

**FIRM GROWTH
IN THE FINNISH SOFTWARE INDUSTRY:**
A Longitudinal Study of Growth Aspirations and Growth Outcomes

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ABSTRACT

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Title Firm Growth in the Finnish Software Industry: A Longitudinal Study of Growth Aspirations and Growth Outcomes	
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<p>This master's thesis uses motivational theories and a quantitative, longitudinal approach to explore the relationship between growth aspirations and firm growth outcomes in the Finnish Software Industry. Specifically, it employs cross-lagged analyses to examine how past growth aspirations and outcomes influence current growth aspirations and outcomes, focusing on revenue and personnel count.</p> <p>The research findings support established theories, such as the Theory of Planned Behavior and the Behavioral Theory of the Firm, showing a two-way relationship between growth aspirations and firm growth. Specifically, past growth aspirations influence current aspirations and firm growth outcomes, while past growth outcomes influence current aspirations. However, the influence of past growth outcomes on growth aspirations and firm growth is complex and can be influenced by various factors at the firm and environmental levels.</p> <p>This study contributes to entrepreneurial growth research by providing empirical evidence on the interplay between aspirations and outcomes over time. It highlights the importance of aligning growth aspirations with realistic goals and leveraging past experiences for sustainable growth. Future studies should consider incorporating firm and industry-level factors and expanding the sample size to enhance the robustness of the results.</p>	
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1 INTRODUCTION

Aim higher in case you fall short...
— *Suzanne Collins, Catching Fire*

...so they say. But not all entrepreneurs follow that way. Some seek growth for their firms, it is true, while others find contentment in what they do.

1.1 Research Background

Firm growth is a fundamental concept in entrepreneurship literature, representing a positive change in business attributes like sales, output, exports, or quality improvement (Davidsson et al., 2005). It is a critical outcome that contributes significantly to employment generation, market stability, and overall economic development (Koster & van Stel, 2014). As a result, researchers and practitioners alike continue to investigate the causes and effects of firm growth.

Research highlights the role of growth aspirations in shaping firm growth trajectories and determining entrepreneurial success. Growth aspiration refers to a firm's expected future size and is closely aligned with ambitious entrepreneurship (Bulanova et al., 2016; Hermans et al., 2015; Wiklund & Shepherd, 2003a). Empirical evidence highlights the significance of growth aspirations in distinguishing profitable from non-profitable firms, as demonstrated by Delmar's (1996) study on Swedish companies. Studies by Wiklund et al. (2003) and Wiklund and Shepherd (2003a) also showed that high aspirations positively impact firm growth. Furthermore, Herman et al. (2015) suggested that growth aspirations could be used to evaluate ambitious entrepreneurship, with non-growth-seeking entrepreneurs classified as non-ambitious.

Nevertheless, understanding the relationship between growth aspirations and firm growth is not straightforward due to its complexity and the influence of various factors (Wiklund & Shepherd, 2003a). Prior research has shown that growth aspirations are influenced by the characteristics of entrepreneurs (Autio & Acs, 2007; Bulanova et al., 2016; Capelleras et al., 2018; Carreón-Gutiérrez & Saiz-Álvarez, 2019; Eide et al., 2021; Puente et al., 2017), as well as firm and environmental factors (Autio & Acs, 2007; Capelleras et al., 2018, 2019; Lajqi & Krasniqi, 2017). Furthermore, scholars such as Greve (2003) have emphasized the influence of feedback from past experiences on entrepreneurs' attitudes and aspirations toward growth. Hence, it is crucial to consider past experiences when

examining the connection between growth aspirations and firm growth to avoid misinterpreting the causal structure and effectively establish realistic growth targets.

The objective of my master's thesis is to empirically investigate how past experiences, particularly past growth aspirations and past growth outcomes, impact current growth aspirations and firm growth outcomes. By considering the influence of past experiences, this study aims to provide insights for managers and firms in setting ambitious yet realistic growth targets. Furthermore, these findings can serve as motivational tools, drawing on past experiences, to drive toward growth and success.

1.2 Research Question

My master's thesis seeks to contribute to empirical research on the relationship between growth aspirations and firm growth, taking into account firms' past experiences. Specifically, my research question is:

(RQ) How do past growth aspirations and growth outcomes influence growth aspirations and firm growth in the subsequent years?

To address this research question, I followed a systematic approach involving several steps. First, I utilized data from the Finnish Software Industry Survey (Rönkkö & Peltonen, 2012), supplemented with Orbis data in 2017. The survey targeted small and medium-sized enterprises in the software industry, encompassing business owners and managers engaged in software licensing, system development, application deployment, and game development. Second, I conducted a thorough assessment to ensure the reliability and quality of the data.

Next, I conducted correlation analysis and tests for normality. Finally, I employed four sets of three cross-lagged regression models using quantitative longitudinal analysis. By employing these methods, I aim to understand how growth aspirations relate to firm growth in the Finnish Software Industry over time.

1.3 Outline of Study

To explore the relationship between growth aspirations and firm growth outcomes, this paper is divided into eight main sections:

Section 1: Introduction. This section provides an overview of my research, that is, to examine the relationship between growth aspirations and firm growth outcomes, taking into account firms' past experiences. I also presented the research question and outlined the structure intending to contribute to the empirical research on growth aspiration and firm growth outcomes.

Section 2: Definition of Concepts. This section starts with the conceptual background on ambitious entrepreneurship and firm growth, focusing on the motivational perspective of growth aspiration. I also explored several motivational concepts of ambitious entrepreneurship and explained how these concepts relate to growth aspiration.

Section 3: Theoretical Background. This section introduces three motivational theories (i.e., the Theory of Planned Behavior, Goal-Setting Theory, and Behavioral Theory of the Firm) explaining entrepreneurial behavior and firm growth. Specifically, I explored the theoretical underpinning of the influence of aspirations on firm growth and the importance of past experiences and outcomes in forming aspirations. I also discussed the relevance of temporal stability of behavior and entrepreneur's sequential attention and cited empirical studies of growth aspiration predicting firm growth.

Section 4: Hypotheses. This section introduces four hypotheses on the relationship between growth aspirations and outcomes, considering the firm's past experiences and outcomes. These hypotheses draw on the Theory of Planned Behavior, Goal-setting Theory, Behavioral Theory of the Firm, and concepts of Temporal Stability of Behavior and Sequential Attention.

Section 5: Research Methodology. This section presents a quantitative approach to evaluating the relationships between variables using a sample dataset from The Finnish Software Industry (Rönkkö & Peltonen, 2012). To ensure reliability, I defined study measures, evaluated the sample data, eliminated irrelevant cases, and created new variables according to the design and measures.

Section 6: Empirical Findings. This section presents the findings and analysis in four main stages. It begins with a descriptive summary of the diverse firms in the dataset. The second stage involves conducting tests to assess

distribution normality, evaluate index reliability, and explore correlations to understand the connections between growth aspiration, firm growth, and other variables. Subsequently, four cross-lagged regression models used in different time lags are presented to examine the relationship between growth aspirations and firm growth. Lastly, an evaluation of growth achievement among small Finnish software companies is provided. All empirical analyses were conducted using Stata/SE 17.0, ensuring accurate and reliable statistical analysis throughout the study.

Section 7: Discussion. This section discusses the result of the hypotheses test and the interpretation of the empirical findings. My analysis focused on the relationship between growth aspirations and firm growth outcomes, examining the impact of time-lagged variables and potential influencing factors. I also presented possible reasons for findings that did not support my hypotheses. Lastly, I discussed the theoretical and practical implications and identified the limitations of my thesis, suggesting potential areas for further study.

Section 8: Conclusion: This section summarizes my research's findings and highlights the key takeaways of this master's thesis. Specifically, I presented the complex relationship between growth aspirations and firm growth outcomes, which shapes firm growth trajectories. Ultimately, my research contributes to the understanding and implications for policymakers and entrepreneurs.

I also presented the references used in the study, such as scientific journals, books, and research data sources. I have also included tables and figures to explain theoretical concepts, correlation matrices, and cross-lagged regression models ('Publication Manual of the American Psychological Association, 7th Ed.', 2020). Furthermore, I have included supporting figures and graphs in the Appendices, which could help understand my thought process in this research.

To maintain transparency, I acknowledge the use of Artificial Intelligence (AI) software tools, namely Grammarly, Elephas, and ChatGPT, primarily for grammar checking, refining the tone, and organizing the content structure. While the use of AI has contributed to improving the quality of my thesis, particularly in writing, I am also aware of the risks associated with using the technology. For example, occasional errors and inaccuracies have arisen when using AI. Therefore, I have allocated extra time to carefully review, edit, and rewrite the AI-generated output to ensure consistency with my thought process and adherence to academic standards. Furthermore, I used AI writing checks from Quill.org to ensure that my thesis is mainly a product of my intellectual output. Hence, while AI software has played a role in this thesis, it has not replaced or diminished my academic contributions.

2 DEFINITION OF CONCEPTS

In this section, I will provide a conceptual overview of firm growth and ambitious entrepreneurship using a behavioral perspective. I will also explore the interwoven concepts of growth aspiration, attitude, willingness, expectation, and intention and explain their relationship to highlight the roles in ambitious entrepreneurship and firm growth achievement.

2.1 Firm Growth

Firm growth is a widely researched concept in entrepreneurship because of its significant contribution to employment and the economy (Koster & van Stel, 2014). *Firm growth* refers to the positive changes in business attributes, encompassing an increase in size or process development like a quality improvement (Davidsson et al., 2005, p. 3). Previous studies used various indicators to measure growth: revenue/sales, employment/personnel, performance, market share, asset growth, financial indicators like profitability, liquidity, and leverage, or other aspects like product/service quality or customer satisfaction (Davidsson et al., 2005, 2006; Delmar & Wiklund, 2008; Wiklund & Shepherd, 2003a). Among these, sales/revenue and employment/personnel are the frequently used indicators in firm growth studies. Nevertheless, regardless of the measure, firm growth indicates a firm's success, performance, and ability to adapt to market changes (Davidsson et al., 2005; Kiviluoto, 2013).

Five theoretical perspectives of firm growth have been identified based on general assumptions, concepts, and relationships among concepts. These are entrepreneurial orientation, environmental dynamism, resource-based, strategic adaptation, and behavioral perspective (Davidsson & Wiklund, 2013, pp. 113–184). The entrepreneurial orientation perspective suggests that entrepreneurial activities such as innovation and risk-taking influence firm growth. The environmental dynamism perspective argues that uncertainties in market conditions and other external factors significantly impact firm growth. The resource-based perspective analyzes the business or related activities and how resources enable their expansion. The strategic adaptation perspective studies how a firm adjusts its strategies and structures in response to changes in its internal and external environments. Furthermore, the behavioral perspective focuses on individual motivation or attitudes toward firm growth. Selecting the appropriate unit of analysis is crucial in accurately studying firm growth (Davidsson & Wiklund, 2000, 2013).

My master's thesis centers around entrepreneurial behavior, examining the motivational aspect of firm growth. Notably, research acknowledges that not all entrepreneurs are driven by growth aspirations (Delmar, 1996; Tominc & Rebernik, 2007). Therefore, it is important to recognize the diverse behaviors exhibited by entrepreneurs toward growth and understand how different factors impact these behaviors throughout the entrepreneurial process. Furthermore, by studying the motivational aspect of firm growth, scholars and practitioners can better explain growth rate variations and implications to various stakeholders (Bulanova et al., 2016; Delmar et al., 2003; Wiklund & Shepherd, 2003a). Ultimately, insights into the motivational perspective of firm growth can help develop effective strategies for promoting, managing, and directing growth to benefit the firms and the broader economy.

2.2 Ambitious Entrepreneurship

Entrepreneurship and firm growth are closely linked, with some scholars viewing growth as the fundamental nature of entrepreneurship (Davidsson et al., 2005, p. 4). However, entrepreneurs exhibit different levels of ambition, leading to diverse approaches to business. While some aspire to start a business and others actively pursue significant growth, others are satisfied with their current business. Notably, research has demonstrated that levels of ambition exhibited by entrepreneurs influence the entrepreneurial process and outcomes related to firm growth (Tominc & Rebernik, 2007). This variation in ambitions has led to the emergence of a new concept called ambitious entrepreneurship, which integrates the concepts of firm growth and entrepreneurship.

Ambitious entrepreneurship refers to the level of ambition or rate of expectations for significant business expansion (Hermans et al., 2015, p. 128). This differs from entrepreneurial ambition, which pertains to the motivations behind starting a business. Ambitious entrepreneurship distinguishes between entrepreneurs with high and low aspirations, with ambitious entrepreneurs having high expectations and aspirations from the beginning of their venture (Hermans et al., 2015). Ambitious entrepreneurs recognize opportunities and capitalize on them to create maximum value.

Within the literature, various related concepts interweave with ambitious entrepreneurship, each carrying its own connotations. For example, *growth aspiration* relates to the entrepreneur's ideal business size (Davidsson, 1991; Wiklund & Shepherd, 2003a), while *growth expectation* involves predictions about future growth. On the other hand, *growth intention* refers to specific actions taken to achieve desired growth, such as expanding sales or employment (Hermans et al., 2015). These concepts have been used in various research to understand the influence of entrepreneurial behavior on entrepreneurship and growth.

Nevertheless, ambitious entrepreneurship is important in firm growth research because it highlights the role of entrepreneurial behavior and motivations in shaping the trajectory of a firm. According to Najeh and Morched (2022), ambitious entrepreneurship is essential in stimulating organizational creativity and innovation and is arguably the most important entrepreneurial trait. Moreover, ambitious entrepreneurs have been found to positively influence firm outcomes, resulting in a greater impact on macroeconomic growth and entrepreneurial activity (Hermans et al., 2015). Therefore, understanding ambitious entrepreneurship is essential for developing effective business support programs and equipping firms with the necessary tools for achieving growth.

2.2.1 Growth Aspiration

Ambitious entrepreneurship revolves around an entrepreneur's strong desire and determination to expand their business, placing emphasis on growth aspiration. *Growth aspiration* refers to an entrepreneur's envisioned size or the ideal size they aim to achieve for their firm in the future (Davidsson, 1991; Delmar & Wiklund, 2008; Hermans et al., 2015; Wiklund & Shepherd, 2003a). It focuses on a forward-looking perspective typically spanning a five-year timeframe (Delmar & Wiklund, 2008).

Growth aspiration is closely tied to entrepreneurial behavior and motivation, influencing how entrepreneurs approach and pursue growth (Tominc & Rebernik, 2007). Entrepreneurs with high aspirations exhibit distinct behaviors and attitudes that contribute to their pursuit of growth (McKelvie et al., 2017). They are more willing to take risks, embrace innovation, and invest greater resources into their ventures. These growth-oriented behaviors driven by aspiration significantly contribute to sustained growth over time (Hermans et al., 2015). Consequently, growth aspiration plays a vital role in distinguishing ambitious entrepreneurs from those who lack the desire to pursue further growth. Scholars, including Hermans et al. (2015), emphasize the importance of growth aspiration in identifying and differentiating ambitious entrepreneurs. By focusing on growth aspirations, ambitious entrepreneurs demonstrate their commitment to expanding their business, irrespective of their current capabilities and resources.

Empirical studies consistently highlight the positive impact of growth aspiration on various performance indicators. For example, research by McKelvie et al. (2017) and Wiklund and Shepherd (2003a) emphasizes that growth aspiration is a significant predictor of firm growth. Likewise, Gruenhagen et al. (2018) utilize growth aspiration as an indicator of the underlying motivation to grow a business. Similarly, studies by Bulanova et al. (2016), Davidsson (1989),

1991), and Delmar and Wiklund (2008) consistently find growth aspiration to be a crucial factor driving firm growth. Understanding the concept of growth aspiration is invaluable for entrepreneurs as it empowers them to set realistic growth targets, focus on expanding their business, and identify growth opportunities. By recognizing the importance of growth aspiration, entrepreneurs can cultivate a growth-oriented mindset and effectively allocate resources to achieve sustained growth and long-term success.

2.2.2 Other Related Concepts

While many scholars have defined growth aspiration coherently, there remains confusion in the use of terminologies. For example, Gruenhagen et al. (2018) used *growth aspiration* to refer to the willingness to grow, but Davidsson (1989) used the term *growth motivation* to refer to the same in the previous decades. In addition, other related terms such as *growth attitude*, *growth intention*, and *growth expectation*, among others, have also been used to describe this phenomenon (Davidsson, 1989; Delmar & Wiklund, 2008; Levie & Autio, 2013; Nummela et al., 2005; Wiklund et al., 2003). To ensure a common understanding of these terminologies, I explained their concepts below and how they relate to growth aspirations.

- **Growth Attitude**

Growth attitude plays an important role in entrepreneurial success, reflecting their mindset and orientation towards pursuing growth for their firm. It is closely tied to an entrepreneur's perception of the desirability of growth and their assessment of its favorable or unfavorable outcomes (Bulanova et al., 2016). A positive growth attitude also encompasses several key characteristics that contribute to a proactive and optimistic mindset when expanding the business. Cliff (1998) suggests that the growth attitude, which refers to an entrepreneur's disposition toward growth, determines their likelihood of investing resources such as time, money, and effort to achieve it.

In contrast to growth aspiration, which focuses on an entrepreneur's desired outcome for their firm, the growth attitude reflects their values and beliefs about growth. Hermans et al. (2015), growth aspiration may not be constrained by perceived abilities or available opportunities. On the other hand, the growth attitude represents an entrepreneur's approach to pursuing growth. Entrepreneurs with a growth attitude demonstrate openness to new ideas, a willingness to take calculated risks, and the ability to view setbacks as valuable learning opportunities. It is important to recognize that growth aspiration and growth attitude are complementary concepts that work together. While growth

aspiration identifies what an entrepreneur wants for their firm, the growth attitude reflects how they actively pursue and approach achieving that growth.

- **Growth Motivation**

Growth motivation, also known as *growth willingness*, is another important concept in ambitious entrepreneurship. It refers to a person's internal drive to engage in growth-oriented behavior, such as seeking expansion opportunities, investing in resources to facilitate growth, and adopting new strategies to increase success (Davidsson, 1989, p. 213). In addition, growth motivation encompasses attitudes and aspirations, including expectations of growth outcomes, attitudes towards firm growth, and the difference between the current size and growth aspiration. (Davidsson, 1991).

However, having a strong growth aspiration does not necessarily mean having the motivation or willingness to take the necessary risks and actions to achieve it. For instance, some entrepreneurs may be risk-averse and prefer maintaining the status quo rather than seeking growth opportunities. Therefore, understanding the difference between growth motivation and aspiration is essential for entrepreneurs who aim to expand their businesses. By identifying and cultivating growth motivation, entrepreneurs can take the necessary actions to achieve their growth aspirations and succeed in their ventures.

- **Growth Expectation**

Growth expectation, on the other hand, is another concept that captures an entrepreneur's belief or prediction regarding the actual growth potential of their firm. Unlike growth aspiration, which refers to the entrepreneur's ideal firm size regardless of its feasibility, growth expectation is grounded in the entrepreneur's current situation, abilities, and available resources (Hermans et al., 2015, p. 137). It measures the entrepreneur's confidence in their ability to achieve growth and their understanding of the external factors that can impact the venture's growth trajectory.

Research has demonstrated that an entrepreneur's growth aspirations and opportunity costs, such as household income, education, and managerial experience, significantly influence their growth expectations for their firm (Hermans et al., 2015, p. 138). Likewise, motivation plays a crucial role in positively shaping entrepreneurs' growth expectations (Karadeniz & Özçam, 2010). Therefore, growth desires and personal circumstances can both contribute to forming growth expectations. It is important to note, however, that while growth aspiration and expectation often exhibit a high correlation, there are

instances where entrepreneurs express a growth aspiration without corresponding growth expectations, and vice versa (Hermans et al., 2015, p. 140).

- **Growth Intention**

Growth intention encompasses the willingness to invest resources to achieve specific goals. It represents the entrepreneur's planned actions and strategies to drive firm growth. Growth intention measures the entrepreneur's commitment to pursuing growth and their proactive approach to realizing it. This commitment is often reflected in establishing specific goals and targets for the firm and the concrete steps taken by the entrepreneur to attain them (Hermans et al., 2015).

However, there can be confusion between growth aspiration, expectation, and intention. For example, entrepreneurs planning to hire employees within a five-year timeframe do not explicitly say whether they are expressing their aspirations or expectations. This is why growth expectations are sometimes referred to as "intended growth" or "intended scale" (Hermans et al., 2015). Moreover, external factors such as market conditions or the availability of a skilled workforce may further complicate the differentiation between intention and expectation. Hence, intention and expectation become intertwined in a complex process for entrepreneurs, wherein they evaluate their aspirations against the resources and capabilities they possess and the external environment's constraints and opportunities.

In summary, growth aspiration captures what an entrepreneur desires regarding size and scale for their firm, while growth expectation reflects their belief in its growth potential. On the other hand, growth intention goes beyond mere desires and beliefs, measuring the entrepreneur's active pursuit of growth through specific actions and strategies. It represents their dedication and drive to make their growth goals a reality. Understanding the distinction and dynamics between aspiration, expectation, and intention is essential for entrepreneurs as it influences their decision-making and strategic planning. By aligning their belief in the firm's growth potential with their aspirations and considering various internal and external factors, entrepreneurs can set realistic goals and develop effective strategies to foster growth.

2.3 Summary

In this section, I discussed the concept of firm growth, which refers to positive changes in various aspects of a business. I also introduced motivational concepts related to firm growth, emphasizing ambitious entrepreneurship and its importance in entrepreneurial behavior. Ambitious entrepreneurship encompasses an entrepreneur's desires, attitude, and commitment to growing their firms. However, differentiating between related concepts such as growth aspiration, attitude, motivation, expectation, and intention can be challenging. These concepts are interconnected yet distinct, influenced by personal circumstances and external factors.

Growth aspiration refers to an entrepreneur's desired level of growth for their firm, while growth attitude reflects one's disposition and mindset towards achieving that growth. When combined with a positive attitude, growth aspiration can translate into growth willingness or motivation. On the other hand, growth expectation is an entrepreneur's belief or prediction about the actual growth potential of their venture, taking into account available resources and opportunities. Similarly, growth intention represents the entrepreneur's planned actions and strategies to achieve firm growth. These concepts work together as entrepreneurs navigate their aspirations in relation to their abilities, resources, and the external environment. Please refer to Figure 1 for a summary of the relationship between these concepts.

Understanding the relationship between these concepts is important for effectively supporting businesses and promoting growth. While my research primarily focuses on an entrepreneur's growth aspiration, it is important to acknowledge the roles of other related concepts in firm growth. Understanding how these concepts relate and their implications is essential for designing effective business support programs and providing firms with the necessary tools to foster growth.

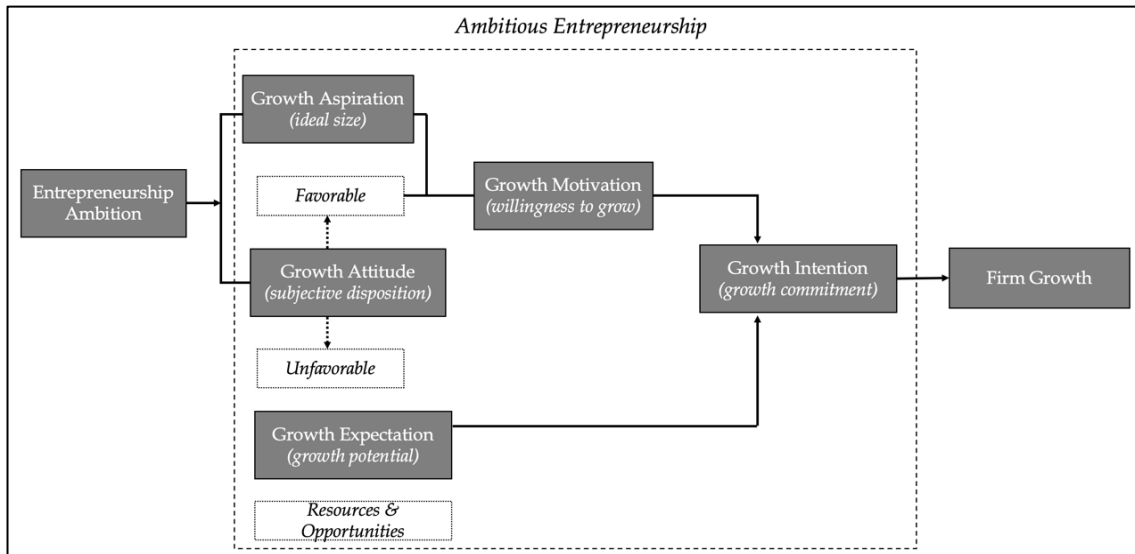


Figure 1. Summary of Ambitious Entrepreneurship Concepts

3 THEORETICAL BACKGROUND

This section provides an overview of the motivational theories underpinning growth aspirations and firm growth. Specifically, I will discuss the Theory of Planned Behavior, Goal-setting Theory, and Behavioral Theory of the Firm. These theories shed light on how past experiences and growth outcomes influence entrepreneurial growth aspirations and firm growth. Furthermore, I will explore the role of temporal stability in sustaining efforts toward achieving firm growth objectives. Understanding these theoretical concepts is important as they form the foundation for the subsequent sections of this thesis.

3.1 Theory of Planned Behavior

The Theory of Planned Behavior proposed by Ajzen (2020) posits that an individual's intention can be used to determine future behavior. This intention is influenced by attitude toward the behavior, subjective norms, and perceived behavioral control. Subjective norms refer to an individual's perception of what others think about the behavior, while perceived behavioral control refers to the amount of control an individual feels over the behavior (Ajzen, 2020).

Based on this theory, Hermans et al. (2015) suggested that an entrepreneur's inclination to seek growth, as reflected in actualized growth (Wiklund & Shepherd, 2003a), can be attributed to the entrepreneur's intention to pursue growth. This intention is formed when entrepreneurs believe that firm growth will benefit themselves and the firm. Additionally, the theory suggests that individuals are inclined to act based on their attitudes and subjective norms. Hence, entrepreneurs are more likely to pursue growth-seeking behavior if their attitudes and subjective norms support the behavior, emphasizing the importance of the individual's desire for growth in driving their willingness to act. Delmar and Wiklund (2008) and Hermans et al. (2015) referred to this intrinsic desire for growth and subjective norms as growth aspiration.

While favorable attitudes and subjective norms support growth aspiration, the theory also highlights that growth intention is formed when perceived behavioral control is sufficiently strong (Ajzen, 2020, p. 315). That is, entrepreneurs have *volitional control*, or the ability to perform the behavior at will, and the availability of resources necessary to perform the behavior (Delmar & Wiklund, 2008; Wiklund & Shepherd, 2003a). This means that while entrepreneurs aspire to grow their firms, entrepreneurs evaluate their skills and capabilities to perform growth-directed activities and consider business variables

and environmental factors in the formation of their growth intention (Ajzen, 2020; Bulanova et al., 2016; Hermans et al., 2015; Karadeniz & Özçam, 2010; Puenta et al., 2017).

Furthermore, the theory has been widely applied in studying entrepreneurial behavior and firm growth. For example, Hanifzadeh et al. (2018) research on export manufacturing firms found a positive influence of growth aspirations on firm growth. Similarly, McKelvie et al. (2017) observed that growth orientation leads to actual growth in Swedish firms, with innovative activities mediating this relationship. Drawing on the theory, these studies underscore the significance of growth aspirations in driving firm growth, offering valuable insights for entrepreneurs.

In summary, the Theory of Planned Behavior helps us understand how an individual's beliefs and attitudes influence behavior and can help predict and promote positive behavior change. Moreover, on a closer look (*see Figure 2*), it paints a simplified conceptual relationship between ambitious entrepreneurship and firm growth. That is, firm growth behavior is determined by an entrepreneur's growth intention, which is influenced by their subjective norms (growth aspiration) and attitudes (growth attitude) and their behavioral control over opportunities and constraints.

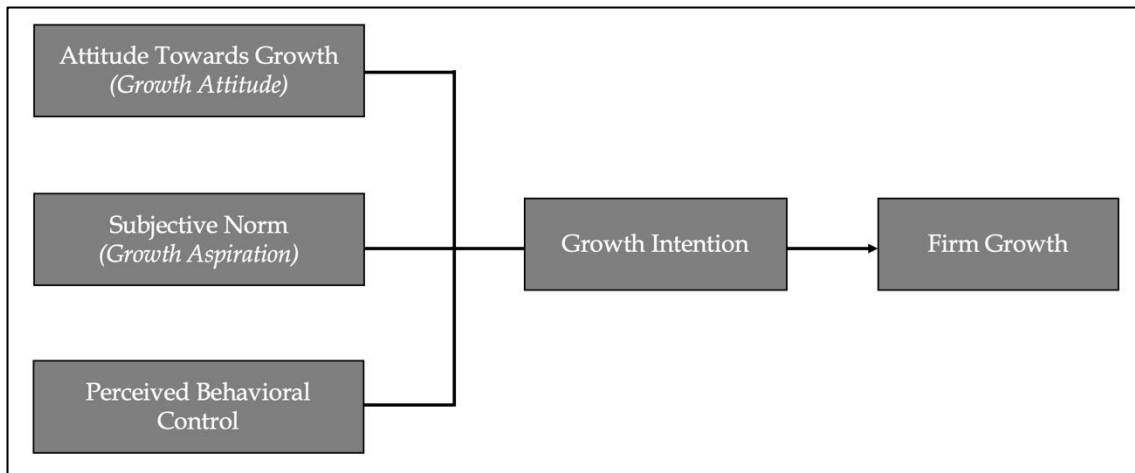


Figure 2. Ajzen's Theory of Planned Behavior in Firm Growth Context

3.2 Temporal Stability of Behavior

Ajzen's (2020) Theory of Planned Behavior highlights the significant role of behavioral intentions in determining actual behavior. A key concept within this theory is the temporal stability of behavior. This concept refers to the consistency and stability of an individual's intention to engage in a specific behavior over time (Sheeran & Abraham, 2003, p. 206). Temporal stability directly influences the likelihood of following through with planned behaviors and moderates the relationship between intentions and behavior (Sheeran et al., 1999).

Sheeran et al.'s (1999) study revealed that individuals with more stable intentions were more likely to act on their intentions and demonstrate greater consistency between their intentions and actual behavior. Moreover, the study demonstrated that when intentions were unstable, previous behavior became a stronger predictor of subsequent performance. In contrast, stable intentions were associated with higher levels of intention-behavior consistency and reduced influence of past experiences on subsequent performance. These findings suggest that individuals with stable intentions are more likely to carry out their planned behaviors, leading to improved performance outcomes.

Temporal stability has garnered considerable attention across various fields, including psychology, sociology, and economics. It serves as a tool to assess the reliability and validity of measurement instruments (Conner et al., 2000). Sheeran and Abraham (2003) focused on the role of temporal stability in the intention-behavior relationship and highlighted its importance as an index of intention strength. It is a critical factor that significantly impacts a firm's ability to grow. The level of commitment towards growth aspirations is a crucial aspect that can influence the pursuit of growth opportunities and, consequently, impact the firm's growth trajectory.

Moreover, empirical research has consistently shown that temporal stability plays a critical role in the relationship between ambitious entrepreneurship and firm growth (Conner et al., 2000; Delmar & Wiklund, 2008; Sheeran et al., 1999; Sheeran & Abraham, 2003). Delmar and Wiklund (2008) emphasized that stable growth motivations are more reliable indicators of growth than unstable ones. Individuals with consistent, long-term goals of starting and growing a business are more likely to persist and achieve their objectives over time. In contrast, those with unstable motivations may be less likely to succeed, as they may be more prone to giving up or shifting their focus to other pursuits. Thus, Delmar and Wiklund (2008) argue that stable growth motivations are a more dependable predictor of growth than unstable motivations.

3.3 Goal-setting Theory

The goal-setting theory is a motivational tool relevant to ambitious entrepreneurs striving to grow their firms. The goal-setting theory highlights the effectiveness of setting specific and challenging goals in promoting motivation and enhancing performance. According to this theory, entrepreneurs can improve their chances of achieving firm growth aspirations by adhering to five fundamental principles: clarity, complexity, challenge, commitment, and feedback (Locke & Latham, 2019, p. 98). In the context of firm growth, entrepreneurs can utilize these principles to align their goals with their firm's vision, challenge themselves, and optimize their chances of success.

Clarity is an important principle that ensures entrepreneurs set clear and specific goals, providing direction and focus to their endeavors. By defining their objectives precisely, entrepreneurs establish a roadmap for success and avoid ambiguity. Additionally, the principle of *challenge* encourages entrepreneurs to set ambitious yet realistic goals that push them beyond their comfort zones. This approach promotes growth and development, as entrepreneurs are motivated to surpass their existing capabilities. Moreover, *task complexity* suggests that goals should align with the entrepreneur's knowledge and skills to avoid overwhelming or limiting them. Therefore, it is important to strike a balance by setting goals that are challenging enough to inspire growth but not so difficult that they become unattainable. Matching the complexity of goals with the entrepreneur's capabilities enables effective goal pursuit.

Another principle is *commitment*, which plays a pivotal role in goal-setting. Entrepreneurs must dedicate sufficient time, effort, and resources to their goals, demonstrating resilience in the face of obstacles. Strong commitment fosters perseverance and ensures that entrepreneurs remain steadfast in their pursuit of growth. Lastly, *feedback* is a crucial component of the goal-setting theory. Regular monitoring of progress, coupled with feedback, allows entrepreneurs to make necessary adjustments and seek improvement. It enables them to stay on track and make informed decisions to maximize their chances of success. By applying these principles, ambitious entrepreneurs significantly increase their likelihood of creating successful businesses and achieving their growth aspirations (Hermans et al., 2015; Locke & Latham, 2006, 2019; Shinkle, 2012).

Based on goal-setting theory, studies found that entrepreneurs' personal beliefs and motivations are also crucial in sustaining a commitment to goals. For example, according to research by De Clercq et al. (2009), several factors influence goal commitment among entrepreneurs. These factors include self-efficacy,

which refers to belief in their ability to overcome obstacles and perform a behavior (Ajzen, 2020, pp. 216–217), perception of feasibility for their business idea, and passion for entrepreneurship. These factors positively impact goal commitment, indicating that entrepreneurs who possess higher self-efficacy, perceive their business idea as feasible, and exhibit a strong passion for entrepreneurship are more likely to be committed to achieving their goals. On the other hand, fear of failure and perception of limited financial support adversely affect goal commitment, suggesting that entrepreneurs who experience these factors are less likely to remain committed to their goals. Similarly, Hechavarria et al. (2012) also found that strong motivation, shaped by goals and self-efficacy beliefs, increases the likelihood of entrepreneurs continuing their efforts in the start-up process.

Overall, the goal-setting theory is relevant to ambitious entrepreneurship and provides valuable guidance for entrepreneurs in setting and achieving their growth aspirations. By following its principles, entrepreneurs can establish clear and achievable goals, tackle complex challenges, and adapt their approach to realizing their vision. Entrepreneurs with high growth aspirations typically set specific, challenging, and attainable goals, seek feedback, and strongly commit to meeting their objectives. Applying these principles increases the likelihood of building successful businesses and achieving desired levels of firm growth (Locke & Latham, 2019; Shinkle, 2012).

3.4 Behavioral Theory of the Firm

The Behavioral Theory of the Firm, proposed by Cyert and March (1963) and cited by Argote and Greve (2007), focuses on understanding individual behavior within an organization and its effect on decision-making. It provides valuable insights into how firms make decisions and adjust to changing environments. One of its central ideas is the role of aspiration levels in setting goals and making growth decisions. The theory suggests that aspiration levels are essential in determining a firm's attitude toward risk and growth (Gavetti et al., 2012; Greve, 2008). As a result, firms with high aspirations are more likely to take risks and pursue ambitious growth strategies, while those with low aspirations tend to be more cautious.

The Behavioral Theory of the Firm sheds light on the role of past experiences in shaping aspirations and informing strategic decisions for firms (Gavetti et al., 2012; Greve, 2008). Scholars such as Greve (2003, 2008) and Mezias et al. (2002) highlight the importance of past performance in shaping individuals' aspirations. In addition, past performances serve as valuable feedback that guides individuals and firms in evaluating the effectiveness of their previous

strategies, actions, and resources, enabling more informed decision-making (Greve, 2003; Hu et al., 2019).

Additionally, Greve's (2008) concept of sequential attention, derived from the Behavioral Theory of the Firm, suggests that entrepreneurs prioritize goals to achieve their aspirations and drive firm growth. Entrepreneurs effectively prioritize goals and promote firm growth by focusing on the next goal once they are satisfied with its progress. When firms fail to attain their aspirations, they reflect on and assess their strategies and operations, leading to possible changes in their approach (Shinkle, 2012). Conversely, achieving aspirations motivates firms to maintain momentum, avoid actions that could lower performance, and strive for even better results. Firms that achieve their aspirations have a higher likelihood of succeeding in subsequent years due to the effectiveness of their strategies and sufficient resources to pursue similar goals.

Drawing from this theory, researchers by Delmar and Wiklund (2008), Greve (2008), Mezas et al. (2002), Berchicci and Tarakci (2022), Hu et al. (2019), and Wennberg et al. (2016) demonstrate that feedback from previous outcomes shapes aspiration levels, with attainment discrepancy playing a significant role. Sequential goal achievement has also been linked to higher growth in specific industries. These studies emphasize the importance of feedback loops and motivational stability over time. Understanding these dynamics can inform strategic decision-making and drive entrepreneurial efforts toward achieving growth aspirations and promoting firm growth.

Overall, the Behavioral Theory of the Firm underscores the importance of past experiences in shaping entrepreneurs' and firms' aspirations, guiding future strategic decisions, and motivating them to pursue growth. This framework offers insights into the factors that influence firm growth, which can benefit managers seeking to promote growth and enhance performance within their organizations. Entrepreneurs and firms can achieve their aspirations and promote firm growth by prioritizing goals and focusing on them individually.

3.5 Summary

In this section, I introduced the motivational theories and concepts underlying growth aspirations and firm growth: The Theory of Planned Behavior, Goal-setting Theory, and Behavioral Theory of the Firm. These theories shed light on the influence of past experiences and outcomes on entrepreneurial growth aspiration and firm growth. Additionally, the significance of temporal stability in sustaining efforts toward achieving firm growth objectives is explored.

The Theory of Planned Behavior highlights the role of an individual's intention in determining future behavior and how attitudes, subjective norms, and perceived behavioral control influence this intention. Growth aspiration is identified as an intrinsic desire for growth and subjective norms that support growth-seeking behavior. The theory emphasizes evaluating skills, capabilities, and resources in forming growth intentions. Additionally, Temporal Stability of Behavior, a concept derived from the Theory of Planned Behavior, refers to the consistency and stability of an individual's intention to engage in a specific behavior over time. Stable intentions are associated with higher levels of intention-behavior consistency on subsequent performance. The significance of temporal stability in the relationship between ambitious entrepreneurship and firm growth is highlighted, with stable growth motivations being more reliable indicators of growth.

The Goal-setting Theory emphasizes the effectiveness of setting specific and challenging goals in promoting motivation and enhancing performance. Principles such as clarity, challenge, complexity, commitment, and feedback guide entrepreneurs in aligning their goals with their firm's vision and pursuing growth opportunities. This theory provides valuable guidance for ambitious entrepreneurs in setting and achieving their growth aspirations.

Lastly, the Behavioral Theory of the Firm focuses on understanding individual behavior within an organization and its impact on decision-making. It highlights the role of aspiration levels in setting goals and making growth decisions. Firms with high aspirations are more likely to take risks and pursue ambitious growth strategies. The theory also emphasizes the importance of past experiences and feedback in shaping aspirations and guiding strategic decisions. Furthermore, the sequential attention derived from the theory suggests that entrepreneurs prioritize goals to achieve their aspirations and promote firm growth. Understanding these theoretical concepts is crucial as they form the foundation for subsequent thesis sections, providing valuable insights into the factors influencing growth aspiration and firm growth.

4 HYPOTHESES

In this section, I proposed four hypotheses exploring the relationship between growth aspirations and firm growth outcomes. These hypotheses draw on the motivational theories and concepts discussed in the previous section: the Theory of Planned Behavior, Goal-setting Theory, Behavioral Theory of the Firm, and the concept of Temporal Stability. These hypotheses are summarized in Figure 3.

4.1 Past and Current Growth Aspirations

Delmar and Wiklund (2008) observed that firms typically plan their growth strategies for one to five years. However, accurately predicting firm growth presents challenges (Coad, 2010), and aspirations can change due to various factors, so firms must maintain consistent growth-oriented behavior over time. Drawing from the Theory of Planned Behavior (Ajzen, 2020), firms with stable growth aspirations are more likely to strive toward their intentions consistently. Conversely, firms with unstable aspirations may encounter difficulties sustaining their efforts for growth. Thus, temporal stability becomes essential for firms to maintain a focused and consistent approach to their growth aspirations and intentions, thereby ensuring sustainable growth.

In uncertain firm growth situations, past growth aspirations can serve as a valuable benchmark for future aspirations. Sequential attention theory suggests that firms establish aspiration levels based on past experiences and adjust them for future goals (Greve, 2008). Therefore, firms that consistently maintain high growth aspirations are more likely to sustain them in the present. Additionally, past growth aspirations can influence current growth aspirations through self-efficacy. Self-efficacy refers to an individual's belief in their ability to overcome obstacles and successfully perform a particular behavior (Ajzen, 2020, pp. 216–217). For instance, entrepreneurs who have previously aspired for growth and have achieved positive growth outcomes may develop higher self-efficacy beliefs regarding their capability to achieve growth in the future. Consequently, this heightened self-efficacy can lead to higher growth aspirations (Bulanova et al., 2016).

Therefore, based on the Theory of Planned Behavior, Temporal Stability, and Sequential Attention, it can be hypothesized that past growth aspirations significantly influence current growth aspirations. Past growth aspirations shape the attitudes and beliefs of entrepreneurs toward growth-seeking behavior,

thereby affecting their aspirations for future growth. Hence, I propose my first hypothesis (H1):

H1: Past growth aspirations have a positive effect on current growth aspirations.

4.2 Past Aspirations and Current Growth Outcomes

Previous studies indicate that firms that consistently aim for high growth are more likely to maintain such aspirations, resulting in increased growth outcomes (Conner et al., 2000; Sheeran et al., 1999; Sheeran & Abraham, 2003). However, the relationship between past growth aspirations and future growth outcomes can be influenced by factors such as perceived behavioral control and the complexity of the relationship. We can analyze the complexity of this relationship from different angles. Achieving growth aspirations necessitates long-term strategic planning, resource allocation, and execution, which may not immediately translate into actual growth outcomes. Moreover, firm growth is a multifaceted endeavor with various approaches, interdependencies, and uncertainties, where small business managers face multiple growth options intertwined with other objectives (Delmar & Wiklund, 2008). The simpler the behavior required for firm growth, the stronger the association between past growth aspirations and current growth outcomes.

Perceived behavioral control is another factor impacting the connection between growth aspirations and firm growth outcomes. Environmental constraints and limitations on capabilities can diminish the influence of aspirations and motivation on behavior (Delmar & Wiklund, 2008). However, when individuals or firms possess more volitional control over their growth outcomes, the relationship between past growth aspirations and current growth outcomes becomes more robust.

Based on these observations, I propose the second hypothesis (H2) that posits a positive effect of past growth aspirations on current growth outcomes, moderated by the degree of volitional control and the complexity of the behavior. This hypothesis highlights the interaction between growth aspirations and growth outcomes in determining the overall impact of past aspirations on current firm growth outcomes.

H2: Past growth aspirations have a positive effect on current growth outcomes.

4.3 Past Growth Outcomes and Current Growth Aspirations

According to the Behavioral Theory of the Firm, firms adapt from past experiences. For instance, those that have achieved growth goals in the past tend to have a positive attitude toward growth and believe they can do more. On the other hand, those that have experienced limited growth or setbacks may set more conservative goals in the future to avoid failure and maintain their self-efficacy.

Moreover, Firms adjust their aspirations based on their past achievements. According to sequential attention, they set their goals based on the previous year's performance and then adjust them for future aspirations (Greve, 2008). If they have achieved past growth, they will likely increase their aspirations. In contrast, if they perform far from their growth aspirations, their behavior, and future aspirations may be affected differently. Thus, entrepreneurs adjust their aspirations based on their experiences and growth outcomes, managing the discrepancy between the actual outcome and past aspirations (Hu et al., 2019).

My third hypothesis (H3) suggests that past growth outcomes have a positive effect on current growth aspirations. Firms with a history of high growth aspirations are likely to have stable high growth aspirations. If the growth outcome is satisfactory or acceptable compared to previous growth aspirations, current growth aspirations will adjust positively. However, if the growth outcome falls below or outside the acceptable level of attainment compared to previous growth aspirations, current growth aspirations will adjust negatively.

H3: Past growth outcomes have a positive effect on current growth aspirations.

4.4 Past and Current Growth Outcomes

Based on the Behavioral Theory of the Firm, firms that have experienced growth are more likely to set similarly high aspirations and achieve future growth (Gavetti et al., 2012; Greve, 2008). The positive results of past growth affirm firms making the right decisions leading to growth, thus motivating them to create a cycle of continual growth and success using the same strategy.

Therefore, past growth outcomes play a significant role in shaping current growth outcomes.

In line with the resource-based view of firm growth, firms with successful past performances possess valuable and unique resources and capabilities that contribute to their competitive advantage. Moreover, accumulating and effectively utilizing these resources over time can enhance a firm's ability to achieve sustained growth. Hence, Hu et al. (2019) argue that firms with successful past performances will likely improve future outcomes despite environmental disruption. Therefore, firms that have experienced growth in the past, along with abundant resources and favorable conditions for behavioral control, are more likely to achieve sustained growth in the presence of challenges and uncertainties.

However, the effect of past growth outcomes may be influenced by factors, as highlighted by Delmar and Wiklund (2008). These factors include perceived behavioral control, entrepreneurial and firm capabilities, environmental constraints, time constraints, and other uncertainties. Moreover, the resource-based perspective of firm growth argues that firms' performance differs due to different resource endowments (Lockett et al., 2009). Therefore, these factors can influence the firm's ability to leverage resources and translate past growth outcomes into continued success.

Hence, in my fourth hypothesis (H4), I propose that past growth outcomes have a positive effect on current growth outcomes. This effect, however, is mediated by the firm's resource endowments and moderated by perceived behavioral control and environmental factors. Specifically, firms with strong resource endowments and favorable conditions for behavioral control are expected to experience a stronger influence of past growth outcomes on their current growth. While past growth outcomes can serve as a valuable predictor of future growth, it is crucial to consider the factors influencing the relationship between past and current growth outcomes.

<p>H4: Past growth outcomes have a positive effect on current growth outcomes.</p>

4.5 Summary

This section explored the relationship between growth aspirations and firm growth outcomes through various theoretical perspectives. The hypotheses presented are mainly based on the Theory of Planned Behavior, Temporal

Stability, and the Behavioral Theory of the Firm. These hypotheses are summarized in Figure 3.

H1 proposes that past growth aspirations have a positive effect on current growth aspirations. It suggests that past growth aspirations serve as a crucial reference point for future aspirations and influence current growth aspirations by shaping the attitudes and beliefs of entrepreneurs toward growth-seeking behavior.

H2 proposes that past growth aspirations have a positive effect on current growth outcomes. Moreover, it highlights that the relationship between past growth aspirations and current growth outcomes is moderated by the degree of volitional control and the complexity of the behavior.

H3 proposes that past growth outcomes have a positive effect on current growth aspirations. This suggests that firms adjust their aspirations based on past growth achievements.

H4 proposes that past growth outcomes have a positive effect on current growth outcomes. However, this effect is mediated by the firm's resource endowments and moderated by perceived behavioral control and environmental factors.

Overall, these hypotheses shed light on the interplay between past growth aspirations, growth outcomes, and the factors that shape their relationship.

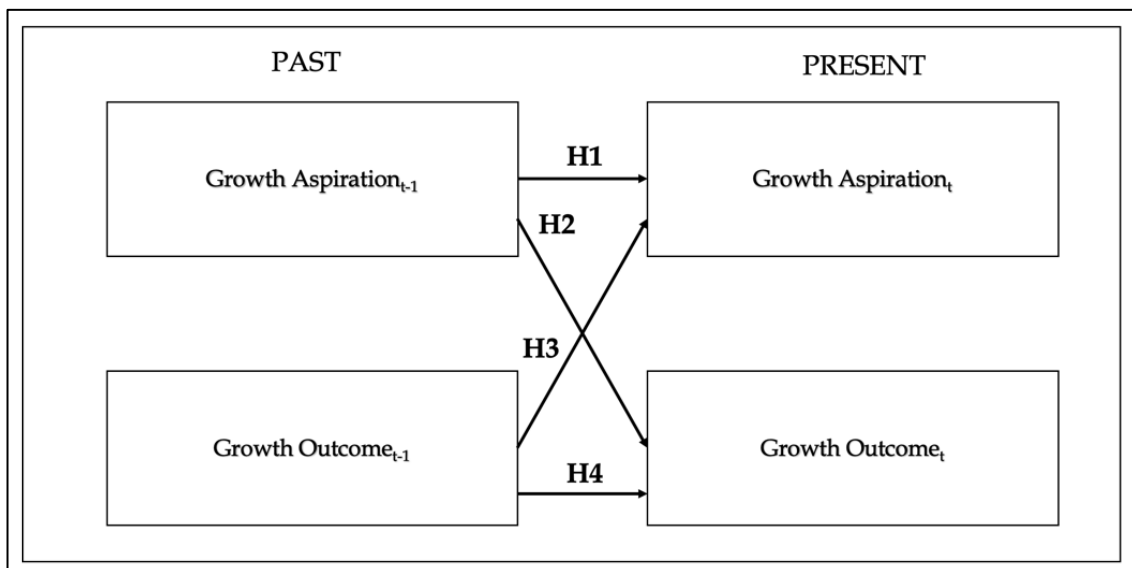


Figure 3. Growth Aspirations and Firm Growth Outcomes

5 RESEARCH METHODOLOGY

In the previous section, I asked: "*How do past growth aspirations and growth outcomes influence growth aspirations and firm growth in subsequent years?*" To answer this research question, I outlined the quantitative research approach used in this study to examine the relationship between growth aspirations and firm growth outcomes.

In this section, I will explain the measures utilized in the study and offered an overview of the data obtained from the Finnish Software Industry (Rönkkö & Peltonen, 2012). Furthermore, I will describe the data preparation stage, which involved eliminating irrelevant cases and creating new variables based on the established measurement criteria.

5.1 Quantitative Approach

Empirical studies can be classified as quantitative, qualitative, or mixed methods. Quantitative research utilizes close-ended questions and experiments to generate numerical data, test theories, and explain phenomena. In contrast, qualitative research seeks to uncover the underlying meaning of people's behavior and experiences by asking open-ended questions and conducting interviews in their natural environment (Goertzen, 2017; Yilmaz, 2013). The primary distinction between quantitative and qualitative research lies in the type of questions used, with quantitative research using closed-ended questions and numerical data, while qualitative research uses open-ended questions. Mixed methods research designs combine elements from both quantitative and qualitative research approaches (Creswell, 2009, pp. 203–224). For example, I used a quantitative, longitudinal approach to study the dynamics of firm growth and understand the factors and mechanisms driving it. This approach suits this study well because firm growth is an ongoing process (Davidsson & Wiklund, 2000).

Specifically, I used cross-lagged regression analyses on three different time points. Cross-lagged regression assesses the directional influences or reciprocal relationships between variables over time. This method is widely used for analyzing panel data with variables measured at different points in time (Cohen et al., 2003, Section 15). Cross-lagged regression, estimated using longitudinal data, is termed "crossed" and "lagged" because it can assess relationships between variables in a two-way (crossed) direction and between variables across different time points (lagged).

The cross-lagged analysis is commonly used in research to establish the causal relationship between constructs that have shown prior correlations. For example, Mezas et al. (2002) used cross-lagged analysis to explore the relationship between aspiration level, performance feedback, and social comparison within the aspiration-level adaptation process. Moreover, Wiklund and Shepherd (2003a) and Delmar and Wiklund (2008) employed cross-lagged analysis to investigate the relationships between firm growth and growth motivation in different periods. Similarly, Venugopal (2016) and Puente et al. (2017) applied the same analysis to investigate the factors influencing the growth aspirations of female entrepreneurs in India and Venezuela, respectively. In these studies, the researchers were able to assess the influence of intervening variables, such as demographic characteristics or other contextual factors, on the relationship between the two variables over time.

5.2 Finnish Software Industry Survey

For this study, I used a subset of data from The Finnish Software Industry Survey (Rönkkö & Peltonen, 2012) supplemented with Orbis data until 2017. The survey evaluates opportunities and challenges in the software industry for Finnish small and medium-sized enterprises. It specifically targets business owners and managers of firms involved in licensing and services for systems, applications, and game development. This dataset is particularly suitable for testing my hypotheses because it includes a longitudinal assessment of firms' growth aspirations and intentions. Additionally, the survey provides annual firm performance data that can be used to calculate firm growth.

The data collection process included contacting many companies in the software development industry codes, plus lists of known software companies. The list was updated yearly by adding new companies and removing those that no longer existed or conducted software business. Rönkkö and Peltonen (2012) described in their report: *"...the study is conducted by contacting a larger number of companies that operate in the industry codes associated with software development, added with several lists of known software companies. [...]. Each year, we adjust the list by adding new companies and removing companies that have either ceased to exist, have become subsidiaries of other Finnish companies, or have told us that they are either not software companies or have discontinued their software business (p. 17)." Further details of the survey's Methodology are explained in the report (Rönkkö & Peltonen, 2012, p. 73).*

The sampling frame was compiled from multiple sources. According to Rönkkö and Peltonen (2012), this includes the mailing list for the previous run, those maintained at portals www.swbusiness.fi by Culminatium Ltd., members

of The Finnish Software Entrepreneurs Association, firms with NACE rev2 codes 6201 and 6202 located in Finland from the Orbis database, and the database of responses to the survey over the years. In 2012, the initial process yielded 7,922 potential software companies, which was then reduced to 4,844 firms after manual screening (i.e., excluding unsuitable firms, inactive firms, and other criteria). Comparable samples and procedures were used in subsequent years (Rönkkö & Peltonen, 2012).

The 4,844 firms were invited to participate in the survey. A six-page questionnaire, based on the previous year's survey and developed according to questionnaire development guidelines, was sent in a booklet format (Rönkkö & Peltonen, 2012). The invitation also included endorsements from individuals and organizations with strong connections to the software industry to encourage firms to participate. Additionally, the respondents were promised firm-specific reports based on their responses as an additional incentive.

Several practical measures were taken during data collection to increase the response rate. Firstly, up to three individuals holding the highest ranks within each firm were contacted as designated contact persons. Secondly, a general email address was used in cases where the personal email addresses of contact persons were unavailable. In addition, the emails were directed to the appropriate positions to ensure a response. In the event of undelivered emails, follow-up was conducted using newly obtained contact information, if available. Thirdly, each respondent was assigned a unique four-digit code and verification letter to ensure data accuracy and privacy. They were instructed to return a blank questionnaire if they did not meet the eligibility criteria or were unwilling to participate. Fourthly, email reminders were sent to emphasize the importance of the survey. Finally, after three email reminders, a total of 401 complete and 108 partial responses were collected, primarily from business owners and managers of firms involved in system development, application development, and game development (Rönkkö & Peltonen, 2012).

5.3 Study Measures

In the Finnish Software Industry Survey (Rönkkö & Peltonen, 2012), business owners and managers were asked to describe their business, products and services, and their interests, aspirations, and performance in terms of revenue and personnel count. This paper was provided with a subset of data containing 17 variables which I have classified into four categories: firm growth, growth aspiration, growth intention, and firm demographics.

5.3.1 Firm Growth

Various indicators have been used in past research to measure growth. These include traditional measures such as revenue/sales, employment/personnel, performance, market share, asset growth, and financial indicators such as profitability and liquidity. In addition, researchers have also considered non-financial aspects such as process innovation, quality, variety, and customer satisfaction (Davidsson et al., 2005, 2006; Delmar & Wiklund, 2008; Wiklund & Shepherd, 2003a). These indicators provide different results on the same variables. Therefore the choice of growth indicators can affect the outcome of firm growth studies (Davidsson et al., 2006).

Rönkkö and Peltonen (2012) used a survey questionnaire to measure growth in revenue and personnel. This questionnaire asked respondents to estimate their revenue figures in Euros for the last fiscal year and to forecast revenue for the current fiscal year. Similarly, respondents were asked to estimate the personnel count for the previous fiscal year and the personnel count predicted for the end of the current fiscal year. In subsequent years, these same questions were used to track the firm's revenue and personnel growth performance over time. In addition, The Finnish Software Industry Survey employed various company databases, such as Fonecta Finder, Orbis, and Kauppalehti, to obtain current contact details and financial data (Rönkkö & Peltonen, 2012, p. 73).

Following the consensus on firm growth indicators, two available variables will be used to determine firm growth in this study (Davidsson et al., 2005; Delmar & Wiklund, 2008; Wiklund & Shepherd, 2003a). First, revenue growth (or sales growth) is a frequently used indicator because it reflects performance based on the market. On the other hand, employment or personnel growth is used because it gives the most robust measure of operationalization (Wiklund & Shepherd, 2003a).

Using both growth indicators (i.e., revenue and personnel growth) can be more beneficial than using one over the other because they will provide distinct yet complementary information. First, revenue is sensitive to inflation, currency, and market fluctuations (Delmar et al., 2003). Second, although sales growth often determines personnel count, firms may experience growth output without increasing the workforce. For example, firms may engage in subcontracting or automation, which does not affect the personnel count. Furthermore, personnel count may also be influenced by strategic decisions such as increased production demands, investing in machines to augment or substitute labor production, in-house production or outsourcing decisions, or even firm acquisitions (Delmar et al., 2003). Hence, examining revenue and personnel growth provides a comprehensive view of the firm's growth.

Consequently, firm growth can be measured by absolute or relative measures of firm size. Absolute growth reflects the actual change in firm size between two points in time, while relative growth (referred to as growth rate) is the change relative to the previous size (Davidsson et al., 2006). Larger firms tend to grow more in absolute terms, whereas small firms grow faster when relative growth is considered (Davidsson et al., 2006, p. 68).

Since the sample data consists of small and medium-sized firms, relative growth will be used as a growth measure in this study. Therefore, growth rates are calculated by subtracting the value in period *a* (e.g., 2010) from period *b* (e.g., 2011) to obtain the absolute growth and then dividing this figure by period *a*'s value to derive the relative growth.

5.3.2 Growth Aspiration

To assess growth aspirations, survey participants were asked about the preferred size of their company over the next five years as perceived by management. Specifically, they were asked, "*What would be the ideal size for your firm in five years, according to the management team?*" Their responses were their desired revenue and personnel counts, which were labeled *GrowthTargetRevenue* and *GrowthTargetPersonnel*.

In keeping with our firm's growth metric, I evaluate growth aspirations relative to the firm's size. This involves dividing the growth targets by the revenue and personnel counts, resulting in relative growth targets for revenue and personnel, respectively.

5.3.3 Growth Intention

In the previous section, I discussed the important role of growth intentions in the relationship between growth aspiration and firm growth. Growth intention refers to "*what the entrepreneur intends to achieve, combined with the effort s/he intends to make*" (Hermans et al., 2015, p. 139). It represents the specific goals and plans to achieve growth and bridges growth aspirations and actual firm growth. Additionally, research has shown that stable growth intentions better predict future performance than unstable ones (Conner et al., 2000; Sheeran et al., 1999), as intentions reflect the determination, dedication, and focus individuals or firms have towards their growth objectives. Therefore, maintaining consistency in growth intentions is an essential prerequisite for achieving firm growth, as emphasized by Delmar and Wiklund (2008).

To measure growth intention, Rönkkö and Peltonen (2012) developed a 5-point scale that categorized GrowthScaleGeneralItems, GrowthScaleInternationalItems, and GrowthScaleRiskItems. Questions such as: *“How well do the following statements describe the growth of your firm?”* *“How well do the following statements describe the growth opportunities of your firm?”* *“How well do the following statements describe your firm?”* *“How does your company make strategy and strategic decisions?”* were asked. These questions were followed by 8-11 statements which respondents answered on a scale from 1 (strongly disagree) to 5 (strongly agree). For this study, I only used the variable GrowthScaleGeneralItems (items 1-3) and dropped other growth intention variables. I generated the GrowthIntention variable to measure the firm’s growth intention.

The GrowthIntention variable was tested for reliability using coefficient α (0.88), also known as Cronbach’s α (Delmar & Wiklund, 2008, p. 443). The coefficient α is a widely accepted measure of quality and internal consistency used to assess the reliability of multi-item measurement instruments (Davidsson et al., 2006, p. 134). It enhances measurement reliability by averaging multiple ratings. Although some studies, such as Agbo (2010) and Vaske et al. (2017), have raised concerns about Cronbach’s α ’s capacity to capture measurement errors and scale dimensionality, this statistic remains widely used in social research.

5.3.4 Firm Demographics

Previous research has identified firm size, firm age, and industry as potential factors that can affect growth, either directly or indirectly, through the entrepreneur's aspirations and motivations (Davidsson, 1989; Delmar & Wiklund, 2008; Wiklund et al., 2003; Wiklund & Shepherd, 2003a, 2003b). Therefore, to account for these variables, I included them as control variables in this study.

The survey data provided basic information about the firms, including their code, name, type, size, and age. Since the survey data focused on the software industry, I checked the variations of the types of firms, including software product firms, device manufacturers, software project contractors, consulting firms, and resellers. Two other types of businesses were unrelated to the software industry; therefore, I excluded them in the data preparation section.

5.4 Data Preparation

The study used data from the Finnish Software Industry Survey (Rönkkö & Peltonen, 2012) and Orbis responses to prepare a dataset with 17 variables and

139,220 observations. The data was evaluated using Stata/SE 17.0. To prepare the data for analysis, I took several steps. I converted a non-numeric variable into a numeric value, dropped observations with negative values in the workforce, removed observations from two types of businesses not included in the study, and created new variables for growth aspiration and firm growth.

To address the non-normality of key variables, scatterplot matrices, and histograms were used to assess their distribution, revealing skewness and non-normality (*see Appendix 2*). To address this issue, potential outliers, and missing values were investigated and removed, including observations with extreme values of at least 10,000 target Personnel, 10B Euro revenue, and 1B Euro target revenue, which may have been recorded in error, given that our data sample is small to medium Finnish firms. A logarithmic transformation was also applied to the data to achieve a more normal-like distribution (*see Appendix 3*) (Davidsson, 1991, p. 415).

Using three scale variables (GrowthScaleGeneralItem1, GrowthScaleGeneralItem2, GrowthScaleGeneralItem3) that focused on general growth items, a GrowthIntention variable was generated. A test on coefficient α , or Cronbach's α , revealed an 88% reliability of the growth intention measure (Delmar & Wiklund, 2008, p. 443). Finally, I tested the variables for correlations and regressions. I conducted four regression analyses to examine the relationship between firm growth and growth aspirations, aligning with the study's hypotheses.

Table 1. Summary of Variables

Study Measures	Variables	Stata Label
Growth aspiration	Past growth aspiration (revenue)	l.GrowthAspiration_LR
	Past growth aspiration (personnel)	l.GrowthAspiration_LP
	Current growth aspiration (revenue)	GrowthAspiration_LR
	Current growth aspiration (personnel)	GrowthAspiration_LP
Growth outcome	Past growth outcome (revenue)	l. GrowthRate_LR
	Past growth outcome (personnel)	l. GrowthRate_LP
	Current growth outcome (revenue)	GrowthRate_LR
	Current growth outcome (personnel)	GrowthRate_LP
Growth intention	Growth intention	GrowthIntention
Demographics	Age	Age

Aspirations and Growth Rates are in log transformation values.

6 EMPIRICAL FINDINGS

This section outlines four main stages of findings and analysis. First, I will present a descriptive summary of the diverse range of firms in the dataset. Second, I will discuss the distribution normality tests, index reliability test, and the correlations between growth aspiration, firm growth, and other variables. Third, I will present four cross-lagged regression tables examining the causal relationships between growth aspiration and firm growth. Lastly, I will provide an evaluation of growth achievement among small Finnish software companies. All analyses were conducted using Stata/SE 17.0 to ensure accuracy.

6.1 Finnish Software Firms

The analysis begins with a descriptive summary of the dataset, setting the foundation for further discussion of the variables in subsequent sections. Upon initial assessment (*refer to Appendix 1*), notable disparities were observed in the dataset. These variations can adversely affect the accuracy and reliability of the statistical analysis, resulting in increased uncertainty and an incomplete understanding of underlying patterns or trends (Aguinis et al., 2013).

To ensure the accuracy and reliability of the data analysis, it is crucial to identify and address potential causes of these variations, such as sampling bias, outliers, or measurement errors. Addressing these factors may involve removing outliers, implementing appropriate statistical methods to manage sampling bias, or improving measurement techniques to reduce errors. Taking such measures is essential to ensure the validity and usefulness of the data analysis (Aguinis et al., 2013).

Table 2. Finnish Software Firms Characteristics

Variable	Observations	Mean	SD	Min	Max
Revenue	4,684	3,243,242	1.95e+07	1,000	5.00e+08
Revenue Aspiration	3,341	262.81	3,898.25	0	150,000
Revenue Growth	1,299	2.17	40.22	-1.00	1,024.32
Personnel	5,178	28.37	175.43	0	5,000
Personnel Aspiration	3,485	5.27	19.90	0	800
Personnel Growth	1,366	0.17	0.76	-1	12
Age	82,371	9.60	9.13	0	118

Table 2 presents an overview of the characteristics of the firms included in the study after the necessary adjustments to the raw data were made based on Aguinis et al. (2013). The descriptive summary reveals a diverse range of firms with varying ages, personnel sizes, and revenue figures within the dataset. Each variable's minimum and maximum values indicate the breadth of values and the firms' diversity. Furthermore, the average and standard deviation offer insights into the typical characteristics of firms, shedding light on the overall maturity of the dataset.

The dataset presents a wide range of firm ages, from 0 to 118 years, indicating the inclusion of both new ventures and well-established companies. Some firms recorded an age surpassing 50 years, often due to being family businesses or undergoing acquisitions without changing their business names. On average, the firms in the sample have an age of 9.6 years, suggesting a mix of relatively young and established companies.

The dataset displays significant variation in revenue, with an average of 3.2 million Euros and a significant standard deviation of 19.5 billion Euros. This indicates the presence of firms with both low and high revenue levels. Similarly, the dataset encompasses a wide range of personnel counts, ranging from 0 to 5,000 employees, with an average of 28 employees and a considerable standard deviation of 175 employees. Again, this implies the inclusion of both small and large firms.

Moreover, the dataset reveals substantial variation in growth aspirations reported by the firms. For revenue aspirations, firms express a broad range of values, from 0 to 150,000 times relative to their current size. On average, the reported revenue aspirations stand at 262.81 times their current size, with a standard deviation 3,898.25. This indicates diverse aspirations for revenue growth, with some firms aiming for moderate expansion and others aspiring for more substantial growth. Similarly, firms express a wide range of personnel growth aspirations, ranging from 0 to 800 times their current personnel count. The average personnel growth aspiration is 527% of their current size, with a standard deviation 19.90.

These findings highlight the varied aspirations for growth among firms, with noticeable differences in ambitions. Some firms aim to strive for significantly higher growth rates compared to others. As a result, the growth rates reported by the firms have an average revenue growth rate of 217%, a standard deviation of 40.22, and an average personnel growth rate of 17% with a standard deviation of 0.76. This suggests that the firms in the dataset are not experiencing extreme growth rates.

The dataset demonstrates significant variations in firms' characteristics and growth aspirations, as evident from the large standard deviations in personnel count, revenue, personnel growth aspiration, revenue growth aspiration, and growth rates. These differences can be attributed to factors such as firm type and size, as reflected in the range of growth aspirations and growth rates. Given the substantial variability in how firms aspire to grow and the pace at which they achieve that growth, it is important to consider the heterogeneity of firms when analyzing the data. Further analyses, such as regression, could be conducted to uncover underlying patterns and relationships between variables.

It's important to note that the dataset primarily comprises small and medium-sized enterprises. Therefore, the relative growth rates and aspirations are computed based on size rather than absolute values. Additionally, longitudinal data may introduce bias, as firms that performed well in previous years are more likely to participate in subsequent years. In contrast, those who underperform are less likely to participate. In summary, the sample population exhibits diverse aspirations and experiences regarding personnel and revenue growth. Therefore, a cautious interpretation of the data is crucial.

6.2 Statistics and Correlations

6.2.1 Test for Normality

To verify the normality of the data, I performed a test for normality, which revealed that the data did not follow a normal distribution (*see Appendix 2*). Several factors may contribute to this non-normality and large variation in the firm data. One, the diversity of firms in terms of age and size may cause heterogeneity that affects the data's distribution. However, the sample population may still not represent all small firms, and including more successful or ambitious firms than average may result in a non-normal distribution. There may also be outliers and extreme values that deviate from most of the data. Also, measurement errors or inaccuracies in data collection can cause non-normal distribution or highly skewed data (Mehmetoglu & Jakobsen, 2017, pp. 326–329).

Another factor is small and medium-sized enterprises are vulnerable to market changes (Aghion & Banerjee, 2005, pp. 23–48), especially with the relative growth rates and growth aspirations used as study measures. Market changes are influenced by consumer demand and economic conditions and may result in significant variations in growth aspirations and rates. Furthermore, the longitudinal nature of this data may introduce bias, as firms that performed well in the previous years are more likely to participate in the following years. In contrast, those that did not perform are less likely to participate.

A non-normally distributed or skewed distribution is not ideal in quantitative analysis and can create problems for regression analysis (Mehmetoglu & Jakobsen, 2017, pp. 326–329). To address these issues, I generated a log transformation of the key variables. This approach helps reduce extreme values and brings the variable distribution closer to a normal distribution (*see Appendix 2*).

6.2.2 Index Reliability

I created a *GrowthIntention* variable from the three *GrowthScaleGeneralItems* (1-3) for a single growth intention measure and evaluated its index reliability. To assess the internal consistency coefficients, I utilized Cronbach's α , preferably called coefficient α (Cronbach & Shavelson, 2004). In a growth intention measure, all items must share sufficient variance to indicate reliability (Delmar & Wiklund, 2008, p. 443).

The coefficient α ranges from 0 to 1, with 0 indicating inconsistent variance and 1 indicating complete consistency (Cronbach & Shavelson, 2004). Typically, a value of α greater than or equal to 0.70 is considered satisfactory, meaning that 70% of the scale's measurements are reliable while the remaining 30% are attributable to errors (Mehmetoglu & Jakobsen, 2017, p. 282). In this case, the coefficient of 0.88 implies a reliability of 88%, indicating a robust internal consistency and dependability level across the scale items. This suggests that the scale consistently evaluates the same concept or construct. Moreover, the positive average interitem covariance of 1.200582 is also a positive sign, indicating that the scale items are positively correlated and share sufficient variance with the index (Delmar & Wiklund, 2008, p. 443), which is desirable for a scale measuring a single construct.

In summary, the scale used in the study demonstrates high reliability, as indicated by the coefficient α of 0.88 and the positive average interitem covariance. This suggests that the scale consistently measures the intended construct. However, it is important to note that the scale consists of only three items, which may limit its comprehensive coverage. Generally, scales with more items tend to have higher reliability coefficients. In the next section, we will calculate the correlations of α with other variables.

6.2.3 Descriptive Statistics and Correlations

After conducting a reliability test using the coefficient α , I performed a correlation analysis to examine the associations among the variables using the

Pearson correlation matrix (Allen & Yen, 2001, p. 48). The pairwise approach was utilized to calculate correlations based on all available observations (Newton et al., 1997, p. 22). *Table 3* presents the means, standard deviations (SDs), and results of the pairwise correlations. *FirmType*, a categorical variable, was excluded from the analysis as it did not impact the numerical data. It is important to note that categorical variables require a different coefficient to measure correlation with other variables (Baak et al., 2020).

Log-transformed values were used to enhance the analysis by minimizing the impact of extreme values and enabling more reliable assessments and accurate comparisons between variables. Upon examining the means and standard deviations of the variables, I found that *Personnel Aspiration* and *Revenue Aspiration* had higher means and standard deviations than the other variables. In contrast, *Personnel Growth* and *Revenue Growth* exhibited negative mean values, indicating an average decline in these variables. The high means and standard deviations in revenue and personnel aspirations suggest that firms strive for growth and have ambitious goals for expanding their revenue and workforce. However, the negative mean values in revenue and personnel growth imply that, on average, firms are not achieving the desired growth. Factors such as economic conditions, market dynamics, or internal challenges could contribute to this discrepancy. Additionally, *Growth Intention* had a moderate mean and relatively low standard deviation, indicating a moderate intention to pursue growth with limited variability among participants. This suggests that while firms may aspire for growth, their intention to pursue and attain that growth actively may not be consistently strong.

In correlation analysis, the correlation coefficient measures the strength of the connection between two variables on a scale from -1 to 1 (Allen & Yen, 2001, p. 36,48). A correlation coefficient of -1 implies a perfect negative correlation, while a coefficient of +1 indicates a perfect positive correlation. A correlation coefficient of 0 indicates no correlation between the two variables. The statistical significance (p-value) suggests that the observed correlation is unlikely to result from random chance (Mehmetoglu & Jakobsen, 2017, p. 5).

The correlation analysis reveals several significant correlations among the variables. *Personnel Aspiration* exhibits a weak positive correlation with both *Personnel Growth* and *Revenue Growth*, indicating that an increase in personnel aspiration is associated with a slight increase in personnel growth and revenue growth. Similarly, *Revenue Aspiration* demonstrates a weak positive correlation with *Revenue Growth* and *Personnel Growth*, suggesting that an increase in revenue aspiration is linked to a slight increase in revenue growth and personnel growth. Moreover, a moderate positive correlation exists between *Revenue Aspiration* and *Personnel Aspiration* and between *Revenue Growth* and *Personnel Growth*. This suggests that firms with higher aspirations in terms of revenue and personnel

tend to have stronger positive correlations between these variables. Furthermore, there is a moderate positive correlation between *Personnel Aspiration* and *Growth Intention*, while the correlation between *Revenue Aspiration* and *Growth Intention* is weak. This implies that firms with higher aspirations are more likely to have increased growth intention, aligning with the Theory of Planner Behavior.

However, *Growth Intention* does not correlate significantly with *Personnel Growth* and only displays a weak positive correlation with *Revenue Growth*. This indicates that factors beyond growth intention may be more influential in determining personnel growth rates. It is important to note that a low correlation does not necessarily mean the absence of a relationship between variables, as there may be non-linear or complex relationships that the correlation coefficient does not capture.

Additionally, *Age* demonstrates a weak negative correlation with *Personnel Aspiration*, *Revenue Aspiration*, and *Growth Intention*, indicating that younger firms tend to have higher aspirations and intentions for growth. Conversely, as firms age, their aspirations and intentions for growth tend to decrease. Moreover, *Age* exhibits a weak negative correlation with *Personnel Growth* and *Revenue Growth*, suggesting that younger firms experience higher growth rates than older firms. This pattern may be attributed to relative growth rates yielding higher figures in small firms than absolute growth.

The findings highlight a disparity between growth aspirations and the actual growth firms achieve, indicating potential challenges that hinder the realization of desired growth. Furthermore, the analysis reveals age-related trends, with younger firms demonstrating higher aspirations, intentions, and growth rates than their older counterparts. Overall, the correlation analysis provides insights into the relationships among the variables, shedding light on how firms' aspirations, intentions, and growth rates are interconnected.

Table 3. Descriptive Statistics and Correlations in Log Transformation Values

	Mean	SD	1	2	3	4	5	6
1. Personnel Aspiration	1.06	0.89	-					
2. Personnel Growth	-1.16	1.14	0.2913***	-				
3. Revenue Aspiration	1.73	2.29	0.5318***	0.2249***	-			
4. Revenue Growth	-1.15	1.44	0.2589***	0.4985***	0.1891***	-		
5. Growth Intention	1.39	1.23	0.4425***	0.0051	0.2610***	0.0832**	-	
6. Age	9.60	9.13	-0.2912***	-0.3141***	-0.2758***	-0.2901***	-0.1190***	-

*** p<.01, ** p<.05, * p<.1

Aspirations and Growth Rates are in log transformation values.

6.3 Cross-lagged Regression Analyses

This section presents the cross-lagged regression models run with different reference points for past growth aspirations and past growth outcomes: 1-year lag, 3-year lag, and 5-year lag. This approach was taken to provide a longitudinal analysis of the data. Tables 4-7 show the regression results for Revenue Aspirations, Personnel Aspirations, Revenue Growth, and Personnel Growth. The R2 values show how much the independent variables explain the variance in the dependent variable. The F-Statistics measure the significance of the regression coefficients in the models (Mehmetoglu & Jakobsen, 2017, pp. 54-55,70).

Meanwhile, the number of observations listed represents the sample size used in the analysis. However, the number of observations decreases as we consider longer lagged years. This decline is because the model only includes data from firms that have recorded growth aspirations and growth rates for the lagged years. It is possible that some firms that participated in the study in the past year did not continue to participate after three or five years for various reasons.

Table 4. Longitudinal Analysis of Revenue Growth Aspirations

Revenue Aspirations by Lagged Years	1 Year		3 Years	5 Years
Past Revenue Aspiration	0.615 (0.231)	**	0.337 (0.314)	1.906 (1.093)
Past Personnel Aspiration	-0.131 (0.324)		0.181 (0.390)	-0.947 (1.521)
Past Revenue Growth	0.073 (0.109)		0.083 (0.101)	0.074 (0.675)
Past Personnel Growth	-0.198 (0.159)		-0.267 (0.181)	-0.219 (0.779)
Growth Intention	0.309 (0.158)		0.371 (0.189)	-0.434 (0.629)
Age	-0.011 (0.021)		-0.027 (0.021)	0.030 (0.119)
Intercept	-0.110 (0.527)		0.127 (0.577)	-1.364 (2.525)
R-squared	0.13		0.25	0.15
F statistic	3.87		4.02	0.91
Number of observations	169		79	39

** p<.01, * p<.05

Standard errors in parentheses

Aspirations and Growth Rates are in log transformation values

6.3.1 Revenue Growth Aspirations

Table 4 presents the results of longitudinal regression analyses examining the relationship between revenue growth aspiration and several predictor variables, including past growth aspiration, past growth outcome, growth intention, and age. The R² values indicate the proportion of the variance in revenue growth aspiration explained by the independent variables, and they (i.e., 13%, 25%, and 15%) suggest a moderate effect of these variables on the dependent variable (Mehmetoglu & Jakobsen, 2017, p. 55). Additionally, the F-Stat values for the three regression models indicate the statistical significance of the regression models in explaining revenue growth aspiration for the first two models but not for the third.

Further analysis reveals that *Past Revenue Aspiration* (1-year lag) is the only statistically significant predictor of *Current Revenue Aspiration* among the explored variables. This finding supports Hypothesis 1, suggesting that firms with high revenue aspirations in the past are more likely to have increased revenue aspirations in the future. However, the findings do not support Hypothesis 3, which posits that past revenue growth affects current revenue aspiration.

In contrast, the lack of significant relationships between revenue aspiration and other predictor variables, including past revenue growth outcome, growth intention, and age in the regression models using 3-year and 5-year lag, suggests that these factors may not consistently impact revenue growth aspiration over time. This finding implies that other unaccounted factors or dynamics may influence revenue growth aspirations beyond the short-term horizon.

Overall, the findings from *Table 4* highlight the significance of past revenue aspiration as a short-term predictor of current revenue growth aspiration. However, they also highlight the need for future research to explore potential underlying factors that influence revenue growth aspiration over time. Further investigation can provide a more comprehensive understanding of the dynamics and contribute to a deeper knowledge of long-term revenue growth aspirations.

Table 5. Longitudinal Analysis of Personnel Growth Aspirations

Personnel Aspirations by Lagged Years	1 Year		3 Years	5 Years
Past Revenue Aspiration	0.133 ** (0.046)		0.075 (0.082)	0.292 (0.171)
Past Personnel Aspiration	0.210 ** (0.065)		0.350 ** (0.103)	-0.083 (0.239)
Past Revenue Growth	-0.022 (0.022)		-0.003 (0.027)	0.010 (0.105)
Past Personnel Growth	0.096 ** (0.032)		0.044 (0.047)	0.040 (0.120)
Growth Intention	0.161 ** (0.032)		0.080 (0.050)	0.186 (0.099)
Age	-0.005 (0.004)		-0.004 (0.006)	-0.007 (0.019)
Intercept	0.360 ** (0.105)		0.310 * (0.152)	0.311 (0.388)
R-squared	0.51		0.53	0.41
F statistic	28.39		13.96	3.88
Number of observations	171		82	41

** p<.01, * p<.05

Standard errors in parentheses

Aspirations and Growth Rates are in log transformation values

6.3.2 Personnel Growth Aspirations

Table 5 presents the findings of longitudinal regression analyses that examined the relationship between personnel aspiration and several predictor variables, including past growth aspiration, past growth outcome, growth intention, and age. The R² values indicate a strong effect of the independent variables on the dependent variable (Mehmetoglu & Jakobsen, 2017, p. 55) and demonstrate that the findings are robust. The F-Statistics for the models were also significant, with varying sample sizes. These statistics provide evidence of the strength of the models, as they indicate significant relationships between the predictor variables and the outcome variable.

Upon examining the individual predictor variables in the regression model using 1-year lagged, several predictors emerged as statistically significant: *Past Revenue Aspiration*, *Past Personnel Aspiration*, *Past Personnel Growth*, and *Growth Intention*. This suggests that growth aspirations, personnel growth outcomes, and intentions from the previous year were crucial in shaping current personnel growth aspirations. Consequently, the regression model using a 3-year lag revealed that *Past Personnel Aspiration* was a significant predictor of *Personnel Growth Aspiration*. These findings indicate that past personnel aspirations from the previous three years continue to influence current personnel growth aspirations.

Another finding from the first two regression models was the significantly positive *Intercept*, which implies that even when all other predictor variables were equal to zero, there was still a positive expected value for personnel growth aspiration. This could be interpreted as a baseline level of aspiration inherent to individuals, regardless of their past experiences or future aspirations and intentions. However, this also suggests that other unaccounted variables may influence personnel growth aspiration, and further research could investigate these factors. Additionally, regression analysis revealed that past growth aspiration, past growth outcome, growth intention, and age were not significant predictors of personnel growth aspiration 5-year lag was used.

Overall, the findings support Hypotheses 1 and 3, demonstrating that past growth aspirations, personnel growth outcomes, and growth intentions significantly affect current personnel growth aspirations. The positive intercept implies that individuals may have an innate level of aspiration not solely determined by past experiences or future intentions or that the model did not consider all relevant factors. Future research should explore additional factors influencing personnel growth aspiration and examine how firms can use these findings to support manpower growth.

Table 6. Longitudinal Analysis of Revenue Growth Outcomes

Revenue Growth Outcomes by Lagged Years	1 Year	3 Years	5 Years
Current Revenue Aspiration	-0.039 (0.051)	-0.338 (0.335)	-1.214 (3.314)
Current Personnel Aspiration	0.091 (0.269)	0.455 (0.637)	-0.162 (4.590)
Past Revenue Aspiration	0.482 ** (0.167)	0.121 (0.483)	1.225 (3.189)
Past Personnel Aspiration	0.111 (0.247)	-0.043 (0.622)	-0.731 (3.234)
Past Revenue Growth	0.115 (0.078)	-0.110 (0.130)	0.038 (0.894)
Past Personnel Growth	0.197 (0.110)	0.191 (0.257)	-0.168 (1.084)
Growth Intention	-0.122 (0.117)	0.869 * (0.354)	-0.590 (1.961)
Age	-0.002 (0.014)	-0.032 (0.036)	-0.058 (0.304)
Intercept	-1.886 ** (0.374)	-2.843 * (1.167)	1.661 (5.603)
R-squared	0.31	0.40	0.06
F statistic	6.50	2.48	0.06
Number of observations	124	39	16

** p<.01, * p<.05

Standard errors in parentheses

Aspirations and Growth Rates are in log transformation values

6.3.3 Revenue Growth Outcomes

Table 6 presents the results of longitudinal regression analyses examining the relationship between revenue growth outcomes and various predictor variables, including past growth aspirations, past growth outcomes, growth intentions, and age. The R² values indicate that the regression models explained a range of variances in revenue growth outcomes with varying magnitudes (Mehmetoglu & Jakobsen, 2017, p. 55). Additionally, the F-statistic values suggest that the model using a 1-year lag had the strongest overall fit, while the model using a 5-year lag had the weakest fit.

The first regression model shows that *Past Revenue Aspiration* positively affected *Revenue Growth*, indicating that firms with high growth aspirations in the past may experience higher revenue growth outcomes. This finding supports Hypothesis 2, which proposes a positive effect of past growth aspirations on current growth outcomes. However, there was no evidence supporting Hypothesis 4, suggesting a positive effect of past revenue growth outcomes on revenue growth outcomes.

On the other hand, *Growth Intention* was a significant predictor in the second regression model, which used a 3-year lag. This indicates that firms with growth intentions in the past three years are more likely to achieve higher revenue growth outcomes. It suggests that the goals and strategies companies adopt to drive growth over a specific period can have a lasting impact on their financial performance. Additionally, it implies that firms that allocate their resources to growth-oriented behavior are more likely to experience growth over three years.

Moreover, the significant negative effects of the *Intercept* in both the 1-year and 3-year lag models suggest the influence of other unaccounted factors on revenue growth outcomes. This highlights additional variables contributing to revenue growth beyond the measured variables in the analysis. Further research and exploration are warranted to identify and understand these unaccounted factors that impact revenue growth outcomes.

Conversely, no significant predictors were found in the regression model using a 5-year lag, indicating that none of the examined variables, including past growth aspirations, past growth outcomes, growth intentions, and age, significantly impacted revenue growth outcomes at a 5-year lag. The low R² values and non-significant predictors in this model suggest the presence of other factors not considered in the analysis. Hence, further research is necessary to understand better the dynamics influencing revenue growth outcomes. Nonetheless, the findings suggest that firms can potentially enhance their revenue growth outcomes by setting ambitious growth aspirations and intentions, as indicated by the significant predictors in the 1-year and 3-year lag

models. Firms need to consider both past growth aspirations and intentions, along with other potentially influential factors, when formulating strategies for revenue growth.

Table 7. Longitudinal Analysis of Personnel Growth Outcomes

Personnel Growth Outcomes by Lagged Years	1 Year	3 Years	5 Years
Current Revenue Aspiration	-0.003 (0.050)	0.054 (0.125)	0.592 (2.813)
Current Personnel Aspiration	0.046 (0.290)	0.468 (0.594)	0.083 (3.069)
Past Revenue Aspiration	-0.050 (0.173)	0.457 (0.495)	-0.499 (1.505)
Past Personnel Aspiration	0.652 * (0.248)	-0.355 (0.705)	1.083 (1.797)
Past Revenue Growth	0.106 (0.059)	0.103 (0.133)	-0.141 (0.617)
Past Personnel Growth	0.118 (0.095)	0.240 (0.242)	0.013 (0.698)
Growth Intention	-0.149 (0.112)	0.034 (0.256)	-0.395 (0.851)
Age	-0.007 (0.013)	0.032 (0.030)	0.167 (0.151)
Intercept	-1.563 * (0.336)	-2.714 ** (0.929)	-4.121 (3.474)
R-squared	0.34	0.29	0.29
F statistic	6.25	1.41	0.26
Number of observations	105	37	14

** p<.01, * p<.05

Standard errors in parentheses

Aspirations and Growth Rates are in log transformation values

6.3.4 Personnel Growth Outcomes

Table 7 presents the relationship between personnel growth outcomes and several predictor variables, including past growth aspirations, past growth outcomes, growth intentions, and age. The R2 values indicate that the regression models explain a substantial proportion of the variance in personnel growth outcomes (Mehmetoglu & Jakobsen, 2017, p. 55), while the F-statistics demonstrate the statistical significance of the regression models, albeit with a lower significance level on 5-years lag. The sample sizes reflect a moderate-sized sample used in the analysis.

In the first regression model using a 1-year lag, *Past Personnel Aspiration* was a significant predictor of *Personnel Growth*, supporting Hypothesis 2. However,

no evidence supported Hypotheses 4, which proposes a relationship between past and current growth outcomes. Notably, the *Intercept* had a significant negative effect in the 1-year and 3-year lagged models, indicating the presence of unaccounted factors influencing personnel growth outcomes. Moreover, when a 5-year lag was used, none of the predictor variables significantly impacted personnel growth outcomes. This suggests that the model's predictive power diminishes over time. Further research is necessary to investigate these factors and their influence on personnel growth outcomes.

Overall, *Table 7* highlights the importance of *Past Personnel Aspiration* as a significant predictor of current personnel growth outcomes. However, it also emphasizes exploring other factors and dynamics that may affect personnel growth outcomes beyond the short-term horizon. Therefore, future research should investigate these factors to enhance our understanding of personnel growth and its determinants.

6.4 Results of Hypotheses Testing

Tables 4 and 5 analyses reveal a positive association between past and current growth aspirations. Specifically, with a 1-year lag, past revenue aspirations significantly affect current revenue aspirations. Additionally, past revenue and personnel aspirations, along with past personnel outcomes and growth intentions, are significant predictors of personnel growth aspirations. Notably, the influence of past personnel aspirations on current personnel aspirations remains significant even when considering a 3-year lag, although the significance diminishes with a 5-year lag. These findings support Hypothesis 1, indicating that past growth aspirations positively affect current growth aspirations, primarily in the short term.

Furthermore, the results in Tables 6 and 7 indicate a positive association between past growth aspirations and current growth outcomes. Specifically, past revenue aspirations positively affect revenue growth outcomes, and past personnel aspirations positively impact personnel growth outcomes, both within a one-year lag. These findings support Hypothesis 2, as they demonstrate the positive influence of past growth aspirations on current growth outcomes, again primarily in the short term.

On the other hand, the analysis reveals that the influence of past growth outcomes on current growth aspirations is primarily observed when using personnel as the growth indicator. Specifically, personnel growth outcomes with a 1-year lag positively affect current personnel growth outcomes. However, no significant evidence suggests that past revenue growth affects current revenue

growth aspirations. These findings partially support Hypothesis 3, indicating that the impact of past growth outcomes on current growth outcomes differs between revenue and personnel. Furthermore, the analysis does not suggest that past growth outcomes influence current growth outcomes for both revenue and personnel, thereby not supporting Hypothesis 4.

Moreover, the presence of significant intercepts, along with relatively low R² and F-statistic values, indicate that additional factors beyond the variables included in the analysis may also play a role in influencing growth aspirations and firm growth outcomes. Therefore, further research is warranted to understand the dynamics underlying growth aspirations outcomes and identify additional relevant factors contributing to them. Overall, the findings underscore the significance of considering past growth aspirations and outcomes, alongside other potentially influential factors, when devising growth strategies.

Table 8. Summary of Hypotheses Test Results

Supported	H1: Past growth aspirations have a positive effect on current growth aspirations
Supported	H2: Past growth aspirations have a positive effect on current growth outcomes
Partially Supported	H3: Past growth outcomes have a positive effect on current growth aspirations
Not supported	H4: Past growth outcomes have a positive effect on current growth outcomes

6.5 Firm Growth Achievement

To further my analysis, I evaluated the growth achievement of small Finnish software companies over five years. The objective was to determine the number of firms that successfully achieved their growth aspirations in terms of revenue and personnel count. *Table 9* provides an overview of the results.

Table 9. Number of Firms that Achieved Growth Aspirations

	Y1	Y2	Y3	Y4	Y5
Achieved Aspired Revenue Growth	2,717	2,371	2,381	2,387	2,470
Achieved Aspired Personnel Growth	6,121	5,626	5,632	5,649	5,615

Over five years, the number of firms that achieved their revenue growth objectives ranged from 2,371 to 2,717. Simultaneously, the number of firms that

achieved their personnel growth objectives ranged from 5,615 to 6,121. Notably, the number of firms meeting their growth objectives remained relatively stable, with a peak in the first year. Moreover, the findings suggest that more firms achieved personnel growth than revenue growth aspirations. This indicates that small Finnish software firms may encounter greater challenges in realizing their revenue growth ambitions than their personnel growth targets.

Interestingly, the analysis reveals a fluctuation in the growth achievement of firms over time. While some firms were able to achieve growth in the initial years, they experienced a decline in the second year. After that, however, they gradually regained momentum and achieved growth again in subsequent years. This underscores the importance for firms aspiring for growth to maintain consistency in achieving their growth objectives. Furthermore, it highlights the need for sustained efforts and adaptability to overcome challenges and maintain steady growth. Nevertheless, many firms achieved their desired revenue and personnel growth success, indicating effective execution of their growth strategies. These firms are examples of successful growth implementation within the small Finnish software industry.

Overall, the results shed light on small Finnish software companies' realizing their revenue growth aspirations, which market conditions and competition may influence. Conducting further analysis and exploring the underlying factors impacting revenue growth achievement would provide valuable insights for these firms, assisting them in navigating the challenges and maximizing their growth potential.

6.6 Summary

This section presented the findings and analysis in four stages: description summary, statistics and correlations, regression analyses, and evaluation of growth achievement. The dataset included firms of varying ages, personnel sizes, and revenue figures, with some aiming for moderate expansion and others for substantial growth. To address the non-normality of the data, I applied a log transformation. I made this adjustment to improve the distribution of the variables and ensure a more accurate analysis. Additionally, I assessed the reliability of growth intention using the coefficient α , which demonstrated high internal consistency and reliability.

The correlation analysis unveiled significant relationships among the variables. It indicated that younger firms tended to have higher aspirations, intentions, and growth rates than older firms, as reflected in weak negative correlations. Moreover, there was a weak positive correlation between higher

aspirations and slight increases in growth. Firms with high aspirations also displayed stronger intentions to pursue growth.

The cross-lagged regression models were employed to explore the relationships between revenue growth aspiration, personnel growth aspiration, revenue growth outcome, and personnel growth outcome, using different time lags (1-year, 3-year, and 5-year). The results revealed a positive association between past and current growth aspirations and between past aspirations and current growth outcomes. Additionally, I observed a positive relationship between past growth outcomes and current growth aspirations, particularly with personnel growth. However, I found no significant association between past and current growth outcomes.

The relatively low R² and F-statistic values in some regression models suggest the presence of additional factors influencing growth outcomes. Thus, further research is necessary to gain a more comprehensive understanding of these dynamics. Nonetheless, these findings contribute to our comprehension of firms' heterogeneity in characteristics and growth aspirations, uncovering meaningful relationships between aspirations, intentions, and growth rates.

Finally, the evaluation of small Finnish software companies' growth achievement reveals a relatively stable number of firms meeting their growth objectives, with more firms achieving personnel growth aspirations than revenue growth aspirations. The fluctuations in growth achievement over time emphasize the importance of consistency and adaptability in pursuing growth objectives. Despite encountering challenges, many firms successfully executed their growth strategies.

7 DISCUSSION

This section discusses the complex relationship between growth aspirations and firm growth outcomes. My study showed that having growth aspirations positively impacts a firm's growth over time. Additionally, I found two significant effects of growth aspirations: the short-term effect and the delayed effect. The short-term effect demonstrates how previous growth aspirations can influence current growth aspirations, while the delayed effect demonstrates how growth aspirations can impact actual growth outcomes over time.

7.1 Short-Term Effect of Growth Aspirations

Drawing upon the Behavioral Theory of the Firm, my research findings provide empirical support for the influence of past aspirations on current aspirations. Specifically, past year's growth aspirations affect current growth aspirations. Moreover, the sequential attention exhibited by entrepreneurs suggests that past achievements serve as a foundation for future aspirations (Greve, 2008). This finding further underscores the theory of temporal stability, indicating that firms with a history of stable growth aspirations are more likely to persist in such behavior (Sheeran et al., 1999). Prior studies on time lags have consistently demonstrated the predictive power of temporal stability in shaping future behavior, underscoring its significance in forecasting firm growth (Conner et al., 2000; Delmar & Wiklund, 2008; Sheeran et al., 1999; Sheeran & Abraham, 2003).

In addition, my research reveals that a firm's growth aspirations from three years ago exert a short-term influence on its current aspirations, while those from five years ago do not. Consequently, it becomes imperative for firms to critically evaluate their recent growth trends and establish realistic short-term targets and aspirations, aligning with the principles of the goal-setting theory (Locke & Latham, 2019). Striking the right balance between ambitious and realistic targets is crucial, as setting overly ambitious goals may lead to overinvestment, resource misallocation, or capacity overstretching. On the other hand, adopting excessively conservative targets based on recent failures may result in missed growth opportunities and falling behind competitors.

Firms must carefully consider recent growth trends, prevailing market conditions, and the competitive landscape to maximize short-term growth potential and establish a sustainable long-term growth trajectory. By adopting

this balanced approach, firms can mitigate potential pitfalls, capitalize on growth opportunities, and ultimately achieve short-term gains and long-term success.

7.2 Delayed Effect on Growth Outcomes

The Theory of Planned Behavior (Ajzen, 2020) suggests that attitudes, subjective norms, and perceived behavioral control influence an individual's intentions to perform a specific behavior, ultimately leading to actual behavior. Interestingly, regression analysis did not support the effect of current growth aspirations on current growth outcomes; instead, past growth aspirations positively influence current growth outcomes. Hence, I found a delayed effect of growth aspiration. The relationship between growth aspirations and outcomes may be complex and dependent on different factors, including the interdependencies of tasks and objectives may complicate the relationship between growth aspirations and outcomes (Delmar & Wiklund, 2008).

Moreso, while the Theory of Planned Behavior posits that growth aspirations are a crucial component of firm growth, achieving growth aspirations requires strategic planning, goal setting, and resource commitment, which may not immediately be executed or translated into firm growth outcomes. Additionally, the significant relationship between growth intention in the last three years and current revenue growth outcome indicates that the growth intentions set by businesses in the past have a meaningful impact on their present revenue growth. This suggests that the goals and strategies companies adopt to drive growth over a specific period can have a lasting influence on their financial performance. Thus, it highlights the importance of long-term planning and goal setting in achieving sustainable revenue growth.

One way to understand this complexity is through the concept of path dependence. Path dependence is "*the set of dynamic processes where small events have long-lasting consequences that economic action at each moment can modify, yet only to a limited extent*" (Antonelli, 1997, p. 643). According to this, past events or decisions set or limit the range of potential outcomes for future events or decisions. This suggests that past aspirations leading to strategic action would realize their benefits only after some time (Ngoasong & Kimbu, 2019). This happens in industrial organizations or firms, such as the information and technology sector, where for example, an investment in R&D would take time to realize its potential.

Furthermore, past growth aspirations can provide firms with accumulated resources, such as money, knowledge, talent, and relationships, to enhance their capabilities and capacity for growth. For example, building a strong customer

base or forming strategic partnerships may take time, but they can provide a solid foundation for current growth efforts. The learnings and experiences gained from past growth aspirations can be applied to current growth intentions, offering valuable insights, knowledge, and expertise to contribute to higher growth outcomes. It is, therefore, important for firms to consistently set and achieve growth goals over time to maintain growth aspirations as a strategic objective. Firms must consistently set and achieve growth goals over time to maintain growth aspirations as a strategic objective. They must also balance ambitious and realistic targets and accumulate resources to enhance their capabilities and capacity for growth.

7.3 A Complex Relationship

The research findings suggest that the relationship between past growth outcomes and current growth aspirations is complex and may be influenced by various factors. For example, the study found that while past personnel growth outcomes may positively affect growth aspirations, past revenue growth outcomes do not significantly affect revenue growth aspirations. It means that if a firm has experienced high revenue growth in the past, it may not necessarily translate into higher revenue growth aspirations. This could be attributed to the complexity of factors influencing revenue growth and the software industry's dynamic and uncertain nature.

In difficult or changing market conditions, past revenue growth may not be enough to boost revenue growth aspirations. Customers' preferences and demands may change over time, and businesses must adapt their products or services to meet these changing needs. Increased competition can also affect current revenue growth aspirations. Additionally, with rapid technological advancements, especially in the software industry, existing products or services can become obsolete. Therefore, revenue growth aspirations may be put aside for innovation or new strategies to adapt and differentiate themselves to sustain revenue growth. Moreover, in Hu et al.'s (2019) study, the impact of past performance on a firm's performance is weakened when environmental disruption is low but is heightened when environmental disruption is high.

Another possible reason that past growth outcome does not necessarily translate into revenue growth aspiration or outcome is investing in and strengthening the firm's human and capital resources. Firms may prioritize different aspects of growth, such as personnel growth aspiration, over revenue growth aspiration, which various factors may influence the decision-making process. This could also imply that firms may place more emphasis on personnel

growth to achieve future growth aspirations rather than solely relying on revenue growth.

Consequently, firms may experience special cases, such as single large contracts or short-term demand, that could lead to unexpected growth. This scenario may be unique and not reliably indicate sustainable or future growth. Moreover, past growth outcomes may not necessarily lead to current growth outcomes because of limiting factors, including perceived behavioral control, environmental constraints, lack of entrepreneurial and firm capabilities, and time constraints. Delmar and Wiklund (2008) argued that these constraints and uncertainties could alter the course of firm growth. Therefore, further research is needed to better understand the dynamics of past and present growth outcomes.

Nevertheless, past growth outcomes can still guide future goal setting and resource allocation. Moreover, achieving past growth outcomes can help firms develop their capabilities and capacity for future growth. Therefore, when setting growth aspirations and making strategic decisions, firms should consider their past growth outcomes, current goals, multiple factors, and context-specific conditions to ensure the successful attainment of their growth goals.

7.4 Theoretical Contributions

The complex relationship between growth aspirations and firm growth outcomes in the Finnish Software Industry context indicates the importance of considering various growth aspects such as revenue growth, personnel growth, and past growth aspirations. First, the research findings contribute to the Theory of Planned Behavior by highlighting the role of entrepreneurial behavior in achieving firm growth. Attitudes, subjective norms (growth aspirations), and perceived behavioral control shape growth intentions, which are critical in shaping firm growth trajectories. Moreover, the study incorporates the principles of goal-setting theory, which suggests that setting specific, challenging, and achievable goals is essential for driving motivation and directing efforts toward desired outcomes.

Second, the research findings support the Behavioral Theory of the Firm, which posits that firms learn from past experiences. Specifically, the results indicate that past growth aspirations have short-term and delayed effects. The short-term effect suggests that past aspirations influence current aspirations, while the delayed effect demonstrates how growth aspirations can impact actual growth outcomes over time. These findings highlight the interplay between past aspirations and future growth trajectories, emphasizing the significance of considering the historical context in understanding firm growth.

The theoretical implications of this study shed light on how firms operating in dynamic and uncertain industries, such as the software sector, can effectively plan for growth. By consistently setting and achieving growth goals in line with goal-setting theory and considering the sequential attention of entrepreneurs, firms can maintain growth aspirations as a strategic objective. However, achieving growth requires a holistic approach considering multiple factors and time frames while acknowledging the complex relationship between growth aspirations and outcomes. This involves striking a balance between ambitious and realistic growth targets and understanding the interdependencies of tasks and the impact of external factors. Overall, the findings highlight the importance of developing a comprehensive growth strategy that incorporates past experiences, accumulated resources, and other external factors, such as market conditions to achieve firm growth success.

7.5 Practical Implications

The findings of this study have implications for entrepreneurs and business managers seeking to achieve firm growth. First, cultivating a positive attitude towards growth and setting growth aspirations that align with the firm's resources, capabilities, and external environment is crucial. To achieve this, entrepreneurs and business managers can use past growth aspirations and outcomes to set realistic and aspirational growth targets that motivate employees.

Second, developing a comprehensive growth strategy that considers multiple factors and time frames is necessary. This involves balancing ambitious growth targets with external factors such as market conditions, competition, and human and capital resources investments. Managers should carefully evaluate the influence of past growth aspirations on current aspirations, taking into account the delayed effect of previous aspirations on growth outcomes. Managers can enhance their firm's growth potential and achieve long-term success by setting realistic and ambitious growth targets, developing effective strategies, allocating resources appropriately, and monitoring firm growth trajectories.

Third, human resource management plays a crucial role in achieving growth aspirations. While past revenue growth outcomes do not consistently predict future growth potential, the study found that past personnel growth outcomes positively affect current personnel growth aspirations. Therefore, managers should prioritize talent acquisition, development, and effective human resource management practices to support and enhance growth aspirations.

Employee training and development programs can also enhance perceived behavioral control and effective decision-making processes.

In conclusion, managers in dynamic and uncertain industries should adopt a growth-oriented mindset and develop a comprehensive growth strategy that considers the complex relationship between growth aspirations and outcomes. By implementing the practical implications of this study, managers can enhance their firm's growth potential and achieve long-term success.

7.6 Research Limitations

Future research should address certain limitations present in the current study. The first limitation is the study's narrow focus on past growth aspirations and outcomes, without considering other significant factors influencing growth, such as market conditions, competition, and technological changes. Future studies should incorporate these variables into the analysis to develop a more comprehensive model that accurately captures the complexity of growth dynamics.

Another limitation is the reliance on a limited set of growth indicators centered around organic growth indicators like revenue growth and personnel growth. This narrow focus may not provide a complete picture of growth dynamics. For instance, past research found that financial performance was a poor predictor of growth outcomes (Coad, 2009, pp. 49–75). Researchers should explore a broader range of indicators to understand growth outcomes better. Different indicators may provide distinct results and interpretations, thus contributing to a more comprehensive growth understanding.

Additionally, the study's focus on the software industry restricts the generalizability of the findings. To enhance the applicability of the results, future studies should investigate the relationship between growth aspirations and outcomes across diverse sectors and contexts. This broader approach would allow for a more diverse and representative sample, facilitating a deeper understanding of growth dynamics.

Furthermore, the relatively small sample size and limited statistical power of the current study may have hindered the ability to detect significant effects. Therefore, future studies should strive to replicate the research with larger sample sizes to strengthen the statistical power and ensure robust findings. Additionally, conducting the study with different populations would further validate the results and assess their generalizability to a broader context.

In conclusion, future research should address the identified limitations by incorporating additional variables, controlling for confounding factors, employing reliable measurement instruments, diversifying industry contexts, and increasing sample sizes. By taking these steps, researchers can gain a more profound understanding of the factors influencing firm growth outcomes, thereby providing valuable insights for individuals and organizations aiming to enhance their growth strategies.

8 CONCLUSION

My thesis explored the relationship between growth aspirations and firm growth outcomes in the Finnish Software Industry. I found that past growth aspirations have a short-term influence on current aspirations and a delayed effect on growth outcomes, highlighting the importance of sustained aspirations for achieving firm growth success. Moreover, the study noted the complexity of the relationship between firm growth outcomes and growth aspirations, showing that they can differ in revenue and personnel growth. Specifically, past personnel growth influenced current personnel growth, while past revenue growth did not have the same impact. This finding highlights the need to consider multiple growth aspects and past aspirations when developing a comprehensive growth strategy.

Theoretical contributions of this study support the Theory of Planned Behavior and the Behavioral Theory of the Firm. The findings highlight the crucial role of growth aspirations in driving firm growth, shaping growth intentions, and influencing growth outcomes over time. These theoretical implications further emphasize the significance of concepts such as sequential attention, temporal stability, goal-setting theory, and the interdependencies between past and current growth aspirations. These insights provide practical guidance for entrepreneurs and business managers who aim to achieve firm growth. It emphasizes cultivating a positive growth-oriented mindset, setting realistic yet ambitious growth targets, and developing comprehensive growth strategies. Additionally, the study highlights the role of human resource management in supporting growth aspirations and underscores the need to consider external factors and accumulated resources to facilitate successful growth.

While the study has made contributions, it is important to acknowledge its limitations. The focus on the software industry and specific context may restrict the generalizability of the findings. Hence, I recommend future research to investigate other industries and contexts to overcome this limitation, allowing for a more comprehensive understanding of the relationship between growth aspirations and outcomes. Additionally, incorporating controls for confounding variables and conducting the study with larger sample sizes would strengthen the reliability of the findings. Moreover, the study emphasized the importance of considering additional factors such as market conditions, competition, and human and capital resources investments. Incorporating these factors could help develop a more holistic model of firm growth outcomes.

In conclusion, this study offers insights into the complex relationship between growth aspirations and firm growth outcomes. Firms can develop

effective growth strategies and make well-informed decisions by recognizing the short-term and delayed effects of growth aspirations. The findings emphasize the importance of continuously monitoring, evaluating and adjusting growth aspirations to ensure sustained growth and success in dynamic and uncertain industries. Furthermore, adopting a holistic approach to growth planning, considering past achievements and accumulated resources, is crucial. Future research should build upon these findings to better understand the factors influencing growth outcomes and provide robust guidance for managerial decision-making.

REFERENCES

- Agbo, A. A. (2010). Cronbach's alpha: Review of limitations and associated recommendations. *Journal of Psychology in Africa, 20*(2), 233–239.
<https://doi.org/10.1080/14330237.2010.10820371>
- Aghion, P., & Banerjee, A. (2005). *Volatility and growth*. OUP Oxford.
- Aguinis, H., Gottfredson, R. K., & Joo, H. (2013). Best-practice recommendations for defining, identifying, and handling outliers. *Organizational Research Methods, 16*(2), 270–301. <https://doi.org/10.1177/1094428112470848>
- Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. *Human Behavior and Emerging Technologies, 2*(4), 314–324.
<https://doi.org/10.1002/hbe2.195>
- Allen, M. J., & Yen, W. M. (2001). *Introduction to measurement theory*. Waveland Press.
- Antonelli, C. (1997). The economics of path-dependence in industrial organization. *International Journal of Industrial Organization, 15*(6), 643–675.
[https://doi.org/10.1016/S0167-7187\(97\)00006-4](https://doi.org/10.1016/S0167-7187(97)00006-4)
- Argote, L., & Greve, H. R. (2007). *a behavioral theory of the firm* – 40 years and counting: Introduction and impact. *Organization Science, 18*(3), 337–349.
<https://doi.org/10.1287/orsc.1070.0280>
- Autio, E., & Acs, Z. (2007). *Individual and country-level determinants of growth aspiration in new ventures*.

- Baak, M., Koopman, R., Snoek, H., & Klous, S. (2020). A new correlation coefficient between categorical, ordinal and interval variables with pearson characteristics. *Computational Statistics & Data Analysis*, 152, 107043.
<https://doi.org/10.1016/j.csda.2020.107043>
- Berchicci, L., & Tarakci, M. (2022). Aspiration formation and attention rules. *Strategic Management Journal*, 43(8), 1575–1601.
<https://doi.org/10.1002/smj.3371>
- Bulanova, O., Isaksen, E. J., & Kolvereid, L. (2016). Growth aspirations among women entrepreneurs in high growth firms. *Baltic Journal of Management*, 11(2), 187–206. <https://doi.org/10.1108/BJM-11-2014-0204>
- Capelleras, J.-L., Contin-Pilart, I., Larraza-Kintana, M., & Martin-Sanchez, V. (2018). Regional and individual determinants of entrepreneurial growth aspirations. *Journal of Evolutionary Studies in Business-JESB*, 1.
<https://doi.org/10.1344/jesb2018.1.j036>
- Capelleras, J.-L., Contin-Pilart, I., Larraza-Kintana, M., & Martin-Sanchez, V. (2019). Entrepreneurs' human capital and growth aspirations: The moderating role of regional entrepreneurial culture. *Small Business Economics*, 52(1), 3–25. <https://doi.org/10.1007/s11187-017-9985-0>
- Carreón-Gutiérrez & Saiz-Álvarez. (2019). Opportunity motivation and growth aspirations of mexican entrepreneurs: The moderating role of the household income. *Sustainability*, 11(22), 6288.
<https://doi.org/10.3390/su11226288>

- Cliff, J. E. (1998). Does one size fit all? Exploring the relationship between attitudes towards growth, gender, and business size. *Journal of Business Venturing*, 13(6), 523–542. [https://doi.org/10.1016/S0883-9026\(97\)00071-2](https://doi.org/10.1016/S0883-9026(97)00071-2)
- Coad, A. (2009). *The growth of firms: A survey of theories and empirical evidence*. Edward Elgar Publishing. <https://doi.org/10.4337/9781848449107>
- Coad, A. (2010). Firm growth: Empirical analysis. *Papers on Economics and Evolution*. https://www.academia.edu/479710/Firm_growth_empirical_analysis
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences, 3rd ed* (pp. xxviii, 703). Lawrence Erlbaum Associates Publishers.
- Conner, M., Sheeran, P., Norman, P., & Armitage, C. J. (2000). Temporal stability as a moderator of relationships in the theory of planned behaviour. *British Journal of Social Psychology*, 39(4), 469–493. <https://doi.org/10.1348/014466600164598>
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches, 3rd ed*. (pp. xxix, 260). Sage Publications, Inc.
- Cronbach, L. J., & Shavelson, R. J. (2004). My current thoughts on coefficient alpha and successor procedures. *Educational and Psychological Measurement*, 64(3), 391–418. <https://doi.org/10.1177/0013164404266386>
- Cyert, R. M., & March, J. G. (1963). *A behavioral theory of the firm* (Vol. 2).
- Davidsson, P. (1989). *A study of growth willingness in small firms*. 4, 211–226.

- Davidsson, P. (1991). Continued entrepreneurship: Ability, need, and opportunity as determinants of small firm growth. *Journal of Business Venturing*, 6(6), 405–429. [https://doi.org/10.1016/0883-9026\(91\)90028-C](https://doi.org/10.1016/0883-9026(91)90028-C)
- Davidsson, P., Achtenhagen, L., & Naldi, L. (2005). *Research on small firm growth: A review*.
- Davidsson, P., Delmar, F., & Wiklund, J. (2006). *Entrepreneurship and the growth of firms*. Edward Elgar Publishing.
<https://doi.org/10.4337/9781781009949>
- Davidsson, P., & Wiklund, J. (2000). 3. Conceptual and empirical challenges in the study of firm growth. *Entrepreneurship and the Growth of Firms*.
- Davidsson, P., & Wiklund, J. (2013). *New perspectives on firm growth*. Edward Elgar Publishing.
- De Clercq, D., Menzies, T. V., Diochon, M., & Gasse, Y. (2009). Explaining nascent entrepreneurs' goal commitment: An exploratory study. *Journal of Small Business & Entrepreneurship*, 22(2), 123–139.
<https://doi.org/10.1080/08276331.2009.10593446>
- Delmar, F. (1996). *Entrepreneurial behavior and business performance*. EFI, Ekonomiska forskningsinstitutet.
- Delmar, F., Davidsson, P., & Gartner, W. B. (2003). Arriving at the high-growth firm. *Journal of Business Venturing*, 18(2), 189–216.
[https://doi.org/10.1016/S0883-9026\(02\)00080-0](https://doi.org/10.1016/S0883-9026(02)00080-0)

- Delmar, F., & Wiklund, J. (2008). The Effect of Small Business Managers' Growth Motivation on Firm Growth: A Longitudinal Study. *Entrepreneurship Theory and Practice*, 32(3), 437–457.
<https://doi.org/10.1111/j.1540-6520.2008.00235.x>
- Eide, A. E., Moen, Ø., Madsen, T. K., & Azari, M. J. (2021). Growth aspirations in smes: Managerial determinants and organizational outcomes. *Journal of Small Business and Enterprise Development*, 28(4), 640–665.
<https://doi.org/10.1108/JSBED-09-2020-0332>
- Gavetti, G., Greve, H. R., Levinthal, D. A., & Ocasio, W. (2012). The behavioral theory of the firm: Assessment and prospects. *Academy of Management Annals*. <https://journals.aom.org/doi/abs/10.5465/19416520.2012.656841>
- Goertzen, M. J. (2017). Introduction to quantitative research and data. *Library Technology Reports*, 53(4), 12+. Gale Academic OneFile.
- Greve, H. R. (2003). *Organizational learning from performance feedback: A behavioral perspective on innovation and change*. Cambridge University Press.
- Greve, H. R. (2008). A behavioral theory of firm growth: Sequential attention to size and performance goals. *Academy of Management Journal*, 51(3), 476–494. <https://doi.org/10.5465/amj.2008.32625975>
- Gruenhagen, J. H., Sawang, S., Gordon, S. R., & Davidsson, P. (2018). International experience, growth aspirations, and the internationalisation of new

- ventures. *Journal of International Entrepreneurship*, 16(3), 421–440.
<https://doi.org/10.1007/s10843-018-0232-9>
- Hanifzadeh, F., Talebi, K., & Sajadi, S. M. (2018). The analysis of effect of aspiration to growth of managers for smes growth case study: Exporting manufacturing smes in iran. *Journal of Entrepreneurship in Emerging Economies*, 10(2), 277–301. <https://doi.org/10.1108/JEEE-10-2016-0045>
- Hechavarria, D. M., Renko, M., & Matthews, C. H. (2012). The nascent entrepreneurship hub: Goals, entrepreneurial self-efficacy and start-up outcomes. *Small Business Economics*, 39(3), 685–701.
<https://doi.org/10.1007/s11187-011-9355-2>
- Hermans, J., Vanderstraeten, J., van Witteloostuijn, A., Dejardin, M., Ramdani, D., & Stam, E. (2015). Ambitious entrepreneurship: A review of growth aspirations, intentions, and expectations. In A. C. Corbett, J. A. Katz, & A. Mckelvie (Eds.), *Advances in Entrepreneurship, Firm Emergence and Growth* (Vol. 17, pp. 127–160). Emerald Group Publishing Limited.
<https://doi.org/10.1108/S1074-754020150000017011>
- Hu, C., Zhang, H., Song, M., & Liang, D. (2019). Past performance, organizational aspiration, and organizational performance: The moderating effect of environmental jolts. *Sustainability*, 11(15), 4217.
<https://doi.org/10.3390/su11154217>
- Karadeniz, E., & Özçam, A. (2010). The determinants of the growth expectations of the early-stage entrepreneurs (TEA) using the ordinal logistic model

- (OLM): The case of Turkey. *Economic and Business Review*, 12(1).
<https://doi.org/10.15458/2335-4216.1242>
- Kiviluoto, N. (2013). Growth as evidence of firm success: Myth or reality? *Entrepreneurship & Regional Development*, 25(7-8), 569-586.
<https://doi.org/10.1080/08985626.2013.814716>
- Koster, S., & van Stel, A. (2014). The relationship between start-ups, market mobility and employment growth: An empirical analysis for dutch regions: start-ups, market mobility and employment growth. *Papers in Regional Science*, 93(1), 203-217. <https://doi.org/10.1111/pirs.12000>
- Lajqi, S., & Krasniqi, B. A. (2017). Entrepreneurial growth aspirations in challenging environment: The role of institutional quality, human and social capital. *Strategic Change*, 26(4), 385-401. <https://doi.org/10.1002/jsc.2139>
- Levie, J., & Autio, E. (2013). *Growth and growth intentions*. 44.
- Locke, E. A., & Latham, G. P. (2006). New directions in goal-setting theory. *Current Directions in Psychological Science*, 15(5), 265-268.
<https://doi.org/10.1111/j.1467-8721.2006.00449.x>
- Locke, E. A., & Latham, G. P. (2019). The development of goal setting theory: A half century retrospective. *Motivation Science*, 5(2), 93-105.
<https://doi.org/10.1037/mot0000127>
- Lockett, A., Thompson, S., & Morgenstern, U. (2009). The development of the resource-based view of the firm: A critical appraisal. *International Journal*

of Management Reviews, 11(1), 9–28. <https://doi.org/10.1111/j.1468-2370.2008.00252.x>

McKelvie, A., Brattström, A., & Wennberg, K. (2017). How young firms achieve growth: Reconciling the roles of growth motivation and innovative activities. *Small Business Economics*, 49(2), 273–293.

<https://doi.org/10.1007/s11187-017-9847-9>

Mehmetoglu, M., & Jakobsen, T. (2017). *Applied statistics using stata – A guide for the social sciences*.

Mezias, S. J., Chen, Y.-R., & Murphy, P. R. (2002). Aspiration-level adaptation in an american financial services organization: A field study. *Management Science*, 48(10), 1285–1300. <https://doi.org/10.1287/mnsc.48.10.1285.277>

Najeh, H., & Morched, S. (2022). *The ambitious entrepreneur and his role in stimulating creativity: The case of tunisian entrepreneurs*. 10(1).

Newton, H. J., Diebold, F. X., Garrett, J. M., Pagano, M., Powell, J. L., & Royston, J. P. (1997). *Stata technical bulletin*.

Ngoasong, M. Z., & Kimbu, A. N. (2019). Why hurry? The slow process of high growth in women-owned businesses in a resource-scarce context: journal of small business management. *Journal of Small Business Management*, 57(1), 40–58. <https://doi.org/10.1111/jsbm.12493>

Nummela, N., Puumalainen, K., & Saarenketo, S. (2005). International growth orientation of knowledge-intensive smes. *Journal of International Entrepreneurship*, 3(1), 5–18. <https://doi.org/10.1007/s10843-005-0350-z>

Publication manual of the American Psychological Association, 7th ed. (2020).

Publication Manual of the American Psychological Association, 7th Ed., xxii, 427–xxii, 427. <https://doi.org/10.1037/0000165-000>

Puente, R., Cervilla, M. A., González, C. G., & Auletta, N. (2017). Determinants of the growth aspiration: A quantitative study of Venezuelan entrepreneurs. *Small Business Economics*, 48(3), 699–726.

<https://doi.org/10.1007/s11187-016-9791-0>

Rönkkö, M., & Peltonen, J. (2012). *Software Industry Survey 2012*. School of Science, Aalto University.

Sheeran, P., & Abraham, C. (2003). Mediator of moderators: Temporal stability of intention and the intention-behavior relation. *Personality and Social Psychology Bulletin*, 29(2), 205–215.

<https://doi.org/10.1177/0146167202239046>

Sheeran, P., Orbell, S., & Trafimow, D. (1999). Does the temporal stability of behavioral intentions moderate intention-behavior and past behavior-future behavior relations? *Personality and Social Psychology Bulletin*, 25(6), 724–734.

<https://doi.org/10.1177/0146167299025006007>

Shinkle, G. A. (2012). Organizational aspirations, reference points, and goals: Building on the past and aiming for the future. *Journal of Management*, 38(1), 415–455. <https://doi.org/10.1177/0149206311419856>

Tominc, P., & Rebernik, M. (2007). Growth Aspirations and Cultural Support for Entrepreneurship: A Comparison of Post-Socialist Countries. *Small*

- Business Economics*, 28(2-3), 239-255. <https://doi.org/10.1007/s11187-006-9018-x>
- Vaske, J. J., Beaman, J., & Sponarski, C. C. (2017). Rethinking internal consistency in cronbach's alpha. *Leisure Sciences*, 39(2), 163-173. <https://doi.org/10.1080/01490400.2015.1127189>
- Venugopal, V. (2016). Investigating women's intentions for entrepreneurial growth. *International Journal of Gender and Entrepreneurship*, 8(1), 2-27. <https://doi.org/10.1108/IJGE-11-2014-0043>
- Wennberg, K., Delmar, F., & McKelvie, A. (2016). Variable risk preferences in new firm growth and survival. *Journal of Business Venturing*, 31(4), 408-427. <https://doi.org/10.1016/j.jbusvent.2016.05.001>
- Wiklund, J., Davidsson, P., & Delmar, F. (2003). What Do They Think and Feel about Growth? An Expectancy-Value Approach to Small Business Managers' Attitudes Toward Growth. *Entrepreneurship Theory and Practice*, 24.
- Wiklund, J., & Shepherd, D. (2003a). Aspiring for, and achieving growth: The moderating role of resources and opportunities*. *Journal of Management Studies*, 40(8), 1919-1941. <https://doi.org/10.1046/j.1467-6486.2003.00406.x>
- Wiklund, J., & Shepherd, D. (2003b). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic Management Journal*, 24(13), 1307-1314. <https://doi.org/10.1002/smj.360>

Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences: european journal of education. *European Journal of Education*, 48(2), 311-325.
<https://doi.org/10.1111/ejed.12014>

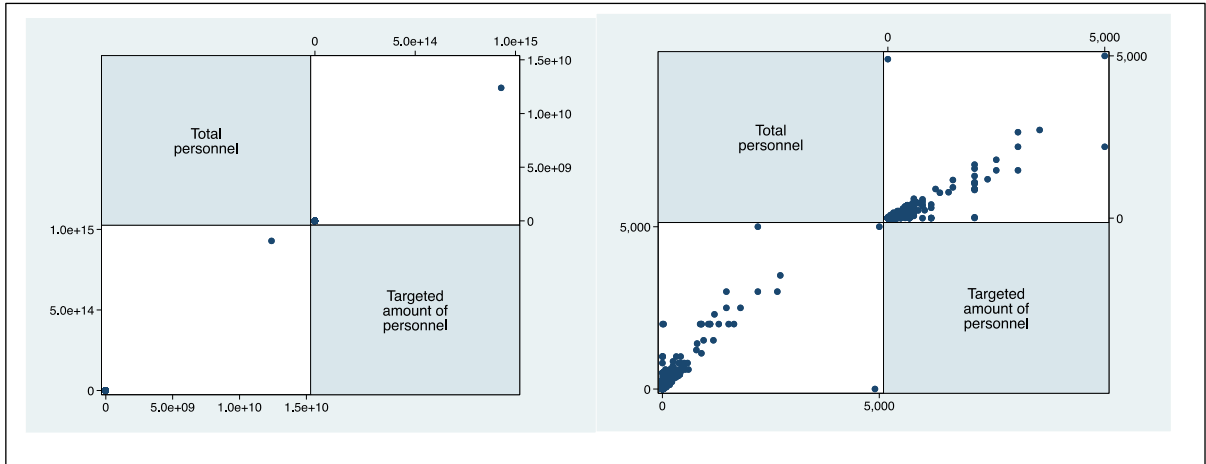
APPENDICES

Appendix 1. Descriptive Summary of Raw

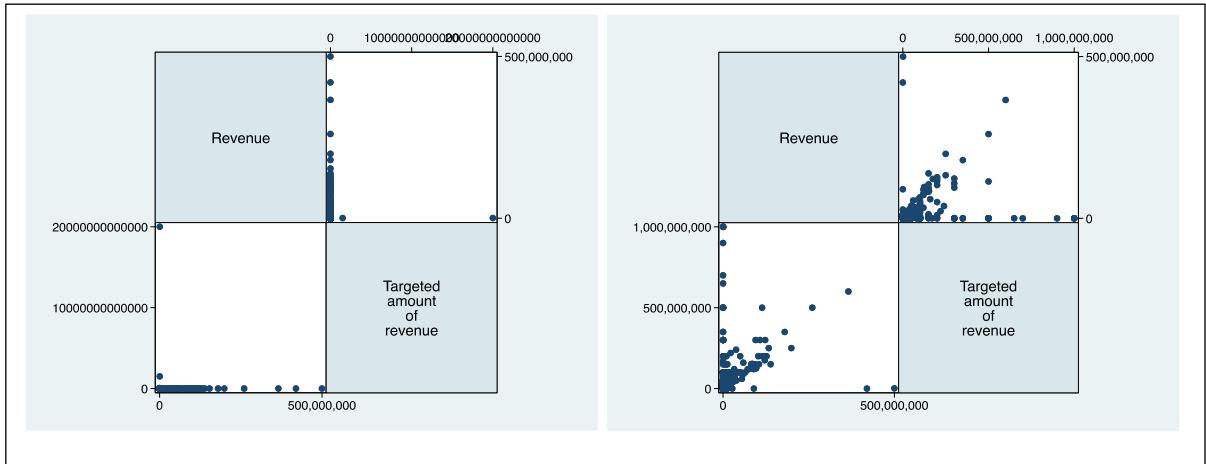
Variable	N	Mean	SD	Min	Max
Age	88,480	9.87	9.46	0	118
FirmType	46,091	2.57	1.65	0	6
GrowthScaleGeneral1	4,455	3.35	1.31	1	5
GrowthScaleGeneral2	4,456	2.28	1.25	1	5
GrowthScaleGeneral3	4,381	3.18	1.34	1	5
GrowthTargetPersonnel	3,930	2.36e+11	1.48e+13	0	9.28e+14
GrowthTargetRevenue	3,873	2.21e+13	1.38e+15	0	8.57e+16
Personnel	6,106	2,029,378	1.59e+08	-1	1.24e+10
Revenue	5,611	4.27e+09	3.19e+11	1,000	2.39e+13
Year	139,220	2,009.52	4.72	1998	2017
ID	139,220	4,520	2,961.27	1	13,045

Appendix 2. Scatterplot Matrix

Personnel & Growth Target Personnel
 Scatterplot Matrix for Raw (left) and Adjusted (right) Data



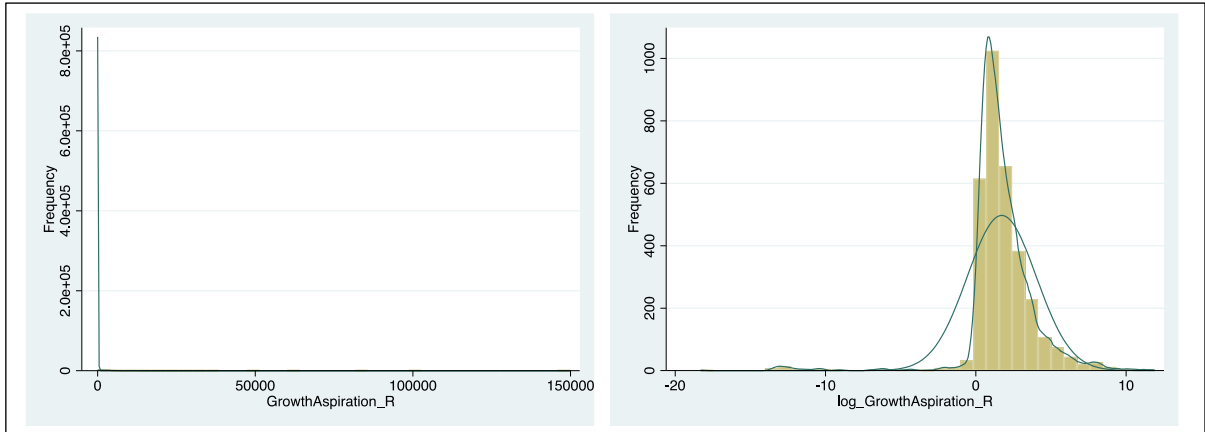
Revenue & Growth Target Revenue
 Scatterplot Matrix for Raw (left) and Adjusted (right) Data



Appendix 3. Test for Normal Distribution

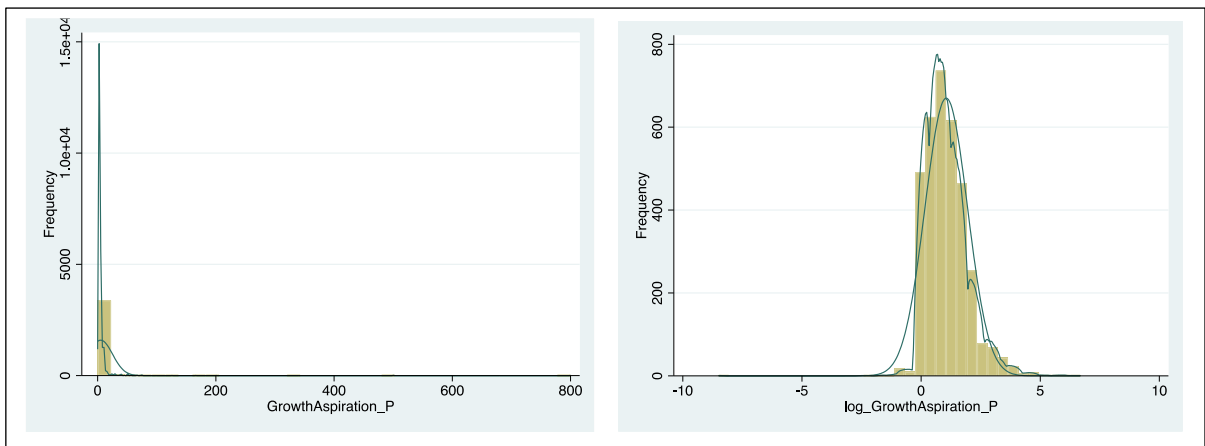
Revenue Growth Aspiration

Histograms on Normal (left) and Log-Transformed (right) Values

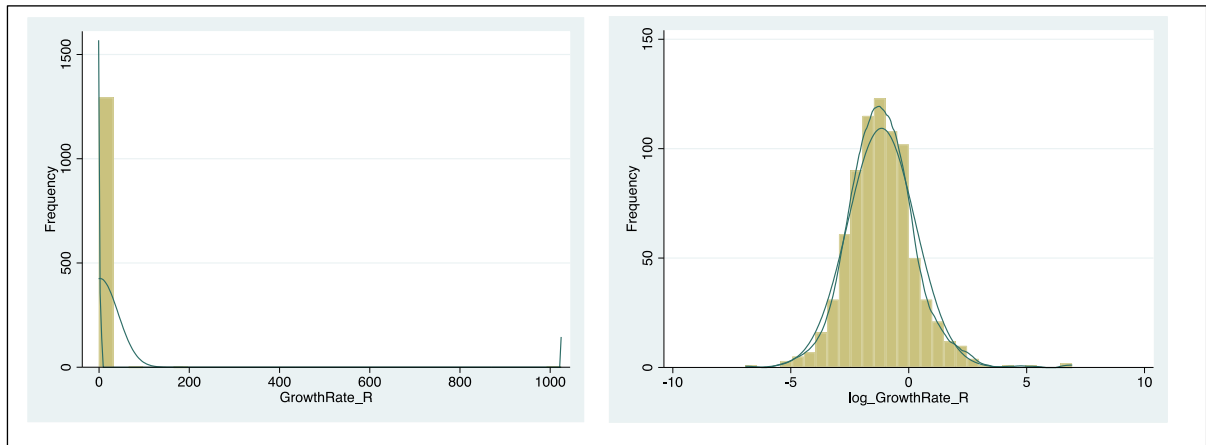


Personnel Growth Aspiration

Histograms on Normal (left) and Log-Transformed (right) Values



Revenue Growth Rate
Histograms on Normal (left) and Log-Transformed (right) Values



Personnel Growth Rate
Histograms on Normal (left) and Log-Transformed (right) Values

