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# Exploring the Relationship Between Growth Strategies and Firm Performance: A Quantitative Study of Norwegian Manufacturing Firms

Master's thesis in Industrial Economics and Technology Management  
Supervisor: Arild Aspelund  
June 2023



Norwegian University of  
Science and Technology



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## *Preface*

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This thesis marks the completion of the authors' Master of Science degree in Industrial Economics and Technology Management at the Norwegian University of Science and Technology (NTNU). The conducted research is part of the specialization Strategy and International Business Development. The master's thesis was written during the spring of 2023.

The research is based on a multiple linear regression (MLR) model conducted in SPSS to disclose the performance dimension of firms pursuing growth. The data is collected from the SISVI (Sustainable Innovation and Shared Value Creation) project led by the Department of Industrial Economics and Technology Management at NTNU. The SISVI data is supplemented with financial records from 2015 to 2021 retrieved from Proff Forvalt.

We express our sincere gratitude to our supervisor Arild Aspelund for his appreciated guidance and support throughout the entire process of writing this master's thesis. Furthermore, we also express our appreciation to everyone who has assisted and inspired us; professors, fellow students, family, and friends.



June 2023  
Trondheim

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## Abstract

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The strong forces of globalization, technological advances, fierce competition, and the climate crisis have led to dramatic and continuous changes in the business environment. Not to mention that recent global crises have caused economic slowdowns. Firms must navigate these challenging conditions and make strategic decisions to survive in the business landscape. The pivotal question becomes: *Can growth strategies guarantee long-term performance?*

Disclosing the influence of growth strategies on firm financial performance is essential for scholars, practitioners, and governments. Scholars pursue an enhanced academic understanding of growth strategies and their economic effects, providing profound insights for managers and governments to make strategic decisions that drive businesses and economies forward.

However, previous efforts to disclose this relationship are fragmented and inconclusive. Thus, there is a need for research advances that uncover how firms strategize for growth and whether these strategies yield long-term financial returns. This master's thesis investigates growth strategies and financial performance, pursuing profound insights into the relationship and aiming to contribute to the academic discourse.

The research adopts a quantitative approach to investigate the relationship between growth strategies and their influence on financial performance. The sample comprises 488 Norwegian manufacturing firms using survey data and financial reports. The hypotheses are tested using Pearson correlation and multiple linear regression (MLR) analyses in SPSS. The results reveal that customization, differentiation, and innovation are the most prominent strategies. Moreover, firms often adopt a combination of strategies in which promoting sustainability appears particularly compatible. The research did not disclose significant influences of the strategies on financial performance. Therefore, the choice of growth strategies and their financial returns seemingly depend on firms' contextual conditions. Further research should take a more holistic approach considering internal and external factors to enhance the understanding of the relationship.

### Keywords:

Growth Strategies, Financial Performance, Competitiveness, Manufacturing

## Sammendrag

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Globalisering, teknologiske fremskritt, markedskonkurransen og en pressende klimakrise har medført drastiske og kontinuerlige endringer i forretningslandskapet. I tillegg har store globale kriser ført til økonomiske nedgangstider og krevende forretningsforhold. Selskaper må håndtere disse utfordringene og ta strategiske beslutninger for å overleve. Derfor er det interessant å stille spørsmålet: *Kan vekststrategier garantere finansiell ytelse på sikt?*

Det er helt sentralt for akademikere, forretningsledere og myndigheter å avdekke hvilken effekt vekststrategier har på selskapers ytelse. Dersom forskere etablerer en økt forståelse for vekststrategier, kan selskaper og myndigheter få nødvendig innsikt til å ta lønnsomme strategiske beslutninger som driver næringslivet og økonomien fremover.

Litteraturen på dette feltet er preget av fragmentert forskning med sprikende resultater. Derfor er det nødvendig med akademiske fremskritt som kan avdekke hvordan selskaper strategisk planlegger for vekst og hvorvidt vekststrategiene gir økonomisk avkastning på sikt. Denne masteroppgaven undersøker vekststrategier og finansiell ytelse for å få dypere kunnskap om dette forholdet og dermed bidra til den akademiske diskursen.

Studien tar en kvantitativ tilnærming til å undersøke forholdet mellom vekststrategier og finansiell ytelse. Utvalget består av 488 norske produksjons-selskaper og benytter data fra en spørreundersøkelse og historiske regnskapsdata. Hypotesene er testet ved å utføre korrelasjonsanalyse og multippel lineær regresjon i SPSS. Resultatene avdekket at skreddersøm, differensiering og innovasjon er de mest fremtredende strategiene. Videre demonstrerte studien at selskaper ofte kombinerer strategier der bærekraftspromotering fremstår som en spesielt kompatibel strategi. Studien fant ingen signifikant relasjon mellom vekststrategier og finansiell ytelse. Dermed ser det ut til at selskapers vekststrategier og økonomiske avkastning avhenger av kontekstuelle forhold. Fremtidige forskningsarbeider bør ta en mer helhetlig tilnærming til fenomenet ved å betrakte interne og eksterne faktorer.

### Nøkkelord:

Vekststrategier, Konkurransedyktighet, Finansiell ytelse, Produksjon

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# CHAPTER 1

## *Introduction*

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Multitude forces contribute to intricate and changing market conditions that are more difficult to navigate than ever. The fierce forces of globalization, rapid technological advances, changing regulations, shifting financial situations, and cut-throat competition have led to dramatic changes in the business environment (European Central Bank, 2022; United Nations, n.d.; McKinsey & Company, 2020). Not to mention that Norwegian manufacturing firms are facing the challenges of volatile oil and gas prices, energy supply disruptions, and a depreciated national currency, intensified by the critical climate crisis, COVID-19 pandemic, and the Russia-Ukraine war in recent years (SSB, 2022; NHO, 2022; Norges Bank, 2023).

Regardless of intricate and detrimental business conditions, firms must make positive profits to survive (Alchian, 1950; Penrose, 1952). This criterion of natural selection forces firms to continuously adapt to changing circumstances, spot opportunities and threats in the business environment, and make strategic decisions to ensure economic endurance in the short and long run. Although planning for success in changing business landscapes represents a challenging endeavor, times of uncertainty and economic slowdowns prompt the following question: *Can solid strategies for growth provide better premises for long-term financial performance?*

Considerable academic attention has been devoted to examining the relationships between growth strategies and their impact on financial performance (Kazan et al., 2006; Lai-Yin Cheah et al., 2021). However, the efforts to disclose the influence of strategies on performance have been fragmented and inconclusive. The research on firm growth comprises a multitude of strategies. Some studies consider innovation, concentration, and product diversification strategies (Pearce et al., 1987; Kyläheiko et al., 2011), whereas others scrutinize growth through internationalization and sustainability efforts (Kyläheiko et al., 2011; Hojnik et al., 2018; Ferioli et al., 2022). Moreover, the performance measures that are subject to analysis and the empirical findings diverge. The research consists of a combination of self-reported and objective data and covers different financial measures ranging from sales and profits to present value and market share. Not least, the empirical findings within academia diverge. Some

scholars suggest that there is a significant effect on performance (Kyläheiko et al., 2011; Hojnik et al., 2018; Ferioli et al., 2022), whereas others claim the relationship to be insignificant (Pearce et al., 1987; Nandakumar et al., 2011; McGee & Thomas, 1986). The multifaceted efforts leave the understanding of growth strategies and their effect on financial performance incomplete and suggest that more research is needed to confirm the significance of the interrelationships.

Research advances on the relationship between growth strategies and financial performance are not just essential to bridge the gap in academia; such advances are also pivotal for managers pursuing strategies to sustain their businesses. The unclear relationship leaves managers uninformed on how to leverage strategies for performance. Besides, it seems unreasonable to assume that firms are willing to change their business models and strategic plans unless the economic benefits are guaranteed to offset the costs. Given that strategic planners are better positioned for success, practitioners need more insights into the strategies that prevail and that provide the most promising prospects for financial performance in the long term.

### 1.0.1 *Aim and Research Questions*

The aim of this thesis is to enhance the understanding of growth strategies and their effect on performance. More specifically, the thesis investigates the most prominent growth strategies among Norwegian manufacturing firms and scrutinizes the effects of these strategies on financial performance measures. Thus, the following research questions are posed:

**RQ1:** Which growth strategies are prominent among Norwegian manufacturing firms, and how do these strategies correlate?

**RQ2:** What is the influence of the growth strategies firms adopt on their financial performance?

This thesis makes three contributions to the research stream. First, the thesis addresses an intriguing research gap and contributes to disclosing the relationship between growth strategies and performance to the benefit of scholars, managers, and policymakers. Second, the thesis leverages robust empirical data using statistical methods to generate accurate and objective results. The data consists of survey responses from a representative sample of Norwegian manufacturing firms combined with publicly available longitudinal financial records from censusing (2015) to 2021. Third, the thesis provides insights into the growth strategies adopted by Norwegian manufacturing firms and brings fresh evidence of their financial returns to research literature. Thus, the research offers an improved understanding of the role of strategies for firms operating in small, open, and developed economies.

### **1.0.2 *Structure of the Thesis***

This paper is structured as follows to answer the posed research questions. [Chapter 2](#) outlines the theory and concepts related to the research on growth strategies and financial performance and presents the deduced hypotheses. Then, [Chapter 3](#) introduces the data and outlines the research method before [Chapter 4](#) provides the results of the hypotheses testing. Following, [Chapter 5](#) synthesizes the empirical findings and identifies theoretical, managerial, and policy implications before reflecting on the research limitations and offering suggestions for further research. Finally, [Chapter 6](#) draws the conclusion of the research.

## CHAPTER 2

### *Theory and Hypotheses Development*

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This chapter outlines the theory and concepts related to the research on growth strategies and their influence on financial performance. The chapter gives a brief description of firm growth and growth strategies before reviewing traditional and novel modes of growth. Next, the chapter introduces the academic conceptualization of growth strategies and performance before it provides a comprehensive guide to common strategies and their financial influence. The purpose of the theoretical foundation is to deduce hypotheses and interpret results in answering the posed research questions. The hypotheses are presented throughout the chapter and encapsulated in a research model outlining the relationships between growth strategies and firm performance.

#### 2.1 FIRM GROWTH

Growth refers to a change in size or magnitude from one time to another (Wiklund, 1998). Therefore, firm growth occurs when firms increase their size in terms of sales, employment, profits, or value added (Coad, 2018).

There has been a trend in academic research to depict firm growth as favorable and equate it with firm success (Davidsson et al., 2009). Theoretical claims posit that successful growth initiatives often yield additional revenue (Coad et al., 2016), suggesting that sales increase is an indicator of firm growth and operational success. This perception is rooted in the idea that the successful translation of inputs into outputs facilitates increased productivity (Coad et al., 2016), which in turn allows for capturing increasing returns to scales in production, referred to as the *Kaldor-Verdoorn Law* (Basu & Budhiraja, 2021). Tendencies to measure firm performance in terms of growth are often based on the assumption that growth is a precursor of sustainable competitive advantages and profitability (Fitzsimmons et al., 2005; D. Li et al., 2017). Therefore, the relationship between firm growth and profitability is often considered the essence of general business practice (Fuertes-Callén & Cuellar-Fernández, 2019). Indeed, academic literature renders firm growth and financial performance closely related concepts.



There seems to be a theoretical consensus confirming the trend of measuring performance through increases in sales and profits (Davidsson et al., 2009; Fuertes-Callén & Cuellar-Fernández, 2019; Mahmutaj & Krasniqi, 2020). Sales growth and profitability are essential financial measures and reflect different aspects of firm performance. Sales growth measures the increase in revenue over time, whereas profitability measures the firm's ability to generate profits from its assets. Moreover, an increase in sales does not necessarily translate into an increase in profits, and vice versa. Therefore, firms should consider both when assessing performance. Considering that firm growth is related to performance and thus sales and profits, this thesis defines firm growth as the *increase in sales or profits*.

Though growth is a common objective for many businesses, not all firms share this aspiration. Numerous small and medium-sized enterprises (SMEs) prioritize maintaining a modest scale and retaining control over their businesses, diverging from the growth ambitions often associated with larger enterprises (Coad, 2018). Concerns about the perceived risks related to growth can discourage some entrepreneurs from pursuing growth, despite evidence indicating that such efforts can enhance firms' survival prospects. Whether or not firms desire and seek growth, sustained profits remain for survival in the competitive marketplace.

## 2.2 GROWTH STRATEGIES

Growth strategies are strategic plans of action to realize firms' growth ambitions. Common for all growth strategies is the inherent desire to grow. Growth is desirable as it can enhance efficiency through economies of scale (that is, increased production volume for reduced unit costs) or economies of scope (that is, diversified product offerings for reduced unit costs) (Coad, 2018; Panzar & Willig, 1981). Growth is also desirable as it can alleviate tensions, provide win-win options, and bring promotion opportunities that can stimulate working morale and benefit firm operations.

Growth strategies differ in the mode of growth, whether it includes replication or diversification, and the degree of novelty, uncertainty, and synergy (Coad, 2018). Three principal categories of growth strategies have emerged in the literature, namely (*internal*) *organic growth*, *external growth through partnership*, and *external growth through acquisition* (X. Chen et al., 2009). Organic growth involves expanding the firm's operations based on its internal resources (Guth, 2018). On the other hand, growth through partnerships and acquisition involves licensing or strategic alliances with other firms and acquiring other firms in related or unrelated business areas (X. Chen et al., 2009).

Strategy is a context-based concept that recognizes the firms' unique circumstances and characteristics. Coad (2018) highlighted that growth strategies aim to leverage a firm's existing resources and capabilities while also considering the need for new resources and capabilities to tap into new markets profitably. However, not all growth strategies are universally applicable to all firms. The contingency theory, as proposed by Donaldson (1999), supports this notion and suggests that there is no one-size-fits-all optimal strategy for organizations. The choice of strategy variables is instead contingent upon specific factors, referred to as contingency factors. Therefore, pursuing growth through a particular strategy might not ensure performance for all firms. For instance, innovation strategies can fit and yield financial returns for some firms but might be less applicable and profitable for others. Thus, it is crucial for companies to carefully assess their internal and external context to determine the most suitable growth strategy that aligns with their unique circumstances and objectives.

Various strategies for firm growth have been identified over the years. Still, Porter's generic strategies remain the most commonly supported in the literature (Allen & Helms, 2006; L. Kim & Lim, 1988).

### 2.2.1 Porter's Generic Strategies

Porter (1980) described three generic approaches to outperforming other firms. These are *overall cost leadership*, *differentiation*, and *focus*. Overall cost leadership is obtained through efficiency measures that ensure low costs relative to competitors, which allows for satisfactory returns despite pressing price wars. Differentiation denotes offering a product or a service that is different from competitors and has an added value, which can create customer loyalty and ensure increased margins. Focus can take many forms but involves focusing on particular customers, products, or geographic markets. Focus rests on the premise that firms can serve their narrow strategic markets better than competitors participating in the broad competition.

The generic strategies can require different organizational arrangements, control procedures, leadership, and corporate cultures (Porter, 1980). Therefore, Porter (1980) proposed that commitment to one target is often needed for successful strategy implementation and enhanced performance. Firms that fail to make strategic choices and develop their strategies in at least one of the directions are "stuck in the middle." Firms stuck in the middle lose competitive ability and are almost guaranteed low profits. Therefore, although firms *can* adopt a broad approach and pursue several strategies, success often requires focus and commitment that are diluted if there is more than one target.

The compatibility of strategies has sparked significant debate in the literature (Helms et al., 1997). So has the dilemma of focusing on one or more strategic targets. Though scholars such as Nandakumar et al. (2011) support the notion of one strategic focus, other scholars (Buzzell & Gale, 1987; Fuerer & Chaharbaghi, 1995; Miller, 1992; Leitner & Guldenberg, 2009) suggest that a combination of strategies can result in superior performance.

Although combining strategies can contribute to enhanced performance, we believe strategic decision-making and a focused approach are imperative for attaining growth. Therefore, we hypothesize that:

**H1:** Firms tend to emphasize specific strategic targets in their pursuit of growth instead of adopting a broad range of strategies.

### 2.2.2 Extending the Generic Strategies

Although Porter's generic strategies constitute fundamental pillars within the competitive strategy field, other strategies for growth are also often adopted. Some of the most common academic classifications for growth strategies, alongside the generic strategies, are the Ansoff (1965) Matrix and Miles and Snow's (1978) adaptation strategies (Leitner & Guldenberg, 2009).

Ansoff pointed out the common practice of *product development*, suggesting that firms pursue the development of novel and different product characteristics for growth (Ansoff, 1958). Similarly, Miles and Snow's conceptualized the strategic position of *prospectors*, that attempt to maintain a reputation as an innovator. The recognition of innovation strategies for firm growth also finds support in more recent research (Phadtare, 2010; Akcigit & Kerr, 2018; Ahlstrom, 2017). Strategic innovation is even said to sit at the base of the economic pyramid (Anderson & Markides, 2007) and is perceived as a chief source of growth (Koudal & Coleman, 2005). Thus, innovation and development add to the list of accepted growth strategies.

Market development also has a central position in the strategic typologies Ansoff (1965) and Miles and Snow's (1978) posed. These scholars suggested that firms realize growth opportunities by reaching new markets, including entering foreign markets. The rise of the global economy has resulted in an increasing number of firms entering the international marketplace (Honeycutt & Ford, 1995). Several scholars (Coad, 2018; Kyläheiko et al., 2011; Grossman & Helpman, 1990; Phadtare, 2010) confirm this trend and refer to internationalization as a common mode of firm growth.

Miles et al. (1978) also pointed out the role of marketing efforts in realizing organic growth. Recent literature has emphasized that green marketing can

be used as a tool for sustainable growth (Saxena & Khandelwal, 2010). The pressing climate crisis and increased environmental and social awareness have made sustainability an essential strategic attribute for competitive ability and long-term survival (UN, 2022; Ferioli et al., 2022). Therefore, promoting sustainability work has become a vital strategy for firm growth in the current business landscape.

Rooted in traditional strategic typologies and the emergence of novel modes, this thesis considers growth through innovation and development, internationalization, offering the lowest price, differentiation, customization, and promoting sustainability efforts.

### 2.3 LINKING GROWTH STRATEGIES TO FINANCIAL PERFORMANCE

There is a long tradition in academia to perceive strategic planning for growth as favorable for firm performance. Penrose (2009) emphasized in the influential book *Theory of the Growth of the Firm* (first published in 1959) that growth strategies are rooted in aspirations for growth and expansion. However, although the desire to grow is essential, it is not enough to guarantee growth. Penrose (2009) pointed out that realizing growth also relies on viable growth opportunities and that firms must be alert to critical decision points in the search for these opportunities. Continuous adjustments are needed for firms to attain a successful alignment between their resource capabilities and environmental opportunities (Pearce & Robbins, 2008). Therefore, strategic decision-making sits at the heart of capitalizing on growth strategies.

Penrose's (2009) notion that growth requires planning and abilities to detect promising growth opportunities underlines the managerial attention of the growth process. Firms that fail to use their resources and capabilities constrain their growth (Penrose, 2009; Tan, 2016). Thus, managerial capabilities constitute both the engine and constraint on firm growth, referred to as the *Penrose effect* (Tan, 2016; Kyläheiko et al., 2011), and appear to be essential in transforming growth opportunities into financial returns.

Penrose's ideas are similar to the Schumpeterian perception of firm growth. Schumpeter (1934) emphasized the role of entrepreneurship in the search for opportunities for novel value-generating activities aimed to enhance income and profits (Audretsch et al., 2014; Cantwell, 2000). From a Penrosian and Schumpeterian perspective, it seems natural to consider strategic managerial planning for growth as a starting point for scrutinizing the relationship between growth strategies and financial performance.

Recent literature also highlights the long-term financial benefits of pursuing growth through solid strategies. The literature suggests that firms often plan for performance through developing strategic orientations based on their perception of the most viable strategies in their environments (Hassan, 2010). The firm's strategic orientation reflects its direction and vision and revolves around targeting efforts towards sustainable growth and long-term objectives (L. Weinzimmer et al., 2012). Moreover, it is a multidimensional construct involving entrepreneurial orientations and strategic postures (Escribá-Esteve et al., 2008). Therefore, the strategic orientation comprises the growth strategies firms adopt in the pursuit of enhanced financial performance. The idea that firms can determine their strategic orientation underlines their abilities to craft their growth strategies to realize financial performance. Thus, growth strategies and performance have a clear link. Research indicates that firms adopting an appropriate strategic orientation maintain better performance levels and that strategic orientation can have universal positive performance implications (Wiklund & Shepherd, 2005). For instance, scholars have found that strategic orientation (particularly in terms of proactivity, strategic information analysis, and risk behavior) can ensure superior firm performance (Poon et al., 2006; Zahra & Covin, 1995; Wiklund, 1999).

Considering the accepted theories of firm growth and prior evidence on the returns of strategic growth plans, there seems to be an underlying assumption in academia of a linear relationship between growth strategies and financial performance. The following subsections elaborate on how the growth strategies considered in this research relate to financial performance in terms of sales and growth. The paragraphs provide a general rationale for the relationship between the respective strategies and performance and do not consider contextual differences. Therefore, the financial benefits related to the strategies might not apply to all firms under all contextual conditions.

### 2.3.1 *Innovation and Development*

Growth through innovation and development can take different forms. Scholars have identified a range of innovation types, including product, service, market, organizational, process, production, supply, and marketing innovation (Damanpour & Aravind, 2012; Johannessen et al., 2001; Knight, 1967; Trott, 2008; Anderson & Markides, 2007). Although these innovations focus on newness, they cover different dimensions of the concept. Product and service innovations are the development of new offerings (the new whats), whereas market innovations involve finding the under- and nonconsumers or expanding to new markets (the new whos). Organizational, process, production, supply,

and marketing innovations relate to new ways of organizing operations and producing, distributing, and promoting offerings (the new hows). Common for strategic innovators is that they find unsaturated markets and tap profitable opportunities in these gaps (Anderson & Markides, 2007). In this sense, some innovations can be perceived as diversification into new product spaces and geographical spaces. Thus, innovation strategies have similarities with differentiation and internationalization strategies, as these often involve product innovations (Semuel et al., 2017; Allen & Helms, 2006; Gallouj, 2002) and market innovations (Kyläheiko et al., 2011). This leads us to hypothesize:

**H2a:** Growth through innovation positively correlates with internationalization.

**H2b:** Growth through innovation positively correlates with differentiation.

The different forms of innovation can expand the firm's operations and enhance its sales and profits and thus promote organic firm growth. The positive influence of innovation on financial performance finds support in the literature. Kyläheiko et al. (2011) highlighted the decisive role of (product) innovation as a determinant of profitability and found that exploiting economies of scope through innovation can facilitate firms' financial performance. Moreover, Xie et al. (2019) found that green product and process innovations positively influence financial performance as innovation enables firms to create new businesses, seize opportunities, and lead in their markets. Confirming these trends, Colombelli et al. (2013) and Karabulut (2015) found a positive impact of innovation on firm growth and performance. On the other hand, some highlight that risks and costs related to innovation deter most firms from making it their primary market strategy, given the uncertainty of consumer demand, high expenses, and the challenge of predicting inventive timing (Pearce & Robbins, 2008; Rosenbusch et al., 2011). Nevertheless, firm growth through innovation seems to provide promising financial prospects, and the following hypothesis is deduced:

**H2c:** Growth through innovation positively influences financial performance.

### 2.3.2 *Internationalization*

Growth through internationalization is a common mode among firms pursuing expanded market reach. Similar to other growth strategies, internationalization unfolds in different forms, such as export, direct entry (establishing facilities in

foreign markets), indirect entry (for example, through agents, franchising or licensing agreements), and electronic marketing (Lu & Beamish, 2006b; Grönroos, 1999). Therefore, internationalization can promote organic growth using internal resources to export or establish entities overseas or facilitate external growth by reaching markets through partnerships, mergers, or acquisitions.

Research has shown that firms pursuing international expansion can achieve higher growth rates, greater profitability, and improved long-term performance compared to companies that remain focused on domestic markets (Lu & Beamish, 2006a; Contractor et al., 2002). Internationalization can also provide firms access to new resources, knowledge, and technology, contributing to their competitive advantage and facilitating the drive for innovation (Kafouros et al., 2008). However, internationalization is not without challenges, and firms must carefully consider factors such as cultural differences, regulatory environments, and market conditions when developing and implementing their expansion strategies (Andersson, 2004; Lu & Beamish, 2006a). Despite these challenges, internationalization remains an attractive growth mode for firms attempting to achieve a strong global foothold. Thus, it is hypothesized that:

**H3:** Growth through internationalization positively influences financial performance.

### 2.3.3 *Offering the Lowest Price*

Growth through offering the lowest price is a common approach for firms to gain market shares and attract price-sensitive consumers. The idea is to offer low prices to outpace competition (Gilbert & Strebel, 1987). Offering the lowest price relates to Porter's (1980) overall cost leadership strategy in the sense that low costs allow the firm to charge lower prices and still make reasonable profits. Therefore, offering the lowest prices (while having a low-cost position) can promote growth even in fierce competition. This research concerns growth through offering the lowest price, regardless of the firm's cost position. While offering low prices and opting for low costs share similarities, they do not necessarily coincide. Firms can achieve low costs without offering low prices, and vice versa. However, it is essential to note that charging low prices without low costs is seldom profitable.

Offering the lowest price is based on the premise that firms can attract a larger customer base and increase sales volume and revenues by undercutting competitors on price (Porter, 1985; Besanko et al., 2017). Hyatt (2001) noted that a sustained and profitable cost leadership strategy requires achieving a substantial market share. Firms can drive higher demand and increase their

market share through lower prices (Helms et al., 1997). Furthermore, offering the lowest price realized through cost leadership can hinder competitors from entering the market because the capital-intensive entry costs restrain their competitive ability (Hyatt, 2001). However, it is essential to note that pursuing growth by offering the lowest price has some drawbacks. Although lower prices can attract customers, it can also result in a loss in total revenues if prices are too low (Allen & Helms, 2006). Porter (1998) also stressed that cutting costs could lead to inferior quality of products and services, alongside charging low prices, can lead to reduced profit margins. Despite these challenges, firms continue to pursue low-cost strategies due to their potential to increase overall performance, such as through leveraging economies of scale, control, and expense reduction (Allen & Helms, 2006). This brings us to the following hypothesis:

**H4:** Growth through offering the lowest price positively influences financial performance.

### 2.3.4 *Differentiation*

Growth through differentiation involves offering products or services that are perceived as unique or superior in the marketplace and that can command higher prices or customer loyalty (Porter, 1980). Firms can pursue differentiation through various means, such as product design, quality, customer service, branding, or innovation (Slater & Narver, 1994). Drawing on Porter's (1980) generic strategies, differentiation and offering the lowest price appear to require different strategic focus. Offering the lowest price is often enabled through cutting costs compared to differentiation strategies that attempt to create added value and grant premium prices. Though Porter (1980) argued that cost leadership and differentiation offer equally viable paths to competitive success, he suggested that cost leadership and differentiation are often incompatible and represent a trade-off as firms can generally not pursue both strategic dimensions simultaneously without causing inefficiency. Other scholars, such as Barney & Hesterly (2015), also support the notion that these strategies require contradicting organizational structures.

Firms differentiating their products can achieve organic growth by leveraging their internal resources for enhanced financial performance. Scholars have found that firms pursuing differentiation strategies tend to have higher profit margins, greater customer loyalty, and improved long-term performance compared to companies that compete solely on price (W. C. Kim & Mauborgne, 2005; Porter, 1980). A successful differentiation strategy enables firms to charge



higher prices for its product and gain customer commitment, as consumers become attached to the differentiation features (David & David, 2017). Based on these theories, the following hypotheses are derived:

**H5a:** Growth through differentiation negatively correlates with growth through offering the lowest price.

**H5b:** Growth through differentiation positively influences financial performance.

### 2.3.5 Customization

Growth through customization comprises offering customized products and services to the customer base. Customization compares to the focus strategy described by Porter (1985), which concentrates on developing tailored, well-specified offerings for specific customer groups. Firms adopting such focused growth strategies tend to build strong customer loyalty, enhancing their competitiveness within the niche market segments they serve. Thus, customization adds to the strategies through which firms can leverage their internal resources to grow. The effect of customization on financial performance has been inconclusive due to its trade-off between costs and benefits. Although research has proven that customization increases revenue through better customer satisfaction, this has also led to cost increases (Wang et al., 2017). For instance, Rodríguez-Escudero et al. (2022) found that customization increased customer value and generated higher revenues but also required resources implying higher costs. Still, the authors found that the generated revenues exceeded the costs, leading to an imbalanced but positive effect on profits. Rodríguez-Escudero et al. (2022) also suggested that customization can sustain profits as customizing firms can transfer the costs to the customer by charging higher prices. Furthermore, research confirms increasing needs for customized offerings (Persson & Lantz, 2022) and suggests that firms that do not customize see a sharp decrease in profits compared to their customizing competitors (Dewan et al., 2000).

Growth through customization goes beyond only serving specific customers. Customization can be perceived as a variation of differentiation, and ideally, customized offerings achieve both a differentiated and low-cost position within the chosen market segment (Porter, 1997). Firms often adopt a combined differentiation-customization strategy that exploits the special needs of buyers in particular segments to outperform better-resourced companies

with broader market offerings and survive in the marketplace [Porter \(1985\)](#). These tendencies lead us to hypothesize:

**H6a:** Growth through customization positively correlates with growth through differentiation.

**H6b:** Growth through customization positively influences financial performance.

### 2.3.6 *Promoting Sustainability*

The impact of promoting sustainability efforts on firm growth has received increased attention in the academic literature in recent years ([Carp et al., 2019](#); [Paelman et al., 2020](#); [Burhan & Rahmanti, 2012](#)). Corporate social responsibility (CSR) has become an emerging business model, and corporate citizenship requires firms to communicate the sustainable activities they undertake ([Ferioli et al., 2022](#)). The growing global trend of reporting requirements has resulted in CSR no longer being a firm choice but a fundamental prerequisite for long-term survival ([Gulenko, 2018](#); [Ferioli et al., 2022](#)). Common tools to promote social, environmental, and economic responsibility to stakeholders are publishing sustainability reports and obtaining sustainability certifications. This leads us to deduce the following hypothesis:

**H7a:** Promoting sustainability is embedded in corporate operations and the growth strategies firms adopt.

Sustainability strategies that entail transparent sustainability performance, such as green certifications and sustainability documents, can drive growth as these strategies appeal to the growing market segment of environmentally concerned consumers ([Eide et al., 2020](#)). Research shows that concerned customers are often willing to pay a premium for sustainable products and services ([McKinsey and Company, 2012](#)), which can positively influence firms' financial performance ([Vu et al., 2020](#)). Scholars also confirm that sustainability certifications and documents directly relate to financial performance. For example, [Ferioli et al. \(2022\)](#) and [Krause \(2018\)](#) found that sustainability certification positively influences ROA, and [Burhan & Rahmanti \(2012\)](#) found that sustainability reports positively associate with ROA. These trends lead us to hypothesize:

**H7b:** Growth through promoting sustainability efforts positively influences financial performance.

2.3.7 Research Model

The research model in Figure 2.1 encapsulates the theoretically deduced hypotheses. The model presents the hypothesized relationships between growth strategies as this thesis aims to examine how these strategies are combined. Moreover, the model outlines the presumed relationships between growth strategies and financial performance in terms of sales growth and profitability, as this thesis investigates the financial returns of adopting these strategies. The model also accounts for firm age and size in testing the growth strategies' influence on financial performance.

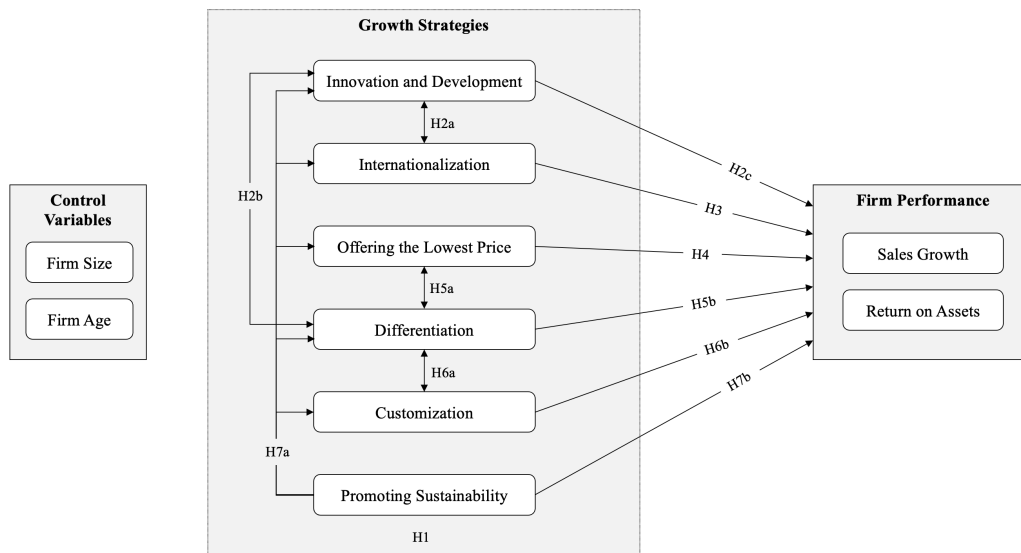


FIGURE 2.1. Research Model

## CHAPTER 3

### *Methodology*

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This chapter delineates the methods employed in this thesis. First, the chapter describes the research design and data collection methods. [Table 3.1](#) outlines the principal methods applied in this research. Then, the chapter reasons for the data variables used in the analysis, followed by an explanation of the data assessment and preparation. Next, a comprehensive description of the data analysis is provided. Finally, the chapter elaborates on the research quality and methodological limitations.

**TABLE 3.1.** Principal Methods Applied in the Research

<b>Research Method</b>	Quantitative
<b>Research Design</b>	Cross-sectional and longitudinal
<b>Data Collection</b>	Subjective survey data combined with objective and public financial reports
<b>Data Analysis</b>	Correlation analysis to explore associations and regression analysis to disclose causal influences over time

#### 3.1 RESEARCH APPROACH

The principal motivation for this research was to empirically investigate the associations between growth strategies and test the path from adopting these strategies to firm performance. Quantitative research methods allow for measuring concepts and understanding the causal or correlational relationship between them ([Bryman, 2012](#)). Moreover, cross-sectional research design allows for disclosing patterns of association at a given point in time, whereas longitudinal design facilitates the understanding of causal influences over time. Therefore, a quantitative approach combining cross-sectional and longitudinal research design was considered appropriate and adopted to examine the posed research questions.

## 3.2 DATA COLLECTION

The empirical research leveraged two data sources: a survey and longitudinal financial reports. The survey data consists of subjective responses and measures the extent firms adopt growth strategies. The objective longitudinal financial data measured the actual financial performance of the firms in the following years. Combining separate sources ensured robust and comprehensive data, in which the longitudinal financial reports facilitated the disclosure of the causal influences.

### 3.2.1 *The SISVI Dataset*

The SISVI (Sustainable Innovation and Shared Value Creation) dataset contains survey data collected between November 2015 and February 2016. The online questionnaire included 110 questions about internationalization, growth strategies, sustainability strategies and innovations, results of sustainability initiatives, and managerial motivation. The Department of Industrial Economics and Technology Management at The Norwegian University of Science and Technology distributed the survey through e-mail to 2638 Norwegian manufacturing firms. This population comprises the firms registered as NACE Group C listed in the Brønnøysund Business Register, excluding firms with incomplete contact information and financial inactivity.

The dataset consists of 682 completed responses, equivalent to a response rate of 25.9%. The SISVI dataset was compared to the entire population of Norwegian manufacturers in terms of firm size, firm age, and industry code. No significant differences were found, indicating that the dataset is representative of the population.

### 3.2.2 *Financial Data*

Longitudinal financial data for 2015 to 2021 were collected from Proff Forvalt. Proff Forvalt is an online service that provides reliable credit and accounting data from Norwegian firms registered in the Brønnøysund Business Register (Proff Forvalt, n.d.). The longitudinal data allowed for analyzing the financial effects of firms' growth strategies. Because the financial records span the pre and peri-COVID-19 era, the data also allowed for investigating the mediating influence of the pandemic on the growth-performance relationship.

### 3.3 VARIABLES

The variables in the research were either derived from the survey questions or based on established measures and scales from previous research. The variables related to the firm demographics and strategies were constructed from single open-response survey items and survey responses measured on a seven-point Likert scale, ranging from 1 = “Not at all” to 7 = “To a great extent”. The financial variables were constructed from the longitudinal financial data records.

The variables categorize as control variables, independent variables, and dependent variables. The independent variables are deemed to have a causal influence on the dependent variables (Bryman, 2012). The control variables were not of primary interest to the research objectives but were included as they might influence the results. Table 3.2 summarizes the variables and their type.

**TABLE 3.2.** Variables

Variables	Type
Firm age and firm size	Control variables
Growth strategies 19.1 - 19.6	Independent variables
Sales growth and mean ROA	Dependent variable

### 3.3.1 Growth Strategy Variables

The measurements of the growth strategy concept constitute the independent variables of the research. The variables corresponded to the growth strategy questions from the SISVI questionnaire and were measured using the seven-point responses to these questions.

**TABLE 3.3.** Growth Strategy Variables

Variable	No.	Survey Statements
Innovation and Development	19.1	The company seeks growth through innovation and development of new products and services.
Internationalization	19.2	The company seeks growth through internationalization.
Lowest Price	19.3	The company seeks growth by offering the lowest price.
Differentiation	19.4	The company seeks growth by offering products and services that are clearly different from those of the competitors.
Customization	19.5	The company seeks growth through providing specially customized products and services to selected customer groups.
Promoting Sustainability	19.6	The company seeks growth by actively promoting its work on sustainability (environment and society).

### 3.3.2 Financial Variables

The measurements of the financial performance concept constitute the dependent variables of the research. The variables were derived through the firm's financial records and corresponded to two common measures of financial performance, namely *sales growth* and *profits*. All variables were calculated as the percentage average change from the accounting year of 2015 until 2021. This method allowed for capturing the potential long-term financial effects of the adopted growth strategies.

#### Sales Growth

Sales growth is often used to represent the financial outcome of firms' strategic choices and is considered an essential measure of success (L. G. Weinzimmer et

al., 1998; Steffens et al., 2009). Kiviluoto (2013) demonstrated that sales growth is extensively portrayed as an indicator of firm success due to the perceived positive relationship between sales growth and profit. The higher the sales growth, the higher the succeeding profitability. The firm's ability to increase its success in terms of sales growth depends on its business environment and the strategies it pursues navigating this environment (Selling & Stickney, 1989). Therefore, measuring sales growth over time can facilitate firms in assessing the effectiveness of their growth strategies and adjusting them accordingly. This research considered sales growth an appropriate measure based on its recognition as an essential metric to determine financial success. Sales growth was measured as the average point-to-point change from 2015 to 2021, as shown in Equation 3.1.

$$\text{Sales growth} = \frac{\text{Sales revenue 2021} - \text{Sales revenue 2015}}{\text{Sales revenue 2015}} \quad (3.1)$$

### Profitability

Profitability is also extensively used in strategic management research as an essential metric for assessing firm performance (Arbelo et al., 2020). Profit is a fundamental and traditional financial metric of success, often seen as a necessary condition for expansion (Penrose, 1952). The literature suggests that profitability and growth coherently develop as profitability is an essential resource for firms' future development (D. Li et al., 2017). Moreover, firms that exhibit higher profitability and possess substantial assets can afford expensive investments allowing them to pursue differentiation strategies for a competitive advantage. Therefore, profitability was considered a suitable measure for evaluating the impact of growth strategies on financial performance.

Profitability was measured using the return on assets (ROA) due to the extensive application of the measure within the literature (Tariq et al., 2019; Ferioli et al., 2022; Jewell & Mankin, 2012). ROA is a practical measure for assessing operational efficiency, and analysts often use ROA to examine firms' financial position, performance, and prospects (Jewell & Mankin, 2012). Therefore, determining growth strategies' influence on ROA can facilitate informed decisions about optimizing asset allocation and profitability. ROA was calculated as the net income divided by total assets, using the formula in Equation 3.2.

$$\begin{aligned} \text{ROA} &= \frac{\text{Ordinary profit before tax} + \text{Financial income}}{\text{Sum equity} + \text{Sum debt}} \\ &= \frac{\text{Net income}}{\text{Total assets}} \end{aligned} \quad (3.2)$$



Profitability was measured using the firms' mean ROA, such as in the research conducted by [Hermundsdottir & Aspelund \(2022\)](#), from 2015 to 2021. The formula for mean ROA is presented in [Equation 3.3](#).

$$\text{Mean ROA} = \frac{\sum_{t=2015}^{2021} \text{ROA}_t}{7} \quad (3.3)$$

Still, one must note that academia presents various definitions of ROA. In a research conducted by [Jewell & Mankin \(2012\)](#), eleven distinct versions of ROA were identified, each with valid applications in different contexts. The definition of ROA in this thesis should not be perceived as the sole or definitive interpretation. However, the definition is consistent with the most generally accepted formula identified in [Jewell and Mankin's \(2012\)](#) comprehensive review.

### 3.3.3 Control Variables

Various factors can influence firms' financial returns. Previous research has highlighted that firm-level characteristics can affect firms' actual performance, such as firm age and size ([Omondi & Muturi, 2013](#); [Coad, 2018](#)). This analysis controlled for firm age and size to account for these potential effects and to facilitate disclosing the actual influence of growth strategies on financial performance.

#### Firm Age

Firm age can indicate a firm's strength in facing competition and surviving in its industry ([Vernetta et al., 2021](#)). There is a general expectation of enhanced performance as firms mature over time, often delivered through assets and sales increases. Research indicates that firms can improve with age due to increasing productivity levels, higher profit margins, and lower debt ratios ([Coad et al., 2013](#); [Bhayani, 2010](#)). Firm age can also affect a firm's ability to engage in international business activities and generate returns from foreign operations ([Zahra et al., 2000](#)). In addition, [Esra Karadeniz & Göçer \(2007\)](#) found that firm age is positively related to exporting capacity, which can increase sales growth. Furthermore, firm age can affect growth and innovation capabilities, and therefore performance ([Coad et al., 2016](#)). This research measured firm age as the difference between the year of establishment (retrieved from a single open-response survey item) and 2021 (the final accounting year).

## Firm Size

Firm size has been identified as a significant factor that can influence firm performance. There are two perceptions on how firm size facilitates performance through business responsiveness (Bowen, 2002). Larger firms often have access to more financial and managerial resources, enabling them to take higher risks and achieve economies of scale (Raymond et al., 2014). For example, research has demonstrated a positive correlation between firm size and performance in both domestic and international markets (Pervan et al., 2017; Moen, 2000). That said, larger firms can face challenges involving reduced flexibility, cumbersome decision-making processes and reduced ability to respond to market changes. Smaller firms with more structural flexibility can be more responsive to market changes, allowing them to exploit industry opportunities faster than their larger counterparts (Hambrick, 1995). Firm size can be measured using various indicators, such as market capitalization, total assets, and employment. This research measured firm size as the number of employees in 2015 (the year of censoring), following the example of (Eide et al., 2020).

### 3.4 DATA PREPARATION AND SAMPLE

Prior to analysis, the data was prepared for further processing, including combining the data sources, treating missing values, and dealing with disengagement.

#### 3.4.1 *Combining the Data Sources*

Combining the two data sources resulted in a sample size of 518. Financial records were found for 518 cases among the 682 completed survey responses. The remaining cases had no matching records in the data retrieved from Proff. The missing matches might be due to the firm dissolution up until 2021.

#### 3.4.2 *Missing Values*

The sample contained missing values from non-responses in 29 out of 518 cases, setting a 20% threshold for missing values over the growth strategy variables per case. Performing a listwise deletion of these cases resulted in a sample size of 489.

### 3.4.3 Disengagement

The sample was also screened for disengagement. The standard deviation within the ordinal variables was calculated and assessed for each case. Among the 489 cases, one case had a standard deviation of zero, meaning that every response value was the same. Providing the same response to all Likert scale questions was evaluated to be unreasonable and to signal disengagement. Therefore, this case was deleted, resulting in a sample size of 488.

### 3.4.4 Descriptive Statistics of the Sample

Table 3.4 provides the characteristics of the final sample. On average, the responding firms were founded around 1976, corresponding to a firm age of 45 (SD = 35.549), and had 53 employees (SD = 113.281). All of the firms in the sample are registered as NACE Group C and categorized as manufacturers. Still, they offer a mix of goods and services. 87.4% of the firms reported being mainly goods-producing, whereas 12.6% reported being mainly service-delivering. Moreover, the firms in the sample have an international presence, with about half of the firms reporting international sales.

**TABLE 3.4.** Descriptive Statistics of the Sample

Variable	Mean	Std. Dev.	Min.	Max.
Firm age	45.219	35.549	6	364
Firm size	53.371	113.281	1	1050
<b>Percentage</b>				
Firm type				
	Goods-producing	87.4%		
	Service-delivering	12.6%		
International sales		48.8%		
International suppliers		77.5%		
International production		8.8%		

## 3.5 DATA ANALYSIS

This research used correlation analysis and the multiple linear regression (MLR) method to test the research model and the hypotheses. More specifically, this research used the Pearson coefficients to analyze the correlation between the growth strategies and the MLR to analyze whether the firms' growth strategies

were significantly predictive of their financial performance. Pearson correlation and MLR assumes linear relationships between variables (Benesty et al., 2009; Uyanık & Güler, 2013). These statistical methods were suitable as this research assumed a linear relationship between growth strategies and financial performance, as illustrated in Figure 2.1. The multiple regression is presented in Equation 3.4.

$$Y = \beta_0 + \beta_a X_a + \beta_s X_s + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \epsilon \quad (3.4)$$

$Y$  denotes the financial performance variables, namely average sales growth for the sales growth regression model and mean ROA for the ROA regression model.  $\beta_0$  denotes the constant term and the  $\beta_i$ 's denote the regression coefficients. The  $X$ 's denote the control and growth variables, where  $X_a$  represents firm age,  $X_s$  represents firm size,  $X_1$  represents growth through innovation,  $X_2$  represents growth through internationalization,  $X_3$  represents growth through offering the lowest price,  $X_4$  represents growth through differentiation,  $X_5$  represents growth through customization, and  $X_6$  represents growth through promoting sustainability. The  $\epsilon$  denotes the error term or the residuals.

### 3.5.1 Outliers

The sample was screened for outliers prior to the regression analysis. Outliers increase the data variability and reduce the statistical power of the results. Thus, removing outliers can ensure nuanced insights and provide more accurate predictions. The outliers were identified in SPSS by evaluating the 5% trimmed mean, histogram, Q-Q plot, and boxplot for each dependent variable. The 5% trimmed mean trims the 5% highest and lowest values (trimming potential outliers) before the mean is calculated from the 90% remaining data points.

The sales growth variable had a 5% trimmed mean of 0.3697 and a mean of 0.4116. The deviation signified that the outliers on the tails could contribute to less accurate regression results. The histogram, Q-Q plot, and boxplot confirmed the presence of outliers, revealing two significantly deviating data points. The data points represented firms in an early business phase (both established six years prior to the survey) with extraordinarily high sales growth percentages over the subsequent seven-year period. The extreme outliers were removed from the sales growth regression analysis as they were not representative of the population.

The mean ROA variable had a 5% trimmed mean of 0.0830 and a mean of 0.0787. The slight deviation signified potential influence from the outliers

on the accuracy of the regression results. The histogram, Q-Q plot, and box-plot revealed seven extreme outliers. The cases were removed from the ROA regression analysis as they were not representative of the population.

### 3.5.2 Assumptions of Multiple Linear Regression

The MLR method has four assumptions, namely linearity, multivariate normality, homoscedasticity, and absence of multicollinearity (Uyanık & Güler, 2013). The assumptions were tested prior to performing the regression analysis to evaluate the accuracy of the regression models.

#### Linearity

The first assumption of MLR is that there is a linear relationship between the dependent variable and the independent variables. Scatterplots generated in SPSS were used to visually inspect the linear relationships. Figure A.1 in Appendix A demonstrate that assuming a linear relationship between the predictors and the dependent variables seemed reasonable.

#### Multivariate Normality

The second assumption of MLR is multivariate normality, which occurs when the residuals (error terms) have a normal distribution. Skewness, kurtosis, and data plots were used to evaluate the distribution of the dependent variables.

Skewness measures the distortion of symmetrical distribution, where a perfect normal distribution has a zero skew (J. Chen, 2023). Kurtosis measures the proportion of data that resides within the tails, where a perfect normal distribution has a kurtosis of three and an excess kurtosis of zero (Kenton, 2023). According to Garson (2012), one can assume that the response variables are normally distributed if the skewness and kurtosis are between -2 and +2. The sales growth variable had a skewness of 0.740 and a kurtosis of 1.286. The mean ROA variable had a skewness of 0.115 and a kurtosis of 1.356. The skewness and kurtosis values fell within the recommended ranges, meaning that multivariate normality could be assumed.

The data plots of the dependent variable are given in Appendix A. The histograms in Figure A.2 illustrate that the distributions resemble the bell curve of normal distributions. Moreover, the Q-Q plots (Figure A.2) and P-P plots (Figure A.2) demonstrate that there are no drastic deviations from the normality line, supporting the assumption of multivariate normality.

### **Homoscedasticity**

The third assumption of MLR is homoscedasticity, meaning that the variances of the residuals (error terms) are constant. Uneven variances can result in skewed and biased regression results. The standardized residuals were plotted against the predicted values using SPSS to assess homoscedasticity. Homoscedasticity can be assumed if the residuals are equally distributed along the axes, forming a patternless cloud (Garson, 2012). Figure A.3 in Appendix A illustrate that the residuals were evenly distributed, not drawing clear patterns. Therefore, homoscedasticity could be assumed.

### **Absence of Multicollinearity**

The fourth assumption of MLR is the absence of multicollinearity, meaning that the independent variables are not highly correlated. Collinearity among variables complicates identifying each predictor's contribution to the variance in the dependent variable. The Pearson correlation coefficients and the Variance Inflation Factor (VIF) were used to assess multicollinearity. The Pearson correlation coefficients and the VIF values are provided in Table 4.1 and Table A.2 in Appendix A.

According to Shrestha (2020), correlation coefficients lower than 0.8 indicate that collinearity is less likely to exist. Moreover, Shrestha (2020) suggested that a VIF value of one indicates no correlation, a VIF value between one and five indicates a moderate correlation, and a VIF value of five or above indicates high correlations and confirms the presence of multicollinearity. As all correlation coefficients were below 0.8 and all VIF values were below five and even close to one, one could assume that multicollinearity would not result in less reliable statistical inferences.

## **3.6 RESEARCH QUALITY**

This research aimed to generate knowledge and enhance the understanding of firms' growth strategies and their financial performance through the quantification of these concepts and analysis of them. Such advances in learning require consistent and accurate measurements and appropriate research methods. The choices made throughout the research process can cause shortcomings that jeopardize the overall quality of the empirical results. Therefore, researchers should reduce errors and address potential deficiencies to ensure quality and transparency (Podsakoff et al., 2003). Three of the most prominent considerations for research quality appraisal are reliability, validity, and replication (Bryman, 2012). These criteria served as the foundation for evaluating the quality of this research.

### 3.6.1 Reliability

Reliability concerns the consistency, stability, and repeatability of measures (Bryman, 2012). The more stable a measurement is, the less it fluctuates from one time to another. The growth strategies, firm age, and firm size were only measured at one point, meaning that it is inadequate data to capture variations and determine whether the measures are reliable or unreliable. Considering the financial data, slight variations are predicted as firms develop along with changes in their internal and external conditions. The financial reports obtained through Proff Forvalt stemmed from a reliable and credible data source, assuring that the financial measurements in this research could be relied upon.

Bryman (2012) described that reliability applies to multiple-indicator measures. However, the measures in this research consisted of single indicators. Therefore, standard internal reliability tests of multiple-indicator measures such as Cronbach's alpha were not applicable in this research. There are some efforts to estimate the reliability of single-item measures in the literature, such as (Wanous & Reichers, 1996; Wanous & Hudy, 2001; Milton et al., 2011; Postmes et al., 2013; Dolbier et al., 2005), though these are often based on the test-retest method. Test-retest assessments of the growth strategies were not feasible due to the stated one-point-in-time measurements.

That said, confirming the absence of multicollinearity among the predictors in Section 3.5.2 suggested that the responses to each of the statements Table 3.3 measured distinct concepts. Therefore, the regression model and the predicted estimates for sales and profits were far more reliable than if there were strong correlations between the predictors.

### 3.6.2 Validity

Bryman (2012) emphasized the aspect of integrity in his definition of validity. Validity refers to the extent to which the research results represent what they intend to measure. The validity concept often divides into construct validity, internal validity, and external validity.

Construct validity, or measurement validity, refers to the extent the measure assesses the concept it is supposed to capture (Bryman, 2012). Bryman (2012) emphasized that the construct validity of a measure rests on deducing hypotheses from the theory that is relevant to the concept. The hypotheses in this research were developed thoroughly and solidly grounded in growth strategy and firm performance theory. Chapter 2 attempted to scrutinize the research concepts and provided the foundation for designing proper measurements of these concepts. One aspect influencing the validity of measuring the

growth strategy concept is that the self-reported nature of the survey data is prone to response bias. The respondents participating in the survey might have answered dishonestly, perhaps due to the desire to protect a particular reputation (Furnham, 1986). For instance, there is reason to assume that the respondents expressed their preoccupation with sustainability, regardless of their actual adoption of such strategies, to align with social norms and expectations. Also, respondents could have acquiescence bias, a tendency to agree with statements (Hurd & Kapteyn, 2000), or extreme responses in the form of choosing only the 1s or the 7s throughout the survey. Still, this research reflected a profound commitment to ensure overall quality and overcome these biases, such as screening the data for disengagement and normality.

Another aspect that could influence the validity of the measures of growth strategies is that respondents might have had different interpretations of the questions. The subjective understandings of growth strategies could diverge and challenge the ability to capture the concepts through measuring the responses. For instance, respondents who perceived differentiation as a matter of innovation might have provided high scores in both respects. Moreover, some respondents could perceive promoting sustainability as simple efforts such as sharing their green vision on their websites. Others might have perceived it as something more comprehensive such as conducting carbon accounting processes or publishing thorough sustainability reports. Such cases complicate distinguishing and really capturing the different concepts of growth, which can question the validity of the growth strategy measures. However, the carefully phrased survey questions and the range of scale points facilitated capturing such nuances and ensured sufficient quality.

This research leveraged objective financial reports rather than subjective self-reported perceptions to ensure the validity of the measures capturing the financial performance concept. Systematic error variance can arise in cases where the independent and dependent variables are based on the responses from the same respondents (Podsakoff et al., 2003). Deriving the independent growth variables from self-reported responses and the dependent financial variables from objective reports mitigated such errors.

Regarding the validity of measuring the firm demographic variables, such as age and size, we performed data triangulation by cross-referencing the data sources. Specifically, we compared the self-reported open-response survey items indicating the year of establishment and the number of employees to the data obtained from Proff Forvalt to mitigate errors and improve accuracy.

External validity concerns the generalizability of the results beyond the research context (Bryman, 2012). The SISVI dataset was considered representative of the population of Norwegian manufacturers, as noted in Section 3.2.1. Moreover, researchers using the same data source (Hermundsdottir & Aspelund,



2022; Eide et al., 2020) found no significant differences between the sample and the population in terms of firm age, firm size, and industry code. Therefore sampling issues seem negligible, and the overall external validity is considered robust. Not to mention that thorough descriptions of the research objective and method facilitate research replication in the context of other industries and countries, which according to Bryman (2012), further strengthens the external validity.

Internal validity relates to the causality among variables (Bryman, 2012). Though the internal validity in cross-sectional design is often deficient as comparisons at a single point in time uncover associations rather than causal influences, longitudinal designs can disclose changes over time and thereby provide a better indication of directionality (Bryman, 2012; Hammer, 1977). Therefore, the longitudinal character of this research involving financial data spanning seven years served as a robust foundation to determine the causal relationship between growth strategies and firm performance. According to Grant (2003), strategies cannot be developed and adopted overnight but should be considered from a long-term perspective. Therefore, the longitudinal feature was crucial for disclosing the cause-effect relationships in this research.

Furthermore, by performing a multiple linear regression to explore the causal relationships between growth strategies and performance, we could quantify the extent to which the independent variables were responsible for the variation in the dependent variables. By controlling for variables such as firm age and size in the regression models, we aimed to produce accurate outcomes and prevent omitted variable bias from affecting the results. This method facilitated disclosing whether growth strategies determine financial performance or if performance is simply a result of other factors. Not to mention that the comprehensive efforts to remove outliers and test assumptions prior to the regression analysis further enhanced the accuracy of the model and, thereby, the internal validity of the results.

### 3.6.3 *Replicability*

Replicability refers to the preoccupation of reproducing research processes and the results (Bryman, 2012). We dedicated significant efforts to thoroughly explain the research methods in this thesis to facilitate the replication of the procedures and the empirical results. This research spelled out the data collection procedures, including the sample selection and the methods for obtaining survey data and financial reports. Furthermore, this research carefully reasoned for the selection of variables and explained the design of concept measurements. Not least, this research demonstrated transparency in terms of data prepara-

tion and provided a comprehensive description of the data analysis process. Altogether, the clear and well-reasoned method suggests that future replication is feasible, ultimately enhancing the quality of this research.

### 3.7 METHODOLOGICAL LIMITATIONS

As argued in the section above, the concept measurements and data analysis were deemed sufficiently reliable, valid, and replicable. This chapter aimed to describe the methods thoroughly and provide reasons for the methodological choices. Still, one cannot neglect the presence of methodological limitations.

One limitation concerns the treatment of missing values. Even though we considered listwise deletion suitable to transform and complete the dataset efficiently, it also resulted in some data loss. The data loss further reduced the sample size and the statistical power. To avoid the shortcomings of deletion methods, imputation methods that complete the dataset without discarding much information could be used (Vinzi et al., 2010). However, it is crucial to carefully consider potential bias in such procedures as imputation involves generating values for missing data. Graham (2009) claimed that if the loss of cases due to missing data is low, such as less than about five percent, biases and loss of statistical power are often insignificant. In this research, deleting cases with missing values resulted in removing 29 out of 518 cases. This share corresponds to 5.6%, and the loss of statistical power is therefore considered rather negligible.

Another limitation regards the trade-off between the potential consequences of removing outliers and the potential consequences of not meeting the assumptions of multiple linear regression (MLR). Outliers can distort the results and reduce statistical power, as explained in Section 3.5.1. On the other hand, removing outliers is a form of data manipulation that reduces the sample size and can compromise statistical power. That said, including the outliers in the data would violate the assumption of multivariate normality and jeopardize the validity of regression analysis and the accuracy of the results. Removing extreme outliers included filtering out two cases for the sales growth analysis and seven cases for the profit analysis, corresponding to a negligible sample size reduction of 0.4% and 1.4%. There is an absence of clear guidelines to deal with this trade-off. All things considered, we still filtered out extreme outliers to ensure valid and accurate research results.

The issues of response bias and different perceptions of growth were inevitable due to the self-reported survey data. However, to mitigate these limitations and further strengthen the validity of the growth strategy measures, one could have investigated the actual adoption of growth strategies through

additional methods. [Bryman \(2012\)](#) suggested methods such as developing additional questionnaires or performing structured observation schedules. For instance, one could distribute a questionnaire to measure the specific initiatives undertaken to seek growth and the time spent on such initiatives. Similarly, one could schedule interviews, monitor websites, and gather information from news articles to disclose the degree to which the firms adopt different growth strategies. However, we considered such efforts too comprehensive for the thesis' time frame and scope. Therefore, additional measurements are considered a matter for future research.

The measurements of growth strategies are also limited by their cross-sectional nature. The one-point-in-time measurements could potentially hinder the disclosure of the actual causal effect of strategies on performance. The data in this research only allowed for longitudinal performance assessment. However, more rigorous tests would also require longitudinal measurements of the growth strategies and control variables. Longitudinal measurements of all variables could enable us to capture the changes in strategies and financial performance as the firms' age and size change. Therefore, such advances could provide a more robust ground for disclosing the actual direction of the strategy-performance relationship.

Moreover, there are potential limitations related to measuring the financial performance concept. [Gupta et al. \(2013\)](#) pointed out that there is significant variance in the approaches used for assessing growth. Although sales and profits are accepted growth indicators, other measures could also capture the concept. Even though measures such as cost margin and CAGR were considered, these did not meet the assumptions of multivariate normality and were therefore discarded. Therefore, testing for other performance measures is suggested in further efforts.

Lastly, this research carried the potential limitation of omitted variable bias. Such bias occurs when important variables are not included in the regression model, leading to inaccurate estimates of the relationships between variables ([King et al., 2000](#)). Although this research accounted for influential factors such as firm age and size, other determinants of performance could also be controlled for, such as industry code, assets, or managerial capabilities. Conducting a thorough literature review could facilitate identifying the most prominent variables.

## CHAPTER 4

### Results

This chapter presents the results from the data analysis, with emphasis on the correlations between the growth strategies and the performed MLRs uncovering the influence of these strategies on financial performance.

#### 4.1 CORRELATION ANALYSIS

The results of the correlation analysis are presented in Table 4.1. The table provides the mean, standard deviation, and Pearson correlation coefficients among the variables. The mean measures the average across the observations, the standard deviation measures the spread of the observations, and the correlation coefficients measure the strength of the linear relationships among the variables.

**TABLE 4.1.** Correlation Analysis

	Mean	S.D.	Firm Age	Firm Size	19.1	19.2	19.3	19.4	19.5
<b>Firm Age</b>	45.22	35.55							
<b>Firm Size</b>	53.37	113.28	.135**						
<b>19.1</b>	4.91	1.789	.014	.067					
<b>19.2</b>	3.21	2.131	.103*	.160**	.430**				
<b>19.3</b>	3.02	1.649	-.018	-.013	-.026	.004			
<b>19.4</b>	5.26	1.484	-.077	.009	.477**	.211**	-.169**		
<b>19.5</b>	5.42	1.497	.016	-.014	.264**	.124**	.031	.369**	
<b>19.6</b>	3.95	1.645	-.007	.127**	.232**	.137**	.098**	.224**	.161**

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

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

### 4.1.1 Firm Demographics and Growth Strategies

The results demonstrated that firm age had a slight positive correlation with firm size ( $r = 0.135$ ,  $p < 0.01$ ), indicating that firm size increases with age. The idea that the longer the firms have operated, the larger their sizes seem generally accepted, as growth takes time. Moreover, the results show that firm age and firm size have slight positive correlations with internationalization (19.2), meaning that as firms increase in age and size, the more they adopt growth through internationalization. Finally, there is a slight positive correlation between firm size and promoting sustainability (19.6), indicating that as the firm size increases, more emphasis is put on the transparency of their environmental and social efforts.

### 4.1.2 Prominent Growth Strategies

The mean values allowed for identifying the most prominent growth strategies among the firms in the sample. High mean values indicate that the strategies are adopted to a great extent, whereas low mean values indicate that the strategies are adopted to a low extent.

Table 4.1 shows that customization (19.5), differentiation (19.4), and innovation and development (19.1) had the highest mean values, of 5.42, 5.26, and 4.91 respectively. On a seven-point Likert scale, these values correspond to the above-average adoption of these growth strategies. Thus, customization, differentiation, and innovation and development stood out as prominent growth strategies among Norwegian manufacturing firms. Moreover, promoting sustainability (19.6) had a mean value of 3.95, corresponding to an average adoption. This result suggests that promoting sustainability is a common practice among firms but not their principal target for growth. Internationalization (19.2) and lowest price (19.3) had the lowest mean values, of 3.21 and 3.02 respectively. These values correspond to a rather low adoption of these strategies among firms pursuing growth. Regarding the below-average adoption of internationalization (19.2), it must be noted that only half of the firms reported international sales and that less than ten percent reported international production (see Table 3.4), which could explain the low adoption rate of internationalization in the context of the sample.

Considering that four of the strategies were adopted to an average or above-average extent, the firms seemed to adopt several strategies to a considerable degree simultaneously. This finding indicated that firms often had more than one target strategy, contradicting the hypothesis that firms tend to emphasize specific targets rather than adopting a broad range of strategies in their pursuit

of growth (H1). Therefore, H1 is not supported. Supposing that the majority of the growth strategies were adopted to a low extent, the tendency would be little commitment to the different growth modes.

### 4.1.3 Correlations Between Growth Strategies

The Pearson correlation coefficients allowed for identifying the correlations among the growth strategies. The correlations provided insights into which strategies often occur together, revealing the most prominent growth strategy combinations.

Table 4.1 demonstrated that the most notable relationships appeared between innovation (19.1) and differentiation (19.4) and between innovation and internationalization (19.2). Innovation and development had a moderate and positive correlation with differentiation ( $r = 0.477$ ,  $p < 0.01$ ) and with internationalization ( $r = 0.430$ ,  $p < 0.01$ ). This finding signified that a higher emphasis on innovation and development yielded a higher emphasis on differentiation and internationalization, or vice versa. Thus, we found empirical support for the hypothesis that innovation and development positively correlate with internationalization (H2a) and differentiation (H2b). Moreover, considering the positive correlation between innovation and development and differentiation and the strategies' high adoption rates, it seemed that the firms often emphasized these strategies simultaneously. Thus, innovation and development and differentiation constitute a common combination among Norwegian manufacturers.

Following, differentiation (19.4) and customization (19.5) had a positive correlation ( $r = 0.369$ ,  $p < 0.01$ ), supporting the hypothesized relationship between the strategies (H6a). The high adoption rates of these strategies and their positive correlation indicate that the firms often pursued a combination of differentiation and customization to achieve growth.

The lowest and most negative correlation coefficients related to offering the lowest price (19.3). The close-to-zero coefficient values indicated negligible relationships between the lowest price and the other strategies. That said, the analysis revealed a significant negative but weak correlation between offering the lowest price (19.3) and differentiation (19.4) ( $r = -0.169$ ,  $p < 0.01$ ). This negative correlation signified that firms emphasizing offering the lowest price often neglected differentiation, and vice versa. Thus, the hypothesis that these strategies correlate negatively (H5a) is supported.

Lastly, promoting sustainability (19.6) had significant positive but weak correlations with the other strategies. Considering the average adoption of this strategy and the weak correlations, promoting sustainability seemed to be

part of most firms' growth strategies but not their primary target. Promoting sustainability instead appeared to be an additional growth factor and a generic strategy. Thus, the hypothesis that promoting sustainability is embedded in firms' growth strategies (H7a) is supported.

#### 4.1.4 *Top-Performing Firms*

Uncovering the most prominent strategies and combinations among the firms sparked interest in investigating potential patterns strategies firms adopt and their financial performance. Therefore the top-performing firms were compared to the entire sample in terms of the degree the firms adopted the different strategies. The top-performing firms denote the top ten percent firms in terms of average percentage sales and ROA. [Appendix B](#) provides the full comparison analysis. The aim was to disclose differences in the strategic patterns among the best performers and the entire sample. However, we did not find significant differences when comparing the groups' distributions of adopted strategies. This result was consistent when comparing the top ten percent in terms of both sales and ROA to the entire sample. Therefore, Norwegian manufacturing firms seemed to adopt the same strategies and combinations regardless of their performance level. No evident trends indicated that particular strategies or combinations provide superior growth conditions. This finding suggests that other variables influenced the manufacturers' performance.

## 4.2 REGRESSION RESULTS

This section provides the results from the linear regression analysis. The predictors for each regression model are the same, namely the two control variables and the six growth variables. The dependent variable for each model corresponds to each of the financial performance variables (sales growth and mean ROA).

### 4.2.1 *Model Summary*

[Table 4.2](#) and [Table 4.3](#) display the correlation coefficients (R), the coefficients of determination (R square), the model accuracy's (adjusted R square), and the standard error of the estimate for the performed multiple regressions.

**TABLE 4.2.** Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.080 <sup>a</sup>	0.006	0.002	0.61615
2	0.151 <sup>b</sup>	0.023	0.006	0.61499

a Predictors: (Constant), Firm age, Firm size

b Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4, 19.5, 19.6

c Dependent variable: Sales growth

The sales growth model represents the regression model estimating the relationship between the predictors and the sales growth variable. The correlation coefficient (R) was 0.151, indicating a slight positive association between the predictors and average sales growth. Moreover, the coefficient of determination (R Square) was 0.023, meaning that the growth strategies (and firm age and size) explained 2.3% of the variance in sales growth. Other factors explained the remaining variance. The adjusted R square is similar to the R square but adjusted for the number of predictors and their degree of improving the model (The Investopedia Team, 2022). The adjusted R square was 0.006, indicating that the predictors explained 0.6% of the variance in sales growth. Altogether, the coefficient values were low or near zero, meaning that the growth strategies, firm age, and firm size did not predict sales growth very well.

**TABLE 4.3.** Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.037 <sup>a</sup>	0.001	-0.003	0.09964
2	0.151 <sup>b</sup>	0.023	0.006	0.09921

a Predictors: (Constant), Firm age, Firm size

b Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4, 19.5, 19.6

c Dependent variable: Mean ROA

The ROA model represents the regression model estimating the relationship between the predictors and the mean ROA variable. Similar to the sales growth model, the ROA model had a correlation coefficient (R) of 0.151, a coefficient of determination (R Square) of 0.023, and an adjusted R square of 0.006. Thus, the ROA model confirmed a slight association between the predictors and mean ROA, and also demonstrated that the predictors explained a low degree



of the variance in mean ROA. Altogether, the coefficient values indicated that the growth strategies, firm age, and firm size were poor predictors for ROA.

#### 4.2.2 ANOVA

The Analysis of Variance (ANOVA) results determined whether the regression models were significant enough to predict the financial measures. The results are presented in Table 4.4 and Table 4.5.

The p-values were 0.216 for the sales growth model and 0.219 for the ROA model when all predictors were accounted for. Neither of the p-values was smaller than the significance level ( $p = 0.05$ ), meaning that the group of predictors did not show a statistically significant relationship with sales growth nor mean ROA. Thus, one cannot conclude that the growth strategies and the control variables reliably predicted financial performance.

Note that the ANOVA significance tests assessed the relationship between the *group of predictors* and each dependent variable and did not address an individual variable's ability to predict the financial measures. The individual prediction ability is addressed in the subsequent coefficient tables.

**TABLE 4.4.** ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.147	2	0.574	1.511	0.222 <sup>b</sup>
	Residual	178.434	470	0.380		
	Total	179.581	472			
2	Regression	4.090	8	0.511	1.352	0.216 <sup>c</sup>
	Residual	175.491	464	0.378		
	Total	179.581	472			

<sup>a</sup> Dependent Variable: Sales growth

<sup>b</sup> Predictors: (Constant), Firm age, Firm size

<sup>c</sup> Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4, 19.5, 19.6

**TABLE 4.5.** ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.006	2	0.003	0.325	0.723 <sup>b</sup>
	Residual	4.667	470	0.010		
	Total	4.673	472			
2	Regression	0.106	8	0.013	1.345	0.219 <sup>c</sup>
	Residual	4.567	464	0.010		
	Total	4.673	472			

<sup>a</sup> Dependent Variable: Mean ROA

<sup>b</sup> Predictors: (Constant), Firm age, Firm size

<sup>c</sup> Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4, 19.5, 19.6

### 4.2.3 Regression Coefficients

The coefficient tables in [Table 4.6](#) and [Table 4.7](#) provide an overview of the relationship between the individual predictors and the dependent variables. The p-values determine the significance of the predictor variables. The B-values denote the magnitude of the predictors' impact on the financial performance measures.

Innovation and development and promoting sustainability had positive regression coefficients for both sales and profitability, consistent with the presumed positive influences of these strategies on financial performance. On the other hand, differentiation and customization had negative regression coefficients for both models, contradicting the hypothesized positive relationships. Regarding internationalization and offering the lowest price, these strategies yielded positive coefficients for the sales growth model and negative coefficients for the ROA model, consistent with the assumed positive effect on sales but inconsistent with the presumed positive influence on profits.

Still, none of the coefficients had p-values below the level of significance ( $p = 0.05$ ). Thus, although some regression coefficients yielded predicted positive or negative effects, neither of them were statistically significant. The absence of significant relationships between the strategies and financial measures indicate that there is no empirical evidence to support any of the presumed influences of growth strategies on financial performance (H2c, H3, H4, H5b, H6b, H7b).

The only significant coefficients were the constants in the sales growth model ( $p = 0.002$ ) and the ROA model ( $p < 0.001$ ), with B-values of 0.463 and

0.131, respectively. The positive and significant coefficients indicate that the sales growth is 46.3% and the mean ROA is 13.1% when all other variables are zero. However, the y-intercepts did not help disclose the effect of growth strategies on performance and therefore did not add value to our analysis.

**TABLE 4.6.** Coefficients<sup>a</sup>

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.451	0.047		11.484	<0.001
	Firm age	-0.001	0.001	-0.067	-1.445	0.149
	Firm size	0.000	0.000	-0.035	-0.765	0.445
2	(Constant)	0.463	0.151		3.066	0.002
	Firm age	-0.001	0.001	-0.074	-1.581	0.115
	Firm size	0.000	0.000	-0.050	-1.058	0.290
	19.1	0.002	0.020	0.006	0.106	0.915
	19.2	0.025	0.015	0.085	1.655	0.099
	19.3	0.027	0.018	0.073	1.542	0.124
	19.4	-0.010	0.023	-0.025	-0.442	0.659
	19.5	-0.025	0.021	-0.061	-1.217	0.224
	19.6	0.004	0.018	0.011	0.224	0.823

<sup>a</sup> Dependent Variable: Sales growth

**TABLE 4.7.** Coefficients<sup>a</sup>

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.087	0.008		11.484	<0.001
	Firm age	-6.961E-5	0.000	-0.025	-0.573	0.592
	Firm size	2.692E-5	0.000	0.031	0.668	0.504
2	(Constant)	0.131	0.024		5.379	<0.001
	Firm age	-6.136E-5	0.000	-0.022	-0.470	0.639
	Firm size	2.882E-5	0.000	0.033	0.704	0.482
	19.1	0.006	0.003	0.100	1.755	0.080
	19.2	-0.003	0.002	-0.063	-1.228	0.220
	19.3	-0.004	0.003	-0.072	-1.522	0.129
	19.4	-0.003	0.004	-0.039	-0.687	0.492
	19.5	-0.006	0.003	-0.095	-1.899	0.058
	19.6	0.000	0.003	-0.007	-0.152	0.879

<sup>a</sup> Dependent Variable: Mean ROA

### 4.3 PRE-PANDEMIC ANALYSIS

The insignificant impact on financial performance prompted an urge to explore whether the economic slowdowns following the COVID-19 pandemic affected these outcomes. Therefore, we regenerated the sales growth and profit measures using financial records from 2015 to 2019. However, the analyses demonstrated negligible differences between the pre and peri-COVID-19 era. The correlation coefficient and the proportion of variance explained by the predictors were somewhat better for the ROA model but slightly poorer for the sales growth model. Neither of the regression models was statistically significant. Most strategies did not affect financial performance significantly except for innovation and development. This strategy demonstrated a slight positive ( $B = 0.007$ ) and significant ( $p = 0.032$ ) influence on profitability. However, as the effect of innovation and development on sales growth was non-significant, the result could only partially support the presumed positive influence on performance (H2c). The results of the pre-pandemic analysis are provided in [Appendix C](#). Overall the pre-pandemic analysis did not provide sufficient empirical evidence to support the hypotheses.

### 4.4 EXPLORING THE EFFECT OF COMBINED GROWTH STRATEGIES

The absence of significant relationships between the individual growth strategies and the financial measures also sparked interest in testing whether the combinations of various growth strategies (derived from the correlation results) had a significant influence on firm performance. The combination variables were constructed using the mean of the growth strategy variables they comprised. The combination variables subject to testing were: innovation and development (19.1) and differentiation (19.4); innovation and development (19.1) and internationalization (19.2); differentiation (19.4) and customization (19.5). The results of the combination effects are provided in [Appendix D](#).

The results demonstrated overall poorer values for the correlation coefficients and the proportion of variance explained by the predictors, meaning that combination variables did not improve the models' predictive abilities. Moreover, none of the combinations had a significant influence on sales growth. Regarding profitability, the combination of differentiation and customization yielded a statistically significant effect ( $p = 0.030$ ). However, this effect was negative ( $B = -0.009$ ), despite the presumed positive effects of differentiation and customization. Altogether, the combination of growth strategies did not provide empirical evidence to support any of the hypotheses nor improve the explanation of financial outcomes beyond what the individual strategies already accounted for.

## 4.5 SUMMARY OF HYPOTHESES

The results provided empirical ground for testing the twelve hypotheses. Table 4.8 and Table 4.9 demonstrate that the results supported five hypotheses but could not support the remaining seven.

**TABLE 4.8.** Summary of Hypotheses Testing: Correlation Results

No.	Hypothesis	r	Validation
H1	Firms tend to emphasize specific strategic targets in their pursuit of growth, instead of adopting a broad range of strategies.		Not supported
H2a	Growth through innovation positively correlates with growth through internationalization	.430**	Supported
H2b	Growth through innovation positively correlates with differentiation.	.477**	Supported
H5a	Growth through differentiation negatively correlates with growth through offering the lowest price.	-.169**	Supported
H6a	Growth through customization positively correlates with growth through differentiation.	.369**	Supported
H7a	Promoting sustainability is embedded in corporate operations and the growth strategies firms adopt.		Supported

Note: Hypotheses were tested using Pearson correlation coefficients (r).

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

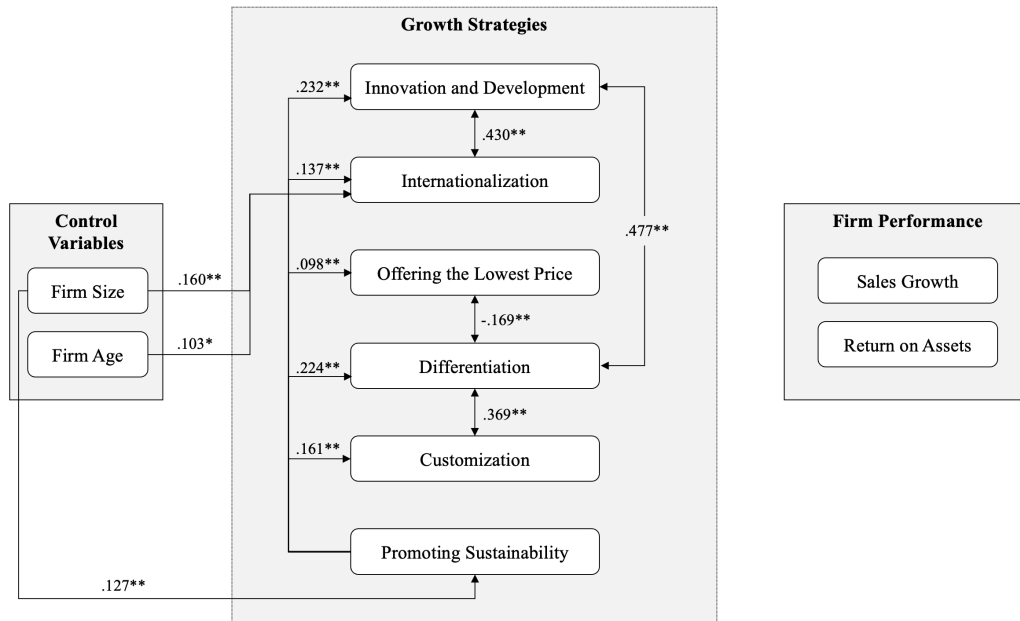
**TABLE 4.9.** Summary of Hypotheses Testing: Regression Results

No.	Hypothesis	B	Sig.	Validation
H2c	Innovation → Financial performance	.002/ .006	.915/ .080	Not supported
H3	Internationalization → Financial performance	.025/ -.003	.099/ .220	Not supported
H4	Lowest price → Financial performance	.027/ -.004	.124/ .129	Not supported
H5b	Differentiation → Financial performance	.010 / -.003	.659/ .492	Not supported
H6b	Customization → Financial performance	.025/ -.006	.224/ .058	Not supported
H7b	Sustainability → Financial performance	.004/ .000	.823/ .879	Not supported

Note: Hypotheses were tested using multiple linear regression (MLR) analysis.

The regression coefficient (B) and the significance value (Sig.) are presented on the form sales/profits.

Figure 4.1 presents the results from the research model as obtained from Table 4.8 and Table 4.9. The significant paths and coefficients are marked up and represent the supported hypotheses. The unsupported hypotheses (due to the non-significant paths) are excluded from the model.



**FIGURE 4.1.** Research Model With Statistically Significant Correlation Coefficients

## CHAPTER 5

### *Discussion*

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This thesis has scrutinized some common perceptions about growth strategies and their influence on financial performance. First, contrary to our belief, firms often adopt several growth strategies rather than choosing one strategic focus. Second, certain strategies appear particularly intuitive to combine, such as customization and differentiation or innovation and differentiation, including promoting sustainability that seems compatible with all other growth strategies. Third, the research has disclosed that growth strategies are poor predictors of firm performance in terms of changes in sales and profits.

The surprising and ambiguous nature of the results urged us to provide the rationale for their existence to further accumulate knowledge on growth strategies and their influence on performance. The following chapter synthesizes the principal discoveries, compares them to prior research, and discusses their theoretical, managerial, and policy implications. Then, the chapter reflects on the research limitations and presents suggestions for further research.

#### **5.1 THEORETICAL IMPLICATIONS**

Several scholars have investigated the growth strategies adopted by firms and attempted to disclose their relationships to performance. This research has undertaken an in-depth exploration of these topics, specifically focusing on the role of growth strategies in predicting financial performance in Norwegian manufacturing firms. Therefore, the research contributes to an enhanced academic understanding of growth strategies among firms operating in small, open, and developed economies.

The subsequent discussion explores the most prominent growth strategies and their correlations. Moreover, the relationships between growth strategies and financial performance are scrutinized, including a consideration of the mediating role of other growth determinants and an overall discussion of whether planning for performance is feasible.

### 5.1.1 *Prominent Strategies and Correlations*

From the fundamental pillars of Porter's generic strategies, this research extended the concept of growth strategies to also comprise growth through innovation and development, internationalization, and promoting sustainability. Based on Porter's argument that firms should commit to one strategic target, this research hypothesized that firms tend to emphasize specific strategic targets when pursuing growth. Considering academic research on Porter's generic strategies and other prominent strategies for growth, this research further deduced some presumed relationships among these strategies.

#### **Several Strategies for Growth**

Contrary to our belief, the results suggested that firms often adopt a combination of growth strategies, indicating that firms tend to prioritize multiple growth strategies simultaneously. Notably, the tendencies were the same regardless of considering the top ten percent performing or the overall sample, suggesting that adopting several strategies is common practice across all firms.

The tendencies among Norwegian manufacturers of combining strategies seem to deviate from Porter's (1980) recommendation that firms should commit to one primary target. Porter even implied that firms, in most cases, can not pursue a combination of strategies to achieve success. Although our research did not find empirical evidence to confirm or contradict this position, previous efforts point to the benefits of combining strategies. For instance, [Dess et al. \(1997\)](#) highlighted the benefits of a diversified growth strategy and suggested that firms pursuing multiple strategies are more prone to achieve superior financial performance. Moreover, strategy combinations can provide greater flexibility and resilience as firms face changing market conditions and technological disruptions. Adopting a portfolio of strategies has also proven essential for achieving growth and competitive advantage ([Allen & Helms, 2006](#); [Teece, 2010](#)). Considering the academic evidence of synergies and dynamic market agility, our theoretical argument is that it seems reasonable that firms pursue multiple targets through combinations of strategies.

That said, our research demonstrated that firms often adopt strategies that one could argue to be complementary or mutually reinforcing. For example, firms pursuing growth through combining innovation development and differentiation seems reasonable as innovation can be understood as an implicit part of differentiating products and services ([Semuel et al., 2017](#); [Allen & Helms, 2006](#); [Gallouj, 2002](#)). Similarly, Porter's (1997) notion that customization is a variant of differentiation can explain the tendency to adopt these strategies simultaneously. This reasoning supports the idea that some strategies appear



complementary and have coinciding targets. Therefore, although firms tended to prioritize more than one target and adopt a broad range of strategies, their growth ambitions *could* be perceived as focused in some cases.

The correlations indicating strategic compatibility could also be related to the measurement of growth strategies. [Section 3.6](#) reflected that respondents could perceive strategies to be similar, leading them to assign high scores in several respects. For instance, respondents that understand differentiation as a form of innovation, or are unable to distinguish differentiation from customization, might provide the same response to these strategies. These situations could lead to higher correlations regardless of the strategic actions the firms actually undertake.

Furthermore, this research renders evidence that firms seldom combine offering the lowest price with other strategies, particularly differentiation. One reason for this trend is that price leaders often need to focus their resources on cutting costs instead of pursuing different strategies. [Chandler \(1990\)](#) supported this idea and explained that such firms might concentrate their resources on maintaining their price leadership position. This reason also applies to the incompatible nature of offering the lowest price and differentiation. [Chapter 2](#) referred to [Porter \(1980\)](#) and clarified that differentiation and cost leadership is seldom compatible due to their different resource commitments. Moreover, the chapter reasoned that offering the lowest price relates to cost leadership as low costs allow the firm to charge lower prices and sustain profits. Therefore, our results add to the debate about the compatibility of a cost leadership strategy and a differentiation strategy and support the notion that offering low prices (through low costs) and differentiation are often not synergistic.

### **Prominent and Less Adopted Strategies**

This research renders empirical evidence that differentiation and customization are common strategies among Norwegian manufacturing firms. The prominence of these strategies seems plausible, considering the robust capital and human capabilities that define Norwegian businesses. The results from a SINTEF research conducted in 100 Norwegian firms demonstrate that mass customization is relevant in Norway ([SINTEF, 2013](#)). Senior researcher Lars Skjelstad at SINTEF emphasized that mass customization success relies on adjustable and robust equipment and machines and, more important, employees that can adapt the production facilities in an efficient manner ([SINTEF, 2013](#)). The researcher explained that the Norwegian labor force enables mass customization success because the firms are founded on involving the employees and delegating responsibilities resulting in autonomous employees that take proper actions to ensure customer satisfaction. Not to mention that the firms

often have negligible communication barriers across hierarchical levels and high competence among employees (SINTEF, 2013).

The trend to provide differentiated offerings and specialize in niche segments could also be attributed to the dominance of small and medium-sized firms in the Norwegian business landscape. Small firms often hold minimal resource reserves and might be less prompt for head-to-head competition at scale compared to their larger counterparts (Covin & Covin, 1990). Moen & Rialp (2019) claimed that targeted niches represent a relevant source of opportunities for small firms, as high-quality offerings adapted to the customer needs can stimulate client loyalty. Considering Norwegian firms' small size and high competence, differentiation and niche-focus strategies seem more suitable for creating sustained competitive advantage.

Furthermore, this research supports academia that offering the lowest price is seldom a strategic focus among Norwegian manufacturers. One reason for this trend is rooted in Porter's (1985) assertion that only one firm in an industry can truly achieve cost leadership, and still sustain a profitable position as the firm lowers its prices. The low adoption of offering the lowest price could also be attributed to the high-cost conditions shaping the domestic business landscape. Norwegian manufacturing is high-cost (Lund & Steen, 2020; Wadhwa, 2012; Klette & Førre, 1998), stemming from high labor and production costs. Therefore, Norwegian manufacturing firms might be unable to compete on price alone. These firms could find more viable strategic opportunities through strategies such as differentiation and innovation, compared to cutting costs for long-term competitiveness. This idea finds support in research suggesting that firms focusing solely on price might be at a disadvantage compared to firms offering higher quality offerings or concentrating strategies, such as differentiation (Porter & Kramer, 2011; D. Banker et al., 2014).

Next, the empirical results revealed that older and larger firms adopt growth through internationalization to a greater extent and display greater transparency in their sustainability efforts. These tendencies are consistent with previous studies, arguing that larger firms have greater access to resources and capabilities necessary for successful international expansion (Zucchella et al., 2007). Similarly, older firms often have larger networks, accumulated resources and experiences, and more established reputations, all of which can facilitate internationalization (Johanson & Vahlne, 2009). Furthermore, transparency in sustainability reporting has received greater importance for firms as stakeholders demand greater accountability and responsibility in corporate behavior (Khan & Serafeim, 2016). Larger firms might also have a greater capacity to invest in sustainability initiatives and meet reporting requirements, leading to greater transparency in their sustainability efforts (Drempetic et al., 2019; Dienes et al., 2016). Therefore, our theoretical argument is that the nature of

old and large firms makes them better equipped for internationalization and sustainability endeavors compared to their smaller and younger counterparts. Small and young firms might find alternative strategies and sustainability initiatives aligning with their available resources and capabilities more appropriate and beneficial.

### **Sustainability as a Hygiene Factor**

The research found that promoting sustainability was often adopted but seldom the primary target to achieve growth. Although the trend testifies to the increasing importance of sustainability in the business environment, it also reveals the lesser role of promoting sustainability compared to other growth strategies. The results lead us to argue that sustainability may be considered a hygiene factor or a precondition to fulfilling stakeholder requirements to sustain the business. This research contributes to the theory by demonstrating that promoting sustainability correlates positively with other growth strategies and can be perceived as a necessity for firms to grow in the marketplace.

Previous research also supports the notion that promoting sustainability efforts is often seen as a required condition rather than a direct source of competitive advantage (Elkington, 1998). For instance, Banerjee (2001) argued that corporate environmentalism is a fundamental requirement for firms to maintain legitimacy and meet stakeholder expectations. Christmann (2000) also indicated that managers primarily considered sustainability strategies as financial burdens. Furthermore, Porter & van der Linde (1995) disclosed that environmental regulations and pressures are becoming increasingly important for firms to meet minimum stakeholder expectations but may not necessarily lead to a direct competitive advantage. Not to mention that research has suggested that manufacturing firms operating in environmentally conscious societies can perceive sustainability as something the firm must possess for its customers to consider its offerings more than a factor for a competitive edge (Shahbazpour & Seidel, 2006).

On the other hand, Porter & Kramer (2011) argued that sustainability could create shared value by addressing social and environmental challenges and creating economic value for firms simultaneously. Ferioli et al. (2022), Kahupi et al. (2021) and D'Amato et al. (2020) supported this idea and claimed that promoting sustainability efforts can improve product differentiation, enhance a firm's reputation and legitimacy, and provide a competitive advantage. The benefits of these efforts could explain why promoting sustainability correlated positively with the other strategies.

Further, promoting sustainability does not necessarily come at the expense of other growth strategies and can sometimes enhance them. In a sense, promot-

ing sustainability seems to be an easy and beneficial add-on for firms' overall growth strategies. According to [Laszlo & Zhexembayeva \(2011\)](#), there is an argument that incorporating sustainability practices can enable companies to stand out in the market and cultivate a positive reputation. A good corporate reputation can again create favorable conditions for success in a highly competitive market. Moreover, aligning corporate objectives with consumer values and preferences for eco-friendly and socially conscious offerings enables companies to bolster customer loyalty and trust. Embracing sustainability can also foster innovation and unlock novel avenues for business growth, reinforcing strategies focusing on product advancements and market expansion. By investing in research and development for sustainable products and services, firms can tap into new markets and create new revenue streams ([Hart & Milstein, 2003](#)). Therefore, promoting sustainability seems compatible with several growth modes, which can explain its positive correlations with the other strategies. Scholars have also discovered positive correlations between sustainability efforts and firm performance ([Jagani, 2023](#); [Hermundsdottir & Aspelund, 2022](#)). These findings reinforce the feasibility of pursuing sustainability without jeopardizing other targets.

However, one must consider these results in the context of the data, which consists of survey responses from 2015. Traditionally, firms have sought economic growth without considering their impact on climate and social conditions too much, leading to the depletion of natural resources and negative environmental consequences ([Park, 2015](#)). Today, however, sustainability is a central aspect of corporate strategy and the requirements of stakeholders ([Hristov et al., 2021](#); [Lopes de Sousa Jabbour et al., 2020](#)). Upcoming regulations, the European Green Deal, dynamic market conditions, and a growing understanding of the finite limits of the planet's resources ([European Commission, n.d.](#); [Geissdoerfer et al., 2017](#); [Jensen et al., 2018](#)) are shaping the business environment. The result is that firms are encouraged to create a competitive advantage of the increased emphasis on environmental and social conditions, thereby transforming sustainability into a motivation factor for superior business and financial growth. Firms increasingly embrace the idea that sustainability can drive growth and innovation while mitigating risks associated with climate change and other environmental challenges, and [Lartey et al. \(2019\)](#) found that a lean-green strategy is positively related to firm growth. Not to mention that the growing understanding of resource scarcity has led to a paradigm shift towards more sustainable models of growth that prioritize environmental concerns alongside economic prosperity ([Apostu et al., 2023](#); [Geissdoerfer et al., 2017](#)). Considering the increasing emphasis today, sustainability might be a more integral component of firms' growth strategies today compared to 2015.

### 5.1.2 Growth Strategies and Financial Performance

Based on the Penrosian notion that firms should leverage strategic plans to realize their growth potential and the underlying academic assumption of a linear relationship between growth strategies and performance, this research did assume to uncover the most promising growth strategies for long-term financial performance. Therefore, the deficient causal effect of growth strategies on performance might be the most intriguing and surprising result of our research, bringing several contributions to the academic field of firm growth.

#### Poor Predictors of Financial Performance

This research renders academic support that growth strategies are poor predictors of financial performance. Despite the hypothesized relationships, the research did not disclose any significant effects of the strategies on sales and profitability. The empirical results were surprising as evidence in research points towards a significant positive influence. For example, [Kyläheiko et al. \(2011\)](#) assessed growth through innovation and internationalization on a comparable sample of 300 Finnish firms. Using similar measures of actual sales growth and profitability over five years, the researchers confirmed the effect of growth strategies on financial performance. Moreover, similar studies conducted in European countries have confirmed significant effects of growth strategies on performance, such as the studies of [Hojnik et al. \(2018\)](#) and [Ferioli et al. \(2022\)](#). Despite some differences in sample size, research methods, and measures, these studies support the notion that growth through internationalization and promoting sustainability directly influence firms' financial situations.

Still, our results are consistent with numerous empirical efforts struggling to find the determinants of growth. [Coad \(2018\)](#) claimed that there is a long tradition in research to perceive firm growth as random and hence hard to predict. [Geroski et al. \(1997\)](#) examined the annual growth rates of 271 UK firms over six years and found that the variance was unsystematic and unpredictable. Moreover, [Gibrat \(1931\)](#) stated that the proportional growth rate of a firm is independent of its size (known as the *Law of Proportionate Effect* or *Gibrat's law*), which predicts that firm growth is a random process. [Coad \(2009, 2018\)](#) even revealed that the explanatory power of predictors in growth regressions is usually below ten percent and often lower than five percent. These values conform with the empirical statistics of this thesis, as the predictors explained just above two percent of the variance in sales growth and profitability (although these models were not statistically significant). Therefore, our theoretical argument is that our evidence demonstrating that growth strategies are unreliable

predictors of actual growth seems reasonable.

One reason for the divergence between our empirical results and scholars disclosing a significant relationship can be rooted in the measurements. This research measured the growth strategies based on the respondents' perceived adoption of these strategies and financial performance in terms of sales and profits. Even though [Section 3.6](#) provided a discussion of the reliability and validity of these measures and reasoned for their sufficient quality, one cannot rule out that other measures might uncover different results. For instance, [Kyläheiko et al. \(2011\)](#) measured innovation as the percentage of sales from new products and internationalization as the percentage of foreign sales to total sales and disclosed the significant effects of these strategies on sales and profits. Moreover, [Hojnik et al. \(2018\)](#) revealed a positive and significant influence of internationalization on firm performance, basing the measurements on the international presence and perceived sales, market share and opportunities, and employment satisfaction (constructed from self-reported seven-point scale values). Therefore, it is evident that the divergence of measures and their reliability and validity contribute to the ambiguous academic nature of the strategy-performance relationship.

Contextual factors are not deemed to determine the difference between our results and those obtained by [Kyläheiko et al. \(2011\)](#) and [Hojnik et al. \(2018\)](#). Similar to our research, these studies consider firms operating in small, open-market, and innovation-driven economies. Nor is time lag regarded to compromise the quality of our results. Beyond doubt, the objective longitudinal financial performance data contribute to academia by rendering solid empirical evidence of the long-term returns of growth strategies. Compared to [Hojnik et al. \(2018\)](#), bearing the shortcomings of self-reported cross-sectional financial data, our data serves as a more robust basis to disclose potential causal effects. Compared to [Kyläheiko et al. \(2011\)](#), suggesting that five years might be too short a time to derive vigorous conclusions about the influence of growth strategies, our research spans seven years and is more prompt to capture the actual returns. Therefore, this research proposes a theoretical standpoint that disclosing the relationships between growth strategies and financial performance relies on sufficient longitudinal data to capture the payoffs in both the short and long run.

### **Other Determinants for Growth**

The limited predictive ability of growth strategies on financial performance could be attributed to the influence of other factors, such as firm demographics. Research suggests that the determinants of growth rates are firm-specific ([Geroski et al., 1997](#); [Coad, 2009](#)) and point to firm age and size as common

factors that consistently influence growth (Coad, 2018). Despite accounting for firm age and size in this research, the variables explained negligible portions of changes in sales and profits and had no significant effect on these measures. These results were surprising due to the robust effects of firm age and size on financial performance manifested in several studies, such as O'sullivan & Abela (2007), Loderer & Waelchli (2010), Coad et al. (2018), Short et al. (2009) and Doğan (2013).

Another potential reason for the insignificant effect is that growth strategies are insufficient impetuses to realize performance. Penrose (2009) claimed that the desire to grow must be combined with viable growth opportunities. Therefore, firms that pursue growth, but fail to recognize and leverage favorable conditions, do not necessarily experience the expected returns from adopting particular growth strategies. The rationale that demand and supply are necessary conditions to capitalize on growth strategies further reinforces the futility of predicting growth when all potential factors are not accounted for, such as in this research that does not consider managerial capabilities and market conditions.

Given the absence of significant influences of growth strategies on performance, this research delivers a pretext for reassessing the theoretical assumption of a linear relationship between them. Even though this research did not confirm a significant influence of demographic factors nor pinpoint specific contextual conditions (such as the pandemic) having a significant impact on performance, numerous research emphasizes the mediating role of other factors on the strategy-performance relationship. For instance, Hojnik et al. (2018) suggested that eco-innovation translates internationalization into improved firm performance. Moreover, Abolarinwa et al. (2020) confirmed the mediating role of global economic crises in the effect of growth strategies on firm performance. Though the relationship might not be linear, one cannot neglect the attribution of indirect factors such as the conditions relating to the firm or its environment.

### **Planning for Performance**

Considering the divergence in measurements and results and the influence of other factors, this research testifies to the academic perception that the relationship between growth strategies and financial performance is still complex and ambiguous. Indeed, one can question whether strategic planning for performance is feasible at all. Research endeavors devoted to investigating this topic have a rich and longstanding heritage. Pearce et al. (1987) denoted *grand strategy* as a comprehensive plan to achieve long-term objectives and defined four generic types, some of them compared to the growth strategies in this research,

such as innovation, internationalization, differentiation, and customization. The author conducted an empirical study of American manufacturing firms and found that although planning formality was consistently related to sales and profits, the overall grand strategy was not. He also found that it did not appear to be *a best grand strategy* in terms of performance. Bracker et al. (1988) and Bracker & Pearson (1986) also revealed a significant relationship between planning sophistication and average sales growth over five years and found that firms employing structured strategic plans outperformed those adopting short-term or unstructured planning orientations. Thus, it appears that engaging in strategic planning is of greater importance than adopting particular strategies. Although the empirical results in this research, nor the findings of Pearce et al. (1987), can confirm the significant influence of strategies on performance nor establish considerable differences in their relative effects, our argument is that one cannot rule out the relevance of growth strategies due to their stated promising prospects. Strategic planners seem to be better positioned for success though planning for performance is not an entirely feasible task as some aspects of the firm growth process still follow a random walk.

## 5.2 MANAGERIAL IMPLICATIONS

The attainment of sustainable competitive advantage and financial success represents a principal firm objective. Therefore, the managerial implications derived from the research findings hold considerable significance for firms aspiring to achieve these objectives.

Although this research did not disclose a significant relationship between growth strategies and performance, the theoretical foundation and the preceding discussion emphasized the promising prospects of strategic planning. For managers, this implies a strong commitment to pursue growth ambitions and be alert to the available growth opportunities. Our research demonstrated that managers should not rely on growth strategies alone but also account for other factors influencing their ability to reap financial returns. This requires robust managerial capabilities to adopt strategies that leverage the firm's resource pool and to grasp the intricate and multifaceted business surroundings. This research calls for further efforts to determine the most prominent factors predicting firm performance so that firms can account for these factors in developing their growth strategies.

Moreover, this research argued that firms often adopt several strategies to ensure agility in the dynamic market. For managers, this argument implies that firms should broaden their strategic focus in their pursuit of growth to account for the range of disruptions shaping and changing the business. Once more,



our emphasis is put on the managerial capabilities to detect emerging threats and opportunities and to be prepared for market shifts that can put the firm survival at risk.

Furthermore, this research argued that some growth strategies are often combined due to their similar or compatible nature. This finding provides a rationale for firms to leverage their resources and combine harmonious strategies to reap synergetic effects. From a managerial standpoint, this suggestion also implies a profound understanding of the internal and external conditions of the firm because developing an optimal strategy portfolio constitutes an intricate task.

Not least, this research underscored the role of sustainability as compatible with the other strategies, providing some important implications for practitioners. The positive correlations demonstrated that promoting sustainability does not compromise other strategic targets of the firm. Moreover, the [Chapter 2](#) referred to numerous research suggesting a positive influence of promoting sustainability on financial performance, although the empirical results did not disclose a significant relationship. Thus our thesis, combined with the increasing pressure from policymakers and upcoming regulations, suggests that firms should incorporate sustainability as part of their strategic focus. Our managerial pleadings are that there is no reason that firms should not emphasize sustainable practices in the process of pursuing future growth.

### 5.3 POLICY IMPLICATIONS

This thesis demonstrated that growth strategies are insufficient predictors of firm performance within the Norwegian manufacturing sector. This intriguing result calls for a reassessment of policymakers' role in enabling actual firm growth and shifting towards more targeted and effective growth measures. Policymakers face two main questions regarding their approach. The first considers how to allocate resources to maximize desired outcomes, and the second comprises alternative metrics to evaluate the success or progress of Norwegian firms.

The absence of causal influences of growth strategies on financial returns suggests that policymakers should reassess the current emphasis on such strategies. Our political argument is that pinpointing the true growth determinants could facilitate governments in making informed funding decisions. For instance, policymakers should consider factors that might ensure greater financial returns, such as resource efficiency measures, business model innovation, or digitalization efforts ([Özbuğday et al., 2020](#); [Salfore et al., 2023](#); [Zeng et al., 2022](#)). Taking a more holistic approach to funding efforts, recognizing the

multifaceted nature of firm growth alongside firm-level characteristics, could augment a more deliberate and optimal distribution of financial support.

Communicated ambitions and strategies constitute prominent preconditions for the current financial resource allocation. For instance, clearly stated growth ambitions are a central funding requirement from [Innovasjon Norge \(2023\)](#). Our disclosure of the poor predictive ability of growth strategies on financial returns and debate on the linear relationship sheds light on the usefulness of current practices. There is a clear need to consider alternative criteria that enhance performance and incentivize sustainable financial returns. Governmental support programs, such as the funding [Innovasjon Norge](#) administers, are encouraged to appraise the practicality of considering stated growth ambitions as a central criterion. We suggest that support programs could stress firms' corporate social responsibility (CSR) efforts or engagement in industry cooperation, as research has confirmed that such endeavors can moderate firm performance and stimulate value added ([Siddiqui et al., 2023](#); [Lindič et al., 2012](#)). The political advice is to adopt a nuanced understanding of performance indicators and redirect the focus to determinants that have demonstrated a stronger correlation with performance.

Finally, the research reflected on the importance of sustainability as a principal strategic focus. The growing emphasis on sustainability, as discussed in [Section 5.1.1](#), strengthens the case for policymakers to promote and incentivize sustainable practices. Though market imperfection related to environmental degradation can lead to opportunities for sustainable entrepreneurship, such entrepreneurs often fear failure and perceive the absence of institutional support as a significant barrier ([Cohen & Winn, 2007](#); [Hoogendoorn et al., 2019](#)). The governmental advice is to stress the aspects of growth that go beyond mere production increases, such as initiatives aligned with circular economy principles and value creation. Policymakers could foster a more sustainable and resilient economy that aligns with environmental objectives and long-term prosperity by encouraging and incentivizing businesses to incorporate sustainable strategies in their growth strategies.

#### 5.4 LIMITATIONS AND FURTHER RESEARCH

This research holds some limitations related to the empirical results alongside the methodological limitations addressed in [Section 3.7](#). Further research should consider these limitations and attempt to overcome them.

The strength of this research is the robust data based on a representative sample and longitudinal financial reports. The representative nature of the sample leads us to presume that the research results can be generalized to the

entire population of Norwegian manufacturers, so-called *sample-to population* or *statistical* generalization (Polit & Beck, 2010). Still, the major limitation of this research concerns the generalization of the results to other populations. Due to the sole reliance on empirical evidence from the Norwegian manufacturing sector, one cannot be confident that the results apply to other industries or nations. That said, the thorough description of the research procedures in this thesis facilitates replication in future efforts that can enhance the understanding of growth strategies and their influence on financial performance. Therefore, we call for further research to conduct similar studies in other industries and nations to disclose if the results transfer to different contextual settings.

Another notable limitation regards the measurements of the growth strategies. Though we argued for the quality and validity of these measurements in Section 3.6, we also reflected on potential dissimilar understandings of the strategies and the extent to which the responses captured actual adoption. Since this research did not reveal noticeable differences in the strategies adopted among the top ten percent best-performing firms and the entire sample, nor disclose significant influences of strategies on performance, questions concerning the firm-specific predictors of performance remain. Further research should investigate which factors distinguish the top-performing firms from those falling behind and scrutinize what actions firms undertake for growth. We recommend adding qualitative case studies to the quantitative approach to gain profound insights into these areas. The reason is that qualitative methods are better suited to understand the research participants' perspectives, compared to quantitative methods, and techniques such as case studies provide the detailed data needed to capture the individual variations (Yilmaz, 2013).

The research approach based on Pearson correlations and linear regression seemed indisputable due to the presumed linear relationship between growth strategies and financial performance. Still, the surprising disclosure that growth strategies explained a negligible portion of the performance variance led us to question the linear relationship and spurred consideration of other influential factors. There is a particular need for further efforts to uncover potential internal and external factors that mediate the relationship. Once more, we call for adding qualitative methods to capture contextual conditions, such as observations, interviews, and focus groups. Not least, further research should embrace the nonlinear nature of the relationship and emphasize methods that capture the most prominent mediating effects. The most common statistical methods of testing mediating influences are stepwise multiple regression analysis and structural equation modeling (SEM) (S. D. Li, 2011). Therefore, we suggest that qualitative considerations of mediating factors and quantitative methods for testing these effects serve as a starting point for further analysis of the relationship between growth strategies and performance.

Another avenue for future research involves exploring the factors driving firms to pursue multiple strategies and under what conditions these combinations yield performance. Though the research on the financial benefits of a singular versus diversified approach is fragmented, we argued that this decision is contingent on the specific firm context. Therefore, we call for further research to accumulate knowledge on the conditions firms benefit from a focused strategic approach and a broader approach. Gaining profound insights into this field can provide valuable guidance for firms' strategic decision-making and optimize their performance outcomes.

Lastly, the relevance of the research results in the current business landscape might be slightly limited by the partially old survey responses. Fresh evidence is needed to disclose the role of sustainability among manufacturers today. An intriguing research opportunity lies in exploring the integration of sustainability into firms' growth strategies. Further research should investigate whether sustainability can become a principal strategic target in firm growth, shifting from a mere hygiene factor to a motivational driver. Additionally, it is crucial to investigate the need to redefine traditional notions of growth to align with sustainability principles. Moreover, exploring the compatibility between sustainability and conventional growth perspectives can shed light on the strategic choices for firms pursuing sustainable growth. Such research endeavors have the potential to provide valuable insights into the transformative role of sustainability in shaping firms' growth strategies beyond conventional economic metrics.

## CHAPTER 6

### *Conclusion*

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This thesis has scrutinized growth strategies and firm performance in the dynamic environment of Norwegian manufacturing firms. Specifically, the research aimed to contribute to the understanding of growth strategies and their influence on financial performance and sought to address the following research questions: *Which growth strategies are prominent among Norwegian manufacturing firms, and how do these strategies correlate?* and *What is the influence of the growth strategies firms adopt on their financial performance?*

The research found that customization, differentiation, and innovation are the most prominent strategies among Norwegian manufacturers. Internationalization and offering the lowest price had lower adoption rates. Furthermore, this research uncovered that firms tend to adopt combinations of growth strategies and that the combined strategies often seem compatible or mutually reinforcing. Promoting sustainability efforts appeared particularly compatible but seldom the principal strategic target, which led us to assess it as a hygiene factor for firms pursuing growth. Regarding the performance dimension, this research did not disclose any significant influence of growth strategies on sales and profits. The intriguing conclusion that growth strategies are poor predictors of financial performance led us to question the presumed linear relationship accepted in academia.

The findings carry important implications for scholars, managers, and governments. The research highlighted the promising prospects of strategic planning though it could not confirm the causal influence of strategies on performance. Thus the thesis calls for academic endeavors to reassess the linear relationship and discover the internal and external conditions mediating it. Our managerial argument suggests a holistic approach to strategic planning, meaning that firms should account for contextual influences in pursuing long-term success. The research also encourages managers to rethink their strategies and incorporate sustainability as a strategic focus. The implication for governments revolves around more deliberate funding procedures to facilitate actual financial returns. This research also encourages policymakers to create profitable conditions for firms to prioritize sustainability in their growth strategies.

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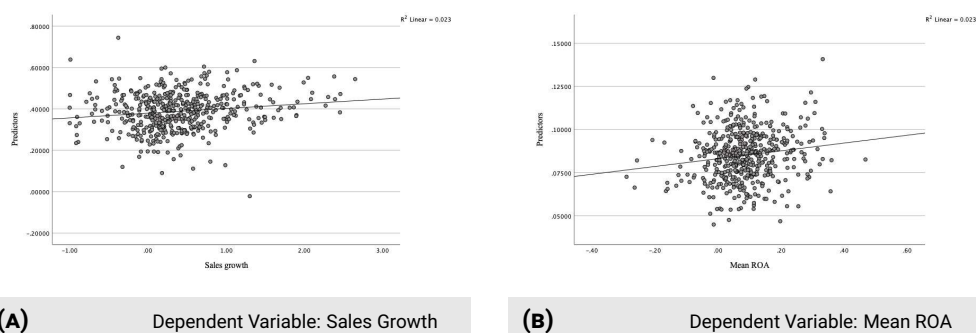
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## APPENDIX A

### Test of Linear Regression Assumptions

#### A.1 LINEARITY

Figure A.1 provides the scatter plots of the group of predictors and the sales growth variable (A) and the mean ROA variable (B). The observations are represented by the circular dots, and the solid line represents the best fit.



**FIGURE A.1.** Scatter Plots of the Group of Predictors and the Dependent Variables

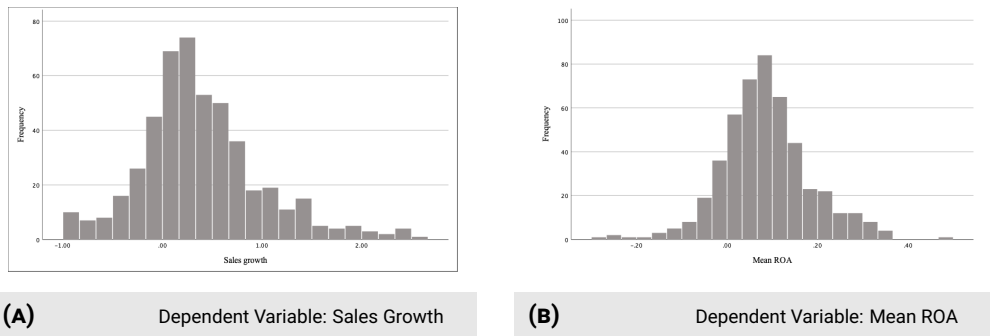
#### A.2 NORMALITY

**TABLE A.1.** Descriptive Statistics of Sales Growth and Mean ROA

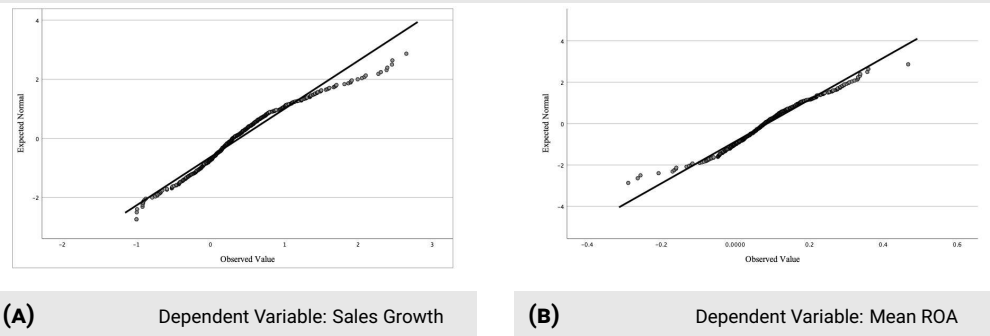
	Statistic		Std. Error	
	Sales Growth	Mean ROA	Sales Growth	Mean ROA
Mean	0.3885	0.0854	0.02793	0.00451
5% Trimmed Mean	0.3642	0.0847		
Median	0.2982	0.0788		
Variance	0.375	0.010		
SD	0.61263	0.09895		
Min.	-1.00	-0.29		
Max.	2.65	0.47		
Skewness	0.740	0.115	0.111	0.111
Kurtosis	1.286	1.356	0.222	0.222

Table A.2 provides the descriptive statistics of the dependent variables. The small differences between the 5% trimmed mean and the mean confirms that the effect of potential outliers are negligible. The skewness and kurtosis values are within the recommended range (-2, 2).

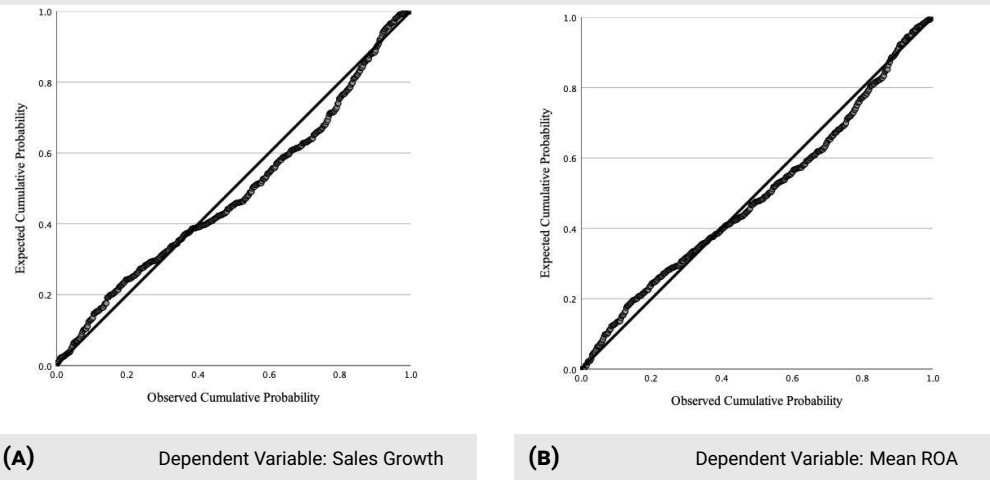
Figure A.2 provides the distributions of the sales growth (A) and mean ROA (B). Figure A.2 provides the normal Q-Q plots of sales growth (A) and mean ROA (B). Figure A.2 provides the normal P-P plots of the standardized sales growth residuals (A) and the standardized mean ROA residuals (B).



**FIGURE A.2.** Distribution of the Dependent Variables



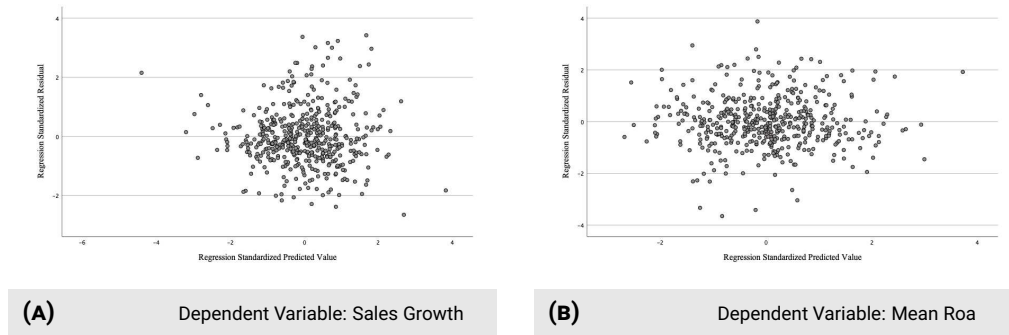
**FIGURE A.3.** Normal Q-Q Plots of the Dependent Variables



**FIGURE A.4.** Normal P-P Plots of the Standardized Residuals

### A.3 HOMOSCEDASTICITY

Figure A.3 provides the scatter plots of the sales growth residuals (A) and the mean ROA residuals (B). The residuals are rather evenly distributed along the axes, forming no obvious patterns.



**FIGURE A.5.** Scatter Plots of the Residuals

### A.4 ABSENCE OF MULTICOLLINEARITY

Table A.2 provides the collinearity diagnostics for the dependent variables. The tolerance (CT) and the variance inflation factor (VIF) demonstrate that absence of multicollinearity can be assumed.

**TABLE A.2.** Coefficients<sup>a</sup>

Model		CT	VIF	Model		CT	VIF
1	Firm age	0.982	1.018	1	Firm age	0.982	1.018
	Firm size	0.982	1.018		Firm size	0.982	1.018
2	Firm age	0.961	1.040	2	Firm age	0.961	1.041
	Firm size	0.944	1.059		Firm size	0.943	1.061
	19.1	0.656	1.524		19.1	0.652	1.534
	19.2	0.800	1.251		19.2	0.798	1.253
	19.3	0.938	1.067		19.3	0.937	1.067
	19.4	0.662	1.510		19.4	0.662	1.510
	19.5	0.836	1.196		19.5	0.839	1.191
	19.6	0.892	1.121		19.6	0.900	1.112
<sup>a</sup> Dependent Variable: Sales growth				<sup>a</sup> Dependent Variable: Mean ROA			

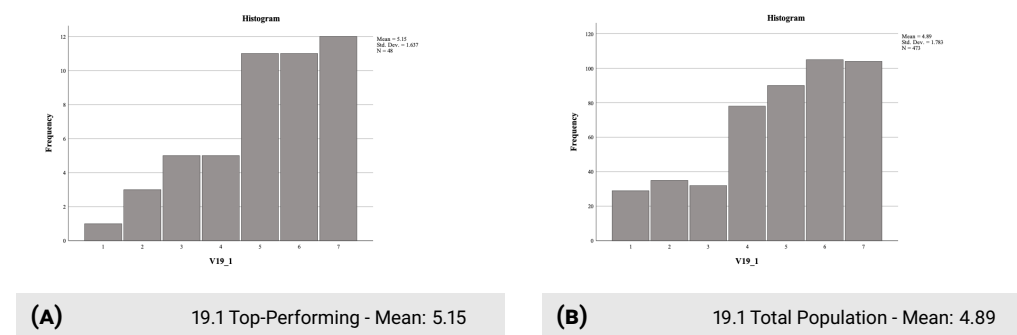


## APPENDIX B

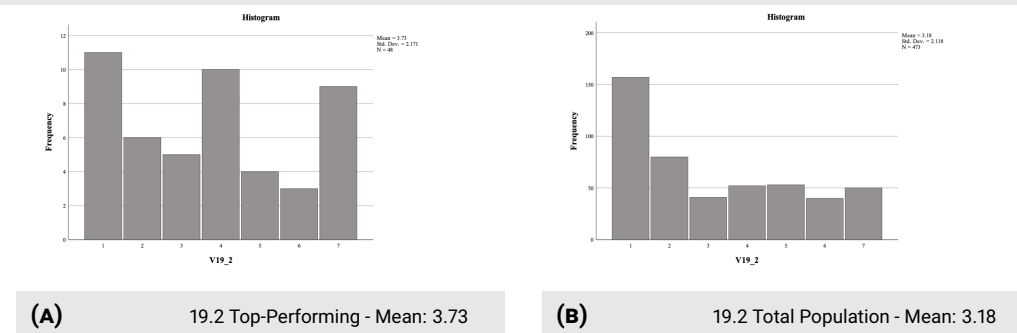
### Top-Performing Firms

#### B.1 TOP-PERFORMING FIRMS IN TERMS OF SALES GROWTH

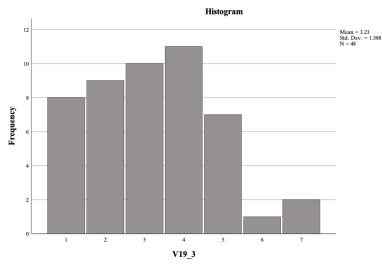
The subsequent histograms illustrate the distribution of strategies adopted by the top ten percent performing firms in terms of average percentage change in sales growth from 2015 to 2021 compared to the distribution strategies adopted by the entire population of the 488 firms. The top-performing firms had an average sales growth change ranging from 1.20% to 2.65%.



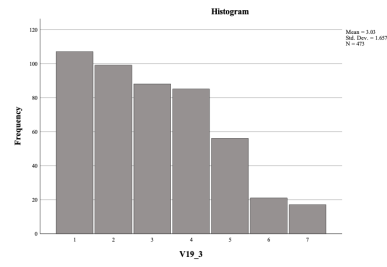
**FIGURE B.1.** 19.1 Innovation and Development - Sales growth



**FIGURE B.2.** 19.1 Internationalization - Sales growth

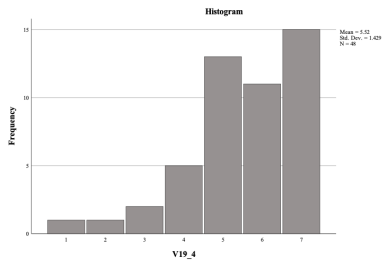


(A) 19.3 Top-Performing - Mean: 3.23

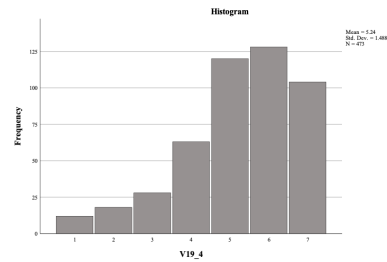


(B) 19.3 Total Population - Mean: 3.03

**FIGURE B.3.** 19.3 Lowest price - Sales growth

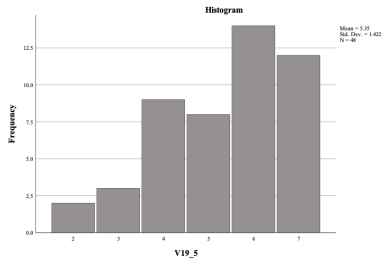


(A) 19.4 Top-Performing - Mean: 5.52

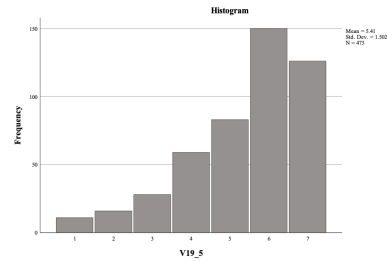


(B) 19.4 Total Population - Mean: 5.24

**FIGURE B.4.** 19.4 Differentiation - Sales growth

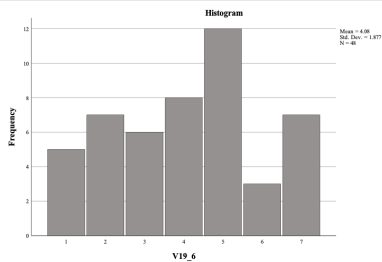


(A) 19.5 Top-Performing - Mean: 5.35

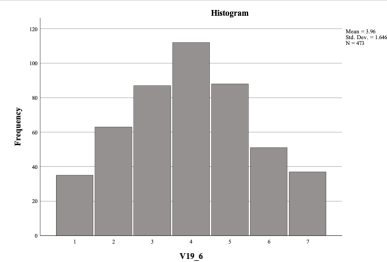


(B) 19.5 Total population - Mean: 5.41

**FIGURE B.5.** 19.5 Customization - Sales Growth



(A) 19.6 Top-Performing - Mean: 4.08

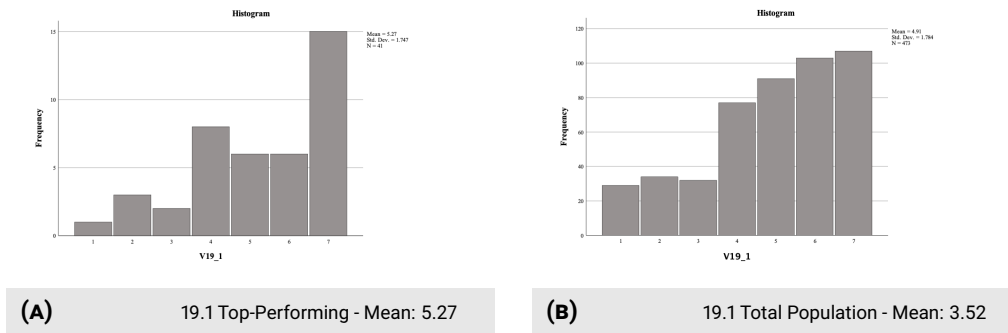


(B) 19.6 Total Population - Mean: 3.96

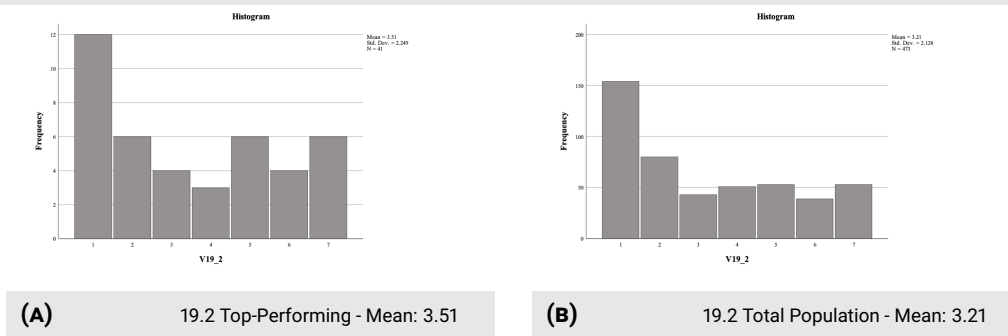
**FIGURE B.6.** 19.6 Promoting Sustainability - Sales growth

## B.2 TOP-PERFORMING FIRMS IN TERMS OF MEAN ROA

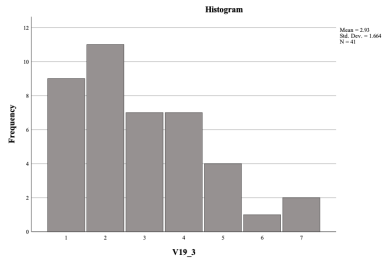
The subsequent histograms illustrate the distribution of strategies adopted by the top ten percent performing firms in terms of percentage mean ROA from 2015 to 2021 compared to the distribution strategies adopted by the entire population of the 488 firms. The top-performing firms had an average ROA ranging from 0.22% to 0.47%.



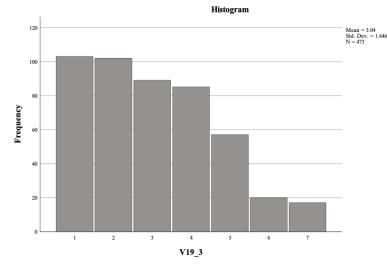
**FIGURE B.7.** 19.1 Innovation and Development - Mean ROA



**FIGURE B.8.** 19.1 Internationalization - Mean ROA

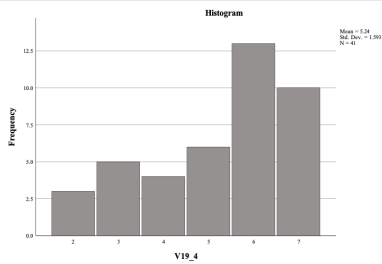


(A) 19.3 Top-Performing - Mean: 2.93

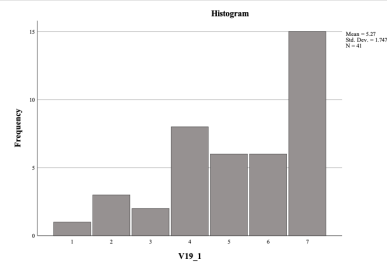


(B) 19.3 Total Population - Mean: 3.04

**FIGURE B.9.** 19.3 Lowest Price - Mean ROA

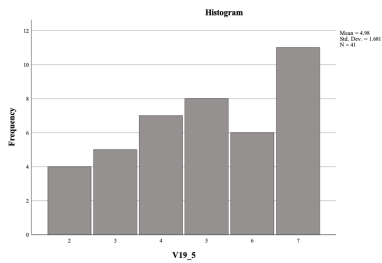


(A) 19.4 Top-Performing - Mean: 5.24

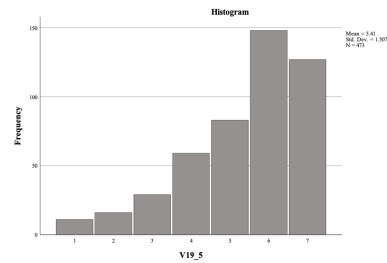


(B) 19.4 Total population - Mean: 5.2

**FIGURE B.10.** 19.4 Differentiation - Mean ROA

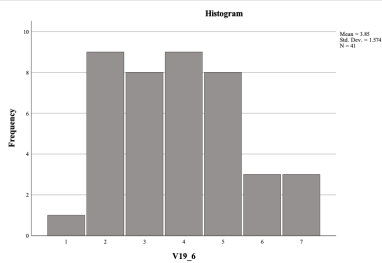


(A) 19.5 Top-Performing - Mean: 4.98

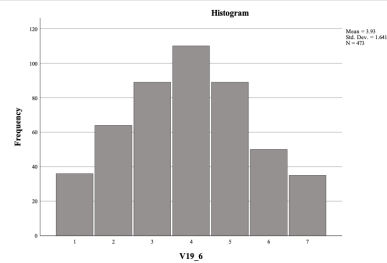


(B) 19.5 Total Population - Mean: 5.41

**FIGURE B.11.** 19.5 Customization - Mean ROA



(A) 19.6 Top-Performing - Mean: 3.85



(B) 19.6 Total Population - Mean: 3.93

**FIGURE B.12.** 19.6 Promoting Sustainability - Mean ROA

## APPENDIX C

### *Pre-Pandemic Analysis*

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This appendix provides the results of the pre-pandemic regressions. The data consist of the survey data and the longitudinal financial reports for the years 2015 to 2019.

#### C.1 MODEL SUMMARY

Table C.1 and Table C.2 show the correlation coefficient (R), the coefficient of determination (R Square), the model accuracy (Adjusted R Square) and the standard error of the estimate for the performed multiple regressions.

**TABLE C.1.** Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.076 <sup>a</sup>	0.006	0.002	0.45221
2	0.143 <sup>b</sup>	0.020	0.003	0.45178

a Predictors: (Constant), Firm age, Firm size

b Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4, 19.5, 19.6

c Dependent variable: Sales growth

**TABLE C.2.** Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.039 <sup>a</sup>	0.002	-0.003	0.10831
2	0.170 <sup>b</sup>	0.029	0.012	0.10750

a Predictors: (Constant), Firm age, Firm size

b Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4, 19.5, 19.6

c Dependent variable: Mean ROA

## C.2 ANOVA

The ANOVA results determined whether the regression models were significant enough to predict the financial measures. The results are presented in [Table C.3](#) and [Table C.4](#).

**TABLE C.3.** ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.558	2	0.279	1.365	0.256 <sup>b</sup>
	Residual	95.501	467	0.204		
	Total	96.059	469			
2	Regression	1.965	8	0.246	1.203	0.295 <sup>c</sup>
	Residual	94.094	461	0.204		
	Total	96.059	469			

<sup>a</sup> Dependent Variable: Sales growth

<sup>b</sup> Predictors: (Constant), Firm age, Firm size

<sup>c</sup> Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4, 19.5, 19.6

**TABLE C.4.** ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.009	2	0.004	0.364	0.695 <sup>b</sup>
	Residual	5.525	471	0.012		
	Total	5.534	473			
2	Regression	0.160	8	0.020	1.735	0.088 <sup>c</sup>
	Residual	5.373	465	0.012		
	Total	5.534	473			

<sup>a</sup> Dependent Variable: Mean ROA

<sup>b</sup> Predictors: (Constant), Firm age, Firm size

<sup>c</sup> Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4, 19.5, 19.6

### C.3 REGRESSION COEFFICIENTS

The coefficient tables in Table C.5 and Table C.6 provide an overview of the relationship between the individual predictor variables and the dependent variables. The p-values determine the significance of the predictor variables whereas the B-values denote the magnitude of the predictors' impact on the financial performance measures.

**TABLE C.5.** Coefficients<sup>a</sup>

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.282	0.034		8.192	<0.001
	Firm age	-0.001	0.001	-0.068	-1.465	0.144
	Firm size	0.000	0.000	-0.026	-0.565	0.572
2	(Constant)	0.103	0.113		0.914	0.361
	Firm age	-0.001	0.001	-0.075	-1.594	0.112
	Firm size	0.000	0.000	-0.038	-0.796	0.426
	19.1	0.001	0.014	0.003	0.047	0.962
	19.2	0.013	0.011	0.061	1.177	0.240
	19.3	0.021	0.013	0.076	1.593	0.112
	19.4	-0.007	0.017	-0.022	-0.393	0.694
	19.5	0.015	0.015	-0.049	0.968	0.334
	19.6	0.009	0.013	0.031	0.639	0.523

<sup>a</sup> Dependent Variable: Sales growth

**TABLE C.6.** Coefficients<sup>a</sup>

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.082	0.008		10.059	<0.001
	Firm age	-9.891E-5	0.000	-0.033	-0.702	0.483
	Firm size	2.514E-5	0.000	0.027	0.574	0.566
2	(Constant)	0.128	0.026		4.832	<0.001
	Firm age	-7.642E-5	0.000	-0.025	-0.541	0.589
	Firm size	2.904E-5	0.000	0.031	0.655	0.514
	19.1	0.007	0.003	0.122	2.153	0.032
	19.2	-0.004	0.003	-0.079	-1.555	0.121
	19.3	-0.002	0.003	-0.036	-0.766	0.444
	19.4	-0.001	0.004	-0.018	-0.317	0.752
	19.5	-0.009	0.004	-0.132	-2.645	0.008
	19.6	-0.001	0.003	-0.017	-0.361	0.718

<sup>a</sup> Dependent Variable: Mean ROA

## APPENDIX D

### *The Effect of Combined Growth Strategies*

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This appendix provides the results of the combination effect regressions. The combinations subject to analysis are: innovation and development (19.1) and differentiation (19.4); innovation and development (19.1) and internationalization (19.2); differentiation (19.4) and customization (19.5). The combinations are generated using the mean of the growth strategy variables they comprise.

#### D.1 INNOVATION AND DIFFERENTIATION

##### D.1.1 *Model Summary*

Table D.1 and Table D.2 show the correlation coefficient (R), the coefficient of determination (R Square), the model accuracy (Adjusted R Square) and the standard error of the estimate for the performed multiple regressions.

**TABLE D.1.** Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.080 <sup>a</sup>	0.006	0.002	0.61557
2	0.150 <sup>b</sup>	0.023	0.008	0.61382

a Predictors: (Constant), Firm age, Firm size

b Predictors: (Constant), Firm age, Firm size, 19.1+19.4, 19.2, 19.3, 19.5, 19.6

c Dependent variable: Sales growth

**TABLE D.2.** Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.037 <sup>a</sup>	0.001	-0.003	0.09954
2	0.136 <sup>b</sup>	0.018	0.004	0.09921

a Predictors: (Constant), Firm age, Firm size

b Predictors: (Constant), Firm age, Firm size, 19.1+19.4, 19.2, 19.3, 19.5, 19.6

c Dependent variable: Mean ROA



**D.1.2 ANOVA**

The ANOVA results determined whether the regression models were significant enough to predict the financial measures. The results are presented in [Table D.3](#) and [Table D.4](#).

**TABLE D.3.** ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.158	2	0.579	1.527	0.218 <sup>b</sup>
	Residual	178.476	471	0.379		
	Total	179.634	473			
2	Regression	4.056	7	0.579	1.538	0.152 <sup>c</sup>
	Residual	175.578	466	0.377		
	Total	179.634	473			

<sup>a</sup> Dependent Variable: Sales growth

<sup>b</sup> Predictors: (Constant), Firm age, Firm size

<sup>c</sup> Predictors: (Constant), Firm age, Firm size, 19.1+19.4, 19.2, 19.3, 19.5, 19.6

**TABLE D.4.** ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.006	2	0.003	0.327	0.722 <sup>b</sup>
	Residual	4.667	471	0.010		
	Total	4.673	473			
2	Regression	0.086	7	0.012	1.251	0.273 <sup>c</sup>
	Residual	4.587	466	0.010		
	Total	4.673	473			

<sup>a</sup> Dependent Variable: Mean ROA

<sup>b</sup> Predictors: (Constant), Firm age, Firm size

<sup>c</sup> Predictors: (Constant), Firm age, Firm size, 19.1+19.4, 19.2, 19.3, 19.5, 19.6

### D.1.3 Regression Coefficients

The coefficient tables in Table D.5 and Table D.6 provide an overview of the relationship between the individual predictor variables and the dependent variables. The p-values determine the significance of the predictor variables whereas the B-values denote the magnitude of the predictors' impact on the financial performance measures.

**TABLE D.5.** Coefficients<sup>a</sup>

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.452	0.047		9.714	<0.001
	Firm age	-0.001	0.001	-0.067	-1.465	0.146
	Firm size	0.000	0.000	-0.035	-0.763	0.446
2	(Constant)	0.453	0.148		3.071	0.002
	Firm age	-0.001	0.001	-0.073	-1.571	0.117
	Firm size	0.000	0.000	-0.050	-1.050	0.294
	19.1+19.4	-0.006	0.024	-0.015	-0.271	0.787
	19.2	0.026	0.015	0.088	1.751	0.081
	19.3	0.028	0.017	0.076	1.633	0.103
	19.5	-0.026	0.020	-0.064	-1.290	0.198
	19.6	0.004	0.018	0.010	0.202	0.840

<sup>a</sup> Dependent Variable: Sales growth

**TABLE D.6.** Coefficients<sup>a</sup>

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.087	0.008		11.511	<0.001
	Firm age	-6.972E-5	0.000	-0.025	-0.538	0.591
	Firm size	2.692E-5	0.000	0.031	0.669	0.504
2	(Constant)	0.124	0.024		5.201	<0.001
	Firm age	-4.762E-5	0.000	-0.017	-0.366	0.715
	Firm size	2.985E-5	0.000	0.034	0.729	0.466
	19.1+19.4	0.004	0.004	0.057	1.035	0.301
	19.2	-0.002	0.002	-0.050	-0.984	0.326
	19.3	-0.004	0.003	-0.062	-1.322	0.187
	19.5	-0.097	0.003	-0.105	-2.125	0.034
	19.6	-0.001	0.003	-0.009	-0.196	0.845

<sup>a</sup> Dependent Variable: Mean ROA

## D.2 INNOVATION AND INTERNATIONALIZATION

### D.2.1 Model Summary

Table D.7 and Table D.8 show the correlation coefficient (R), the coefficient of determination (R Square), the model accuracy (Adjusted R Square) and the standard error of the estimate for the performed multiple regressions.

**TABLE D.7.** Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.080 <sup>a</sup>	0.006	0.002	0.61554
2	0.147 <sup>b</sup>	0.021	0.007	0.61411

a Predictors: (Constant), Firm age, Firm size

b Predictors: (Constant), Firm age, Firm size, 19.1+19.2, 19.3, 19.4, 19.5, 19.6

c Dependent variable: Sales growth

**TABLE D.8.** Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.037 <sup>a</sup>	0.001	-0.003	0.09954
2	0.124 <sup>b</sup>	0.015	0.001	0.09936

a Predictors: (Constant), Firm age, Firm size

b Predictors: (Constant), Firm age, Firm size, 19.1+19.2, 19.3, 19.4, 19.5, 19.6

c Dependent variable: Mean ROA

**D.2.2 ANOVA**

The ANOVA results determined whether the regression models were significant enough to predict the financial measures. The results are presented in [Table D.9](#) and [Table D.10](#).

**TABLE D.9.** ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.142	2	0.571	1.506	0.223 <sup>b</sup>
	Residual	178.454	471	0.379		
	Total	179.596	473			
2	Regression	3.855	7	0.551	1.460	0.179 <sup>c</sup>
	Residual	175.740	466	0.377		
	Total	179.596	473			

<sup>a</sup> Dependent Variable: Sales growth

<sup>b</sup> Predictors: (Constant), Firm age, Firm size

<sup>c</sup> Predictors: (Constant), Firm age, Firm size, 19.1+19.2, 19.3, 19.4, 19.5, 19.6

**TABLE D.10.** ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.006	2	0.003	0.327	0.721 <sup>b</sup>
	Residual	4.667	471	0.010		
	Total	4.673	473			
2	Regression	0.072	7	0.010	1.048	0.397 <sup>c</sup>
	Residual	4.601	466	0.010		
	Total	4.673	473			

<sup>a</sup> Dependent Variable: Mean ROA

<sup>b</sup> Predictors: (Constant), Firm age, Firm size

<sup>c</sup> Predictors: (Constant), Firm age, Firm size, 19.1+19.2, 19.3, 19.4, 19.5, 19.6

### D.2.3 Regression Coefficients

The coefficient tables in Table D.11 and Table D.12 provide an overview of the relationship between the individual predictor variables and the dependent variables. The p-values determine the significance of the predictor variables whereas the B-values denote the magnitude of the predictors' impact on the financial performance measures.

**TABLE D.11.** Coefficients<sup>a</sup>

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.451	0.047		9.689	<0.001
	Firm age	-0.001	0.001	-0.067	-1.439	0.151
	Firm size	0.000	0.000	-0.036	-0.770	0.442
2	(Constant)	0.455	0.150		3.023	0.003
	Firm age	-0.001	0.001	-0.072	-1.548	0.112
	Firm size	0.000	0.000	-0.048	-1.013	0.311
	19.1+19.2	0.031	0.019	0.084	1.644	0.101
	19.3	0.027	0.018	0.073	1.540	0.124
	19.4	-0.015	0.023	-0.036	-0.659	0.510
	19.5	-0.026	0.021	-0.063	-1.263	0.207
	19.6	0.003	0.018	0.009	0.186	0.852

<sup>a</sup> Dependent Variable: Sales growth

**TABLE D.12.** Coefficients<sup>a</sup>

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.087	0.008		11.496	<0.001
	Firm age	-6.971E-5	0.000	-0.025	-0.538	0.591
	Firm size	2.693E-5	0.000	0.031	0.669	0.504
2	(Constant)	0.134	0.024		5.503	<0.001
	Firm age	-7.198E-5	0.000	-0.026	-0.551	0.582
	Firm size	2.369E-5	0.000	0.027	0.579	0.563
	19.1+19.2	0.001	0.003	0.015	0.291	0.771
	19.3	-0.004	0.003	-0.072	-1.517	0.130
	19.4	-0.001	0.004	-0.013	-0.242	0.809
	19.5	-0.006	0.003	-0.090	-1.796	0.073
	19.6	0.000	0.003	-0.002	-0.039	0.969

<sup>a</sup> Dependent Variable: Mean ROA

### D.3 DIFFERENTIATION AND CUSTOMIZATION

#### D.3.1 Model Summary

Table D.13 and Table D.14 show the correlation coefficient (R), the coefficient of determination (R Square), the model accuracy (Adjusted R Square) and the standard error of the estimate for the performed multiple regressions.

**TABLE D.13.** Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.081 <sup>a</sup>	0.007	0.002	0.61568
2	0.151 <sup>b</sup>	0.023	0.008	0.61288

a Predictors: (Constant), Firm age, Firm size

b Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4+19.5, 19.6

c Dependent variable: Sales growth

**TABLE D.14.** Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.039 <sup>a</sup>	0.001	-0.003	0.09946
2	0.146 <sup>b</sup>	0.021	0.007	0.09900

a Predictors: (Constant), Firm age, Firm size

b Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4+19.5, 19.6

c Dependent variable: Mean ROA

### D.3.2 ANOVA

The ANOVA results determined whether the regression models were significant enough to predict the financial measures. The results are presented in [Table D.15](#) and [Table D.16](#).

**TABLE D.15.** ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.186	2	0.593	1.570	0.209 <sup>b</sup>
	Residual	178.713	473	0.378		
	Total	179.899	475			
2	Regression	4.106	7	0.587	1.561	0.145 <sup>c</sup>
	Residual	175.793	468	0.376		
	Total	179.899	475			

<sup>a</sup> Dependent Variable: Sales growth

<sup>b</sup> Predictors: (Constant), Firm age, Firm size

<sup>c</sup> Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4+19.5, 19.6

**TABLE D.16.** ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.007	2	0.003	0.354	0.702 <sup>b</sup>
	Residual	4.679	473	0.010		
	Total	4.686	475			
2	Regression	0.099	7	0.014	1.447	0.185 <sup>c</sup>
	Residual	4.587	468	0.010		
	Total	4.686	475			

<sup>a</sup> Dependent Variable: Mean ROA

<sup>b</sup> Predictors: (Constant), Firm age, Firm size

<sup>c</sup> Predictors: (Constant), Firm age, Firm size, 19.1, 19.2, 19.3, 19.4+19.5, 19.6

### D.3.3 Regression Coefficients

The coefficient tables in Table D.17 and Table D.18 provide an overview of the relationship between the individual predictor variables and the dependent variables. The p-values determine the significance of the predictor variables whereas the B-values denote the magnitude of the predictors' impact on the financial performance measures.

**TABLE D.17.** Coefficients<sup>a</sup>

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.453	0.046		9.760	<0.001
	Firm age	-0.001	0.001	-0.069	-1.487	0.138
	Firm size	0.000	0.000	-0.035	-0.756	0.450
2	(Constant)	0.460	0.150		3.070	0.002
	Firm age	-0.001	0.001	-0.077	-1.667	0.096
	Firm size	0.000	0.000	-0.049	-1.052	0.293
	19.1	0.004	0.019	0.012	0.211	0.833
	19.2	0.024	0.015	0.084	1.644	0.101
	19.3	0.027	0.017	0.071	1.545	0.123
	19.4+5	-0.036	0.026	-0.073	-1.408	0.160
	19.6	0.005	0.018	0.014	0.280	0.780

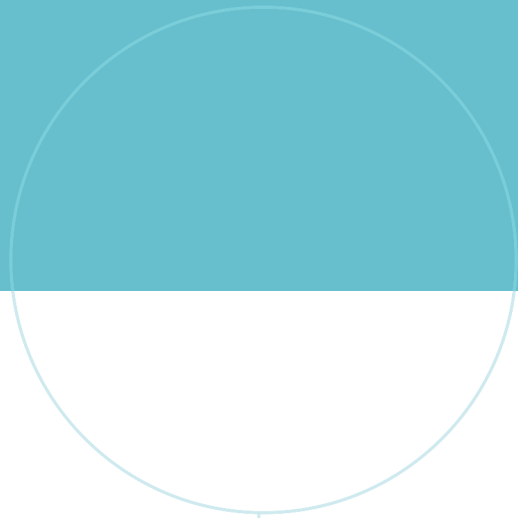
<sup>a</sup> Dependent Variable: Sales growth

**TABLE D.18.** Coefficients<sup>a</sup>

Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.087	0.008		11.567	<0.001
	Firm age	-7.492E-5	0.000	-0.027	-0.579	0.563
	Firm size	2.738E-5	0.000	0.032	0.681	0.496
2	(Constant)	0.130	0.024		5.366	<0.001
	Firm age	-7.541E-5	0.000	-0.027	-0.582	0.561
	Firm size	2.907E-5	0.000	0.034	0.712	0.477
	19.1	0.006	0.003	0.109	1.955	0.051
	19.2	-0.003	0.002	-0.063	-1.238	0.216
	19.3	-0.005	0.003	-0.075	-1.629	0.104
	19.4+19.5	-0.009	0.004	-0.113	-2.177	0.030
	19.6	0.000	0.003	-0.002	-0.049	0.961

<sup>a</sup> Dependent Variable: Mean ROA





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