Voluntary Adoption of International Financial Reporting Standards (IFRS) by unlisted companies

Evidence from Norway

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Preface

This Master Thesis is the final part of the master's degree in Accounting and Auditing at the University of Agder. The thesis counted for 30 credits and was completed in Spring 2020.

Completing and writing this thesis has been educational, interesting, and challenging. Despite some challenges along the way, I have gained a lot of knowledge regarding the chosen topic, determinants of voluntary IFRS adoption by unlisted companies in Norway.

I want to express my most profound appreciation to my supervisor, Associate Professor Victoria Carol Edgar, who helped and gave me the opportunity to make this thesis possible. Moreover, I am very grateful for her continuous feedback, guidance, and encouragement throughout the writing process.

Furthermore, a special thanks to my husband, Øyvind Eide, for taking care of our two sons and always being there for me when I lost motivation. I am very thankful for his unconditional love, constant support, and understanding throughout the research process. I dedicate this thesis to him.

I would like to thank my family in the Philippines, my family in Norway, and friends who supported me with love, understanding, and patient advice. Especially, I am very grateful for the help from my father in law, Svein Eide, and his partner, Solveig Bjelland, for always stepping in whenever we need help to take care of our youngest son (1-year-old). A special thanks also to Marilex Rea Llave for helping me with the printing, for her informative advice and for reading through my thesis. Last but not least, thanks to Maria Theresa Westervoll for proofreading my research and for her motivational feedback. Thank you all very much for the unwavering support.

I hope you enjoy your reading.

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Vivian Tirol Eide

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Abstract

This thesis explores the voluntary IFRS adoption among unlisted companies by testing the main hypothesis: *Certain company characteristics influence the voluntary adoption of IFRS Standards in Norway.* This research tackles the issue of which company characteristics influence the voluntary adoption of IFRS by unlisted companies in the Norwegian context. In the empirical analysis, this study focuses on 1395 unlisted companies preparing unconsolidated financial statements in 2018.

A descriptive research study using a quantitative research strategy are conducted to answer the main research hypothesis. Chi-square statistical tests of independence are used to examine the determinants of voluntary IFRS adoption. Findings from the chi-square test of independence reveal that firm size by employees, firm size by turnover, industry type, and auditor type are statistically significantly related to the voluntary adoption of IFRS by Norwegian unlisted companies. Specifically, larger companies that operate in oil & gas, telecommunication & information, financial & insurance industries, and are audited "Big Five" auditing firms (especially EY and Deloitte) significantly related to unlisted company's decisions to adopt IFRS voluntarily.

This research contributes to prior literature on the voluntary adoption of IFRS by unlisted companies by focusing on the Norwegian context. Specifically, by examining the role of certain company characteristics in explaining the adoption of IFRS. The findings of this study have implications for regulators, preparers, and standard setters that evaluates financial reporting, which is related to policies for unlisted companies. In addition, the findings will provide a better understanding on how unlisted company's characteristics influence the voluntary adoption of IFRS. In that way, regulators, preparers, and standard setters can promote the usage of IFRS Standards more efficiently and adjust or improve IFRS standards, especially for unlisted companies.

Additionally, this study offers insights regarding the determinants of unlisted company's preferences for voluntary adoption of IFRS Standards. The study also suggests which type of unlisted companies prefer to choose and benefit from IFRS. Furthermore, the findings in this study may enhance the decision of unlisted companies to adopt IFRS voluntarily.

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Abbreviations

AS	Aksjeselskap
BDO	Binder, Dijker, and Otte
EC	European Commission
EU	European Union
EEA	European Economic Area
EY	Ernst & Young
GAP	Good Accounting Practice
GDP	Gross Domestic Product
IASC	International Accounting Standard Committee
IFRS	International Financial Reporting Standards
MNCs	Multinational Corporations
NASB	Norwegian Accounting Standards Board
NGAAP	Norwegian Generally Accepted Accounting Principles
NRS F	Norsk RegnskapsStiftelse Foreløpig (Preliminary Standards)
OSE	Oslo Stock Exchange
PwC	Pricewaterhouse Coopers
SMEs	Small and Medium-sized Enterprises

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1 Introduction

This research explores the determinants of the voluntary adoption of International Financial Reporting Standards (IFRS) in Norway. This chapter outlines the research context and motivations of this study. Consequently, the problem statement and research hypotheses are discussed. Finally, the research contributions and the structure of the thesis are presented.

1.1 Research context and motivations

Despite not being a European Union (EU) member, Norway is required to implement the EU Accounting Directive (including IAS/IFRS regulation) through its obligations under the European Economic Area (EEA) agreement (Kvaal, 2017). In 2005, the EU mandated Norwegian listed companies to prepare their consolidated financial statements in compliance with IFRS. In 2011, Norwegian listed companies that did not prepare consolidated accounts were mandated to prepare their separate company financial statements in accordance with IFRS. This context will be explored in more detail in Chapter 2.

Unlisted companies are not obliged but are permitted to adopt IFRS in Norway. In Norway, unlisted companies represent 99.97 % of all companies in 2020 (out of the total 590 810 companies, only 198 are listed in Oslo Stock Exchange) (OSE, 2020; SSB, 2020b). Berner and Olving (2013) find that companies mandatorily reporting under IFRS tripled from 2005 to 2011, while unlisted companies that voluntarily adopted IFRS increased six-fold during the same period. Recently, Schwencke, Haugen, Baksaas, Stenheim, and Avlesen-Østli (2019) commented that the percentage of unlisted companies that adopt IFRS voluntarily continues to increase. Prior literature has focused on the impact and consequences of IFRS adoption (Barth, Landsman, Lang, & Williams, 2018; Daske, Hail, Leuz, & Verdi, 2013; Kim & Shi, 2012). Specifically, in Norway, research has focused on the value relevance of earnings and book values (Beisland & Knivsflå, 2015; Gjerde, Knivsflå, & Sættem, 2008), and accounting quality under the IFRS accounting regime (Galaen & Stenheim, 2010; Stenheim & Madsen, 2017). Recent studies have considered the characteristics of companies adopting IFRS voluntarily, including André, Walton, and Yang (2012); Di Fabio (2018); Haapamäki (2018); and Matonti and Iuliano (2012). Most of these recent studies were conducted in European setting, such as UK, Ireland, Poland, and Italy.

Despite the increased number of companies adopting IFRS voluntarily (Schwencke et al., 2019), in Norway, only one study considers the determinants of IFRS voluntary adoption. Berner and Olving (2013), through a descriptive analysis, find that the industry sector where the company operates in influences the voluntary adoption of IFRS in Norway. This study extends the research of Berner and Olving (2013) by analyzing the firm-factors empirically. Disparate from the study by Berner and Olving (2013), which is based on the fiscal year 2005 – 2011, this thesis is based on the 2018 financial year indicating that more chances for companies to adopt IFRS voluntarily having seen any potential benefits/costs in action for a longer time. For that reason, it would be interesting to see if this empirical research validates what has been found in the descriptive analysis of Berner and Olving (2013). Therefore, this research is conducted to see if the characteristics are still the same after more experience in Norway with IFRS.

This study is motivated by a desire to examine whether a company's specific characteristics are likely to influence the voluntary adoption of IFRS. It has been argued that empirical evidence on the drivers of voluntary IFRS adoption is still limited (André et al., 2012). This is because information on unlisted companies is not easy to collect compared to information on listed companies. Fortunately, in Norway, information on unlisted companies can be obtained from the Norwegian company register, Brønnøysund Register Center. For this reason, Norway provides a suitable setting to study as it also has unlisted companies that represent more than 99 % of all companies. Berner and Olving (2013) call for further research concerning the determinants of voluntary IFRS adoption in the Norwegian context. It is important to understand this area because it will guide unlisted companies for a better decision-making of what accounting regime that is beneficial for them, especially to those unlisted companies that seek to go global and plans to be listed in the regulated market.

Moreover, this thesis is also motivated by the recommendations of the recent study by Di Fabio (2018), concerning firm factors that may influence the voluntary adoption of IFRS. As both of the latter studies focus on unlisted companies, it is relevant for this thesis to evaluate whether their findings support the results of this research.

1.2 Problem Statement

This section outlines the research objectives and hypotheses of this thesis. This study focuses on the voluntary adoption of IFRS Standards in Norway. The overall aim of this research is to understand the characteristics of unlisted companies that adopt IFRS Standards voluntarily in Norway. Even though IFRS is a complex theme to study, it is an influential accounting regime not only in Norway but also around the world as it currently been used by a total of 166 jurisdictions (IFRS.org, 2020). Therefore, this study will test the overarching research hypothesis:

"Certain company characteristics relate the voluntary adoption of IFRS Standards in Norway."

In order to answer the central research hypothesis of this study, four research hypotheses are examined:

H1. *Voluntary adoption of IFRS by unlisted companies is related to the firm size by employees.*
H2. *Voluntary adoption of IFRS by unlisted companies is related to the firm size by turnover.*
H3. *Voluntary adoption of IFRS by unlisted companies is related to the industry sector.*
H4. *Voluntary adoption of IFRS by unlisted companies is related to the audit firm.*

1.3 Research contribution

This section outlines some of the main contributions of this study. First, this study adds to the IFRS literature in terms of the voluntary adoption of IFRS by focusing on the Norwegian jurisdiction. Second, this study offers a deeper our understanding of whether specific company characteristics are more likely to influence the voluntary adoption of IFRS. This research is potentially relevant to producers of financial statements as well as standard setters and regulators and to those unlisted companies that are planning to adopt IFRS accounting regime. Standard setters may have a better understanding of the motivations for the voluntary adoption of IFRS. This will enable them to promote IFRS more effectively to countries that currently do not employ IFRS. Regulators, Norwegian accounting standard regulators, in particular, may enhance their awareness for evaluating to what extent IFRS adoption may be beneficial to voluntary adopters. Since IFRS is a complex and dynamic accounting regime, regulators need to know whether any improvements or adjustments of IFRS Standard is relevant. Therefore, the findings of this study may help the regulators to know the type of unlisted companies, their

characteristics, which needs to be adjusted or improved. This research can also be of interest to a wide range of practitioners, and especially for managers of companies currently evaluating the opportunity to convert to international accounting standards. The findings of this thesis may also help unlisted companies to understand voluntary IFRS adoption decision-making better. It will be beneficial for the unlisted companies that do not adopt IFRS yet to know if other unlisted companies with similar characteristics that chose IFRS have benefited from the use of IFRS Standards. Thus, it is crucial to determine which firms' characteristics are more likely to adopt IFRS voluntarily and whether all the firms benefit from voluntary IFRS adoption.

The remainder of this paper is structured as follows: Chapter 2 provides the background of IFRS adoption generally, the prevalence of IFRS in Norway, and discusses the major differences of NGAAP and IFRS policy. Chapter 3 presents the main literature review and the hypotheses development. Followed by the methodology, which is presented in Chapter 4. While Chapter 5 draws the findings and discussions of the results. Concluding remarks, limitations, and recommendations for future studies are presented in Chapter 6.

2 Background

This chapter outlines the general background of IFRS to provide context for the study. Section 2.1 outlines the accounting regulation in Norway, Section 2.2 outlines the prevalence of IFRS in Norway, and Section 2.3 outlines the differences between IFRS and Norwegian Generally Accepted Accounting Principles (NGAAP).

The European Union (EU) adopted an IAS Regulation (Regulation 1606/2002) in June 2002 requiring all European companies listed in any regulated market within the EU to prepare their consolidated financial statements in accordance with International Financial Reporting Standards (IFRS), as adopted by the EU, effective from the financial year 2005. The EU Accounting Directives and Regulations, which includes IFRS adoption in 2005, also applies to members of the European Economic Area (EEA). Since Norway is an EEA member (Kvaal, 2017), IFRS Standards were adopted as law in Norway through the Norwegian Accounting Act of 1998 (hereafter called Accounting Act) (NRS, 2017). As stated in the preparatory document under the implementation of IFRS, IAS/IFRS Standards should continue to be the basis for the development of Norwegian accounting standards (IFRS Foundation, 2017).

As a result, all Norwegian companies that are listed in an EU/EEA securities market are obligated to prepare their consolidated financial statements in compliance with IFRS as adopted by the EU starting in 2005 (Larson & Street, 2004). As of 2011, Norwegian listed companies that do not prepare consolidated accounts because they do not have any subsidiaries must prepare their separate company financial accounts under IFRS (Schwencke et al., 2019). Unlisted Norwegian companies have the right but are not obliged to report their financial accounts in compliance with IFRS; instead, they are required to report their financial accounts using NGAAP.

2.1 Accounting regulation in Norway

This section outlines the accounting regulation in Norway to provide context for the study. In particular, this section presents the structure and implementation of IFRS in Norway.

Financial accounting in Norway is regulated by legislation, the Accounting Act (Johnsen, 1993). Norway has five types of accounting language namely IFRS as adopted by the EU (called full IFRS in Norway), simplified IFRS, traditional Norwegian Good Accounting Practice

(GAP), Good Accounting Practice for small business (NRS 8) and Good Accounting Practice for not-for-profit organizations (NRS F). NRS is the abbreviation for "Norsk RegnskapsStiftelse," the Norwegian Accounting Standards Board (NASB) in English. These five accounting languages are categorized into two groups, which are (1) IFRS as adopted by the EU and (2) NGAAP and are summarized in Figure 2.1 below.
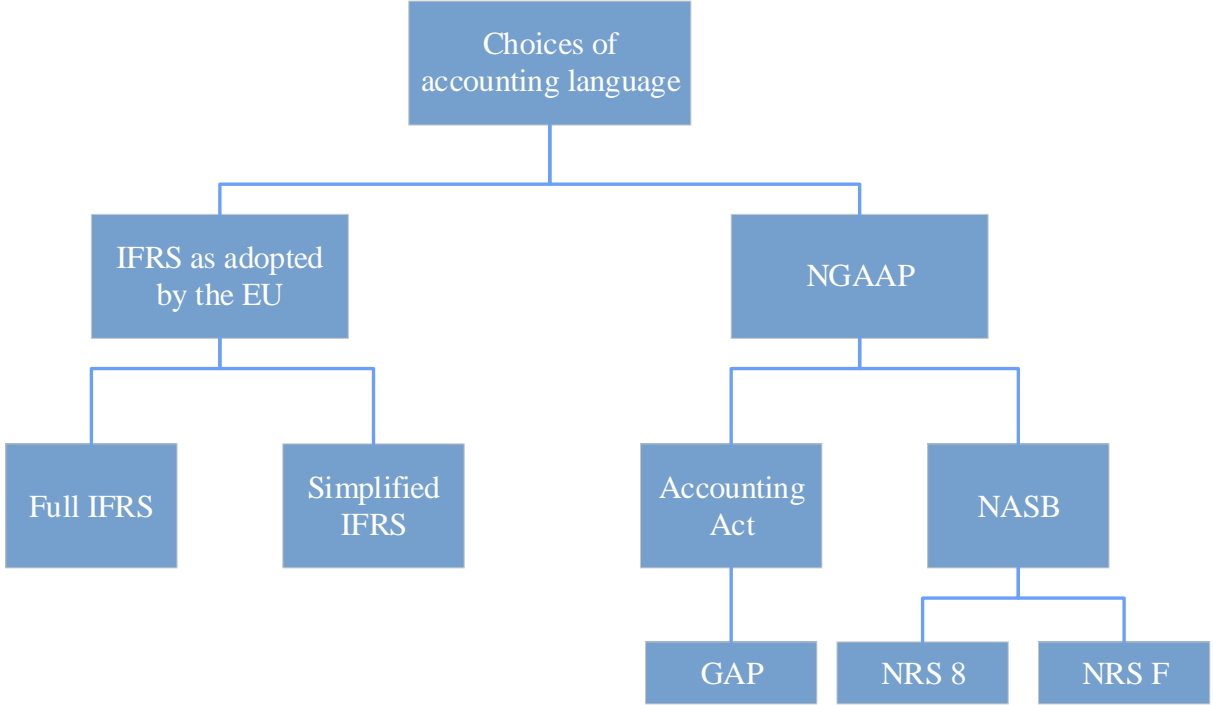
Figure 2.1: Accounting language in Norway (Langli & Tellefsen, 2010)

Full IFRS is regulated in § 3-9 of the Accounting Act. This is based on the International Accounting Standards Board's (IASB) conceptual framework and consists of both IAS Standards and IFRS Standards. IASB is the standard-setting body of IFRS. This was created in 2001 as a successor to the International Accounting Standard Committee (IASC) (Whittington, 2008). The mission of IASB is to develop IFRS Standards that bring transparency, comparability, accountability, and efficiency to financial markets globally. Investors are primarily the main users of IFRS's financial statements (Carini, Teodori, Veneziani, Dunne, & Helliar, 2011). The IASC issued International Accounting Standards (IAS), which were later revised and adapted to IFRS. The IFRS Standards are published by the IASB and are validated by the EU before being written down in Norway in the separate by law in the Accounting Act § 3-9.

Simplified IFRS is also regulated in § 3-9 of the Accounting Act. Companies that comply with this standard mainly use the same rules for recognition and measurement as used in Full IFRS. However, cash flow presentations and note information are based on the Accounting Act (Baksaas & Stenheim, 2019). Simplified IFRS can be used by all entities obliged to keep accounts unless the law requires them to use other solutions. This is also used by entities that plan to be listed on the Oslo Stock Exchange (OSE) and entities that want to show fair values in the balance sheet (Gotland consulting, 2017).

The traditional 'Good Accounting Practice' is regulated in § 4-6 of the Accounting Act and has been a legal standard in Norway since 1976/77. It serves an integral part in Norwegian accounting laws (Alexander & Schwencke, 2003). Johnsen (1993) stated that Good Accounting Practice is a dynamic concept since it is continually developed in response to economic change and when entities undertake new transactions and face new accountable events. Good Accounting Practice is meant to supplement the law in areas that are not directly regulated by law or regulation. Good Accounting Practice for small businesses (NRS 8) is intended to supplement and interpret the fundamental accounting principles and regulations in the Accounting Act for small businesses. In this way, NRS 8 helps ensure that information provided to users of financial statements remains relevant and reliable. This standard should be easy to follow and less costly to the small businesses that are obliged to report annual accounts. Good Accounting Practice for not-for-profit organizations (NRS F) has the purpose of describing and interpreting Good Accounting Practice for not-for-profit organizations that must to report annual accounts (Rettsdata, 2020).

Both NRS 8 and NRS F are published by the Norwegian Accounting Standards Board (NASB). NASB is the official standard-setting body in Norway. The major work of this private body is to publish discussion papers, exposure drafts, preliminary accounting standards, and final accounting standards. Final accounting standards must be in compliance with the Accounting Act and are mandatory to all Norwegian companies, except listed companies, small businesses (can choose to apply NRS 8), and not-for-profit organizations where they have a separate standard to comply with. If preliminary accounting standards are available before the final standards, it is then recommended to be applied (NRS, 2017).

The Accounting Act and the accounting standards published by NASB are the essential regulations of NGAAP (Beisland & Knivsflå, 2015). The Accounting Act includes all aspects

of financial accounting, along with the measurement rules and fundamental accounting principles (Alexander & Schwencke, 2003). These fundamental accounting principles are explained in the Accounting Act §§ 4-1 – 4-4. The Accounting Act defines what is considered to be large and small companies. Large companies have stricter requirements than small companies. Small companies are, for example, not required to prepare cash flow analysis and are only subject to simplified notes requirements. Small companies are required to use the GAP for small businesses (NRS 8). The Accounting Act § 1-5 defines large companies as public limited companies (ASA), companies whose shares, units, primary capital certificates or bonds are listed on the stock exchange, authorized market place or similarly regulated market abroad or enterprises as entities required by law to prepare accounts if so provided by the Ministry in general regulation. On the other hand, small companies are also obliged to prepare accounts if at least two of three criteria are satisfied over two consecutive years, see Accounting Act § 1-6:

- Sales revenues less than NOK 70 million
- Balance sheet total (+ sum of balance sheet assets) less than NOK 35 million
- Fewer than 50 employees determined as average full-time equivalents during the financial year

The value at the end of the financial year, which is normally 31 December, is the basis of whether or not the criteria are met. A parent group can be considered a small business if the above criteria are fulfilled. Other companies are not covered by the definition of large or small companies, which are medium-sized companies.

2.2   Prevalence of IFRS in Norway

This section outlines the prevalence of IFRS in Norway. The accounting choice of the reporting companies in Norway is regulated in the Accounting Act. As mentioned earlier in this chapter, large companies have stricter requirements relative to financial reporting. Listed companies are required to use IFRS Standards in their consolidated accounts and separate company accounts. The three other business categories (other companies, small companies, and not-for-profit organizations) may also use IFRS if they find it useful. Table 2.1 summarizes what type of accounting language is used by the different business categories in Norway.

Table 2.1: Accounting choice by different types of business

	Listed companies	**Other companies**	**Small companies**	**Not-for-profit organizations**
Separate company financial statements	IFRS Simplified IFRS	IFRS Simplified IFRS GAP	IFRS Simplified IFRS GAP for small businesses	IFRS Simplified IFRS GAP for not-for-profit organization
Consolidated financial statements	IFRS	IFRS Simplified IFRS GAP	IFRS Simplified IFRS GAP for small businesses	IFRS Simplified IFRS GAP for not-for-profit organization

(DIBKunnskap, 2019)

Table 2.2 below shows the overview of the different accounting languages used by the Oslo Stock Exchange (OSE) listed firms in 2004-2005.

Table 2.2: Accounting language used by OSE listed firms in 2004 and 2005

GAAP	**Initially reported**	**2004 IFRS Restatements in 2005**	**2005**
IFRS	2	1	188
NGAAP	167	145	16
USGAAP	10	2	10
SGAAP	4	4	0
CGAAP	2	0	4
DKGAAP	1	1	0
HKGAAP	1	0	1
UKGAAP	1	1	0
Listed on OSE	**188**		**219**

(Gjerde et al., 2008)

Based on Table 2.2 above, there were 188 firms out of 219 firms listed on the OSE that reported their 2005 financial statements in accordance with IFRS. Approximately 14 % of the firms listed on the OSE did not report in compliance with IFRS since they do not disclose consolidated accounts, have their primary listing on a non-European exchange, or have temporarily delayed the adoption of IFRS.

Table 2.3 shows the number of companies that have an accounting obligation in Norway from 2005 to 2011, with the corresponding number of companies reporting their financial statements in accordance with IFRS standards.

Table 2.3: Companies with accounting obligation in Norway

Financial reporting year	Separate company accounts	Consolidated accounts	Total	IFRS	IFRS in %
2005	165 395	2 979	168 374	276	0.2 %
2006	198 964	3 118	202 082	570	0.3 %
2007	214 876	3 491	218 367	854	0.4 %
2008	226 350	3 732	230 082	1 038	0.5 %
2009	229 358	3 890	233 248	1 110	0.5 %
2010	233 828	3 811	237 639	1 306	0.5 %
2011	247 343	3 875	251 218	1 129	0.4 %
Total	**1 516 114**	**24 896**	**1 541 010**	**6 283**	**0.4 %**

(Berner & Olving, 2013)

Table 2.3 shows that the number of firms that adopt IFRS (either Full IFRS or simplified IFRS) represents only a small percentage of the total companies with an accounting obligation. Nevertheless, it is encouraging since it increases along with the increasing total number of reporting companies, although the year 2011 did decrease.

NASB (2010) conducted an analysis of the number of enterprises that are required to prepare financial statements in Norway. In 2008, there were about approximately 235 000 firms with accounting obligations in Norway. Table 2.4 below presents the result of their analysis.

Table 2.4: Number of companies with accounting obligation and their chosen accounting language

Chosen accounting language	Company accounts	In percentage	Consolidated accounts	In percentage
GAP for small businesses	223 479	95.17 %	847	22.40 %
GAP	10 765	4.58 %	2 661	70.38 %
IFRS or simplified IFRS	557	0.24 %	163	4.31 %
Others / not given	8	0.00 %	110	2.91 %
Total accounts	234 809	100 %	3 781	100 %

(NRS, 2010)

Table 2.4 shows the breakdown of the companies' chosen accounting languages who prepare financial statements in 2008. There were 557 companies that reported their separate company accounts in compliance with IFRS or simplified IFRS and 163 companies that reported their consolidated accounts under IFRS or simplified IFRS.

2.3   Differences between NGAAP and IFRS

This study examines the voluntary adoption of IFRS in Norway; therefore, it is relevant to consider the differences between NGAAP and IFRS. NGAAP is based on an earnings-oriented conceptual framework and focuses on historical cost (Gjerde et al., 2008). Johnsen (1993) describes historical cost accounting as transaction-based accounting. He stated that transactions are the basis for recognition and measurement. It is crucial to determine when a transaction occurs or whether it has occurred at all for revenue recognition purposes. He also proposed that substance over form should be used when recognizing revenues.

On the other hand, IFRS is based on a balance sheet-oriented conceptual framework and emphasizes fair value as the principle of measurement (Dichev, 2008). It also allows the use of historical cost accounting if there is no reliable alternative (Gjerde et al., 2008). Definitions of assets and liabilities are the starting point for accounting recognition under IFRS (Beisland & Knivsflå, 2015; Elling, 1995; Gjerde et al., 2008; Kvifte, 2003).

The significant difference between NGAAP and IFRS is characterized by what principle of measurement they use. According to Gjerde et al. (2008), the most critical differences between NGAAP and IFRS are the following:

- *Goodwill and other intangible assets with indefinite economic lives*. NGAAP requires investment expenditures to be capitalized as assets, which is to be matched with future economic benefits. Intangible assets are amortized over the best estimate of the useful life and tested annually for impairment. IFRS requires assets to be capitalized if the asset definition and criteria for recognition are satisfied. Intangible assets are tested annually for impairment but not amortized.
- *Research and development expenditures*. NGAAP allows both research and development expenditures to be capitalized as an asset with an option to expense both when incurred. IFRS requires research expenditures to be expensed when incurred, while development expenditures are to be capitalized as an asset if the criteria for asset recognition are satisfied.
- *Provisions for future expenditures*. NGAAP allows provisions for future expenditures to be capitalized as debt and matched with corresponding revenues. While IFRS treats periodic maintenance as an investment which is depreciated over time.
- *Biological assets and investment property*. NGAAP requires both biological assets and investment property to be capitalized at cost and should be depreciated if it has a long

useful life and is subject to an impairment test. Under IFRS, it should be capitalized as an asset and measured according to fair value when this can be measured reliably.

- *Financial instruments.* NGAAP measures financial instruments at cost/nominal value, except for short-term financial instruments traded in a liquid market, which is measured at fair value. IFRS measures financial instruments at fair value and amortized cost.

Some other differences that are mentioned are related to pensions, deferred taxes, and share-based payments (Gjerde et al., 2008, cited in Beisland & Knivsflå, 2015).

3 Literature review

The first section of this chapter (Section 3.1) generally examines the costs and benefits of IFRS adoption around the world. It demonstrates some of the findings of diverse researchers and academics who have influenced an understanding of the impact of IFRS adoption globally and provides context for why companies may be motivated or not to adopt IFRS voluntarily. The second section (Section 3.2), continues specifically with an analysis of the early and post voluntary adoption of IFRS, which is the focus of this study. The third section (Section 3.3) presents the development of the research hypotheses of this study.

3.1 IFRS adoption

Research relating to IFRS adoption emerged as early as in the 1990s, where several European countries, including Germany, Switzerland, and Italy, permitted firms to adopt IAS Standards voluntarily. Since then, researchers have provided initial insights into the potential benefits (e.g., enhance transparency, comparability of financial statements, and lower costs of capital) and expected costs (e.g., implementation costs, direct and indirect costs) of voluntary IFRS adoption (Bassemir, 2018; De George, Li, & Shivakumar, 2016). This section considers the proposed benefits of IFRS and the expected costs of IFRS adoption.

3.1.1 Research on the benefits of IFRS adoption

The expected benefits of IFRS adoption vary from firm to firm and from country to country. NASB represents Norway as one of the participants in the public consultation held by European Commission (EC) in 2014, suggests that some benefits from IFRS implementation include higher transparency and comparability, enhanced quality of disclosure and improved value relevance, reliability, and accountability (Brown, 2011; European Commission, 2017).

The other expected benefits of IFRS adoption are increased market participant's confidence, improved ability to trade or expand internationally (Brown, 2011), improved group reporting in terms of process, the robust accounting framework for preparing financial statements, administrative savings, and group audit savings (European Commission, 2017). Additional expected benefits of IFRS adoption have increased the mobility of expertise and resources across different jurisdictions, bring credibility to EU financial reporting, and allows the EU to participate actively and effectively in the international standard-setting process (European Commission, 2017). Jermakowicz and Gornik-Tomaszewski (2006) and Brown (2013) also

suggest that IFRS adoption may enhance cross-border listings and provide better investment opportunities.

Research methods and design that have been used to examine IFRS adoption are diversified. The following are the expected benefits found in the literature:

Lower costs of capital

Jermakowicz and Gornik-Tomaszewski (2006) conducted a questionnaire survey sent to EU-listed firms in 2004. Findings provide no evidence of the lower cost of capital in their study. In contrast, several other studies reported that the said cost of equity capital has decreased. For instance, a sample of more than 20,000 firm-years and 34 countries between 1998 and 2004 used in the study of Kim, Shi, and Zhou (2014) provided evidence that the cost of equity capital has significantly decreased under IFRS adoption. Another study conducted by Li (2010), using a sample of approximately 6,500 firm-year observations of more than 1,000 EU firms between 1995 and 2006, found significant evidence of the decreased cost of equity capital for mandatory adopters of IFRS in countries with vigorous legal enforcement. The reduced cost of equity capital is primarily gained from the increased financial disclosure and enhanced information comparability of financial accounts.

Improved comparability and transparency

Brown (2011) explained comparability as the ability to use accounting data to draw valid assumptions about similarities and differences between entities and for the same entity over time. Cole, Branson, and Breesch (2011) found in their online questionnaire survey of 426 auditors, analysts, and other users in 27 European countries that only 41 percent of the respondents believe that the comparability in the European IFRS financial statements is improved. Additionally, Callao, Jarne, and Laínez (2007) showed that local comparability is significantly negatively affected when both IFRS and local GAAP are applied in the same country at the same time.

In contrast, according to the questionnaire survey sent by Jermakowicz and Gornik-Tomaszewski (2006) to EU-listed companies in 2004, most respondents believe that the comparability and transparency of reported financial information have been improved under IFRS accounting policy. A similar study conducted by Jermakowicz, Prather-Kinsey, and Wulf (2007), using a survey of German DAX-30 company executives, found that most companies

believe that IFRS would improve the comparability of financial statements. Furthermore, in the light of the questionnaire survey conducted by Carini et al. (2011), it resulted that most of the interviewees believed that IFRS had improved transparency through an increase in quantity and quality of the financial statement information. A recent study by Barth et al. (2018) also provided evidence that voluntary IFRS adopters gained more comparable accounting amounts than those that mandatorily adopted IFRS standards.

Increased value relevance

One of the presumed benefits of IFRS adoption is increased value relevance. Callao et al. (2007) revealed that the value relevance of financial reporting to local stock market operators did not improve because of the gap between book and market values is wider under IFRS. Consistent with the latter study, Paananen (2008) also found some indications of a decrease in financial reporting quality in Sweden measured as earnings smoothing, timely loss recognition, and value relevance. Further, Gjerde et al. (2008) performed two types of test evaluating the value relevance differences and their significance between IFRS and NGAAP: (1) two-sample unconditional comparison tests, and (2) marginal dependency tests, utilizing value-relevance measures derived from price, return and abnormal return regression. They found little evidence of improved value relevance after adopting IFRS when comparing and evaluating the two accounting regimes unconditionally. Nevertheless, when evaluating the change in the accounting figures from NGAAP to IFRS, they (Gjerde et al., 2008)found evidence that the restatement adjustments are marginally value relevant. This is because of the more capitalization of intangible assets under the IFRS regime.

Beisland and Knivsflå (2015) extended the literature of value relevance and found that IFRS enhances the value relevance of book values and reduces earnings value relevance. The study of Stenheim and Madsen (2017), also an extension of the work of Gjerde et al. (2008), investigated the change in accounting quality where they use a panel design with 640 firm-year observations from 2001 to 2008 that includes four years of pre-IFRS observations and four years of IFRS observations. One of the tests Stenheim and Madsen (2017) conducted was the test of value relevance of net earnings and book values, which also provided evidence consistent with the result of the work of Gjerde et al. (2008) and Beisland and Knivsflå (2015) that the adoption of IFRS increases the value relevance significantly. Their study proposed that IFRS provides financial information that are more useful for valuation purposes. While NGAAP, on the other hand, provides information more relevant for stewardship purposes. Stenheim and

Madsen (2017) also found evidence that the accrual quality has improved upon the adoption of IFRS.

Enhanced disclosure quality

Another presumed benefit of IFRS adoption is the enhanced quality of disclosure of company's annual reports. Daske and Gebhardt (2006) explored the quality of the financial statements of Austrian, German, and Swiss firms. They concluded that the quality of disclosure had significantly improved under IFRS in these three countries. Some other prior research has also proposed that the adoption of IFRS enhances the quality of corporate disclosure, such that IFRS adoption leads to a lower cost of equity capital, increased market liquidity, increased earnings quality and higher value relevance of earnings and book values (Barth, Landsman, & Lang, 2008; Daske, 2006; Daske et al., 2013; Leuz & Verrecchia, 2000).

Analysts forecast following and accuracy

Other studies also investigated the effects of IFRS adoption on both analysts' forecast following and analyst forecast accuracy. Ashbaugh and Pincus (2001) suggested that the analyst forecast accuracy improves after firms adopt IFRS Standards. Hope (2003), using a sample from 22 countries, provided evidence that firm-level disclosures are positively related to analyst forecast accuracy. Further, Tan, Wang, and Welker (2011) found that the mandatory adoption of IFRS harmonizes financial reporting standards across countries, which leads to improvements in foreign analysts' forecast accuracy. Byard, Li, and Yu (2011) also showed that mandatory IFRS adoption improves earnings forecasts accuracy, forecast dispersion, and information precision. Kim and Shi (2012) extended the study of analysts' forecast accuracy and following via voluntary adoption of IFRS and find evidence of enhanced overall information environment faced by financial analysts. Semi-structured interviews were conducted by Fox, Hannah, Helliar, and Veneziani (2013) in the UK (including Ireland) and Italy context, and found that there were some differences in the experiences of IFRS adoption between stakeholders across countries and that costs exceeded benefits of financial reporting under IFRS.

3.1.2   Research on the costs of IFRS adoption

In contrast to studies on the benefits of IFRS adoption, studies examining the costs of IFRS adoption are limited (Christensen, 2012). Bassemir (2018) suggested that the cost of IFRS implementation can be divided into two types: direct and indirect costs. Direct costs deal with setting up an IFRS project team, costs derived from adjusting software and accounting system,

costs on educating personnel with IFRS and costs with regard to increased communication between parent companies and their subsidiaries. On the contrary, indirect costs refer to proprietary costs. Since IFRS requires more extensive disclosure than NGAAP, private firms would potentially reveal the proprietary information that can be used by competitors against them.

The NASB (on their answer to the public consultation held by EC) suggests that complexity in financial reporting is one of the costs associated with the IFRS implementation (European Commission, 2017). This is consistent with the work of Jermakowicz and Gornik-Tomaszewski (2006), in which the process of implementing IFRS is costly, complicated, and burdensome. Implementation costs that can be gained when adopting IFRS are such cost obtained when setting up an IFRS project team, hiring IFRS trained staff and training other staff such as IT staff, internal audit and management, other costs like software and system change, tax advising course, third party communication and additional external audit costs (PWC, 2006 and Institute of Chartered Accountants in England and Wales (ICAEW, 2007) cited in Fox et al. (2013).

The study by Jermakowicz and Gornik-Tomaszewski (2006) conducted a survey questionnaire, which is sent to the EU-listed companies in 2004. The results of this survey revealed the most common challenges in IFRS adoption. These common challenges includes (1) complexity of the nature of IFRS, (2) lack of implementation guidance, (3) lack of uniform interpretation, unready final rules for the deadline date (2005), (4) impact on profit and loss account, (5) the continuous debate about IAS 39, (6) dynamic change of IFRS, (7) the transformation of IASB decisions in EU Regulations, (8) running of parallel accounting systems, (9) preparation of comparative financial statements for the past years, (10) lack of IFRS knowledge of both employees and auditors, (11) training of accounting staff and management, (12) difficulties on change mindset of finance personnel, and (13) change of the IT systems. Consistent with the latter study, Jermakowicz et al. (2007) also found that the complex nature, cost of adopting IFRS, lack of guidance, and the increased volatility of earnings were among the most important challenges faced by the German DAX-30 companies after applying IFRS. Besides, Fox et al. (2013) explored the costs and benefits of IFRS implementation in the UK (including Ireland) and Italy. Their study found that the interviewees considered the IFRS implementation process as costly in both settings, despite the diversity of cost perceived across companies. Their research also revealed that transition costs of IFRS imply a change in many systems (IT and

management systems) and processes depending on the nationality of the company, its size, and its sector.

3.1.3 Summary

In Section 3.1.1 and 3.1.2, the proposed benefits and the expected costs of IFRS adoption have been discussed. While some researchers have found that the specific benefits were improved, other researchers disagreed. Observed evidence on benefits of adopting include reduction of cost of capital (Kim et al., 2014; Li, 2010), improvement of comparability and transparency (Barth et al., 2018; Carini et al., 2011; Jermakowicz & Gornik-Tomaszewski, 2006; Jermakowicz et al., 2007), value relevance (Beisland & Knivsflå, 2015; Gjerde et al., 2008; Stenheim & Madsen, 2017), quality of disclosure (Barth et al., 2008; Daske & Gebhardt, 2006; Daske et al., 2013), analyst forecast following, and analyst forecast accuracy (Ashbaugh & Pincus, 2001; Byard et al., 2011; Hope, 2003; Kim & Shi, 2012; Tan et al., 2011). Contrasting research concerning cost of capital (Jermakowicz & Gornik-Tomaszewski, 2006), comparability (Callao et al., 2007; Cole et al., 2011), value relevance (Callao et al., 2007; Paananen, 2008), have also been examined.

Findings on the costs of implementing IFRS have been analyzed. Expected costs are typically distinguished between direct and indirect costs (Bassemir, 2018). Several costs, such as implementation, transition, and complexity of financial reporting, have been examined (European Commission, 2017; Fox et al., 2013; Jermakowicz & Gornik-Tomaszewski, 2006; Jermakowicz et al., 2007).

Having reviewed the literature concerning the benefits and costs of IFRS adoption, generally to provide context for why companies may be motivated or not to adopt IFRS voluntarily, prior studies concerning voluntary IFRS adoption around the world are now considered.

3.2 Voluntary IFRS adoption

In June 2000, the European Commission (EC) decided to mandate IFRS adoption in all EU member states and the three other members of EEA: Norway, Liechtenstein, and Iceland. The adoption of new accounting standards was formally proposed in February 2001, legally adopted in June 2002, and mandated in 2005 (Christensen, 2012). According to Christensen (2012), the adoption of IFRS Standards in the EU is distinguished as voluntary adoption when firms

adopted prior to 2000 and early adoption of mandatory regulation after 2000 but before 2005. Then voluntary adoption after 2005 relates to unlisted firms not required to adopt IFRS at all. This section will focus specifically on prior studies that have considered the voluntary adoption of the IFRS accounting regime. Since this present study will focus on the Norwegian context, this research further divided voluntary adoption as follows: early voluntary adoption of IFRS (before it was mandated in 2005) and post-voluntary adoption of IFRS (after 2005).

3.2.1   Early voluntary adoption of IFRS (before 2005)

Academics internationally increasingly investigate the voluntary adoption of IFRS Standards. These studies rely specifically on previous literature and not on theories. Prior literature on early voluntary IFRS adoption reveals both economic consequences and the factors influencing voluntary IFRS adoption. In a Japanese context, Cooke (1992) found that firm size, listing status, and manufacturing industry sector significantly influences the voluntary adoption of Japanese listed companies. Moreover, focusing on Multinational Corporations (MNCs) from the US, UK, and Continental Europe, Meek, Roberts, and Gray (1995) revealed that firm size, country/region, listing status, and industry are the most important factors influencing voluntary adoption of IFRS. Moving to Switzerland's context, conducting univariate analyses, Dumontier and Raffournier (1998) showed evidence that size, listing status, auditor type, and ownership diffusion have a positive influence on voluntary compliance with IFRS. Besides, no significant influence found for leverage, profitability and capital intensity among Swiss listed companies. Additionally, Cuijpers and Buijink (2005) analyzed the 1999 annual reports of companies listed and domiciled in the EU. The evidence revealed that manufacturing industry sectors are more likely to adopt IFRS voluntarily, whereas agriculture, forestry, fishing, mining, construction, retail and wholesale industries are less likely to adopt IFRS voluntarily.

Gassen and Sellhorn (2006) explored the drivers of voluntary IFRS adoption by publicly traded firms in Germany between 1998 and 2004. They concluded that size, international exposure, dispersion of ownership, and recent IPOs are among the essential drivers of voluntary IFRS adoption. A similar study conducted by Bora Senyiit (2014) analyzed the factors influencing voluntary IFRS adoption by Turkish listed companies. The Turkish study, using the sample of 206 non-financial Turkish listed firms during the transition period (2003 – 2005), found that size of the firm, international exposure, and the type of auditor is among the important drivers of voluntary IFRS adoption in Turkey. In contrast, industry and leverage do not have any statistical significance on voluntary IFRS adoption.

Barth et al. (2008) explored the effects of voluntary adoption using an international sample from 21 countries consisting of 1,896 firm-year observations for 327 firms that adopted IFRS between 1994 and 2003. They found that IFRS firms have higher accounting quality than firms that do not comply with IFRS. In particular, their study revealed that early IFRS adopters exhibit lower levels of earnings management, more timely loss recognition, and more enhanced value relevance of accounting amounts. Germany, as one of the early voluntary adopters of IFRS, serves as an excellent setting to study. Christensen, Lee, Walker, and Zeng (2015) considered this opportunity and find evidence that voluntary adoption of IFRS is associated with reduced earnings management, increased timely loss recognition and increased value relevance, which is in line with the findings derived by Barth et al. (2008).

Furthermore, Hellman (2011) studied the impact of IFRS on financial statements in Sweden using a sample of 132 largest Swedish listed companies during 1991-2004. He argued that the Swedish pre-2005 adoption was "soft," which involves national deviations from IFRS and weak enforcement institutions. He concluded that voluntary adoption of IFRS indicates that firms, on average, used the flexibility offered by the soft adoption regime to manage earnings and shareholders' equity.

In addition, Kim and Shi (2012) investigated the economic consequences of voluntary adoption of the IFRS accounting regime based on firm-level data from 34 countries over the period of 1998 to 2004. Using stock price synchronicity as a measure of firm-specific information in stock prices, Kim and Shi (2012) found that stock prices incorporate more firm-specific information for voluntary IFRS adopters than local GAAP entities. Daske (2006) investigated the IFRS adoption in German companies between 1993 and 2004. The findings of his study found no reliable evidence that the cost of equity capital has lowered under the voluntary adoption of IFRS. Another study conducted by Daske et al. (2013) examined the liquidity and cost of capital effects around voluntary IFRS adoption. They focused on the firm-level heterogeneity in the economic consequences of IFRS adoption, which recognizes that firms have substantial discretion in how they implement the new accounting standards. The findings of their study showed little evidence that voluntary IFRS adoption is associated with an improvement in market liquidity or a drop in the cost of capital. However, serious adopters experience more potent effects on their cost of capital and market liquidity than label adopters. Their study also suggested that the quality of financial reporting has improved under the IFRS regime for some firms.

3.2.2 Post-voluntary adoption of IFRS (after 2005)

Researchers on post- voluntary adoption, similar to the early voluntary adoption of IFRS, report several findings of the economic consequences and drivers of voluntary adoption. Francis, Khurana, Martin, and Pereira (2008) investigated the factors influencing voluntary IFRS adoption through a survey-based research design using a sample of 3,722 private small and medium-sized enterprises (SMEs) from 56 countries worldwide. The findings revealed that both firm-specific factors such as contracting incentives (measured by firms' characteristics that proxy for expected future growth opportunities, current external financing, foreign owners, export sales, firm size, and corporate ownership structure) and country-level institutional factors matter in the voluntary IFRS adoption decision. Further, André et al. (2012) analyzed a sample of 8,417 medium-to-large UK unlisted firms in 2009 in order to examine the determinants of voluntary adoption. Their evidence showed that internationality, leverage, firm size, and auditor reputation have a positive impact on the firm's decision to adopt IFRS voluntarily. In contradiction, other firm characteristics such as profitability, capital intensity, manufacturing industry, financial industry, growth, ownership structure, and employee productivity do not influence the decision of unlisted UK firms to adopt IFRS voluntarily.

Moreover, Matonti and Iuliano (2012) also investigated the determinants of voluntary IFRS adoption but focus on Italian private firms. The results revealed that Italian private firms are more likely to adopt IFRS voluntarily when they are more leveraged and when their parent company complies with IFRS. However, Matonti and Iuliano (2012) argued that firm size, auditor type, and industry type are factors that do not influence the voluntary adoption of IFRS, which contradicts the results of the study of André et al. (2012). Another study in the Italian context was conducted by Di Fabio (2018). She focused her study on which firm-level factors are associated with unlisted company's choice to apply IFRS, instead of private firms. From analyzing a sample of 2,915 firms between 2007 to 2015, this study suggested the significance of firm size (not in line with the study of Matonti and Iuliano (2012)), foreign ownership, and capital intensity on the voluntary IFRS adoption decision of the unlisted Italian firms. The differences in the result concerning firm size from the same settings occurred, presumably because the samples are from different groups. Matonti and Iuliano (2012) examined unconsolidated accounts of private firms in Italy. Private firms can only comply with IFRS voluntarily if they are large enough to prepare a separate company accounts, so their sample is more likely to be large private firms. On the other hand, Di Fabio (2018) focused on unlisted companies that prepare consolidated and separate financial statements at the same time. She

also found that in Italy, leveraged firms are more likely to adopt IFRS, which is consistent with the findings of Matonti and Iuliano (2012). In addition, she found that firms in a financial and economic distress situation are likely to adopt IFRS voluntarily.

Berner and Olving (2013) conducted a descriptive analysis of the prevalence of IFRS in the Norwegian context. The results of their descriptive analysis showed that industry type positively relates to the voluntary adoption of IFRS. Mainly, industries like financial & insurance, oil & gas, shipping, manufacturing, and retails are more likely to adopt IFRS voluntarily. Additionally, Bassemir (2018) extended the literature on the determinants of IFRS adoption, focusing on nearly 3,000 German private firms preparing consolidated financial statements between 1998 and 2010. The findings revealed that firms are more likely to comply with IFRS when they are larger, have higher growth opportunities, have more leverage, are externally rated, are more international, are audited by a 'Big Five' auditor, are seeking to raise capital by issuing public bonds or equity and have the legal form of a stock corporation. Moreover, Haapamäki (2018) examined the firm-specific incentives in three European countries (Ireland, Poland, and the UK). The findings revealed that large unlisted firms that are profitable and have foreign owners are more likely to adopt IFRS voluntarily.

Some researchers and academics have also explored the economic consequences of the voluntary adoption of IFRS. In the South Korean setting (Chung & Park, 2017), mandatory adoption of IFRS took place in 2011 for South Korean listed companies. Their findings showed that the financial statements of listed companies are less comparable with unlisted companies. Chung and Park (2017) conducted an empirical study using a probit model to test whether unlisted companies in industries with higher ratios of listed companies are more likely to adopt IFRS voluntarily and find evidence of a positive result. This study also provided empirical evidence that the unlisted firms who voluntarily adopt IFRS tend to attract greater investment in the public debt market.

Barth et al. (2018), utilized matched sample research design (samples of non-US companies that adopt IFRS voluntarily matched with firms of similar size in their country of origin and industry that either adopted IFRS before them or not adopting IFRS at all), found that after firms voluntarily adopt IFRS, their financial accounting numbers become more comparable to those of companies that adopted IFRS before them and less comparable to those of companies that do not comply IFRS. Moreover, Barth et al. (2018) also presented evidence that voluntary

adopters generally gained capital market benefits such as liquidity, share turnover, and firm-specific information parallel to both adopted and non-adopting companies.

3.2.3 Summary

Different research studies of voluntary IFRS adoption from different settings have been conducted by several researchers and academics. Section 3.2.1 and 3.2.2 examined the voluntary IFRS adoption, especially early and post-voluntary adoption. Several academics and researchers have focused their study on the economic consequences of voluntary IFRS adoption, while some have focused on its determinants. Among the economic consequences of voluntary IFRS adoption were lower earnings management, increased timely loss recognition and value relevance (Barth et al., 2008; Christensen et al., 2015), costs of equity (Daske, 2006; Daske et al., 2013), enhanced comparability (Barth et al., 2018; Chung & Park, 2017).

There has been a diversity of the findings in prior studies concerning the determinants of voluntary IFRS adoption. Various researchers have found a positive influence between firm-specific characteristics and voluntary IFRS adoption, while others have found the opposite. Table 3.1 presents the summary of the research regarding Section 3.2.1 and Section 3.2.2 about the determinants of voluntary IFRS adoption.

Table 3.1: Research on the determinants of voluntary IFRS adoption

Researchers on voluntary IFRS adoption	Firm characteristics	Type of company	Findings
(André et al., 2012)	Firm size, auditor reputation, leverage, and internationality Profitability, capital intensity, manufacturing industry, financial industry, growth, ownership structure, and employee productivity	Medium-to-large UK unlisted firms	Positive influence No significant influence
(Bassemir, 2018)	Larger firms, higher growth opportunities, more leverage, externally rated, more international, audited by a Big Five auditor, have legal form of a stock corporation and seek to raise capital by issuing public bonds	German private firms	Positive influence
(Berner & Olving, 2013)	Industry sector: financial & insurance, oil & gas, shipping, manufacturing and retails	Norwegian unlisted companies	Positive influence
(Bora Senyiit, 2014)	Firm size, international exposure, and auditor type Industry type and leverage	Turkish listed companies	Positive influence No significant influence

(Cooke, 1992)	Firm size, listing status, and manufacturing industry sector	Japanese listed companies	Positive influence
(Cuijpers & Buijink, 2005)	Manufacturing Agriculture, forestry, fishing, mining, construction, retail and wholesale	EU listed companies	Positive influence No significant influence
(Di Fabio, 2018)	Firm size, foreign ownership, leveraged, capital intensity, financial and economic destressed firms	Italian unlisted firms	Positive influence
(Dumontier & Raffournier, 1998)	Firm size, auditor type, listing status, and ownership diffusion Leverage, profitability, and capital intensity	Swiss listed companies	Positive influence No significant influence
(Francis et al., 2008)	Firm-specific (size, expected future growth opportunities, current external financing, foreign owners, export sales, and corporate ownership structure), and institutional factors	Private SMEs from 56 countries	Positive influence
(Gassen & Sellhorn, 2006)	Firm size, international exposure, dispersion of ownership, recent IPOs	German listed companies	Positive influence
(Haapamäki, 2018)	Large companies, profitable, and foreign owners	Unlisted firms (Ireland, Poland, UK)	Positive influence
(Matonti & Iuliano, 2012)	More leveraged and parent company comply with IFRS Firm size, auditor type, and industry type	Italian private firms	Positive influence No significant influence
(Meek et al., 1995)	Firm size, country region, listing status, and industry sector	Multinational Corporations	Positive influence

Section 3.2.1 and 3.2.2 of the literature reviews identified that voluntary adoption of IFRS had been researched in several European countries such as Norway, Italy, Germany, Switzerland, UK, Sweden, and Turkey, and Asian countries such as South Korea and Japan. This thesis focuses on the Norwegian context. Prior studies primarily considered the economic consequences and the factors influencing the adoption of IFRS. This present study extends the literature on which company characteristics influence the voluntary adoption of IFRS. In addition, this study contributes to the prior literature by adding an additional international context, explicitly voluntary adoption of IFRS in Norway.

3.3 Hypotheses development

This section outlines the research hypotheses in this study. A number of firm-specific factors that are related to voluntary IFRS adoption have been identified empirically. In particular, firm-specific factors that have been proposed and tested in prior studies are of interest. In Norway,

almost 67 % of the companies have no employees, while only 17 % of the companies have greater than five employees (SSB, 2020a). It would be interesting to examine if firm size matters, even if 99 % of the Norwegian companies are classified as SMEs when selecting IFRS as the basis for reporting financial accounts. "Big Five" auditing firms in Norway are typically used by Norwegian companies (Berner & Olving, 2013). It is relevant to examine if the unlisted companies are audited by the "Big Five" report under IFRS because every companies would seek to have credible financial information. That credibility can be enhanced if Big Five auditing firms, with good reputation, audit their financial accounts. The industry factor is also of interest to examine because industries like oil & gas (Norway as one of the distributors of Oil internationally), telecommunication & information, and finance & insurance generally deal with international market. Thus, reporting under IFRS would give investors and other users of financial statements more comparable and transparent accounting information. Therefore, this study used firm size, industry, and auditor type as firm-specific independent variables to capture the factors influencing the voluntary IFRS adoption in the Norwegian setting. The overarching research hypothesis is stated as:

"Certain company characteristics relate the voluntary adoption of IFRS standards in Norway."

Unlisted companies make up most of all firms in Norway (99.7%). As previously mentioned in Section 1.1, the IFRS accounting policy is not only mandated on consolidated financial accounts of Norwegian listed companies but also permits Norwegian unlisted companies to adopt it. As a result, voluntary IFRS adoption for unlisted companies has been rising and has been popularly debated among standard setters and regulators in recent years (Jermakowicz & Gornik-Tomaszewski, 2006). Nevertheless, the number of unlisted companies reporting their financial statements in accordance with NGAAP is expected to be significantly higher than IFRS. Yet, the number of unlisted companies adopting IFRS is increasing. In the proceeding sub-sections, the characteristics of firms that adopt IFRS voluntarily are now considered. This study tests the determinants of voluntary IFRS adoption empirically. The following presents the development of the research hypotheses for each company characteristic.

3.3.1 Firm size

Prior studies showed that firm size matters in the change of accounting standards from national GAAP to IFRS. Firm size is commonly used as the independent variable in studies investigating

factors influencing the voluntary IFRS adoption of unlisted companies. Most of the prior studies found significant evidence that firm size positively influences the voluntary IFRS adoption of listed and unlisted companies (André et al., 2012; Bassemir, 2018; Bora Senyiit, 2014; Di Fabio, 2018; Meek et al., 1995). In general, large companies may have lower information production costs, and lower costs of competitive disadvantage associated with their disclosure (Meek et al., 1995). Larger companies are also more open to international market, especially when they are planning to expand their business abroad. Moreover, large companies may have the financial resources that allows them to voluntarily adopt new accounting regime (André et al., 2012).

Consequently, it is expected that larger unlisted companies gain net benefits by switching from local GAAP to IFRS since it will be less costly for them to make more disclosure because they also produce accounting information for internal purposes (André et al., 2012; Dumontier & Raffournier, 1998; Haapamäki, 2018; Kvaal & Nobes, 2010). This study tested this empirically to see if the size of Norwegian unlisted companies matters on voluntarily choosing IFRS as the basis of their financial reporting. It would be interesting to know if how firm size relates to voluntary IFRS adoption. This research measures the firm size using two different measurements: employees and turnover. Thus, this thesis hypothesizes that:

> *H1: Voluntary adoption of IFRS by unlisted companies is related to the firm size by employees.*
>
> *H2: Voluntary adoption of IFRS by unlisted companies is related to the firm size by turnover*

3.3.2 Industry sector

Prior research argues that the level of voluntary adoption of IFRS differs between industries because of the industry-specific accounting regulation, the nature of their products, their research & development, as well as competitive pressures (Cooke, 1992; Meek et al., 1995). These factors may also cause industry differences in the costs and benefits of adopting IFRS (André et al., 2012; Matonti & Iuliano, 2012). Several studies find evidence that industry type influences the voluntary adoption of IFRS (Berner & Olving, 2013; Cooke, 1992; Cuijpers & Buijink, 2005; Meek et al., 1995). In particular, manufacturing (Cooke, 1992), transportations, communications (Cuijpers & Buijink, 2005), oil & gas (Cuijpers & Buijink, 2005) industries are more likely to adopt IFRS voluntarily. On the other hand, André et al. (2012) have not found

significant evidence that the manufacturing and financial industry influence the voluntary adoption of IFRS by unlisted firms. Likewise, Matonti and Iuliano (2012) have found no evidence that the industry sector is a driver of IFRS voluntary adoption. In this thesis, it is expected that voluntary IFRS adoption by unlisted firms may vary across industries. With that, it is likely that:

H3: Voluntary adoption of IFRS by unlisted companies is related to the industry sector.

3.3.3 Audit firm

In Norway, audit firms can be classified as the "Big Five" and "non-big five." The big five refers to BDO, Deloitte, Ernst & Young (EY), KPMG, and Pricewaterhouse Coopers (PwC). It has been argued that large and well-known audit firms influence the accounting choice of reporting companies (Berner & Olving, 2013; Bora Senyiit, 2014; Dumontier & Raffournier, 1998; Matonti & Iuliano, 2012). In particular, Big Five auditing firms have significant expertise and strong specialization in IFRS adoption, and their personnel is better trained in terms of auditing IFRS standards (Bassemir, 2018; Bora Senyiit, 2014). Hence, it is likely that:

H4: Voluntary adoption of IFRS by unlisted companies is related to the audit firm.

4 Methodology

The purpose of this chapter is to explain the methods applied in analyzing the research hypotheses. The methods and principles used are critically discussed and evaluated to answer the research hypotheses in the best possible way. At the same time, the readers could evaluate the strengths and weaknesses of the analysis.

4.1 Research philosophy

This section outlines the four types of research philosophy. According to Dudovskiy (2018), there are four types of research philosophy: pragmatism, positivism, interpretivism and realism. Saunders, Lewis, and Thornhill (2019) point out that being pragmatics is to recognize that there are enormous ways of interpreting the world and undertaking research. Moreover, there is no single point of view that can ever give the entire picture and realities may be multiple. Sekaran and Bougie (2016) also describe pragmatism as research that can be based on both objectives, observable phenomena, and subjective meanings, which can create meaningful and useful knowledge.

The main idea of positivism is that there is only one truth: only factual knowledge gained through observation is trustworthy (Dudovskiy, 2018; Sekaran & Bougie, 2016). The research findings in positivism philosophy are usually observable and quantifiable. It assumes that the only way people can be positive that the knowledge is true is if it was discovered using the scientific method by generating hypotheses to explain a phenomenon (Sue, 2018). Interpretivist (constructivism), on the contrary, believes that there is no single truth, such that they have different explanation for everything. Constructivism emphasizes qualitative analysis rather than quantitative analysis (Sekaran & Bougie, 2016).

Lastly, realism research philosophy depends on the idea of independence of reality from people's minds. It is based on the assumption of a scientific approach to the development of knowledge. There are two types of realism research philosophy, direct and critical. Direct realism is defined as "what you see is what you get" and sees the world through personal human senses. On the other hand, critical realism contends that humans do experience the sensations and images of the real world, which can be deceptive. Opposite to direct realism, critical realism does not portray the real world.

According to Sekaran and Bougie (2016), there are two ways of doing research, the inductive approach and deductive approach. Inductive reasoning is defined by (Sekaran & Bougie, 2016) as a process of observing a specific phenomenon to provide generalizations about that phenomenon. It is often called as 'bottom-up' reasoning (Horn, 2012). Conversely, the deductive approach works the other way around, from the more general to the more specific. Deductive reasoning is often known as 'top-down' reasoning (Horn, 2012). Deductive approaches are typically used in causal and quantitative research, while inductive approaches are frequently used in exploratory and qualitative research (Sekaran & Bougie, 2016).

This study applied a deductive approach where prior literature about the chosen subject is being described first and then analyzed how it is used in practice. This study did not rely on the theories but instead on previous literature of the chosen topic, which is the voluntary adoption of unlisted companies, specifically, the determinants of voluntary IFRS adoption. As this research applied a deductive approach, the philosophy of positivism is appropriate research philosophy for this study as it employs deductive laws and quantitative methods to get at the truth.

4.2   Research strategies and methods

This section outlines the research strategy and research method used in collecting data. Research strategy can be divided into three types: qualitative, quantitative, and mixed methods (Creswell & Creswell, 2018).

A qualitative research strategy is about meanings and understandings and is more concerned about how people express their feelings, beliefs, assumptions, desires, and understandings (Horn, 2012). The primary qualitative research data will be words, but it could also be a video or audio material (Johannessen, Christoffersen, & Tufte, 2011). Qualitative data are not immediately quantifiable unless coded and categorized in some way (Sekaran & Bougie, 2016).

According to Johannessen et al. (2011), quantitative research is appropriate for data that comes in number. Quantitative research assesses research problems via statistical, mathematical, or computational techniques (Horn, 2012). It has a more systematic and scientific design which able to test the causal relationship between the variables. Quantitative studies mainly examine the relationship between numerically measured variables and the application of statistical techniques (Dudovskiy, 2018). This approach is suitable, mainly if the research problem is

aimed to analyze factors that influence an outcome (dependent variable) or in testing hypotheses (Creswell & Creswell, 2018).

A mixed-methods strategy is the combination or integration of qualitative and quantitative research and data in a research study. It is also called "multiple methods" and is based on the idea that all methods had biases and weaknesses. The combination of qualitative and quantitative data helps to neutralize these biases and weaknesses (Creswell & Creswell, 2018).

Based on the purpose of the study, which is to gain understanding in a complex topic (IFRS), as well as test and verify events based on facts and hypotheses (empirical), it is appropriate to use a quantitative research strategy. The reason is that this study aims to analyze and to gain a deeper understanding of the factors influencing the voluntary adoption of IFRS in Norway.

The theory about empirical methods is usually classified between two forms of information, primary data and secondary data. Primary data involves data collection from original sources for the specific purpose of the study. On the other hand, researchers that use secondary data do not need to collect them because they are already available (Sekaran & Bougie, 2016). Some examples of secondary data are books, research papers, statistics, and financial statements. This study is based on a review of secondary data. Financial statements of the unlisted companies used in the empirical analysis are carefully examined to gain information about the accounting regime used by each unlisted company. Secondary data is suitable for the study because the data is already available. Since this research aims to analyze which factors influence the voluntary adoption of IFRS, secondary data such as financial statements, prior research studies, company information were collected.

4.3   Sample selection and data collection

This section outlines how the data is being collected and describes the sample selection. Various researchers have examined the appropriate methods in choosing the right sample size (Horn, 2012; Sekaran & Bougie, 2016). The sampling method can be distinguished between probability sampling and non-probability sampling. While probability sampling uses random selection and is a commonly used method when inductive reasoning drives the methodology, non-probability sampling do not involve any random selection and is commonly used method when deductive reasoning drives the methodology (Horn, 2012). Non-probability sampling is being used in this research because it fits the research approach (deductive) and available data.

4.3.1 Research sample selection

This study is based on the largest companies in Norway in terms of turnover in fiscal year 2018, which is already available at the company information registry named Largest Companies (Largestcompanies, 2020b). Largest Companies is a website that delivers a high-quality market information. This website connect Nordic companies though e-mail marketing display and keyword advertising (Largestcompanies, 2020a). In addition, it was possible to get a list of all the companies for this thesis in Brønnøysund Register Center, which you have to pay for it. However, due to limited financial resources of this study, this research is entirely based on the top largest companies as their data was already available with no expense.

The sample covers Norwegian unlisted companies for the year of 2018. All data refer to unconsolidated financial statements of the same year. The information concerning each company's accounting regime is taken from their separate company account (unconsolidated financial statements) because not all unlisted companies have subsidiaries that reports consolidated accounts. As previous studies focus on consolidated accounts of listed firms, research on unconsolidated financial statements of unlisted companies is scarce because IFRS adoption is not yet permitted to unconsolidated accounts by several countries. This research took the top 1,429 companies across the 11 main sectors in Norway: retail, oil & gas, telecommunication & information, health services, financial & insurance, construction, manufacturing, accommodation & food services activities, education, and real estate (Chaffey, 2017), which is equal to 1,429 companies. These main sectors are classified in terms of the number of employees, value-added to Gross Domestic Product (GDP), and sales figures (Chaffey, 2017). Among 1,429 companies, the listed companies were eliminated because they are required to adopt IFRS. The number of listed companies in that 1,429 companies is 34 companies, which leave 1,395 companies that are unlisted that can if they want to voluntarily adopt IFRS that are not obliged to adopt IFRS. Despite these 1,429 companies being the "largest companies" in Norway, the distribution of the companies' size between small, medium, and large is quite even by employee size in terms of voluntary IFRS adoption, with a percentage of 38.04 %, 28.26 %, and 33.70 %, respectively. In contrast, the distribution of companies that voluntarily adopt IFRS is not even by turnover, which has a percentage of 13.04 %, 27.17 %, and 59.78 % for small, medium, and large companies. Table 4.1 shows the breakdown of the selected sample from these main sectors in Norway.

Table 4.1: Breakdown of the selected sample

Main sectors in Norway	Number of companies	Number of unlisted companies
Retail	100	95
Oil & Gas	49	44
Telecommunication & Information	200	198
Health services	100	98
Financial & Insurance	140	135
Construction	100	98
Manufacturing	198	198
Transportation	142	139
Accommodations & Food services activities	200	197
Education	100	100
Real Estate	100	93
Total	1,429	1,395

4.3.2   Data collection

This research used the Brønnøysund Register Center to collect information from 1,395 unlisted companies. Brønnøysund Register Center is a government body under the Ministry of Trade, Industry, and Fisheries, which consists of several different national computerized registers, including an accounting registry ("Regnskapsregisteret" in Norwegian). All companies that are obliged to keep accounts must register their financial statements in the accounting registry. The annual accounts of all 1,395 unlisted companies in the sample were collected one by one from the accounting registry in Brønnøysund Register Center. After collecting the financial statements of each company, they were then examined and analyzed carefully. The data obtained from the financial statements included the following: the accounting regime used by the company, the type of auditor, and turnover. The collection of data concerning the firm size by employees is based generally from the Largest Companies register. However, Largestcompanies (2020b) does not allocate the number of employees in all companies. Therefore, other business finder registries are then examined, such as Proff.no and Regnskapstall.no, to supplement further the number of employees for the specific company in the sample.

4.4   Research design

This section outlines the research design used for the research analysis. According to Sekaran and Bougie (2016), a research design is created as a blueprint or plan for the collection, measurement, and analysis of data to answer the research questions. Johannessen et al. (2011) also described research design as the strategy to make choices and considerations regarding what and who is going to be studied in a research and how the research should be conducted.

Ghauri and Grønhaug (2010) defined three types of research design: exploratory, causal, and descriptive.

Exploratory research design is used when there is limited prior knowledge about a particular phenomenon, and the topic is highly complex. It is also typically used when existing research results are uncertain or suffer from significant limitations. Exploratory research is flexible in nature and often depends on secondary data and qualitative approaches to data gathering like an informal discussion with consumers, employees or managers, and more formal data gatherings like interviews, focus groups ,or case studies (Sekaran & Bougie, 2016).

Causal research design tests whether or not one variable causes another variable to change. According to Sekaran and Bougie (2016), all four conditions should be met to establish a causal relationship:

- Covariation of the independent and the dependent variable
- The independent variable should precede the dependent variable
- No other factor that can cause a change in the dependent variable,
- A logical explanation must be in place and explain why the independent variable affects the dependent variable.

A descriptive research design is used when the study aims to obtain data that describes the topic of interest. In particular, descriptive research is usually designed to collect data that describe characteristics of objects, events, or situations. Descriptive design is either quantitative or qualitative in nature. Examples of quantitative descriptive research design involve the collection of data such as satisfaction ratings, production figures, sales figures, or demographic data. While qualitative descriptive research design may describe how consumers go through a decision-making process or examine how managers resolve conflicts in organizations, descriptive studies may help the researcher better understand the characteristics of a group in a given situation (Sekaran & Bougie, 2016).

Since this study aims to understand the company characteristics that influence the voluntary adoption of IFRS in Norway, a descriptive research design is adopted. This thesis follows a quantitative research strategy; as a result, it is beneficial to use a descriptive research design because it works in both quantitative and qualitative research strategies.

In order to answer the research hypotheses, methodological tools are being used. The difference between parametric and non-parametric statistical test is distinguished by their respective assumptions. Parametric statistical tests assume that the underlying source of the population(s) is normally distributed. This study used STATA to run the Shapiro-Wilk W test to check the normality of the distribution. STATA is an integrated software packaged, which provides everything about data analysis, data management, and graphics. This statistical analytical program is intended for use by research scholars and analytics practitioners (Kothari, 2015). The results shown in Table 4.2 indicates that two of the explanatory variables in this study do not pass the normality test because *p-values* were less than .05 (industry and auditor type). Therefore, non-parametric statistical tests are adopted in this research.

Table 4.2: Shapiro-Wilk W test for normal data

Variable	Obs	W	V	Z	Prob>z
Employees	1,395	0.99878	1.038	0.095	0.46232
Turnover	1,395	0.99976	0.208	-3.940	0.99996
Industry	1,395	0.98363	13.985	6.620	0.00000
Auditor type	1,395	0.98910	9.314	5.600	0.00000

A chi-square statistical test is a type of non-parametric statistical test used to test if there is a relationship/association between two categorical variables. It is rather based on frequencies than parameters like mean and standard deviation. A chi-square test is adopted because it allows data frequencies to be analyzed, usually presented in a contingency table (Faherty, 2008). The chi-square test can be divided into two different tests, to compare the collected frequency data. Firstly, the chi-square test of independence compares two different sets of frequencies to identify if they are independent. Secondly, the chi-square goodness of fit test matches data with a hypothetical model, comparing a question with an expected pattern of responses (Hinton, McMurray, & Brownlow, 2014). This study uses the chi-square test of independence because this research will check whether there is a relationship between the voluntary adoption of IFRS and specific company characteristics.

4.4.1 Chi-square test of independence

Chi-square test of independence (x_2) (also called chi-square test of association) is applied when you have two categorical variables from a single population. The categorical variable is also known as a nominal-level variable. This study used chi-square test of independence because some of the variables can only be measured at the nominal level (e.g., IFRS = yes/no), audit

firm and industry). Unlike any other statistical tests, the chi-square test of independence provides information not just on the significance of any observed differences, but also provides detailed information on precisely which categories account for any differences found. Certain assumptions of the chi-square test are to be passed to perform the test adequately (McHugh, 2013):

- The expected value of all cells should be five or higher when testing for a 2x2 contingency table; otherwise, it is more appropriate to use the fisher's exact test. While in any larger contingency table (e.g., 2x3, 3x3), 80% or more of the expected values should be five or more. It indicates that if either independent or dependent variable has a large number of categories (i.e., three or more), then you should have a reasonably large enough number of observations in the sample (Faherty, 2008).
- There should be two categorical variables, usually at a nominal level, and variables should be independent.
- The data in the cells should be frequencies rather than percentages.
- All observations in the sample must be independent, meaning there should be no relationship exists between the variables.

Assumption check on the sample:

Firm size by employees

The assumption concerning expected frequencies is not violated; all cells are greater than 5; therefore, the chi-square test of independence is conducted (see Table 5.4).

Firm size by turnover

Table 5.6 shows that all expected frequencies are higher than 5. As a result, the chi-square test of independence can be use in further analysis.

Industry

To meet the assumption that 80 % of the expected frequency should have values equal to five or more, Table 5.8 should have (22 x .80 = 17.6 rounded to 18) 18 cells with expected values equal to five or more. Table 5.8 shows that there are 21 expected frequencies greater than five; therefore, it does not violate the 80% expected frequency assumption. The chi-square test of independence can be used.

Auditor type

To meet the assumption that 80 % of the expected frequency have values equal to five or more, Table 5.10 should have (12 x .80 = 9.6 rounded to 10) 10 cells with expected values equal to five or more. Table 5.10 reveals that all expected frequencies are greater than five; therefore, it does not violate the 80 % expected frequency assumption. Accordingly, the chi-square test of independence is conducted.

Table 4.3 summarizes if the assumptions concerning expected frequency are violated or not violated in this study.

Table 4.3: Expected cell frequency assumptions

Variables	Contingency table	Expected value
Firm size by employees	3x2	Not violated
Firm sized by turnover	3x2	Not violated
Industry sector	11x2	Not violated
Audit firm	6x2	Not violated

Chi-square test of independence set up the following hypothesis:

H0: The two categorical variables are independent.

HA: The two categorical variables are related.

Below are the null hypothesis and alternative hypothesis for the independent variable – firm size by employees and firm size by turnover:

H0: *The two categorical variables are independent (that is, firm size has no influence on the voluntary adoption of IFRS).*

HA: *The two categorical variables are related (that is, firm size has an influence on the voluntary adoption of IFRS).*

The null hypothesis and alternative hypothesis for the independent variable – industry sector are as follows:

H0: *The two categorical variables are independent (that is, the industry sector has no influence on the voluntary adoption of IFRS).*

HA: *The two categorical variables are related (that is, the industry sector has an influence on the voluntary adoption of IFRS).*

The null hypothesis and alternative hypothesis for the independent variable – audit firm are given as:

H0: The two categorical variables are independent (that is, the audit firm does not influence the voluntary adoption of IFRS).

HA: The two categorical variables are related (that is, the audit firm has an influence on the voluntary adoption of IFRS).

The chi-square test of independence is computed using the following formula:

$$\chi^2 = \frac{(O - E)^2}{E} ,$$

where,

χ^2 = Chi square test of independence

O = observed value

E = expected value

The observed value is the actual number of observations, while the expected value is a hypothetical number derived from computing the chi-square formula. The more significant the gap between the observed and the expected value, the higher the possibility that the independent variable significantly influences the dependent variable, which means that they are related (Faherty, 2008).

The results are interpreted by comparing the probability factor, *P-value,* to the significance level (α), and rejecting the null hypothesis when the *P-value* is less than the significance level. This study used an $\alpha = .05$, indicating that with $p < .05$, there is only 5 % out of a possible 100 % probability that the results are due purely to sampling error or occurrence by chance (Faherty, 2008). A type I error occurs when the researcher rejects a null hypothesis when it is true. The probability of committing a Type I error is called the significance level. Type II is an error that occurs when a false null hypothesis is not rejected (Hayes, 2019).

The chi-square test of independence is a statistical significance test that should be coupled with a suitable statistical test of strength. Cramer's V test is the commonly used strength test of the chi-square test, which measures the strength of the association between two variables (McHugh, 2013). Table 4.4 shows the classification of the Cramer's V strength of association.

Table 4.4: Cramer's V strength of association

Significance level	Strength of association
.60 to 1.00	High association
.40 to .59	Moderate association
.20 to .39	Weak association
.01 to .19	Virtually nonexistent association

This research adopts the chi-square test of independence because it aims to analyze the relationship between the company's characteristics (independent variables) and the voluntary adoption of IFRS (dependent variable). The chi-square test of independence is also used for the reason that the measurement of the variables is in nominal-level form. This thesis conducts four tests of the chi-square test of independence. The IFRS voluntary adoption is the dependent variable, which has two categories: IFRS or non-IFRS (NGAAP), coded in the data set as 1 for the company adopting IFRS and 0 otherwise. The independent variables are firm size, industry sector, and audit firm. Firm size has three categories: small, medium, and large, coded as 1, 2, and 3, respectively. The industry sector has eleven categories: retail, oil & gas, telecommunication & information, health services, financial & insurance, construction, manufacturing, accommodation & food services activities, education, and real estate, coded as 1, 2, to 11, respectively. The audit firm has six categories: BDO, Deloitte, EY, KPMG, PwC, and Others, coded as 1 to 6, respectively.

4.5   Methodological limitations

Like any other statistical tests, chi-square test of independence has also some limitations. First, chi-square test is only a significance test that determines the whether there is an association between the variables. It does not measure the strength of association itself. This research makes use of the Cramer's V statistical strength test. Second, this test does not identify the cause and effect relationship of the variables, it only indicates the probability of association to occur by chance. Third, this test can only be applied with independent individual observations (Faherty, 2008).

Additionally, the chi-square test is intensively sensitive to sample size. The larger the sample size is, the absolute differences become a smaller fraction of the expected value. This indicates that, in large samples, statistical significance may occur when the association between variables is weak. In contrast, if the sample is small, a reasonable strong association can occur between variables even though there is no statistical significance (Faherty, 2008; McHugh, 2013).

Despite these limitations, this study chose the chi-square test of independence based on its suitability with the sample based on the data available.

Finally, this research has limitation regarding sample size as this study had to use the largest companies so the results concerning turnover should be interpreted with caution.

5 Findings and Discussions

This chapter outlines the results of this thesis, as well as it will outline and discuss the findings. The findings will then be synthesized in conclusion in chapter 6.

This study aims to examine the voluntary IFRS adoption in Norway, specifically focusing on whether a company's specific characteristics influence IFRS voluntary adoption. To do so, the following overarching research hypothesis has guided this master thesis: *Certain company characteristics relate the voluntary adoption of IFRS standards in Norway.* A descriptive research study using a quantitative research strategy was conducted to answer this research hypothesis. The next sections present the three hypotheses in this study, which have been tested by using the chi-square test of independence.

5.1 Firm size by employees

This section outlines the results and discussion of the analysis between firm size by number of employees and voluntary IFRS adoption.

Table 5.1 shows the total number of unlisted companies in the sample classified by the number of NGAAP companies and IFRS companies.

Table 5.1: Total number of unlisted companies by accounting regime

Total unlisted companies	NGAAP	IFRS	Total
Total	1303	92	1395

As shown in Figure 5.1, 93 % of unlisted firms that report their annual accounts in compliance with NGAAP, and the remaining 7 % comply with IFRS.
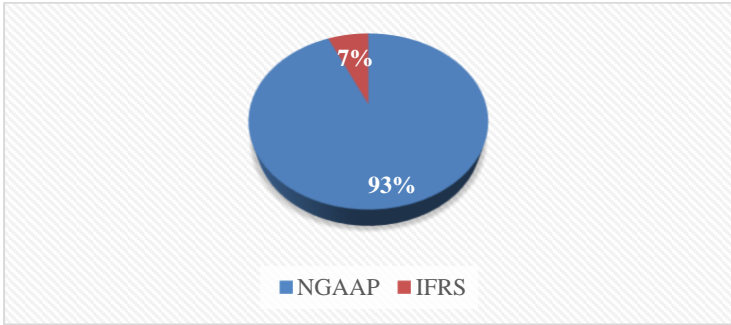

Figure 5.1: Number of unlisted companies by accounting regime

Table 5.2 presents how the company size in the sample is being classified. The employee headcount is based on EU classification of company size by employees. The small companies are categorized as those that only have 1 to 49 employees, while the medium-sized companies have between 50 to 249 employees. Large enterprises are those who have over 249 employees. Turnover and balance sheet numbers are based on the European standard of company size classification (Giske, 2012). This study uses the EU classification to provide better comparability with other studies.

Table 5.2: Classification of company size

Company category	Employee headcount (EU)	Turnover (x1000) NOK (EU)	Balance sheet total (X1000) NOK (EU)
Small companies	1 – 49	≤ 105 000	≤ 115 000
Medium companies	49 – 249	≤ 525 000	≤ 453 000
Large companies	> 249	> 525 000	> 453 000

Table 5.3 reveals the number of unlisted companies by size based on employees. In particular, it presents the number of small, medium, and large companies that comply with either NGAAP or IFRS. Small companies gained the highest number of companies in the sample, by a total of 576 companies, in this classification followed by medium-sized companies (510) and large companies with a total of 309. Table 5.3 illustrates that small-sized companies comprise 541 NGAAP and 35 IFRS companies; medium-sized companies consist of 484 NGAAP and 26 IFRS; and lastly, large companies are divided into 278 NGAAP and 31 IFRS companies.

Table 5.3: Number of unlisted companies by size (based on employees)

Size (based on employees)	NGAAP	IFRS	Total
Small	541	35	576
Medium	484	26	510
Large	278	31	309
Total	1303	92	1395

Figure 5.2 shows the distribution between NGAAP and IFRS by company size based on employees. This figure presents a better overview of the distribution between NGAAP and IFRS from the sample. It is visible that the distribution of IFRS among small, medium, and large companies are almost equal.
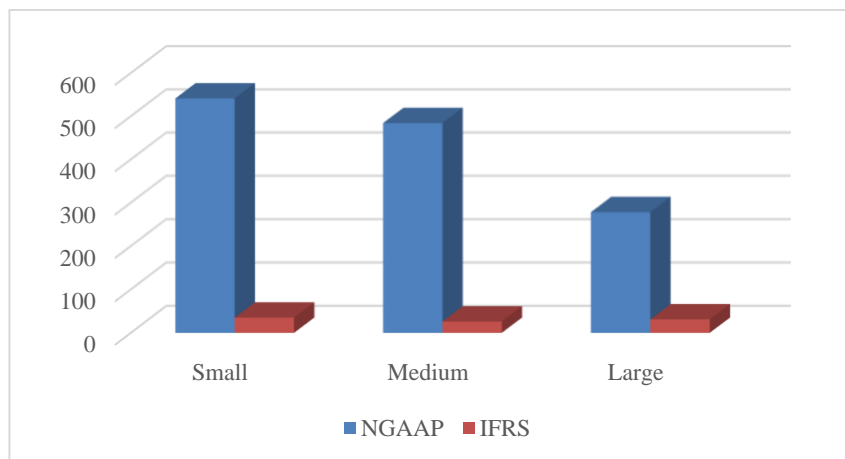
Figure 5.2: Number of unlisted companies by size (based on employees)

The first hypothesis to be tested in this study is the following:

> **H1: Voluntary adoption of IFRS by unlisted companies is related to the firm size by employees.**

Table 5.4 presents the result of the chi-square test of independence. The row percentages identify how many percent of the firm size (small, medium, and large) that reports either NGAAP or IFRS. Table 5.4 shows that 93.92 % of small-sized companies reported under NGAAP, and 6.06 % were reported under IFRS. There were 94.90 % of medium-sized companies comply with NGAAP, and 5.10 % reported under IFRS. In large-sized companies, there were 89.97 % of companies following NGAAP and 10.03 % following IFRS.

The column percentage represents what the count is as a proportion of the total number for that column, for example, 35 IFRS reporting companies who are small account for 38.04 % of the total number of IFRS, which is 92. Thus, within small-sized companies, there were 41.52 % of the NGAAP compared to 38.04 % of the IFRS. Further, the percentage within medium-sized companies was 37.15 % of the NGAAP compared to 28.26 % of the IFRS. Consequently, the percentages within large companies were 21.34 % of the NGAAP compared to 33.70 % of the IFRS.

The chi square-test statistic is equal to 8.0336 with 2 degrees of freedom. The probability of significance is less than 0.05, *p=0.018,* which means that it is significant. Therefore, the null hypothesis is rejected. This result suggests that there is a statistically significant relationship between firm size by employees and the voluntary IFRS adoption among unlisted Norwegian

companies. It can be seen in Table 5.4 that the largest chi-square contribution (Chi2) of value 5.5 occurs between large-sized companies and IFRS. This is a result of a higher observed value than the expected value. This indicates that the observed number of large-sized companies reporting IFRS was greater than expected. This may suggest that large companies are more likely to adopt IFRS compared to small and medium-sized tests. This result supports H1 that the firm's number of employees significantly related to the voluntary adoption of IFRS by unlisted companies. The larger the number of employees, the higher the probability that the unlisted companies likely to adopt IFRS voluntarily.

The significance test (chi-square test of independence) should be coupled with Cramer's V test of statistical strength to complete the analysis. The Cramer's V is equal to 0.0759, indicating a virtually non-existent association between firm size by employees and IFRS voluntary adoption. This implies that even though the findings show a significant relationship between firm size by employees and voluntary IFRS adoption, their association's strength is very weak. This is considered as one of the limitations of the chi-square test of independence because of the large sample size.

Table 5.4: Chi-square test of independence results: Firm size by employees

Firm size by employees	Key	NGAAP	IFRS	Total
Small	*Frequency*	541	35	576
	Expected frequency	538.0	38.0	576.0
	Chi2 contribution	0.0	0.2	0.3
	Row percentage	93.92	6.08	100.00
	Column percentage	41.52	38.04	41.29
Medium	*Frequency*	484	26	510
	Expected frequency	476.4	33.6	510.0
	Chi2 contribution	0.1	1.7	1.9
	Row percentage	94.90	5.10	100.00
	Column percentage	37.15	28.26	36.56
Large	*Frequency*	278	31	277
	Expected frequency	288.6	20.4	277.0
	Chi2 contribution	0.4	5.5	0.1
	Row percentage	89.97	10.03	100.00
	Column percentage	21.34	33.70	59.83
Total	*Frequency*	1,303	92	1,395
	Expected frequency	1,303.0	92.0	1,395.0
	Chi2 contribution	0.5	7.5	8.0
	Row percentage	93.41	6.59	100.00
	Column percentage	100.00	100.00	100.00

Pearson chi2(2) = 8.0336 Pr = 0.018
Likelihood-ratio chi2(2) = 7.4230 Pr = 0.472
Cramér's V = 0.0759

5.2   Firm size by turnover

The following outlines the results and discussion of the analysis between firm's turnover and voluntary IFRS adoption.

Table 5.5 shows the number of unlisted companies by turnover. Notably, the number of small, medium and large companies varies differently from the first classification of company size, which is size by employees. In this category, the study has a total of 451, 500, and 352 observations for large, medium, and small companies. There were 12 small companies comply with IFRS, while 25 and 55 medium and large companies that adopt IFRS.

Table 5.5: Number of unlisted companies by turnover

Size (based on turnover)	NGAAP	IFRS	Total
Small	352	12	364
Medium	500	25	525
Large	451	55	506
Total	1303	92	1395

In Figure 5.3, the distribution of companies complying either NGAAP or IFRS is presented. In this figure, the significant difference in the distribution between NGAAP and IFRS by a company-sized based on turnover is visible. This distribution is different from Figure 5.2 (employee size), where the distribution of IFRS reporting companies are almost equal. This figure illustrates that as the company's size increases, the number of companies that comply with IFRS also increases: 13.04 %, 27.17 %, and 59.78 % for small, medium, and large sized companies.
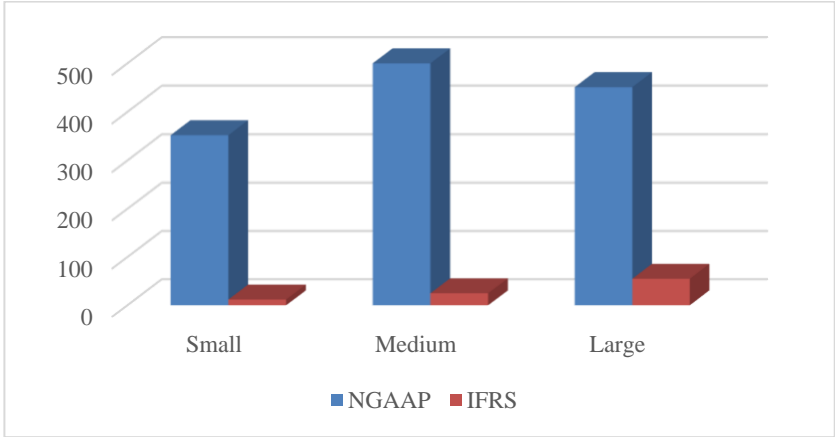

Figure 5.3: Number of unlisted companies by size (based on turnover)

It is interesting to see the differences in firm size by employees and firm size by turnover. The result on firm's number of employees shows that IFRS contribution among small, medium, and large companies was equal (35, 26 and 31). In contrast, the result in the firm's turnover varied across firm size (small (12), medium (25), and large (55)). It is because companies with high turnover do not necessarily have a high number of employees, and it varies across industries. For instance, most of the sample companies from real estate and finance & insurance industries are classified as a small company in terms of employees. However, these companies are classified as large in terms of turnover. There are also holding companies (parent companies) categorized as small in terms of firm size by employees because they have zero or few employees. In contrast, these companies are categorized as large in terms of firm size by turnover.

The second hypothesis to be tested is stated as:

H2: Voluntary adoption of IFRS by unlisted companies is related to the firm size by turnover.

Table 5.6 reveals the result of the conducted chi-square test of independence. The row percentages identify how many percent of the firm size (small, medium, and large) reports either NGAAP or IFRS. Table 5.6 shows that there were 96.70 of small companies that reported under NGAAP and 3.30 % reported under IFRS. There were 95.24 % of medium-sized companies keeping accounts under NGAAP, and 4.76 % reported under IFRS. In large companies, there were 89.13 % of companies following NGAAP and 10.87 % following IFRS.

The column percentage represents what the count is as a proportion of the total number for that column, for example, 46 IFRS reporting companies who are large account for 82.14 % of the total number of IFRS, which is 56. Thus, within small-sized companies, there were 2.46 % of the NGAAP compared to 0 % of the IFRS. Further, the percentage within medium-sized companies was 27.03 % of the NGAAP compared to 17.86 % of the IFRS. Moreover, the percentages within large companies were 70.52 % of the NGAAP compared to 82.14 % of the IFRS.

The chi-square test statistic is equal to 24.3011 with 2 degrees of freedom. The probability of significance is less than 0.05, *p=0.000*, which means that it is highly significant. Therefore, the

null hypothesis is rejected. This suggests that there is a significant relationship between firm size by turnover and the voluntary IFRS adoption, so these variables are not independent. It can be seen in Table 5.6 that the largest chi-square contribution (Chi2) of value 14.0 occurs between large-sized companies and IFRS. This is a result of higher observed value than expected value. This implies that the number of large-sized companies reporting IFRS was significantly greater than expected. This may also suggest that large-sized companies are more likely to adopt IFRS voluntarily than SMEs companies among unlisted companies in Norway (observed value > expected value). In addition, this indicates that if a company does choose to comply with IFRS, it is more likely to be large companies (59.78 %).

In contrast, chi-square value of 6.0 occurs between small-sized companies and IFRS and chi-square value of 2.7 occurs between medium-sized companies and IFRS. These are the result of higher expected values than observed values. This shows that the expected number of SMEs choosing IFRS was significantly greater than observed, suggesting that if fewer small/medium companies than expected used IFRS.

The overall result in this test is that firm size by turnover and the decision of unlisted companies to select IFRS voluntarily are not independent, meaning there is an association between these two variables. This result supports H2. Cramer's V is equal to 0.1320, indicating that there is a virtually non-existent association between firm size by turnover and IFRS. This implies that even though the findings show a significant relationship between firm size by employees and voluntary IFRS adoption, their relationship's strength is very weak. This is considered as a limitation of this study.

Table 5.6: Chi-square test of independence results: Firm size by turnover

Firm size by turnover	Key	NGAAP	IFRS	Total
Small	*Frequency*	352	12	364
	Expected frequency	340.0	24.0	364.0
	Chi2 contribution	0.4	6.0	6.4
	Row percentage	96.70	3.30	100.00
	Column percentage	27.01	13.04	26.09
Medium	*Frequency*	500	25	525
	Expected frequency	490.4	34.6	525.0
	Chi2 contribution	0.2	2.7	2.9
	Row percentage	95.24	4.76	100.00
	Column percentage	38.37	27.17	37.63
Large	*Frequency*	451	55	506
	Expected frequency	472.6	33.4	506.0
	Chi2 contribution	1.0	14.0	15.0

	Row percentage	89.13	10.87	100.00
	Column percentage	34.61	59.78	36.27
Total	Frequency	1,303	92	1,395
	Expected frequency	1,303.0	92.0	1,395.0
	Chi2 contribution	1.6	22.7	24.3
	Row percentage	93.41	6.59	100.00
	Column percentage	100.00	100.00	100.00

Pearson chi2(2) = 24.3011 Pr = 0.000
Likelihood-ratio chi2(2) = 23.6500 Pr = 0.000
Cramér's V = 0.1320

Some potential reasons why firm size is a motivator for unlisted companies to choose IFRS include factors that most small and medium-sized companies typically lack resources, limited budget, and limited expertise, which makes them less likely to adapt to new accounting systems. Due to this limitation, most small and medium-sized companies create a potential blockage preventing them from adopting innovative technologies, like IFRS adoption. Conversely, large companies have more resources and are willing to take more risks as they are more likely to engage in business on an international level (André et al., 2012). It will less costly for them to adopt IFRS voluntarily and make more disclosure as they also produce accounting information for internal purposes (Dumontier & Raffournier, 1998). It was argued that the direct costs of IFRS contain a fixed component, which indicates that larger companies bear proportionately fewer costs of IFRS implementation than smaller companies (Bassemir, 2018).

5.3   Industry sector

This section outlines the analysis of the relationship between the industry sector and the voluntary adoption of IFRS.

The number of unlisted companies grouped by industry sector is presented in Table 5.7. The industry sector classification is based on Standard Industrial Classification 2007 (SIC 2007), which corresponds to EU NACE Rev.2 (Statistics Norway, 2016). As shown in Table 5.7, the industry sectors with the highest number of IFRS are telecommunication & information, financial & insurance, and manufacturing, whereas the construction, education, accommodation & food services activities, and health services industries are among the lowest one.

Table 5.7: Number of unlisted companies by Industry Sector

Industry sector	NGAAP	IFRS	Total
Retail	90	5	95
Oil & Gas	36	8	44
Telecommunication & Information	171	27	198
Health services	94	4	98
Financial & Insurance	122	13	135
Construction	96	2	98
Manufacturing	187	11	198
Transportation	130	9	139
Accommodations & Food services activities	193	4	197
Education	97	3	100
Real Estate	87	6	93
Total	1303	92	1395

Figure 5.4 shows the distribution of NGAAP and IFRS companies by industry sector. This figure gives a better picture of how the distribution is between both accounting policies.
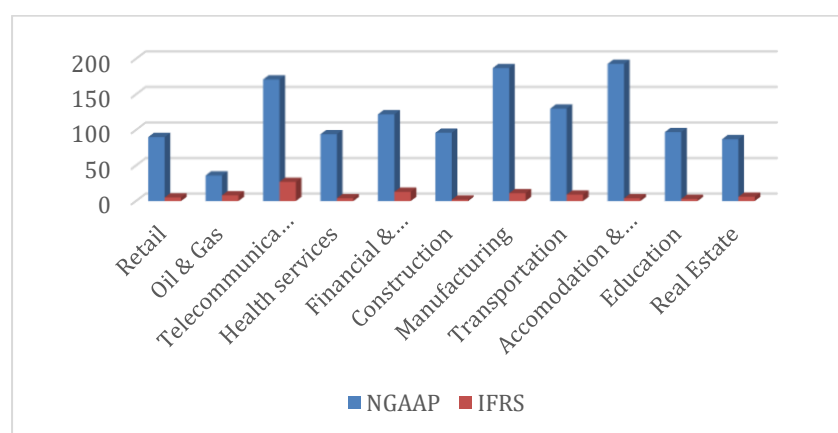
Figure 5.4: Number of unlisted companies by Industry Sector

The third hypothesis to be tested in this research is the following:

H3: Voluntary adoption of IFRS by unlisted companies is related to the industry sector.

Table 5.8 presents the results of the conducted chi-square test of independence. The row percentages identify how many percent of each industry sector reports either NGAAP or IFRS. Table 5.8 shows that 94.74 % of the retail industry that reported under NGAAP, and 5.26 %

were reported under IFRS. There were 81.82 % of the oil & gas industry that comply with NGAAP, and 18.18 % reported under IFRS. In the telecommunication & information industry, there were 86.36 % companies reported under NGAAP AND 13.64 % reported under IFRS. The rest of the industry sectors have more than 90 % of companies that chose to report their financial statements under NGAAP.

The column percentage represents what the count is as a proportion of the total number for that column. For instance, 5.43 IFRS reporting companies in the retail industry account for 5.43 % of the total number of IFRS, which is 92. Thus, within retail industry sectors, there were 6.91 % of the NGAAP compared to 5.43 % of the IFRS. The percentage within the oil & gas industry was 2.76 % of the NGAAP compared to 8.70 % of the IFRS. Moreover, within the telecommunication & information industry, there were 13.12 % of the NGAAP, whereas 29.35 % of the IFRS. The telecommunication and information industry have the highest number of companies reporting under IFRS (29.35 %), followed by financial & insurance (14.13 %), manufacturing (11.96 %), and oil & gas (8.70 %).

The chi-square test statistic with 10 degrees of freedom is equal to 41.2372. The probability of significance, *p=0.000*, is less than 0.05, which means that it is highly significant. Thus, the null hypothesis is rejected. Consequently, this study suggests that there is a statistically significant relationship between the industry sector and the voluntary adoption of IFRS in Norway. Cramer's V is equal to 0.1719, indicating a virtually non-existent association between industry type and IFRS. This signifies that although there is a known relationship between industry sector and voluntary adoption of IFRS, their association's strength implies a weak correlation, which is considered as a limitation of this study.

Table 5.8 shows that the chi-square contributions less than 1 indicate that the number of observed values is approximately equal to expected values, which means there was no difference in terms of the association between that specific industry and voluntary IFRS adoption. As seen in Table 5.8, the accommodation & food service activities and education have a chi-square contribution of 6.2 and 2.0, respectively. This is a result of having an expected value higher than the observed values. This means that the expected number of companies from these industries that choose IFRS was greater than observed. In contrast, the telecommunication & information (14.9), oil & gas (9.0), and financial & insurance (1.9) industries have the highest chi-square contribution in the analysis. This is a result of higher observed values than expected

values. This indicates that the observed number of companies from these industries that adopt IFRS was higher than expected. Therefore, the industries such as telecommunication & information, oil & gas, and financial & insurance appear more likely to adopt IFRS voluntarily (observed values > expected values).

Table 5.8: Chi-square test of independence results: Industry Sector

Industry	Key	NGAAP	IFRS	Total
Retail	*Frequency*	90	5	95
	Expected frequency	88.7	6.3	95.0
	Chi2 contribution	0.0	0.3	0.3
	Row percentage	94.74	5.26	100.00
	Column percentage	6.91	5.43	6.81
Oil & Gas	*Frequency*	36	8	44
	Expected frequency	41.1	2.9	44.0
	Chi2 contribution	0.6	9.0	9.6
	Row percentage	81.82	18.18	100.00
	Column percentage	2.76	8.70	3.15
Telecommunication & information	*Frequency*	171	27	198
	Expected frequency	184.9	13.1	198.0
	Chi2 contribution	1.1	14.9	15.9
	Row percentage	86.36	13.64	100.00
	Column percentage	13.12	29.35	14.19
Health services	*Frequency*	94	4	98
	Expected frequency	91.5	6.5	98.0
	Chi2 contribution	0.1	0.9	1.0
	Row percentage	95.92	4.08	100.00
	Column percentage	7.21	4.35	7.03
Financial & Insurance	*Frequency*	122	13	135
	Expected frequency	126.1	8.9	135.0
	Chi2 contribution	0.1	1.9	2.0
	Row percentage	90.37	9.63	100.00
	Column percentage	9.36	14.13	9.68
Construction	*Frequency*	96	2	98
	Expected frequency	91.5	6.5	98.0
	Chi2 contribution	0.2	3.1	3.3
	Row percentage	97.96	2.04	100.00
	Column percentage	7.37	2.17	7.03
Manufacturing	*Frequency*	187	11	198
	Expected frequency	184.9	13.1	198.0
	Chi2 contribution	0.0	0.3	0.3
	Row percentage	94.44	5.56	100.00
	Column percentage	14.35	11.96	14.19
Transportation	*Frequency*	130	9	139
	Expected frequency	129.8	9.2	139.0
	Chi2 contribution	0.0	0.0	0.0
	Row percentage	93.53	6.47	100.00
	Column percentage	9.98	9.98	9.96
Accommodations & food service activities	*Frequency*	193	4	197
	Expected frequency	184.0	13.0	197.0
	Chi2 contribution	0.4	6.2	6.7
	Row percentage	97.97	2.03	100.00
	Column percentage	14.81	4.35	14.12
Education	*Frequency*	97	3	100
	Expected frequency	93.4	6.6	100.0

	Chi2 contribution	0.1	2.0	2.1
	Row percentage	97.00	3.00	100.00
	Column percentage	7.44	3.26	7.17
Real Estate	Frequency	87	6	93
	Expected frequency	86.9	6.1	93.0
	Chi2 contribution	0.0	0.0	0.0
	Row percentage	93.55	6.45	100.00
	Column percentage	6.68	6.52	6.67
Total	Frequency	1,303	92	1,395
	Expected frequency	1,303.0	92.0	1,395.0
	Chi2 contribution	2.7	38.5	41.2
	Row percentage	93.41	6.59	100.00
	Column percentage	100.00	100.00	100.00

Pearson chi2(10) = 41.2372   Pr = 0.000
likelihood-ratio chi2(10) = 38.7538   Pr = 0.000
Cramér's V = 0.1719

The results show that there is a relationship between industry sector and voluntary adoption of IFRS by unlisted companies in Norway. Therefore, these findings support hypothesis H3 that there is a relationship between industry sector and unlisted companies' voluntary adoption to IFRS. From the results, industries such as oil & gas, telecommunication & information, and financial & insurance are more likely to adopt IFRS voluntarily because of its nature. The oil & gas industry serves as Norway's largest industry. Norway, being the 8th largest producer of oil and the 3rd largest producer of gas in the world (Berthelsen & Nagell, 2020), undoubtedly that unlisted companies in the oil & gas industry are more likely to adopt IFRS voluntarily, as these companies would seek for higher quality, more transparent, and comparable reporting standards, like IFRS. Financial & insurance, as well as telecommunication & information, are examples of industries that are more capital-intensive and are more willing to involve their business at the international level (Chaffey, 2017). In December 2018, the Norwegian Ministry of Finance mandated unlisted banks, mortgage companies and financial institutions to use the IFRS accounting regime starting from the fiscal year 2020, after following the proposal from the Financial Supervisory Authority of Norway. Moreover, the Ministry of Finance allows these companies to adopt IFRS earlier. This accounting change will enhance the comparability between the financial statements of unlisted and listed companies of the said industry (Finanstilsynet, 2019; Wålen & Røisgård, 2018). This change is a potential reason why the financial & insurance industry in the analysis are more likely to adopt IFRS voluntarily.

It has been argued that real estate industries are more likely to adopt IFRS voluntarily because they are more capital intensive and want to measure their investment properties at fair value (Schwencke et al., 2019). However, this is not the case in Norway, because real estate industries in Norway are mostly small-sized companies based on the number of employees (mostly

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holdings/parent company that does not have any employees). The majority of the companies in this industry are keeping their financial accounts under NGAAP, precisely GAP for small businesses. Additionally, from the research sample, transportation, manufacturing, and education industries mostly have small companies, which reported financial accounts in accordance with NGAAP (GAP for small businesses).

5.4 Auditor type

This section outlines the results and findings derived from the analysis of the relationship between the audit firm and voluntary IFRS adoption.

Table 5.9 reveals the number of unlisted companies by Big Five auditing firms. In this table, other auditing firms, EY, and PwC have the highest number of unlisted companies, with a total number of 300, 261, and 245 companies, respectively. In the sample, other auditing firms, EY and PwC have the highest number of audited companies reported under NGAAP, 300, 228, and 228, respectively. In contrast to BDO and other auditing firms, EY and Deloitte dominates in terms of auditing companies that reported under IFRS. This table also indicates that the number of unlisted companies reporting their financial statements in compliance with NGAAP or IFRS varies across auditing firms.

Table 5.9: Number of unlisted companies by Big Five auditing firms

Auditing firm	NGAAP	IFRS	Total
BDO	209	2	211
Deloitte	183	21	204
EY	228	33	261
KPMG	155	14	169
PwC	228	17	245
Other auditing firms	300	5	305
Total	1303	92	1395

Figure 5.5 presents the distribution between NGAAP and IFRS by auditing firms. This sample shows that EY has the highest score in terms of IFRS compliance, while BDO has the lowest score in using IFRS. Other auditor firms have the highest number of unlisted companies that reported their financial statements in accordance with NGAAP. In the contrary, KPMG has audited the lowest number of unlisted companies reporting under NGAAP.
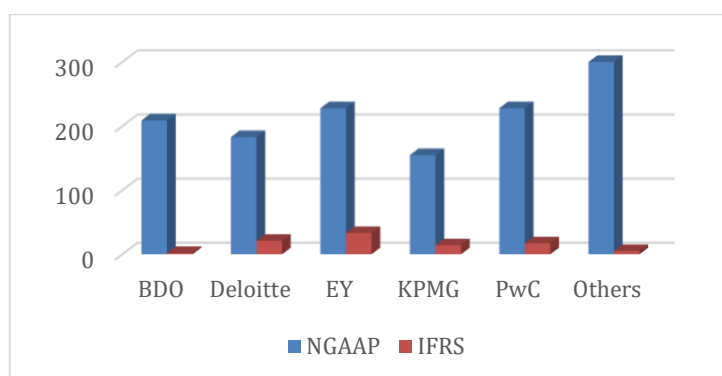
Figure 5.5: Number of unlisted companies by Big Five auditing firms

The fourth and final hypothesis to be tested is stated as:

H4: Voluntary adoption of IFRS by unlisted companies is related to the audit firm.

Based on the conducted chi-square test of independence (results shown in Table 5.10), the row percentages identify how many percent of the audit firm (BDO, Deloitte, EY, KPMG, PwC, and Others) reports either NGAAP or IFRS. Table 5.10 shows that 99.05 % of companies audited by BDO reported under NGAAP and 0.95 % reported under IFRS. There were 89.71 % of companies audited by Deloitte reported under NGAAP, and 10.29 % reported under IFRS. While 87.36 % of EY audited companies following NGAAP and 12.64 % following IFRS. KPMG, PwC, and Others had 91.72 %, 93.06 %, and 98.36 % comply with NGAAP, and 8.28 %, 6.94 %, and 1.64 % comply with IFRS.

The column percentage represents what the count is as a proportion of the total number for that column; for example, two IFRS reporting companies audited by BDO account for 2.17 % of the total number of IFRS, which is 92. Thus, within the group of companies audited by BDO, there were 16.04 % of the NGAAP compared to 2.17 % of the IFRS. Further, the percentages within the companies audited by Deloitte was 14.04 % of the NGAAP compared to 22.83 % of the IFRS. Within the group of companies audited by EY, there were 17.50 % of the NGAAP compared to 35.87 % of the IFRS. Consequently, the percentages within the group of companies audited by KPMG were 11.90 % of the NGAAP compared to 15.22 % of the IFRS. Finally, within the group of companies audited by PwC and Others, there were 17.50 % and 23.02 % of the NGAAP and 18.48 % and 5.43 % of the IFRS, respectively. As a result, it is visible that

there are more unlisted companies audited by EY and Deloitte to report their financial statements according to IFRS.

The chi-square test statistic with five degrees of freedom is equal to 43.9457. The probability of significance, *p=0.000*, is less than 0.05, which indicates that it is highly significant. This means that the null hypothesis is rejected. Therefore, this research suggests that there is a statistically significant relationship between audit firm and voluntary adoption of IFRS in Norway. The Cramer's V is equal to 0.1775, indicating a virtually non-existent relationship between industry sector and voluntary adoption of IFRS. This implies that even though there is an association between auditor type and voluntary adoption of IFRS, their association's strength is weak, which is considered as a limitation of this study.

As shown in Table 5.10, the highest chi-square contribution (Chi2) of value 14.5 occurs between EY and IFRS (observed > expected), value 4.2 occurs between Deloitte and IFRS (observed > expected). This suggest that companies that are audited by EY and Deloitte are more likely to voluntarily adopt IFRS (observed values greater than expected values). In contrast, value 10.2 occurs between BDO and IFRS (expected > observed), the value of 11.4 occurs between Other auditing firms and IFRS (expected > observed), and the value of 1.0 occurs between EY and NGAAP (expected > observed). All the others have a value of less than 1.0; the number of expected values is approximately equal to the number of observed values, which means that there was no difference between them.

Table 5.10: Chi square test of independence results: Big Five auditing firms

Audit firm	Key	NGAAP	IFRS	Total
BDO	*Frequency*	209	2	211
	Expected frequency	197.1	13.9	211.0
	Chi2 contribution	0.7	10.2	10.9
	Row percentage	99.05	0.95	100.00
	Column percentage	16.04	2.17	15.13
Deloitte	*Frequency*	183	21	204
	Expected frequency	190.5	13.5	204.0
	Chi2 contribution	0.3	4.2	4.5
	Row percentage	89.71	10.29	100.00
	Column percentage	14.04	22.83	14.62
EY	*Frequency*	228	33	261
	Expected frequency	243.8	17.2	261.0
	Chi2 contribution	1.0	14.5	15.5
	Row percentage	87.36	12.64	100.00
	Column percentage	17.50	35.87	18.71
KPMG	*Frequency*	155	14	169

	Expected frequency	157.9	11.1	169.0
	Chi2 contribution	0.1	0.7	0.8
	Row percentage	91.72	8.28	100.00
	Column percentage	11.90	15.22	12.11
PWC	Frequency	228	17	245
	Expected frequency	228.8	16.2	245.0
	Chi2 contribution	0.0	0.0	0.0
	Row percentage	93.06	6.94	100.00
	Column percentage	17.50	18.48	17.56
Others	Frequency	300	5	305
	Expected frequency	284.9	20.1	305.0
	Chi2 contribution	0.8	11.4	12.2
	Row percentage	98.36	1.64	100.00
	Column percentage	23.02	5.43	21.86
Total	Frequency	1,303	92	1,395
	Expected frequency	1,303.0	92.0	1,395.0
	Chi2 contribution	2.9	41.0	43.9
	Row percentage	93.41	6.59	100.00
	Column percentage	100.00	100.00	100.00

Pearson chi2(5) = 43.9457   Pr = 0.000
Likelihood-ratio chi2(5) = 50.9873   Pr = 0.000
Cramér's V = 0.1775

Large and well-known auditing companies (Big Five auditing firms) may encourage their customers to adopt IFRS voluntarily. The findings indicate a relationship between auditing firm and the voluntary adoption of IFRS among unlisted companies in Norway, which validates hypothesis H4 in this study. Specifically, the results suggest that if the company is audited by EY and Deloitte, they are more likely to voluntarily adopt IFRS.

Overall, the findings imply that the expertise of the auditors, precisely the Big Five, has statistically significant relationship with voluntary IFRS adoption. Large audit firms can provide their customers with the expertise needed to comply with IFRS. In particular, Big Five auditing firms specialize strongly in IFRS adoption, where their staffs are better trained in terms of auditing companies under IFRS Standards. Thus, unlisted companies that are audited by Big Five auditing firms are more likely to adopt IFRS because these auditors will enable them to manage the transition of IFRS and more efficient auditing.

5.5   Summary

The results of the chi-square test of independence are summarized as follows:

H1:   Firm size by employees: $x^2(2) = 8.0336, p < .05, Cramer's\ V = 0.0759$

H2:   Firm size by turnover: $x^2(2) = 24.3011, p < .01, Cramer's\ V = 0.1320$

H3:   Industry sector: $x^2(10) = 41.2372, p < .01, Cramer's\ V = 0.1719$

H4:   Audit firm $x^2(5) = 43.9457, P < .01, Cramer's\ V = 0.1775$

The summarized findings can be seen in Table 5.11.

Table 5.11: Summary of hypothesis testing

Code	Hypothesis	Findings
H1	Voluntary adoption of IFRS by unlisted companies is related to the firm size by employees.	Supported
H2	Voluntary adoption of IFRS by unlisted companies is related to the firm size by turnover.	Supported
H3	Voluntary adoption of IFRS by unlisted companies is related to the industry sector.	Supported
H4	Voluntary adoption of IFRS by unlisted companies is related to the audit firm.	Supported

6 Conclusions and recommendations for future research

This master thesis aims to understand the voluntary adoption of IFRS among unlisted companies in Norway. To do so, this study investigates which company characteristics influence the voluntary adoption of IFRS by focusing on Norwegian unlisted companies. Unlisted companies in Norway have substantial discretion to choose either NGAAP or IFRS in preparing their financial statements. This research examined unlisted companies and their choice of accounting practices, NGAAP or IFRS, in the fiscal year 2018. Previous studies focus on consolidated financial accounts, while this current research focuses on unconsolidated financial accounts of unlisted companies. The full sample of 1,395 companies comprises 1,303 (93.41 %) NGAAP companies and 92 (6.59 %) IFRS companies.

Chi-square statistical test of independence showed that voluntary adoption of IFRS among Norwegian unlisted companies is significantly related to the size of the company (both by the number of employees and turnover), industry type, and auditor type.

The result concerning firm size is supported with the findings from the broader literature (André et al., 2012; Bassemir, 2018; Bora Senyiit, 2014; Cooke, 1992; Di Fabio, 2018; Dumontier & Raffournier, 1998; Gassen & Sellhorn, 2006; Haapamäki, 2018; Meek et al., 1995), but inconsistent with the results in the study of Matonti and Iuliano (2012). The result of the study confirms the first and second hypothesis predicting that there is a relationship between firm size and the application of IFRS as the basis of the reporting financial statements by unlisted companies in Norway. The biggest chi-square contribution is from large companies, which indicates that larger companies are more likely to voluntarily adopt IFRS than SMEs. The findings concerning industry sector is in line with prior literature (Berner & Olving, 2013; Cooke, 1992; Cuijpers & Buijink, 2005; Meek et al., 1995), but is not supported with other studies (André et al., 2012; Bora Senyiit, 2014; Matonti & Iuliano, 2012). This finding validates the third hypothesis that the voluntary adoption of IFRS by Norwegian unlisted companies is statistically significantly related to the type of industry. Finally, the result concerning auditor type is consistent with the findings from the broader research studies (André et al., 2012; Bassemir, 2018; Berner & Olving, 2013; Bora Senyiit, 2014; Dumontier & Raffournier, 1998), but inconsistent with the results found in the study of Matonti and Iuliano (2012). The result regarding auditor type confirms the fourth hypothesis that there is a statistically significant relationship between Big Five and voluntary adoption of IFRS.

In Norway, IFRS's expected benefits are more likely to accrue to industry types such as oil & gas, telecommunication & information, financial & insurance and companies audited by Big Five auditors (precisely EY and Deloite). Consistent with the study of Berner and Olving (2013), this thesis find that the industry sector is positively related to unlisted companies' decision to adopt IFRS voluntarily. Especially, Berner and Olving (2013) find that in finance & insurance, oil & gas, shipping, and certain parts in retail and manufacturing industries that IFRS stands firmly as the accounting policy. This study obtained similar results regarding voluntary IFRS adoption by unlisted companies that operate in the finance & insurance and oil & gas industry. But not consistent in terms of telecommunication, retail, and manufacturing. In line with the findings in the study of Berner and Olving (2013), EY obtained the highest contribution of IFRS companies, but completely the opposite in terms of Deloitte audit firm. Overall, this study suggests that certain company characteristics have a relationship with the voluntary adoption of IFRS Standards in Norway, specifically firm size by employees, firm size by turnover, industry type and auditor type.

This paper contributes to existing literature on the voluntary adoption of IFRS by unlisted companies, specifically by examining the role of certain company characteristics in explaining the adoption of IFRS in the Norwegian setting. Findings derived from this study can help regulators increase their awareness for evaluating whether unlisted firms benefited voluntarily adopting IFRS. This research also provides empirical evidence to standard setters by indicating the type of unlisted companies which may prefer to use and benefit from IFRS. Standard setters may also find this thesis an indispensable guide to a better understanding of what company's characteristics that are likely to motivate the voluntary adoption of IFRS, enabling them to promote the adoption of IFRS effectively to countries that currently do not employ IFRS. Additionally, this research can also be beneficial to a wide variety of practitioners, such as auditors and managers.

In line with prior research, this study gained several limitations. Firstly, given constraints on time and data availability, the sample size is minimal relative to the whole population (590 810 companies) (SSB, 2020a). Secondly, the results may not be generalizable to several other industry sectors such as the primary industry sector (e.g., agriculture, forestry, and fishing), professional, scientific & technical activities, administrative and support service activities and more due to such industry sectors were not included from my sample. Finally, this study does not consider all relevant variables that might influence the voluntary IFRS adoption decision

by unlisted companies. For example, ownership structure was not included because the available data contain mainly limited companies (Aksjeselskap (AS) in the Norwegian term). More variables could potentially be included in the study, but it was very time consuming gathering all data one by one from the 1,395 unlisted companies in the sample.

As this study focuses on the company's characteristics influencing voluntary adoption of IFRS, this study acknowledges that there is still scope for future research to expand this research. For instance, further analysis can explore the influence of institutional factors on voluntary adoption in unlisted companies in Norway. Additionally, it can be an exciting avenue for future research to extend this research to analyze other firm-specific factors influencing voluntary adoption in Norway. Such company characteristics that could be of interest for future research are international exposure, ownership structure, leverage, profitability, and capital intensity. These areas also need to be addressed to determine whether the findings of this future research, specifically in the Norwegian setting, are consistent with prior literature. Moreover, it is an essential area for further work to conduct similar research with an increased sample size and include more variables to investigates. Finally, since the chi-square test of independence shows the presence or absence of a relationship between the company's characteristics and voluntary IFRS adoption, further analysis could examine the new cause and effect of why unlisted companies are willing to adopt IFRS by conducting a qualitative study.

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Appendix: Reflection notes

To be able to submit a master's thesis at the University of Agder, some criteria are to be met. One of the requirements is to write a reflection note. This reflective note will shortly introduce the summary of the main topic and findings of this thesis. The topic, which is the voluntary adoption of IFRS by unlisted companies in Norway, will then be discussed in relation to internationalization, innovation, and responsibility.

Brief summary and findings

This master thesis aims to understand the characteristics of unlisted companies that influence the voluntary adoption of IFRS Standards in Norway. Norway is a suitable setting to study because it permits all unlisted firms to comply with IFRS. This study investigates 1,395 unlisted companies comprises of 1.303 NGAAP (93 %) and 92 IFRS (7 %) companies.

A descriptive research study using a quantitative research strategy is conducted to answer the main research hypothesis: *Certain company characteristics influence the voluntary adoption of IFRS Standards in Norway.* Chi-square statistical tests of independence are used to examine the determinants of voluntary IFRS adoption. Findings from the chi-square test of independence indicate a statistically significant relationship between firm size by employees, firm size by turnover, industry type, and auditor type and the voluntary adoption of IFRS by Norwegian unlisted companies. Precisely, large companies that operate in oil & gas, telecommunication & information, financial & insurance industries, and are audited Big Five auditing firms (especially EY and Deloitte) are significantly not independent of unlisted companies' decisions to adopt IFRS voluntarily, meaning they are related to each other.

International trends

International Financial Reporting Standards (IFRS) is developed and approved by the International Accounting Standards Board (IASB), an independent, private body under the IFRS Foundation's oversight. IFRS Standards is a very influential accounting regime not only in Norway but also internationally. It is a comprehensive accounting policy, which is now adopted by 166 jurisdictions. This implies that IFRS dominates as an accounting language, which serves as an international accounting trend. IFRS enhances the comparability, transparency, accountability, and efficiency of financial markets around the world. This indicates that this accounting language is the top choice for reporting financial statements by

companies, especially larger companies, whose business is involved at an international level. This topic has been focused master's degree level subjects, such as BE-420 and BE-507, where thorough introduction and application of this accounting standard were being discussed and explained. This topic is necessary to be a part of UIAs syllabus, so we are aware of what is happening around the world and can adapt to what changes may occur in this dynamic world.

The importance of internationalization is increasing, and the use of international accounting language, like IFRS, is essential. It improves the ability to trade or expand the business internationally and increase the market participant's confidence because this accounting language is known internationally.

Innovation

The widespread adoption of IFRS Standards 15 years ago represents an indeed real innovation in financial reporting. IFRS Standards are generally viewed as high-quality standards as it enhances the comparability and transparency of financial statements globally. Unfortunately, IFRS adoption is also associated with several challenges. First, this policy is very complex, costly, and burdensome. Second, the need for training accounting staff and educating personnel to manage IFRS adoption is a necessity. Third, the need for software and accounting system adjustment. Finally, IFRS is a dynamic accounting standard that implies constant modifications and improvements of the rules to present the users of financial statements with more comparable and transparent financial reports.

This research focused on the determinants of voluntary adoption of IFRS by unlisted companies in Norway. Unlisted companies in Norway are permitted to comply with IFRS as long as they find it useful, especially when these companies are planning to expand their business at an international level and when these companies want to show their balance sheet at fair value. Empirical results of this study revealed that larger unlisted companies, which operate in oil & gas, telecommunication & information, and financial & insurance industry are more likely to adopt the IFRS accounting regime. This indicates that Norway increasingly adapted innovative financial reporting. Recently, the Ministry of Finance mandated unlisted banks, mortgage companies, and financial institutions to comply fully with IFRS. This is an innovative way to improve the comparability of accounts between unlisted and listed banks, mortgage companies, and financial institutions.

Responsibility

Through this master's degree journey, I have learned about the important responsibility the auditor has in obtaining reasonable assurance that the financial statements are free from material misstatement and that accounting regulation is prepared with little room for manipulation as possible. Since IFRS is a complex and dynamic accounting regime, standard setters, regulators, and preparers need to understand how IFRS standards affect each unlisted companies' financial accounts and whether they are beneficial for them to use. Moreover, it is crucial to take responsibility by considering and taking into consideration which type of companies that may adopt IFRS for the regulators and standard setter to be aware of what improvements and adjustments that matters.

This thesis focused on unlisted companies' characteristics that may influence the voluntary adoption of IFRS. Whenever unlisted companies adopt IFRS or any other accounting regime, it is their responsibility to follow a code of ethics and professional conduct necessary for efficient implementation of the standard. Furthermore, accountants and auditors are responsible for delivering honesty, integrity, and professionalism when preparing financial statements for the companies, investors, and other users of the report.

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