also means lack of orthogonality among them.” She also mentioned that setting up a correlation matrix is the way to detect or examine multicollinearity and or we can examine the variance inflation factor (VIF) which is produced by various statistical programs for detecting it. In a correlation matrix, a coefficient below |0.1| means that there exists no correlation between the variables whereas it is considered to be small correlation if the correlation coefficient is between [0.1] and [0.3] and moderate correlation between variables is found when the coefficient is between [0.3] and [0.5] and anything higher than that is considered high correlation (Cohen, 1988, p. 77-81).

Table 2 is the correlation matrix of variables for this analysis. It illustrates that our dependent variable Gross goodwill/ Total asset has a moderate negative correlation coefficient with all our independent variables E, S, G, and Average ESG score. However, our control variables log (Total asset), Turnover, and ROE have small or almost no correlation with the dependent variable. The table also displays that the highest coefficient exists between Average ESG score and S score which is 0.8716 and the lowest coefficient exists between ROE and G score of -0.0005. Furthermore, Average ESG has the 3 highest coefficients with individual S, E, and G scores which are 0.8716, 0.855, and 0.7091 respectively. This type of coefficient is expected since the value of these individual scores has actively participated to determine the value of the Average ESG score. We can also observe that our independent variables; E, S, G, and Average ESG score has moderate or high correlation with each other. Though all the independent variables have a moderate negative coefficient with Gross goodwill/ Total asset, the average ESG score has the highest coefficient amongst them. On the other hand, the coefficients between our control variables with our independent variable are very low, or there exists almost no correlation.
Table 2: Correlation matrix for variables

<table>
<thead>
<tr>
<th></th>
<th>Gross goodwill/Total Asset</th>
<th>E score</th>
<th>S score</th>
<th>G score</th>
<th>Avg ESG Score</th>
<th>Log (Total Asset)</th>
<th>Turnover</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross goodwill/Total Asset</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E score</td>
<td>-0.3444</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S score</td>
<td>-0.4025</td>
<td>0.7083</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G score</td>
<td>-0.3146</td>
<td>0.2931</td>
<td>0.4938</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg ESG Score</td>
<td>-0.4286</td>
<td>0.855</td>
<td>0.8716</td>
<td>0.7091</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log (Total Asset)</td>
<td>-0.1293</td>
<td>-0.0321</td>
<td>0.1172</td>
<td>0.0907</td>
<td>0.0523</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turnover</td>
<td>-0.0709</td>
<td>0.2301</td>
<td>0.0576</td>
<td>-0.0931</td>
<td>0.1102</td>
<td>-0.2291</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>0.1026</td>
<td>0.0056</td>
<td>0.0121</td>
<td>-0.0005</td>
<td>0.0077</td>
<td>0.2899</td>
<td>0.0444</td>
<td>1</td>
</tr>
</tbody>
</table>
5.3. The Relationship Between ESG Score and Goodwill

The relationship between E, S, G, and Average ESG score and Gross goodwill/ Total asset is presented below. Table 3 illustrates the OLS regression where Gross goodwill/ Total asset and independent variables are regressed. We measure Gross goodwill/ Total asset as our only dependent variable and E, S, G, and Average ESG score of 26 firms from OMX Stockholm (excluding four banks) as our independent variables. Whereas Table 4 illustrates the results from an OLS regression where log (Total asset), Turnover, and ROE as control variables are regressed with aforesaid independent and dependent variables. The t-statistics are reported in parenthesis which is founded on robust standard errors and are clustered at the firm level. 10%, 5%, and 1% level of statistical significance are represented by *, **, and *** respectively.

Table 3: OLS regression between Gross goodwill/ Total asset and independent variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>No. of observations</th>
<th>R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>E score</td>
<td>-0.0021*</td>
<td>214</td>
<td>0.1186</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td>(-5.34)</td>
<td></td>
</tr>
<tr>
<td>S score</td>
<td>-0.0042*</td>
<td>214</td>
<td>0.1620</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td>(-6.4)</td>
<td></td>
</tr>
<tr>
<td>G score</td>
<td>-0.0025*</td>
<td>214</td>
<td>0.0990</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td>(-4.83)</td>
<td></td>
</tr>
<tr>
<td>Average ESG score</td>
<td>-0.0041*</td>
<td>214</td>
<td>0.1837</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td>(-6.91)</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows the coefficient of E, S, G, and Average ESG score with Gross goodwill/ Total asset. It also indicates if the coefficient is statistically significant. It also contains
the t-value, R-squared, and no of observation. Here we can see that all the independent variables have a negative coefficient with Gross goodwill/Total assets. Moreover, all the coefficients are statistically significant. The table also tells us that, S score has the highest influence among other independent variables on Gross goodwill/Total assets having a coefficient of -0.0042, and E score has the lowest coefficient of -0.0021. The economic significance of these scores represents that, if the S score goes up by 1 for a company, it will have the opportunity to reduce goodwill by 0.42%. Moreover, if the E score goes up by 1, the company will have 0.21% less goodwill. The R-squared is also presented in the table and we can see that the highest value of R-squared is 0.1837 for the Average ESG score and the lowest value is 0.0990 for the G score. Since the value of R-squared is considered somewhat noteworthy if it is as high as 0.2 and considered relatively high if it is 0.5 (Greene, 2012, p. 85) therefore, we can say that the value of R-squared is very close to being noteworthy only for the independent variable Average ESG Score. We also have the t-value reported in parenthesis beneath each coefficient which represents the standard error. The highest t-value is for G score which – 4.83 and the lowest is for Average ESG score of -6.91.

Table 4: OLS regression between Gross goodwill/Total asset and independent and control variables.

<table>
<thead>
<tr>
<th>Regression</th>
<th>Variables</th>
<th>Coefficient</th>
<th>No. of observation</th>
<th>R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression of Gross goodwill over total assets with E score, log (Total asset), turnover and ROE</td>
<td>E score</td>
<td>-0.0021***</td>
<td>(-5.25)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Log (Total Asset)</td>
<td>-0.0410***</td>
<td>(-2.90)</td>
<td>214</td>
</tr>
<tr>
<td></td>
<td>Turnover</td>
<td>-0.0155</td>
<td>(-0.67)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ROE</td>
<td>0.0555**</td>
<td>(2.46)</td>
<td></td>
</tr>
<tr>
<td>Regression of Gross goodwill over total assets with S score, log (Total asset), turnover and ROE</td>
<td>S score</td>
<td>-0.0040***</td>
<td>(-6.08)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Log (Total Asset)</td>
<td>-0.0310**</td>
<td>(-2.22)</td>
<td>214</td>
</tr>
<tr>
<td></td>
<td>Turnover</td>
<td>-0.0310</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Regression of Gross goodwill over total assets with G score, log (Total asset), turnover and ROE

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Test Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>0.0524**</td>
<td>(2.37)</td>
</tr>
<tr>
<td>G score</td>
<td>-0.0024***</td>
<td>(-4.85)</td>
</tr>
<tr>
<td>Log (Total Asset)</td>
<td>-0.0376***</td>
<td>(-2.63)</td>
</tr>
<tr>
<td>Turnover</td>
<td>-0.0511**</td>
<td>(-2.25)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.0548**</td>
<td>(2.41)</td>
</tr>
</tbody>
</table>

Sample size: 214  
Adjusted R-squared: 0.1488

### Regression of Gross goodwill over total assets with average ESG score, log (Total asset), turnover and ROE

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Test Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average ESG score</td>
<td>-0.0040***</td>
<td>(-6.7)</td>
</tr>
<tr>
<td>Log (Total Asset)</td>
<td>-0.0351**</td>
<td>(-2.57)</td>
</tr>
<tr>
<td>Turnover</td>
<td>-0.0245</td>
<td>(-1.12)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.0535**</td>
<td>(2.46)</td>
</tr>
</tbody>
</table>

Sample size: 214  
Adjusted R-squared: 0.2203
In table 4, we can see that, we have done the regression with our dependent variable Gross goodwill/ Total asset and independent variable E, S, G, and Average ESG score and control variable log (Total Asset), Turnover, and ROE. Here, we witness that, adding our control variables has fewer effects on the coefficients between independent and dependent variables. Here ROE has the highest value of coefficient every time and the highest of them is 0.0555 which is observed while regressing with E score. The economic significance of this analysis means that, when ROE is increased by 1, the company has 5.5% more goodwill. However, the coefficient of ROE has moderate statistical significance. On the other hand, the E score has the lowest coefficient value of 0.0021 but with a higher statistical significance. The coefficient of Turnover has been statistically insignificant compared to other variables. The highest value of R squared is noticed in the regression between Gross goodwill/ Total asset, Average ESG score, log (Total asset), Turnover, and ROE which is 0.2203 and the lowest one of 0.1488 which is on the regression with G score. The highest t-value of 2.46 is seen on ROE on E score and Average ESG score. The lowest t-value is -6.7 for AverageESG.

Finally, to sum up, the result discussion we can say that, the result of our regression analysis is statistically significant and hence we reject the null hypothesis. In other words, there is a significant correlation or impact of E, S, G, and Average ESG scores on Gross goodwill/ Total asset.
6. Discussion

In this part of our study, we discuss our empirical results relatively to our research question and explain the findings from the perspective of our primary independent variables as well as our control variables. Then we will explain the connection between our findings with the studies on ESG score previously conducted and the theories we have used previously in this study. In the end, we will discuss the possible reasons for getting such results.

6.1. Empirical Results and Discussion

In this part, we will discuss about our findings of the effect of individual E, S, and G scores on Gross goodwill/ Total asset. We will then focus on the impact of Average ESG scores on Gross goodwill/ Total asset. We will also highlight the findings on the impact of control variable on Gross goodwill/ Total asset.

6.1.1. Impact of Individual E, S, and G Scores

The research question of our study aims at examining the relationship or impact of ESG scores on goodwill. For answering this question, we have run several regression models between our dependent variable Gross goodwill/ Total asset and independent variables E, S, and G scores. We have run three separate regression models to find out the impact of E, S, and G scores separately to find their impact on Gross goodwill/ Total asset. We have found a negative coefficient between E, S, and G scores and Gross goodwill/ Total asset. These regressions also suggest that the coefficient found between Gross goodwill/ Total asset and E, S, and G scores are statistically significant. Since our data represents how much each company of OMX Stockholm 30 (except the financial companies) spend on gross goodwill over their total assets and we found a negative coefficient between the individual E, S, and G scores which interprets the companies having higher E, S, and G scores have to spend less while acquiring a company. That is because investors want to increase their reputation and create a better image by choosing to merge with an entity with a better ESG reputation (Mergermarket, n.d., p. 13).

In our study, we have chosen the Swedish listed companies, more specifically companies of OMX Stockholm 30, for some reason. It is because not all the market indexes have companies with ESG scores, goodwill in their balance sheet, and especially the country where sustainability is valued so highly as Sweden. Therefore, we do not have industry-wise, size-wise, or country wise analysis in our study. However, even in the Swedish market, stakeholders do not always emphasize on all the E, S, and G factors equally. Therefore, we also have a different level of coefficient. We have the highest negative coefficient for the S score and lowest coefficient for the E score. That implies that sustainability regarding society is viewed highly amongst our observed companies. However, the noticeable thing is that all the coefficients have statistical significance. The value of R-squared tells that, only the coefficient of S score better explains the relationship of the coefficient of determination with Gross goodwill than E score and G score. Though the value of R-squared of S score is close to moderate label whereas the other two have even lower R-squared value.
Furthermore, when we regressed our dependent, independent, and control variables together, we found that all the individual independent variables have a little bit lower but almost identical negative coefficient and all of them are still statistically significant. S score still has the highest coefficient whereas the E score has the lowest coefficient. In this regression with control variables, our R-squared value has improved for all three individual independent variables and S score has now a fairly moderate label of explanation of its relationship with Gross goodwill/ Total asset.

6.1.2. Impact of Average ESG Scores

It is expected to have a negative coefficient between average ESG score and Gross goodwill/ Total asset since all the individual elements of the ESG score have displayed negative coefficients. Like all individual scores, the coefficient of Average ESG has statistical significance. Therefore, to answer our research question we can comment that, ESG score has a significant impact on goodwill. However, the coefficient of the average ESG score is slightly lower than that of the S score but a lot higher than that of E score and G score. From observing these independent variables and their coefficients, we can say that the average ESG score has a higher impact on Gross goodwill/ Total asset than two of its individual elements.

When we regressed the average ESG score with our control variables log (Total asset), Turnover, and ROE it displayed a lower coefficient, but it still has statistical significance. However, this regression has better R-squared value which translates the coefficient of determination of Average ESG score better explains the relationship this time while regressed with the control variables.

6.1.3. Impact of Control Variables

Our control variables are log (Total asset), Turnover, ROE. Turnover and ROE are key economic performance indicators (Kocmanová and Dočekalová, 2012, p. 202) and log (Total asset) is used to interpret firm size. We used these control variables to see if they have any impact (positive or negative) on Gross goodwill/ Total asset when regressed with our independent variables. In our regressions with dependent, independent, and control variables we can see that our control variables have negative coefficients with Gross goodwill/ Total assets except for ROE. Only ROE has a positive coefficient with our dependable variable. However, the statistical significance of these coefficients is not regular except for ROE which has a moderate significance when regressed with E score, S score, G score, and Average ESG score.
6.2. Discussion Alongside Previous Studies

To the best of authors’ knowledge, we have not found any identical research that tried to find out the impact of ESG scores on firms’ goodwill. We have found that firms’ ESG score has a negative coefficient with Gross goodwill/Total asset which means firms who have better ESG score, pay less amount as goodwill compared to the firms with less ESG score. For the lack of similar studies, we cannot make any direct comparison with any study. However, we still found some studies which can be connected or compared to our research findings.

Fatemi et al. (2018) conducted a study on the effect of ESG (environmental, social, and governance) activities and their disclosure on the value of the firm. They have conducted their research on 403 listed U.S. companies from KLD and Bloomberg between the reporting year 2006 and 2011 and found that the strength of ESG increase firms’ value whereas the concern about ESG reduce it. Which means companies having a higher ESG score are valued higher in compared to a company with lower ESG score even though the value of the net asset is similar. In our study, we observed a similar result but on goodwill. We have found both individual and average ESG scores have a negative coefficient with Gross goodwill/Total asset which means firms with higher ESG scores pay less as goodwill while merger and acquisition compared to those who have a lower ESG score despite having an identical net asset. Furthermore, their individual environmental score displayed similar results, but social and governance scores lead them to a slightly different conclusion. Though the strength of social and governance scores does not increase firms’ value but the concerns in both areas decrease the value of the firm.

Capelle-Blancard and Petit (2017) also conducted a study regarding the determinants of stock market reaction following ESG related news or ESG factors. They have studied 33000 news both positive and negative related to ESG among the largest hundred listed companies from all over the world. They have analyzed the data from 2002 to 2010 and the database was provided by a Geneva-based firm called Covalence EthicalQuote who is specialized in the ethical quotation. They have found that companies do not gain from positive ESG news, but the market value of the companies drops 0.1% on average when they experience any negative news. On the contrary, our study has shown that if a firm’s ESG score goes up by 1 point, it will be able to pay 0.4% less as goodwill. They have also commented that the market participants are more sensitive to media news than companies’ won press releases. This statement indicates that stakeholders trust third party reports than companies’ own disclosers. Though ESG news and ESG scores represent different things, both of them are published by sovereign organizations and have an impact on the decisions taken by market participants. Another noteworthy point is that, though ESG news can be negative and positive, ESG scores range from 0 to 100. Though negative activities can reduce the ESG score, the score cannot go below 0.

Sahut and Pasquini-Descomps (2015) conducted their research on the impact of ESG on firms’ market performance but they did not find any significant influence on firms’ ESG score and their market performance. However, we found a completely different result compared to their study. Our regression model showed ESG scores have negative coefficients with firms’ goodwill that means firms pay less as goodwill if they have higher ESG scores. However, we have conducted our study among
Swedish listed company and their study was conducted in the UK, US, and Switzerland. Maybe the geographical location and the perception of the people of these markets played a significant role in the outcome of these studies which has a further scope of the study.

6.3. Discussion of Results Based on the Aforementioned Theories

Previously we have described shareholder theory, stakeholder theory, and legitimacy theory alongside goodwill. Amongst the previously mentioned theories, shareholder theory seems to conflict with the idea of ESG or in a broader sense with sustainable investment. However, shareholder theory can be related to ESG idea in the sense that, shareholders may use ESG as a tool for achieving its own goal. Moore (1999, p. 119) has also supported the idea that shareholder theory will try to please the stakeholders besides themselves but until this is commensurate with the fulfillment of the overriding goal. Our study result displayed that Gross goodwill/Total asset has not only a statistically significant negative coefficient with ESG score which means the shareholders can increase the value of their investment by paying less goodwill but also a positive coefficient with the ROE.

On the other hand, stakeholder theory and legitimacy theory both are connected to the sustainability of a business. The individual elements of ESG have stronger motivation to support these theories. Wijnberg (2000, p. 329-330) described stakeholder theory as the most admired way to handle the issues that deal with the responsibilities of business in a broader sense. Burlea and Popa mentioned (2013, p. 1579), the organization justifies its presence through ecological and social activities that do not jeopardize the existence of the society where it operates. Thus they demonstrated the importance of these theories and similarly, our result showed that the individual E score, S score and, G score has a significant connection with goodwill just like overall ESG score.

6.4. Result Analysis

We have mentioned that several times that, there is no exact previous research on the effects of ESG score on goodwill to the best of our knowledge. Therefore, we cannot accurately compare the results of our findings with any previous research. We can, however, analyze the results and try to find out some motivation for such findings.

Our results represent that, there is a negative coefficient between the E, S, G, and Average scores with Gross goodwill/ Total asset. Since goodwill can only be recognized by the acquirer (IFRS 3, 2017, para 32), the goodwill amount evident in balance sheets represents the extra amount paid during acquisition. Which we can describe as firms with higher ESG score, pays less amount as goodwill. Moreover, the coefficient found in our regression model is statistically significant which only strengthens our finding.
Since Sweden is one of the most sustainable countries, therefore, getting an effect of ESG score on goodwill has a higher probability here. Here in Sweden, opinions of different stakeholders from different walks of society are invited during the review of a national strategy (Swedish government, 2003, p. 22). Therefore, the individual elements of E, S, and G are highly viewed here by all the stakeholders and that is reflected in our study. We have experienced that, individual E, S, and G scores have similar impacts on goodwill alike the average ESG score.

According to Corporate Knights (A Canadian sustainable ranking agency), ranked stock exchanges from around the world regarding sustainability disclosure and found Nasdaq Stockholm to be the second most sustainable stock market only after neighboring Nasdaq Helsinki (Leaper, 2017). Therefore, it is not very difficult for investors, consumers, and other stakeholders to find sustainable options. Moreover, OMX Stockholm 30 is comprised of 30 shares regarding the largest volume of trading calculated in Swedish Kronor (Nasdaq, 2016, p. 4). All these things contribute when it comes to the demand for better ESG score both for the investors and consumers. Therefore, it is not unusual or completely unexpected to find such results.
7. Conclusion and Suggestions

The concluding segment of our study will be discussed to what extent the aim of the study has been met and how the research question has been answered. Here we will also discuss the importance of the study in terms of social and ethical points of view. We will also look back on the theoretical and practical contributions of this research. In the end, the limitations of the study will be discussed alongside suggestions for future research followed by generalizability.

7.1. Conclusions

The principal aim of this research has been to search whether the ESG score has any impact on the goodwill among the Swedish listed companies and we have found a negative coefficient between ESG score and goodwill of the firm. We have also observed the individual E score, S score, and G score have any influence on gross goodwill. To complete our observation, we have performed 8 different regression models. From these regression models, we experienced the impact of both individual and average ESG scores on Gross goodwill/Total asset. Moreover, the regression model was conducted on a data set that contains the E, S, G, average ESG score, total asset, net income, common equity, and gross goodwill over a period of 10 years.

We have comprehended from the empirical results that, there is a significant negative coefficient of E, S, G, and average ESG scores on Gross goodwill/Total asset which represents the explanation that, firms’ E, S, G, and the average score has an impact on the goodwill and while merger and acquisition, these firms with higher ESG score, spent less as goodwill. However, the impact of the S score is found to be greater than its counterparts and the impact of E score is found to be smaller than others. The reasons for such findings may be the location, the market efficiency, and the stakeholders’ curiosity regarding sustainability, etc. Though ESG is a relatively new term for the financial world, the millennial investors are obsessed with it.

On the other hand, we cannot surely say if we have chosen a different location for our study, we will have found similar results. In Sweden, government, non-government, individuals, landers, investors, and consumers all share the same value as all participate in dialogue regarding sustainability (Swedish government, 2003, p. 22). When a single issue is seen from the perspective of different stakeholders, the issue gets more attention and can be handled with different mechanisms. Hoffman (2018), presented a fascinating example regarding sustainability pressure. He described, if ESG pressure is put on the firm by insurance companies, it becomes a risk management issue when competitors put such pressure, it is regarded strategic direction, money landers do that, it turns into the cost of capital or capital acquisition issue if suppliers and buyers apply such pressure, it becomes a supply-chain issue, and if consumers do so it turns into market demand. Therefore, we can say that firms in Sweden feel pressure from all around and that is why they adopt sustainability in their activities as a result they are duly rewarded.
Though we run some regression with variables like log (Total asset), Turnover, and ROE with our aforementioned independent and dependent variables, it did not change the results altogether, but the value of coefficients decreased a little.

7.2. Societal and Ethical Implications of the Research

In our scientific method chapter, we have discussed the ethical considerations. Since the data used in our study are secondary, we cannot be absolutely sure about how the data was collected and if the companies were informed duly about the collection and its use. We have used Rifinitiv Datastream as our source of data which is renowned and reputed for its services. Therefore, we believe that they have collected the data legally and ethically. During our study, we tried to abstain ourselves from misapprehension and speculative findings and we remained truthful and honest about the research process. We have done the study with a view to finding comparable scientific values regarding sustainability and broaden our knowledge.

This study concludes that there is a significant correlation between Gross goodwill/Total asset and firms’ ESG performance. The result of this thesis can be used to encourage organizations for incorporating ESG activities and ESG reporting. The investors can rely more on sustainable investment, analyzing the data of this study. Though this study was conducted in the Swedish market, it can be helpful for those markets also who are trying to incorporate sustainability in their market as well as their organizations. From a wide point of view, our research can also encourage consumers and individual investors to consider ESG factors while buying products or investing.

7.3. Theoretical and Practical Contribution

Our study explained how the ESG performance of a company can affect the goodwill in the Swedish stock market. This can be an addition to those studies who researched on sustainability, ESG reporting, economic performance indicators, corporate social responsibility, goodwill, market behavior, etc. Since the study was conducted in only one country, it has some positives also. Here we could focus a relatively smaller market with specific stakeholders. Therefore, the study has less possibility to be affected by other markets or stakeholders with different cultural and social values. We have mentioned this several times that there was no previous research on this topic, so it has opened the scope for future deep research on the impacts of ESG score or sustainability reporting on goodwill.

The previous studies conducted on goodwill were mostly from an accounting point of view. However, this study was done as a combination of corporate governance, finance, and accounting point of view. Moreover, the relationship between sustainability and goodwill has not been dug deeply in the past Therefore, this study opens the door for a wide range of future studies on these topics. Unlike most of the studies on goodwill as well as ESG scores which are too hard for the general public to understand, our study is conducted in a simpler manner which we believe will be helpful for readers from different walks of life to understand. Thus, our
7.4. Limitations and Suggestions for Future Studies

Despite both the authors have given their best to complete the study, there exist some limitations for this research. Since the time frame is very small and this unprecedented situation never been experienced before, it is hard to cover more things in one paper. However, these limitations have nothing to do with the reliability of the study, but they are part of every research. We have some recommendations for future study which are presented below can also be viewed as the limitations of our thesis.

- For conducting our research, we have chosen Sweden and Swedish listed companies from OMX Stockholm 30 which has restricted our findings. Since Sweden is a high performing country when it comes to sustainability, it would have been interesting to see the result from other countries with a bigger sample size.
- It will be interesting to see the impact of ESG on impaired goodwill. Since impaired goodwill had a lot of missing data, during our data collection and analysis, we concentrated on gross goodwill.
- In our study, we have not concentrated on the industry-wise and firm size-wise analysis of ESG score and goodwill. However, it would have been interesting to see if there is any significant correlation found between them regarding the market segment.
- We have added $\log(Total\ asset)$, Turnover, and ROE as our control variable. There are more performance indicators left such as EBIT, Growth rate, etc. Future studies can consider adding such control variables to make the research more interesting.
- We used a quantitative method for our study. We thought a bigger sample is better for supporting the findings of our thesis. However, Future studies can also be considered in a qualitative method.
- We have taken the data from 2010 to 2019. In these 10 years, there was no major economic vulnerability. However, the result can be very different if we take the data from a recession period or a period of economic instability, the result can be different. Therefore, different market or economic condition has scope for further research.

7.5. Generalizability

The last concern of a study is related to the validity form outside which testifies the generalizability of any research findings (Saunders et al., 2009, p.158). If the research was undertaken in a different circumstance and the generalizability concerns are what can happen to the findings of the research and what may be the outcome of this study (Ribson, 2002, p. 107)

In this thesis, we used only one country, Sweden and we have taken into account the data from the last 10 years. Though our data is from a very reliable source, we
highlighted the findings after focusing on our data analysis on the basis of our theoretical framework that we have previously developed. We will have a very low generalizability of our findings if the study is conducted in a different country using a larger sample size than what we used. We argue that our research is helpful in recreating and transforming data in the research of a similar topic in the Scandinavian market, there is a good possibility of generalizing the findings of our research although the outcomes of such research may not be as high as we expect.
8. The Credibility of Research Findings

In our research to evaluate the trustworthiness or our results, we have assessed two criteria. “Reducing the possibility of getting the answer wrong means that attention has to be paid to two particular emphases on research design: reliability and validity” (Saunders et al., 2007 p. 149).

8.1. Reliability

Reliability refers to the extent to which the data collection techniques or analysis procedures will yield consistent findings. It also refers to the accuracy of the measurement and checking the results of the research is conducted again. (Collis and Hussey, 2014, p. 217). Saunders et al. (2007, p. 149), mentored three criteria to check if the research is reliable; First, if the measure yields the same results in other locations. Secondly, if the observation is similar by other observers, and finally, if the research is transparent with the raw data. Our project is followed by a quantitative research approach and there is no subject or participant errors, participant bias, or observation error (Saunders et al., 2007, p. 49). Simultaneously we have used authentic sources to collect the secondary data and this will give similar and repeatable results if the research is done again. Due to constant and different measures of ESG scores that are stable over time, it is possible to get similar results if the same source of data is being used.

8.2. Validity

“Validity is concerned with whether the findings are really about what they appear to be about and asks if there is a causal relationship between variables.” (Saunders et al., 2007, p. 150). The major risk to validate a research analysis is considered faulty procedures, poor sampling, an inaccurate measurement. As our data is derived from a trusted and reliable source or research fulfills the conditions to be validated as, “Refinitiv recognizes the increasingly critical importance of transparent, accurate and comparable Environmental, Social and Governance (ESG) data and analytics for the financial industry” (Refinitiv, April 2020). In our research, we have used previous literature to relate, argue, and support our findings. Apart from this Umeå University supervisor and staff from USBE (Umeå School of Business, Economics, and Statistics) helps us in the process of conducting the research. Therefore, we consider our test and analysis possess a high degree of validity.
9. References


Nasdaq, 2016. Available at: https://indexes.nasdaq.com/docs/Methodology_OMXS30.pdf [Retrieved 22 May 2020].


Sehleanu, M. 2015. Creating or destroying value through mergers and acquisitions? Annals Of The University Of Oradea, Economic Science Series, 24, 1, pp. 593-600


