CATÓLICA LISBON
BVSINESS & ECONOMICS

A dark side of pivoting? – The effect on employee motivation and commitment

Frederick Meiners

Dissertation written under the supervision of
Prof. Claudia Costa

Dissertation submitted in partial fulfillment of requirements for the MSc in Management with specialization Strategy & Entrepreneurship, at the Universidade Católica Portuguesa, 03.01.2018.

ABSTRACT

Purpose – The thesis "A dark side of pivoting? – The effect on employee motivation and commitment" of Frederick Meiners aims to examine how pivoting, changes to the course of action - as a concept and part of the lean startup methodology influences employees' motivation and commitment, and as such shining light on the current criticism about pivoting.

Methodology/approach – Targeting startups that went through the process of pivoting, this thesis uses an online survey to ask employees and startup's founders how they evaluate job related aspects of pivoting such as their motivation and commitment totaling in a sample of 50 respondents.

Findings – The findings suggest that pivoting has an overall positive effect on motivation. In fact, since pivoting is usually triggered by a negative business situation and offers the possibility to do a turnaround, this increases motivation. However, when startups experience high number of pivots a darker side emerges. High numbers of pivots experienced by employees along with the effect of pivots on salaries and job security however, indicate there possibly is an inherently darks side of pivoting.

Originality/value – This thesis contributes to our understanding of the methodology of the lean startup and in particular the under-studied concept of pivoting. The popularity of the lean startup methodology along with the concept of pivoting, and the lack of understanding of its impact on employees' motivation demonstrate the need for studies addressing this issue.

Keywords – The Lean Startup Methodology, Entrepreneurial learning, Pivot, Employee Motivation, The Entrepreneurial Opportunity

SUMÁRIO

Objetivo - A tese "A dark side of pivoting? – The effect on employee motivation and commitment" de Frederick Meiners pretende examinar como o "pivot", mudanças no curso de ação- como conceito e parte da metodologia lean startup influencia a motivação e o comprometimento dos funcionários, iluminando a crítica resultante contra o "pivot".

Metodologia / abordagem - Esta tese emprega uma pesquisa on-line voltada para funcionários e fundadores de startups projetados para analisar os efeitos do "pivot" sobre a motivação, totalizando uma amostra de 50 entrevistados.

Resultados - Os achados sugerem que o "pivot" tem um efeito geral positivo sobre a motivação. De fato, uma vez que o "pivot" geralmente é desencadeado por uma situação comercial negativa e oferece a possibilidade de fazer um turnaround, isso aumenta a motivação. No entanto, quando os startups experimentam alto número de "pivots", um lado mais escuro emerge. Um número elevado de "pivots" experimentados pelos funcionários e o efeito de "pivots" sobre os salários e a segurança do emprego, no entanto, indicam que possivelmente existe um lado inerentemente obscuro do "pivot".

Originalidade / valor – Esta tese contribui para a nossa compreensão da metodologia pouco estudada da inicialização lean e, em particular, do conceito de "pivot". A falta de compreensão do impacto do "pivot" na motivação dos funcionários demonstram a necessidade de estudos que abordem esta questão.

Palavras-chave – The Lean Startup Methodology, Entrepreneurial learning, Pivot, Employee Motivation, The entrepreneurial Opportunity

TABLE OF CONTENTS

TABLE OF FIGURES

TABLE OF TABLES

TABLE OF APPENDICES

CHAPTER 1: INTRODUCTION

1.1 Background and problem statement

Startup pivoting is an important topic when analyzing success and failure stories in today's startup scene. Anecdotal evidence shows that "(…) it is through learning that entrepreneurs develop and grow (…)"(Cope, 2005, p.379). Pivoting as more substantive adjustments in the business plan (Blank, 2013) is one essential part of entrepreneurial learning. Most successful startups, at one point in time, had to pivot along its way to success. Successful cases such as Instagram, PayPal or Twitter show, that pivots are among the main reasons for startups success and made their business to what it is known for now. Instagram pivoted from a Check-in app with gaming elements to the social media platform based on photos. PayPal used to focus on PDA (mobile device) based payment beaming before changing strategy to become the preferred online payment tool on the market and Twitter started as a network where people could find and subscribe to podcasts to became the status –updating micro-blogging platform of today.

In spite of successful cases, research shows that about 75% of startups fail (Ghosh, 2012). Interestingly, "pivots gone bad" are among the top 20 reasons for startups failure explaining 10% of that percentage (CBinsights, 2014). Hence, there is evidence pointing to pivots as a reason why startups fail. Understanding why pivots may lead to failure is important to reduce such high percentage of failure, particularly for entrepreneurs. Reducing the failure rate helps avoiding extensive consumption of resources and avoids going into a direction, which is not generating value for the entrepreneur or society.

The pivot literature, yet under researched, follows from Eric Ries work, "The lean startup" (2011) and focuses mainly on triggers to pivots, thus reasons that eventually lead startups to decide to pivot or how the pivot changes the business hypotheses (Bajwa et al., 2016; Comberg et al., 2014; Terho et al, 2015). However, recently in the tech and startup scene, industry practitioners and -observers questioned weather pivots themselves can lead to failure. Pivoting, a concept designed to avoid failure, involves substantial changes in the business strategy and therefore pivots have an effect on several stakeholders, like employees, founder or investors. Increasing interest to analyze pivoting more thoroughly has led for instance to suggest that there are ex-ante reasons related to the entrepreneurs' personality and psychology (Todd, 2011) and ex-post reasons for pivot failures. Ex-post reasons are related to investors' commitment and support as well as the motivation and commitment of employees after pivots. Frequent changes in the whole business model or badly executed pivots might

influence both investors and the startups' team negatively (Kim, 2016). After all, these interdependences recently suggested are important to study as they are possible reasons for failure of pivots and require to take a new look on pivots literature in order to be able to understand and validate what factors are important for a successful structure of pivoting.

This thesis analyzes ex-post pivoting outcomes: Particularly, we look at weather pivots affect employee motivation and commitment and if so in what direction. Negative effects might eventually result in startup failure. Employees in startups are said to often miss a high amount of commitment (Baum & Silverman, 2004). The role of pivoting can be a possible reason. Surely a pivot can have an effect on startup employees in several ways. Sales roles might worry about pivots because the time until success and the work time required selling a product could be delayed after changing the business direction, since having to pivot often requires retaking several steps, which have been done before the pivot already. Developers and engineers might be upset with the abandonment of the product, which they have been working and putting energy on. (Kim, 2016) Moreover pivots can indicate a lack of passion about the original idea, which started the business (McGinn, 2012), which is another possible reason that pivots can be demoralizing. Furthermore team motivation can be linked to performance, as studies show that work motivation is among the main factors, which has an impact on a company's performance (Knippenberg, 2000). Again, the effects of pivots on motivation could be one reason explaining failure of pivots and subsequently startups' failure.

In a literature review we will try to understand, why pivots were the reason for success of popular examples as the motioned Instagram's or PayPal's and try to review in motivational literature what speaks for and against negative effects on motivation.

To test our hypotheses we conducted a survey with startups. The survey analyzes the relationship between pivots and variables of motivation/commitment as well as the dependency on several control variables. We analyze the nature of the pivots, namely if they are technology or market-oriented. Eric Ries lean startup framework (2011) suggests the differentiation between different types of pivots, which we found can be grouped either as technology or market-oriented pivots. Technology pivots are more likely to affect the work of technology employees, while market pivots relate more directly to the work of sales and market oriented employees. Therefore we include the differentiation of pivots, the nature of pivot, as variable.

1.2 Problem Statement

The aim of the thesis is to understand the impact of pivoting in team motivation and commitment and as such the likelihood of pivoting having a negative impact on performance. We also analyze determinants, which might influence the effect of pivoting on motivation.

The following research questions present the topics of interest that guide us through the research.

Research questions:

•   Is there a dark side of pivoting, through negative effects of pivoting on motivation?

Pivoting by definition involves substantial changes in the business. This could lead to conclude that pivoting also involves effects on motivation, since you end up working in a new direction. Hence, this question investigates the link between startups' pivoting and employee's motivation to understand if there is a detrimental effect of pivoting, what we can call the dark side of the concept.

•   What motivational framework describes the relationship between pivots and job motivation?

This research question focuses on motivational research in startups, which mainly follows from Sauermann's (2017) framework with 5 motivational factors discriminated between extrinsic and intrinsic factors. Sauermann's framework describes the major motives of employees in startups and how these are important for success. Additionally, given that different employees may exhibit different motivation behaviors, how are such behaviors related to the different employee categories.

•   Is there a type of pivot that might affect motivation more than others?

Finally, the last research combines the two previous question by identifying the reasons of such different motivational behavior. There are different types of employees and different types of pivots. The goal is to analyze if in particular the type of pivot can explain the relationship between pivoting and job motivation controlled by variables such as the industry or the type of employee.

1.3 Relevance

The lean start up approach has first been introduced by Eric Ries in 2008 and thus is still a young research area. Nevertheless the theory behind the lean startup is commonly used among a rising number of entrepreneurs. Among the most cited articles are "Why the lean start-up changes everything" (Ries, 2013) or "Hypothesis-driven entrepreneurship: The lean startup" (Eisenmann, 2012), which focus mainly on the benefits of the approach but rarely considers why in the real world even lean startups fail. To our knowledge, literature, which critically looks at the concept of pivoting and the lean startup is missing. Hence this study tries to analyze reasons that can influence failure of pivoting fail. The importance of employee motivation and commitment as well as the ideas behind pivot failure are already part of discussions in the industry and startup forums (e.g. blogs) but such discussions miss the rigor of academic research. Comments on the Internet such as, "(…) if you have to tell your engineering team that you're pivoting a second time? Forget about it! They're gone." (Kim, 2016) are not validated yet but motivation enough to test if there is a dark side of pivoting.

By linking academic literature on employees' motivational theories and the concept behind pivoting the author tries to fill a part of the gap on research on failure of startups. The results can add value to entrepreneurship and mainly lean literature by understanding how pivoting is affecting important determinants like employee motivation, which might be a reason for ex-post failure of pivots. In terms of pivoting the research is mainly embedded in existing theories like Effectuation and the thesis adds implications on the learning effects after pivoting. The results can also be valuable for entrepreneurs by creating awareness on possible mistakes that can be made within the lean startup approach. For instance entrepreneurs might have to communicate their pivoting strategy better.

1.4 Research methods

For the research of the thesis a descriptive approach is applied, with the use of primary data conducted though an online survey. First of all however a comprehensive literature review on the lean start up concept with a deep dive on pivoting as well as on motivation theories shall give an overview and foundation to the topic.

1.5 Dissertation outline

The thesis at hand is structured as follows. After having introduced the overall topic background and the research questions in chapter 1, chapter 2 is divided into three parts and will analyze the three main research questions in more detail. Special focus will be on the lean start up approach and introducing pivoting as key elements of interest in the first two parts. Following, employee's motivational theories with focus on startups are being reviewed, before trying to make a link between pivoting and employees' motivation. Chapter 3, again divided into three subsections, describes in detail how the research was conducted and how primary data is used in the thesis. Explanations of results and introduction of survey results followed by their critical discussion can be found in chapter 4. Chapter 5 concludes and addresses limitations and indications for further research in this area of study.

CHAPTER 2: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 The lean startup

Startups are becoming of increasing importance as they are an important reason for the growth of an economy and responsible for a positive net creation of jobs (Kane, 2010). Estimated 100 million businesses are launched annually, according to figures from GEM Global Report. To be considered a startup there is no need for a specific size or revenue restriction, however startups are known to operate under conditions of extreme uncertainty and face many challenges (Bosch et al., 2013). One of the most important resources of startups are their employees. Founder or non-founder, technology expert or sales person, there is evidence that people and teams are the major determinant for success or failure of startups (Katz et al., 2000).

The lean startup approach allows reducing the failure rate by making more substantial changes in the business model, so called pivots (Ries, 2011). Instead of persisting with the same unsuccessful business idea and thereby wasting resources - time, stress and money, pivoting can help to avoid these problems. A suitable metaphor is found in basketball, where a player, who is not allowed to move with one foot but allowed to move and "pivot" with the other, in the lean approach the entrepreneur, keeps part of the business the same but moves and pivots other parts of the business. Pivot by definition "is a structured course correction designed to test a new fundamental hypothesis about the product, strategy and engine of growth." (Ries, 2011, p.26)

A startups goal is to pursue entrepreneurial opportunities, which can be described as a set of environmental conditions that result in the creation of new products and/or services (Dutta & Crossan, 2005). Opportunities as such have been described to start as simple concepts, which then develop into more complex systems as entrepreneurs work on them (Pavia, 1991). Others regard "opportunity development as a continuous, proactive process essential to the formation of a business" (Ardichvilia et al., 2003, p.109). In order to provide guidance in pursuing Entrepreneurial opportunities scholars developed methodologies and tools for entrepreneurs to facilitate the creation of successful startups.

One of the methodologies is the framework of the lean startup. It has been introduced by serial entrepreneur Eric Ries and describes a new guideline for entrepreneurs to build and develop startups under these uncertain conditions, which startups face. The lean startup was introduced in order to reduce the high failure rates of startups out of the conviction that "startup success can be engineered by following the process, which means it can be learned, which means it can be taught" (Ries, 2011) answering calls for systematic entrepreneurial methods. Entrepreneurs in the startup environment face high risks and high levels of uncertainty. The benefits of lean are that allows startups to reduce risks and uncertainties, because lean means small, bearing the minimum possible cost to build something that can be tested. Through agile development practices and lean principles, close customer collaboration is ensured and short feedback help to avoid building products the customer is not demanding, thus reducing risk (Bosch et al., 2013) The lean startup is not a completely new methodology as it takes ideas from big companies and previous literature and developed them. Mainly it originates from lean manufacturing, introduced by car manufacturers, which is a production practice trying to avoid any kind of waste creation throughout the production process (Bosch et al., 2013). The figure 1 gives an overview on the framework of the lean startup in order to summarize the main tools and steps and to present a foundation for the benefits of the lean methodology.
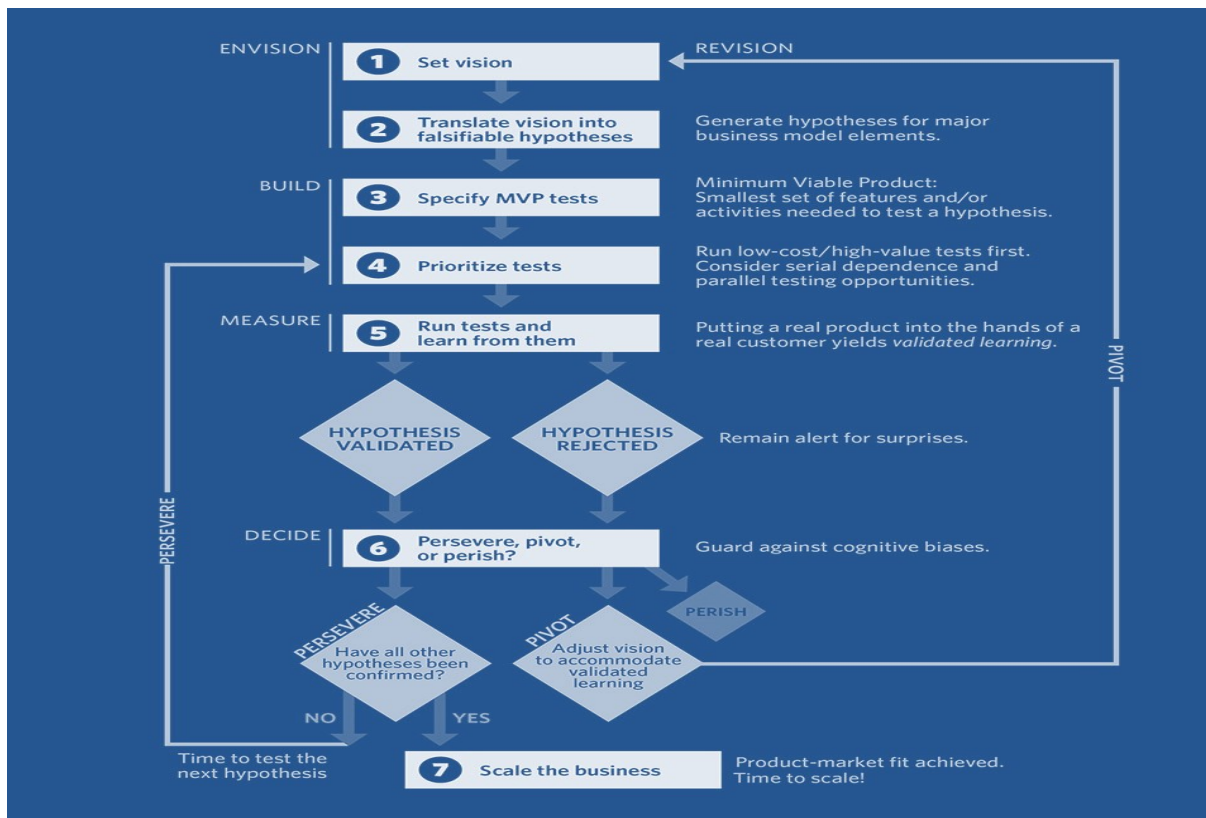
Figure 1: Framework of lean startup, taken from Thomas R. Eisenmann, Ries, Dillard

With the hypothesis-driven approach to entrepreneurship, entrepreneurs translate their vision into falsifiable business model hypotheses. The methodology follows the seven steps from setting a vision to scaling the business. Two major tools used in the lean startup approach, are the minimum valuable product (MVP) seen in step 3 in the figure and pivots, as shown in step 6. The MVP pushes the entrepreneurs to have a prototype of the desired product or service as soon as possible. An MVP represents the smallest set of activities needed to disprove a hypothesis. (Eisenmann et al., 2013) Pivots in short, helps managers to maneuver the venture towards success by adapting parts of the business plan. The main benefit of a hypothesis-driven approach is helping to reduce the big risk entrepreneurs face when the market doesn't want your product. Compared to antecedent methodologies for entrepreneurs the lean startup approach has the benefit that it evaluates an early stage startup's entire business model, not only a focus more narrowly on a startup's product. (Eisenmann et al., 2013)

Other methodologies offer alternative ways to build startups such as Customer Development (Blank 2003), Design Thinking (Brown 2009), Business Model Canvas (Osterwalder & Pigneur 2010), Entrepreneurial Operating System (Wickman 2011), The $100 Startup (Guillebeau 2012), Lean Canvas (Maurya 2012), Value Proposition Design (Osterwalder et al.

2014) or Agile Development (Shore and Warden 2008), that are among the list of books, which also offers solutions for entrepreneurs. The methodology of design thinking by Brown is often compared and contrasted to the lean methodology (Mueller & Thoring, 2012; Cranfield, 2015; Krakovsky, 2016). Design thinking is an approach based on designerly methods and principles. It was developed by the design consultancy IDEO. The methodology shares the main ideas behind the lean principle; identifying user needs in order to create appropriate solutions. The "design thinking" concept however focuses more on the idea generation, which is already preconditioned for the lean startup methodology (Mueller & Thoring, 2012). The goal is not to declare one of the methods superior. Rather it to show that different methodologies exist to guide entrepreneurs and that the lean startup methodology is not the only and best of all approaches. The lean methodology however is the most popular and the fast adoption and quickly achieved reputation of the lean startup such as adoption by leading business schools (e.g. Stanford University, Harvard Business School, Berkeley, Columbia University) and accelerators (e.g. Techstars, 500 Startups, Y Combinator) (Blank, 2013) justifies that the lean startup methodology is an important methodology to consider.

There is evidence that in general the lean startup method is successful in guiding entrepreneurs and reduces failure of startups (Ladd, 2016). Despite the lean approaches' success some scholars challenge the benefits of the methodology. The main argument is that more validation is not always better since there is a chance that entrepreneurs, who take too much feedback from customers into account, get discouraged too quickly. The lean startup method might be producing "false negatives," as Ladd points out. The point is that with the lean approach sometimes good ideas are mistakenly rejected because there is no clear rule or instruction when to stop the testing phase and begin scaling production (Ladd, 2016). Similarly, we observe rising criticism against pivoting, as important concept of the lean approach. The article "Is "Pivot" the new "fail"?" for instance criticizes pivoting for promoting failure too much or "Too Many Pivots, Too Little Passion" (McGinn, 2009) talk about problems that arise from extensive pivoting as part of the lean approach. Silicon Valley's mantra and also idea of the lean start up approach "fail fast, fail often" want to promote fast entrepreneurial learning. Instead is suggested, that entrepreneurs should believe in their business model more instead of planning actively to pivot. Hence pivoting is receiving more and more buzz, which led us to focus and analyze the concept in the following section.

In general the lean startup approach has increasingly become a way for the development of business plans of early-stage ventures. Adherence to the methodology allows startups to

reduce uncertainty and unnecessary resource consumption (waste), which in turn helps startups to increase their chances of success. The method however is not limited to startups only, as some of today's most successful companies adopt approaches of the lean startup methodology.

2.2 Pivoting as key concept of the lean approach

"Founders know that no matter what their original business plan, managing a start-up requires navigating a fast-moving stream of hypotheses, experiments, and redirections, which often result in the adoption of a very different model."(McDonald & Gao, 2017, p.1)

The lean approach involves constant validations of the business plan through hypotheses testing in order to recognize when it is time to change the course of action. The foundation of the concept of pivoting is rooted in the principles of the learning theory (Mowrer, 1960). Learning is "the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 41).

Pivoting is a term, which recently has met high popularity in the startup world. Parts of the idea behind pivoting however have been described in previous theories of learning: the learning by trial and error learning (Young, 2009) or learning by doing theory (Schank et al., 1999) and more recently the effectuation theory. Effectuation posits a theoretical framework of decision-making in uncertain situations (Sarasvathy, 2008) such as in startup environments and as such is very similar to pivoting. The theory of effectuation is based on cognitive studies and describes how individuals in uncertain and complex conditions make their decisions. "Effectuation releases entrepreneurs from specific, predetermined goals and allows them to convert uncertainty into opportunity by treating it as a tool for the development of new goals" (Deligianni et al., 2015, p.351) Similarly pivoting is a tool for the development of new goals when startups realize that after too many iterations in the business plan you learn that some elements of your product or strategy are flawed and that it is time to pivot. (Ries, 2011)

Knowing when to pivot is also a result of learning. Several reasons can point to the need to pivot. The supply and demand do not match, the wrong market was targeted, or the product is not what customers are looking for. These are among many reasons why startups have to pivot (Bajwa et al., 2017). Similarly as there are different types of triggers for pivots, there are different types of pivots. Ries identifies nine types of pivots. A more detailed analysis shows that they can be grouped in two main categories if we are considering which main job areas

they are affecting: marketing side of business or the technology side. For the scope of the research conducted in the thesis we therefore summarize the several pivots as either technology or market oriented, since they might affect employees with different positions differently. Market and technology pivots are most related to specific tasks related to sales and marketing and developers or engineers. Table 1 illustrates the different types of pivots.

Nature of Pivot	Description	Accumulated pivot types
Technology Pivot	A startup achieves the same solution using a completely different technology that can provide superior price and/or performance to improve competitive posture (Ries, 2011) or when the product does not provide a fit with customers' needs leading to a complete redevelopment of the product (Ries, 2011).	- Technology Pivot - Platform Pivot - Zoom-In Pivot - Zoom-Out Pivot
Market Pivot	Can include new value capture models, the selection of a new growth engine, repositioning in the market or a completely new competitive positioning.	- Customer Segment Pivot - Customer Need Pivot - Value Capture Pivot - Engine of Growth Pivot - Channel Pivot
Table 1: The nature of the pivot, adapted from Eric Ries: The lean startup (2011)		

Besides the benefits of reducing risk and avoiding waste, which are accompanied by pivots, they are also often the last tool to help save a startup or at least a way to finally move into a successful direction. In software (digital) startups, merely one project failure could put a the startup out of business (Giardino et al. 2016), which highlights the risks due to very low entry barriers, which in particular digital startups face. Hence pivots should ideally have a positive impact of the performance of startups and ensure job security, as a pivot can be the tool to manage a successful turnaround. Similarly pivots can ensure entrepreneurial learning and

through change of business direction, keeping job tasks challenging and changing autonomies at job tasks, which can avoid boredom at the job (Fischerl, 1993).

Nevertheless pivoting is not the solution to everything and can also have a dark side. Pivoting if done extensively can also become a problem in particular if important stakeholders loose faith in the original idea and in the entrepreneurial team (McGinn, 2012). Following the criticism about the extensive use of pivoting from McGinn (2012), justification about the motives to pivot for employees and investors can be as important as pivoting itself. Hence, the way the management explains strategic reorientations can be crucial for successful pivoting as successful entrepreneurs not only generate and test hypotheses, they also convincingly justifying (McDonald & Gao, 2016). Good justification could also be important to ensure employees are not upset and clear about the new business direction. This indicates that understanding how the process of pivoting is structured is critical to judge if employees, who we already introduced to be a major determinant for success of startups, are prepared for a pivot or on the contrary are surprised by it. Both learning theory and pivot literature suggests that pivots are a structured process and result. Each pivot is the result of rigorous planning as the methodology of the lean startup advises entrepreneurs to follow the very structured process including possible pivots as shown in figure 2. "(…) Project failure is embraced actively and considered crucial to obtain validated learning that can lead to pivots" (Bajwa et al., 2017, p.1) Similarly, the development process within the lean framework is cyclical and iterative: an entrepreneur is likely to conduct evaluations several times at different stages of development. Those iterations could finally lead to adjustments, pivots, of the initial vision. (Ardichvili et al., 2003). There are even frameworks developed how to structure successful business model innovation and as such pivoting as suggested by García-Gutiérrez & Martínez-Borreguero (2016). Hence we can assume that employees under normal and theoretical conditions should not be surprised by pivots and can prepare to work on a new direction since its definition suggests a very structured and foreseeable path, which leads to a pivot.

2.3 Employees motivation theories in Startups

Employee motivation theories focus on motivation at an individual or team level. We focus on pivots effects on individual motivations. As such, individual's motivation is determined by benefits the individual expect from performing on an activity (Sauermann & Cohen, 2008). The study of individual's motivation at work is important since employees' motivation is a critical factor for organizational success. The drive to perform well on the job is one of the

preeminent factors affecting performance of companies (Van Knippenberg, 2000). Academic studies show that changes in motivation can also lead to changes in performance since human resources are among the most valuable resources available to companies, which drive growth and proactive work behaviors are particularly important for success in dynamic and uncertain environments such as in startups (Crant, 2000; Frese & Fay, 2001; Parker, 2000). Moreover motivation is a key aspect for successful startups. For example, the business press shows that Venture Capitalists when allocating investment decisions weight more the people/teams than the product or strategy. Venture Capital is looking for startups with employees that have high levels of energy and are hungry for success (Byrne, 2000). Similarly research shows that the just quoted proactive work behavior is an evident problem startups face, since startups often have problems with employees and their commitment to the project (Baum & Silverman, 2004). Furthermore as Knippenberg (2000) points in his study team motivation can be linked to performance, as studies show that job motivation is among the most important factors affecting a companies' performance. Motivation and commitment are two distinct concepts, however, there is empirical evidence suggested by Meyer and colleagues (2004) that both variables are interdependent as commitment leads to motivation, and motivation through other mediators is, again, closely related to commitment.

Startups offer different work environments for people and the motivational backgrounds of employees differ from established firms. Namely they end to emerge in highly dynamic and risky environments. Since our study focuses on job motivation on an individual level in startups, it is important to analyze specific motivational characteristics of this group. Motivational literature steam differentiates extrinsic and intrinsic motivational factors, where intrinsic motivation refers to the interior of a person and liking a job, because it is enjoyable and interesting, and where extrinsic motivation is linked to doing something because either positive or negative outcomes may cause them to take action (Ryan & Deci, 2000). Fishman (1998) for example points out that one reason, why people prefer to work in startups despite lower salaries and lower job security, (both indicators of extrinsic factors), is to have the chance to be very connected to the top of the company, which refers to job responsibilities, which is also extrinsic. Employees are able to play a key role already at a young age. Nonetheless the intrinsic motives seem to play an increasingly important role, namely challenging job tasks. The motivation to work on something that is interesting work and intellectually challenging (Amabile, 1997) can be a crucial factor to attract talent. Also

intrinsically motivated people tend to display higher levels of creativity, which in turn is crucial for a startups' success (Amabile, 1997).

Motivation is not seen as a fixed trait but refers to a dynamic internal state. Several factors related to an individual's personality as well as situational factors are determining the dynamic state and change of motivation (Wiley, 1995). Sauermann's framework (2017), which focuses on employee motivation in startups is illustrated in figure 2, and compares five important motivational factors, differentiates between intrinsic and extrinsic motivational factors. The framework is suitable as it provides five factors of motivation, which can be measured and offers the chance to indicate the origin of overall changes in motivation. The five factors to measure work motivation are job security, salary and responsibility (extrinsic factors) and independence and challenge at work, referring to the intrinsic factors.
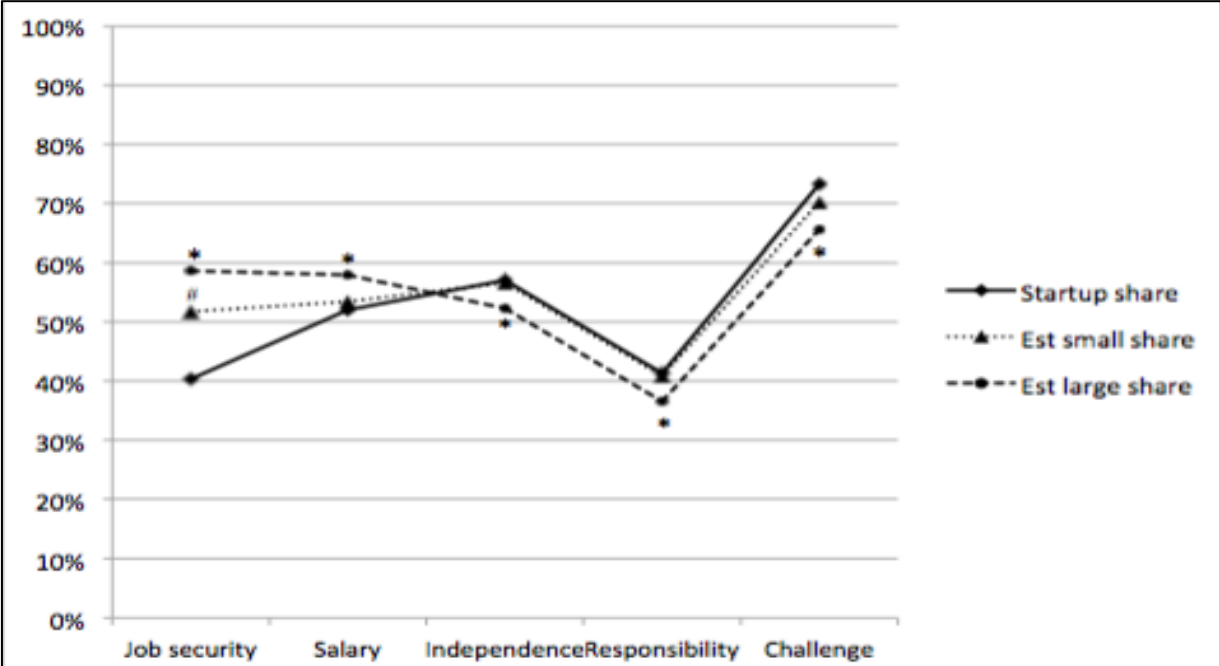
Figure 2: Motivational factors across firm types, taken from Sauermann (2017) Fire in the Belly? Employee Motives and Innovative Performance in Startups versus Established Firms

From figure 2 we can observe that the main difference between motives of startup employees and bigger companies is the job security. This can be explained by the fact that startup employees know that working for startups involve a dynamic environment with uncertainty about the long-term survival of the business. Hence startup's employees show an increased willingness to bear risk (Sauermann, 2017). The most important motivational factor is a challenging job tasks (intrinsic). After all, all five factors re good indicators to motivate

employees or in our case, the effect on the single elements can indicate if motivation is affected. We can observe that employee motivation in startups is rather intrinsic so if pivoting demotivates employees the company face serious problems because they rely on the intrinsic factors, as extrinsic incentives main not be available as motivation factor, such as salaries as high as established companies offer. Pivoting, by definition involves substantial changes in the business model and thus is also always affecting employees. We already reviewed literature saying that too many pivots by McGinn (2009). Employees might get confused and mentally distant when startups pivot too much and getting demotivated from the initial idea of the founders and the startup, which leads us to the first hypothesis of the thesis motivated by the claims and statements of Kim (2016) that pivoting leads to negative motivational effects.

H1: Pivoting has a negative relationship with on the job motivation in startups employees

Finally it's also important to distinguish between technical positions and sales or marketing oriented positions related to job motivation. Market pivots for instance could not at all affect the job of a technology guy and the other way around. Research shows important relationships between job motivation and personality factors. Intrinsic and extrinsic job motivation factors are found to be different across different segments of the working population such as higher educated employees are more intrinsically motivated than less educated employees, where extrinsic motivation plays a bigger role (Centers & Bugental, 1966). Additionally Scott Stern (2004) indicates that job motivation also differs between different job specializations, as scientists are highly intrinsically motivated, since they value interesting job characteristics. Conversely, for sales representatives motivational factors like striving for accomplishment and status are more likely to be motive based on extrinsic factors. Therefore it is important to keep in mind that the inherent position and the associated different motivational backgrounds can be moderating the results of the survey, which leads to the formulation of the second hypothesis, which is going to be tested.

H2a): Technology pivots have a higher effect on motivation on technology employees than market pivots.
H2b): Market pivots have a higher effect on motivation on sales and marketing employees than technology pivots.

The conceptual framework illustrated in figure 3 summarizes the relationships to be analyzed.
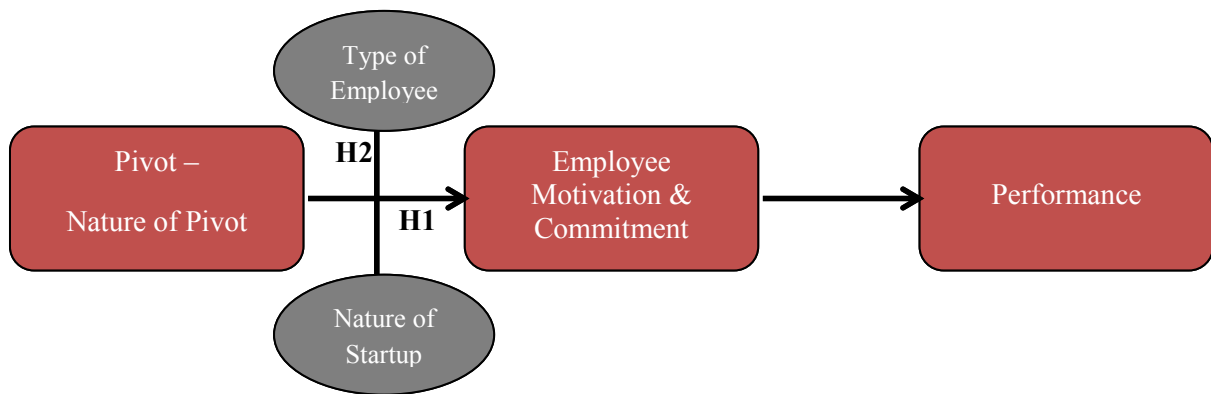
Figure 3: Conceptual Framework

CHAPTER 3: METHODOLOGY

3.1 Research Approach

The research conducted follows a descriptive approach, collecting primary data through an online survey. The approach was chosen to get the results, which can describe the effect of pivoting on motivation. Moreover quantitative data is used instead of qualitative data. The goal is to establish evidence with the results in a given and fixed environment. The research questions and hypotheses, which are derived in the first two chapters, are summarized below in table 2.

Research questions	Hypothesis
R.Q.1. Is there a dark side of pivoting, through negative effects of pivoting on motivation?	H.1: Pivoting has a negative relationship with on the job motivation in startups employees
R.Q.2. What motivational framework describes the relationship between pivots and job motivation?	H2a): Technology pivots have a higher effect on motivation on technology employees than market pivots.
R.Q.3 Is there a type of pivot that might affect motivation more than others?	H2b): Market pivots have a higher effect on motivation on sales and marketing employees than technology pivots.
Table 2: Research Questions and Hypotheses	

Since the survey conducted is targeted at startup employees, first of all it is necessary to define the types of startups and employees, which are considered. The startups, which we consider for the study, have to fulfill a requirement in order to effectively address the hypotheses. We already defined startups in the literature review as highly dynamic companies that operate under high-risk circumstances and that size and revenue is not necessarily a restriction criteria. However we try to address specific industries of startups. The claims about negative effects of pivoting arose from a tech-scene and differentiated between the effect of pivoting on either sales people or technology-oriented employees. Hence, it is crucial that all the startups of the sample have some kind of technology-orientation, e.g. employees, who fulfill technology-oriented roles. For the selection of employees it was essential that only employees were reached out to, who have a relatively higher position in the startup, since it is important that they get affected by the pivot and its consequences and thus having an overview on the strategy, which is affected by the pivot. Moreover only employees, who have experienced pivots in their startup, are considered. In the Data Collection subsection there is a description of how the we ensured to fulfill the criteria.

3.2 Primary Data

Given the lack of data available on the influence of pivots on motivation it is necessary to collect primary data. To do so a survey is designed using the online survey software Qualtrics. The main advantage being that the software allows full randomization between respondents and offering the option to export the data set to various statistical software.

3.2.1 Data Collection

To maximize the likelihood of responses the online survey was kept small - 3 minutes in order to reduce possible disadvantages of answering under time pressure. 50% of the responses were obtained in the Websummit, the biggest technology conference in the world; technology-oriented startups were already pre selected in terms of industry. The other half of responses came from different sources of connections of the author. Incubators, Entrepreneurship centers and startups were contacted in order to distribute the survey to employees of startups. Nonetheless, within five weeks dedicated to data collection 50 responses were generated.

As mentioned it is crucial to only have employees fill out the survey, who are directly affected by pivots, since an intern, part time position or the receptionist of a startup most likely will not have the insights necessary to answer the survey. Therefore the survey was

only distributed to those employees or founders, which had a position in the startup, high enough to be affected by pivots. These were either founders or non-founders with sales or technology positions. Therefore the main respondents are developers or have technology positions in startups as well as sales and marketing management positions and can both be founders or non-founders. In order to reduce company-based bias, for example pivots, which were extremely successful the survey does not include more than 4 employees from the same startup.

The survey consists of thirteen questions and is split into four blocks. The first and last blocks include a short description of the topic and a acknowledgement for participation respectively. The second block is concerned only with the topic of the pivot. A short introduction explains the concept and subsequently respondents are asked about the impact of pivots in their startup. The third block asks general questions regarding basic demographics of both the startup and the respondent himself.

Since the survey includes employees' responses only, who experienced a pivot before, pivoting can't be taken as a dependent variable. Respondents were asked how a pivot, which they experienced in the startup affected their overall job motivation and commitment respectively. If they answered they have not experienced a pivot before they were excluded from the data set. For the full set of questions the complete survey is included in the appendix.

3.2.2 Measurement / Indicators

With hypothesis 1 we seek to understand if there is a positive or negative effect of pivoting on job motivation and commitment. Performance is not measured within the data set, however increased motivation can be linked by the literature to performance. Motivation and commitment are considered the dependent variables in the framework and include answers on the effect of pivoting on motivation/commitment on a 7-point-scale (7 = increased motivation/commitment). The three extrinsic factors, responsibility, salary/bonus and job security and two intrinsic factors, which are challenging job tasks and independence at work are the five explanatory variables measured on a 7-point-scale (7 = very positive effect of pivot on factor)[1].

---

[1] The results for the motivational factors were inverted for data analysis in order to fit the logic of the other variables, since in the survey a 7 was a very negative effect for the five motivation factors.

The survey also controlled for the nature of the startup, which defines the industry in which the startup operates. The remaining variables are the age- and size of the startup as well as the tenure, position and number of experienced pivots by an employee and finally a variable describing, which type of pivot would affect the respondent the most. Employees are grouped in Founders, and Non-Founders and technical-oriented positions or sales and marketing positions. Table 3 summarizes all variables conducted through the survey distinguished by dependent variables, motivational factors and the remaining control variables. The order of items asked matches the survey.

Variable	Item asked
Control Variable	Number of Pivots experienced
Control Variable	Nature of Pivot that had biggest impact
Control Variable	Pivot that would affect motivation most
Control Variable	Frustration
Dependent Variable	Effect on Motivation
Dependent Variable	Effect on Commitment
Motivational Factors	Job Security
Motivational Factors	Challenging Job Tasks
Motivational Factors	Independence at work
Motivational Factors	Amount of responsibility
Motivational Factors	Salary/Bonuses
Control Variable	Startups' age
Control Variable	Size of startup
Control Variable	Tenure duration of employee
Control Variable	Industry
Control Variable	Founding team or not
Control Variable	Job positing description
Table 3: Variables overview	

3.2.3 Data Analysis

In order to address research questions and hypotheses statistical tests will be run on different levels. That being said, the software chosen to analyze the data is R Studio with the programming language R, which is the most widely and powerful, used statistical software on the market. On a first level, which focuses on hypothesis 1, the variables motivation and the intrinsic/extrinsic factors of motivation will be analyzed separately and without dependency on other variables. For this purpose, means, medians and simple descriptive statistic plots are used in order to indicate if pivots have a positive or negative effect on these variables. The whole sample is considered.

On the second level the relationship of the motivational factors on overall motivation are analyzed using simple linear regression as well as descriptive plots in order to analyze the origins of changes of motivation caused by pivots again run on the whole sample

The following level three analyzes if the results from the first levels are significant and if our sample is representative for the whole population of startups by running t-tests and simple linear regression models. We include control variables in the regression; by checking first which variables show correlations with the dependent variable. Moreover the second hypothesis is addressed by running a regression with the variables of type of pivot and position of employee and overall motivation.

Finally on the fourth level we analyze with sub samples, as the upper and lower quartile of overall motivation and compare the results in order to see if the particular quartiles can be explained by certain control variables again. Fur this purpose we will compare the means between the different quartiles.

CHAPTER 4: RESULTS AND DISCUSSION

4.1 Sample Characterization

Our sample consists of 50 respondents. The respondents, who have not experienced any pivot, are already excluded from this sample size. Figure 4 illustrates, which are the industries of the startups in the sample. Between the three categories, service oriented, technology oriented and software startups, the sample is very balanced. Software startups might be seen as technology oriented, too but were subdivided into the specific group of software startups, since they were highly represented on the Websummit and represent a significant group of the sample. Regarding the startup size (number of employees) they are either bigger (28%) than 20 employees (indicating a level development of the business as more mature) or early stage with 5-10 employees (28%) as illustrated in figure 5. The smallest group has the least representation in out sample (12%) is represented by the smallest startups, with less than 5 employees with six respondents in this group. While the sample is balanced regarding respondents of either founders (56%) or non-founders (44%), there is a majority of respondents, who have market & sales-oriented positions with 33 respondents (66%). The remaining 17 respondents (34%) have technology-oriented positions in the startup (Table 3).

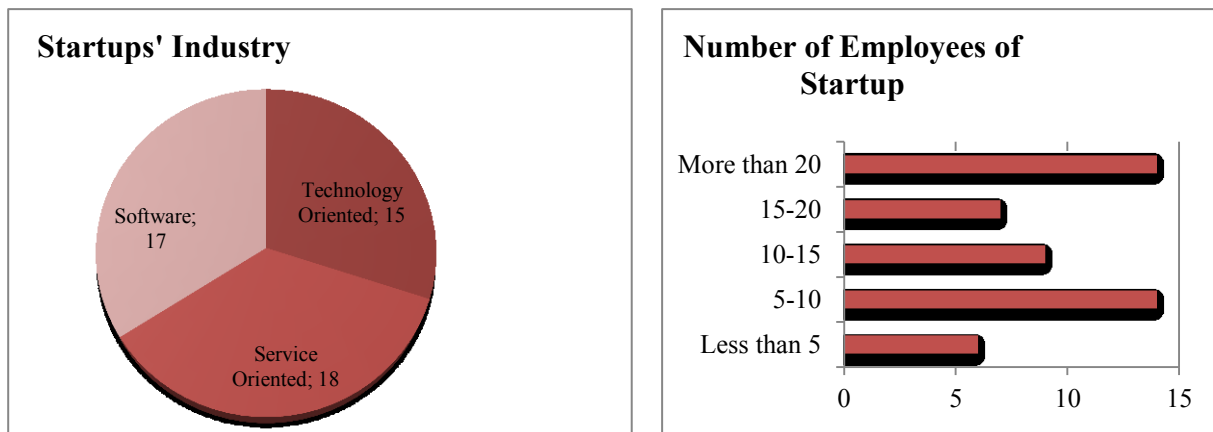| Founders	Non-Founders	Technology Oriented	Market & Sales-oriented
22	28	17	33
Table 4: Sample characteristics, Respondents job positions			

Figure 4 and 5: Sample characteristics

Additionally, the 50 survey respondents additionally come from over 30 different startups to ensure there is no company-based bias in responses on pivots influence on motivation. All respondents have experienced a pivot at least one time during the time working for the startup. This is essential because the effects from pivots on motivation can only be judged if a pivot and the consequences have been experienced at least once before. The average number of pivots in the sample, which respondents have experienced, is 1.7 and respondents have been working on average 2.5 years for the startup.[2]

4.2 Results from quantitative analysis

As described in the methodology the results are presented in the order of different levels. The first level analysis is dedicated to the overall effects of pivoting on motivation and the motivation factors respectively.

4.2.1 Level one analysis: Effect of pivoting on motivation

Figure 6 illustrates the distribution of respondents regarding the effect of pivots on their motivation. There is a clear growth rate towards an effect of increasing motivation with the exception of the highest possible choice. In total 39 (78%) respondents answered that pivots had a positive effect on their overall job motivation, while only 5 indicate negative effects (10%). The remaining (12%) respondents say there is neither a positive nor negative effect. Table 4 presents the mean, median and standard deviation for all respondents regarding their answers on overall job motivation and commitment as well as intrinsic factors, which represent challenging job tasks and autonomy and extrinsic factors, which are represented by job security, responsibilities and salary.

---

[2] The answers of "5+" pivots in the survey were counted as 5 to calculate the average. The answers of "10+" years working for the startup have been counted as 10 to calculate the average.

**Figure 6: Effect of pivoting on overall job motivation**
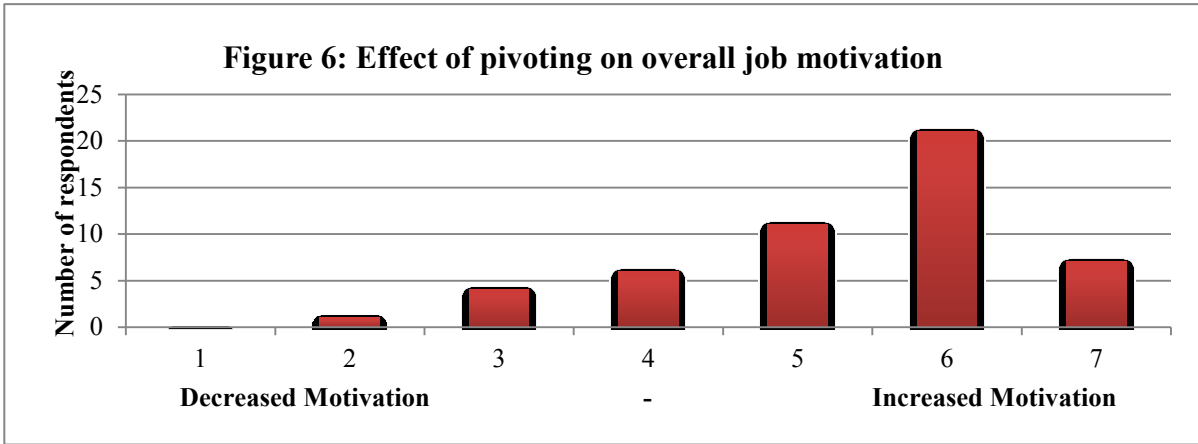
The results for commitment and motivation and in particular the median at the second highest level possible further indicates that pivots in startups have a positive effect on either job motivation and commitment. Moreover running a correlation test showed that commitment and motivation are moderately uphill correlated (correlation = 0.51), which means that both variables are increasing in the same direction and count more answers on higher ratings.

	Motivation	Commitment	Intrinsic Factors	Extrinsic Factors
Mean	5,36	5,6	4,61	4,52
Median	6	6	4,5	4
SD	1,22	0,95	1,42	1,28

Table 5: Pivots effects on motivational factors

Regarding extrinsic and intrinsic factors the results are only slightly indicating positive effects of pivoting on the motivational factors but overall are rather neutral. This means that on average the effects of pivots on the respondent's intrinsic and extrinsic motivation factors are small. Slightly higher standard deviations in particular for intrinsic factors motivate to analyze these factors more deeply and try to only consider upper and lower quartiles to see if some specific motivational factors have stronger relationships with the effect of pivots. This way we can check if the groups of respondents, who are affected negatively on motivation (lower quartile) also show specific effects in the motivational factors that differ from the whole sample. We checked the distribution for the single motivational factors and only the intrinsic factor "challenging job tasks" showed to be skewed more significantly to the left, meaning the mean being higher than 4, which is shown in figure 7 below.

Figure 7: Distribution of "challenging job tasks"
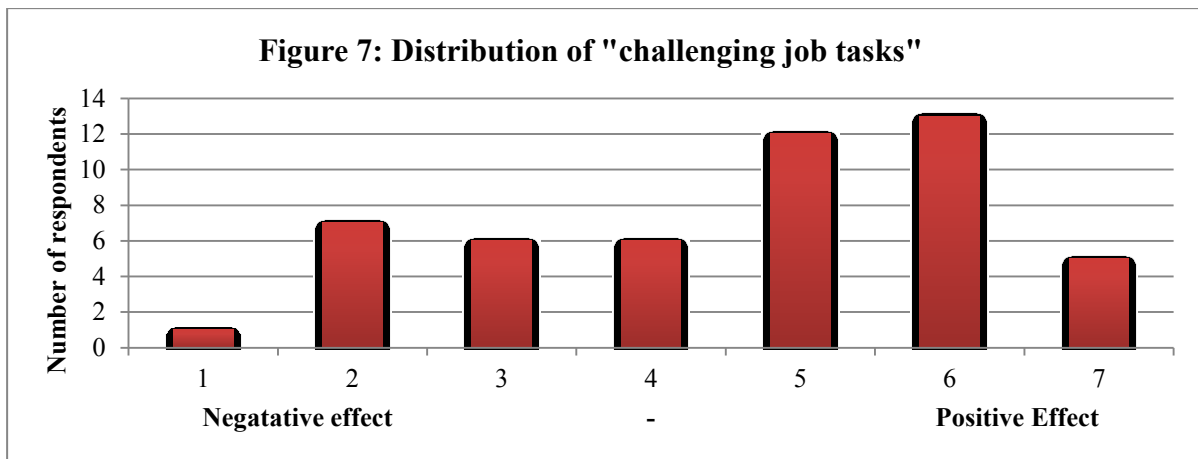
4.2.2 Level two analysis: Relationship of motivational factors and overall motivation

In order to understand the on average overall positive effect of pivots on motivation we ran several regression models. The following table two models were run with overall motivation as dependent variable and in Model 1 with extrinsic factors as explanatory variables and Model 2 with respectively with intrinsic variables. The constant is of no meaning in this analysis; what is of interest to us are the beta values of the explanatory variables, the R-square, and significance levels. In Model 1 the factor salary is the only significant variable if the p-value lower 0.1 is considered significant. The model tells us that if salary increases by one, the overall motivation increases by 0.3. If job security or responsibility change by 1 there is an effect of close to zero. Model 2 tells us that if Challenging Job tasks change by one, the motivation increases by 0.088 and autonomy has again an effect of close to zero. While the extrinsic factors explain the relationship between pivoting and changes in job motivation slightly better with an R-square of 0.085 than the intrinsic factors (R-square: 0.018), both models are not significant and the reasons for an overall positive effect of pivots on motivation have to be further analyzed. Still what we can say is that only extrinsic factors explain motivation derived from a pivot, more specifically, the expectation of more money is what motivates employees most. The adjusted R-squares are used to compare models with different amount of variables. When we include the control variables in level three analysis we want to compare them with the resulting adjusted R-squares.

| | Overall Motivation | |
	Model 1	Model 2
Job Security	-0.016	
Salary/Bonus	0.306*	
Responsibility	-0.023	
Challenging job tasks		0.088
Autonomy		0.025
Constant	4.258***	4.843***
R2	0.085	0.018
Adjusted R2	0.025	-0.024

==

Note: *p<0.1; **p<0.05; ***p<0.01

Table 6: Motivation regressed on motivational factors

4.2.3 Level three analysis: Significance checks with control variables

On the third level of analysis linear regression models are extended by control variables in order to better explain the relationship between pivoting and effects on job motivation. With the purpose to control for effects that might be affecting motivation we run a correlation test on all control variables and the overall motivation. The numbers are presented below in table 7.

Correlations Table	Overall Motivation
Overall Motivation	1
Number of pivots	-0.07
Biggest impact pivot	0.14
Most relevant pivot	-0.01
Age of Startup	0.22*
Number of employees	0.13
Tenure	0.05
Industry	0.25**
Founder/Non-founder	-0.04
Employee type	0.18
Note: *p<0.15; **p<0.1; ***p<0.05	
Table 7: Correlations with Motivation	

Overall the correlation values are low in general. Nevertheless the two most correlated variables, the industry type, the age of the startups and frustration, show weak uphill (positive) linear relationships and are significant at a 0.15 and 0.10 confidence level. The number of pivots that an employee has experienced, the nature of the pivot (most relevant

pivot, biggest impact pivot) the number of employees of the startup, the tenure of the respondent and the variable distinguishing between founders and non-founders show almost no correlation at all with the impact of pivots on overall motivation. Using the two most correlated variables as well as type of employee, since we assumed this variable to be important from the literature review, in the regression with salary/bonuses, which was the only significant variable for motivation factors, the following model results.

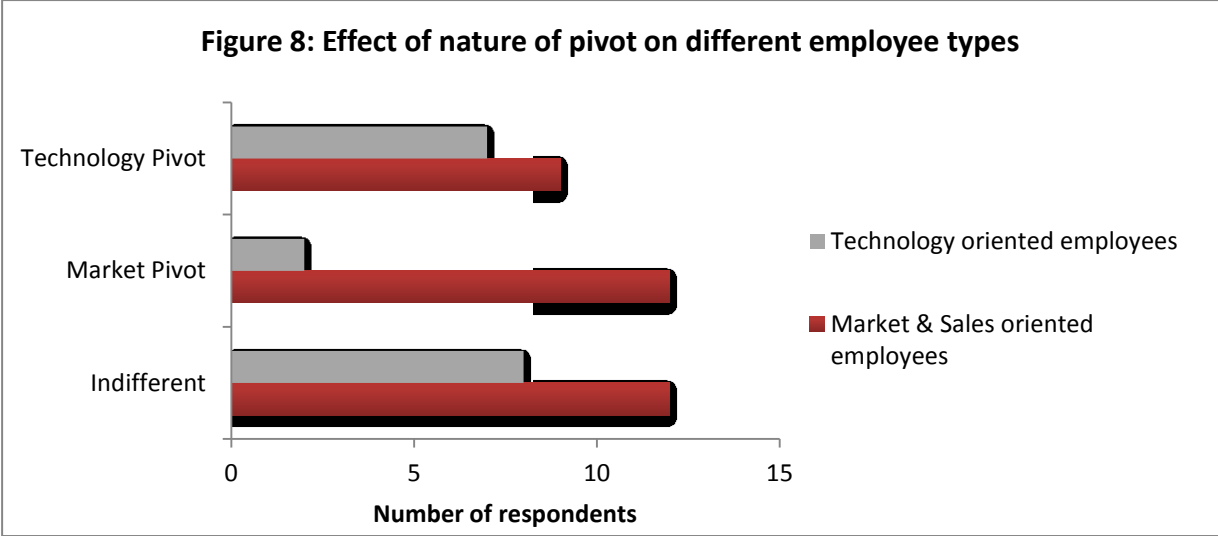|	Overall Motivation
	Model 3
Salary/Bonus	0.238*
Industry	0.245
Type of Employee	0.384
Age of startup	0.207
Constant	2.710***
R2	0.183
Adjusted R2	0.110
F-Statistic	2.519*

Note: *p<0.1; **p<0.05; ***p<0.01

Table 8: Regression model with control variables

The statistics shown in table 8 represent the best model describing the relationship of pivoting and work motivation within the sample. Additionally the F-statistic was run to understand if the model computed provides a better fit than the intercept-only model and shows that the explanatory variables explain some extent of the relationship between pivoting and overall job motivation and shows significance at a p-value < 0.1. Hence, the model provides a better fit than the intercept-only model. Still the variable salary/bonus stays significant which means that pivoting is perceived as a good concept and contributes to employees motivation because of expectations of a higher salary, independently of the industry, type of employee and age of the startup. $F (df = 4; 45) = 2.519$ and the Adjusted $R^2 = 0.110$, now with an higher amount of explanatory variables in the model, increased from previously 2.5% (model 1) to 11% (model 3). Hence the model accounts for 11.0% (18% with R-square) of the variance of the response data around its mean.

The low R square is not necessarily inherently bad. In areas such as psychology, it is expected that R-squared values will be low. Attempts to predict human behavior, typically has R-squared values lower than 50% since humans are simply harder to predict (Frost, 2013).

Motivation is also part of human psychology and therefore a R-Square of 11% (18%) is able to justify some of the relationship between pivoting and motivation.

Regarding H2 where we argued that the type of pivot influences the effects on motivation of different employee types. Figure 8 shows that technology-oriented employees are more affected by technology pivots than by market pivots, whereas market & sales oriented employees are barely affected by the nature of the pivot and just slightly feel that market pivots have bigger impacts. The statistic counts the responses of what type of pivot would affect the survey participant most.

Figure 8: Effect of nature of pivot on different employee types

In the next step we are looking at the different means of overall motivation for different employee and pivot types (Table 9). Then a "Welch" two-sample t-test is run, to understand if certain types of pivot have significantly higher effects on either technology-oriented employees in terms of effects on job motivation. Statistically speaking, the t-test computes the differences in means and the p-values for the level of significance. The results can be seen in following figure 9 and 10. The two analyses shall also help to identify if there is a moderation effect by the nature of the pivot. From the table we can already see that the differences in means across employee types is equal to zero for the market pivot and 0.46 higher for technology employees when it is a technology pivot. Across pivot types there are again no big differences observable with almost zero difference for technology employees and 0.39 higher effects for market pivots on market and sales employees.

	Employee Type	
	Technology	Market & Sales
Technology Pivot	5,57	5,11
Market Pivot	5,50	5,50

Table 9: Means of motivation for different pivot and employee types

Running the t-test we obtained a p-value greater than 0.05 (0.93) for technology employees and market & sales employees (0.43). We cannot reject the null hypothesis in both cases and thus confirm that the means are significantly similar for different pivot types. In relation to hypothesis 2 this means that the hypothesis is rejected and there is no evidence that different pivot types neither have bigger effects on the motivation of technology employees nor market & sales employees. We cannot identify that in our sample there is any moderation effect for nature of pivot or employee type.

H2a): Technology pivots have a higher effect on motivation on technology employees than market pivots. (Figure 9)

H2b): Market pivots have a higher effect on motivation on sales and marketing employees than technology pivots. (Figure 10)
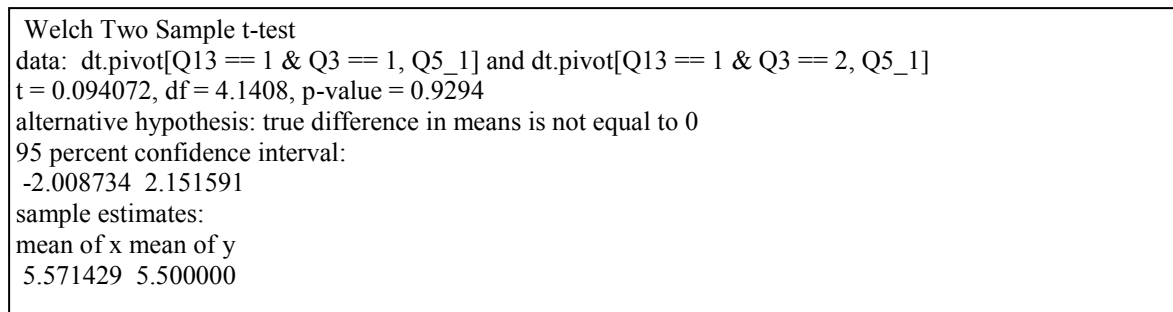
```
 Welch Two Sample t-test
data:  dt.pivot[Q13 == 1 & Q3 == 1, Q5_1] and dt.pivot[Q13 == 1 & Q3 == 2, Q5_1]
t = 0.094072, df = 4.1408, p-value = 0.9294
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -2.008734  2.151591
sample estimates:
mean of x mean of y
 5.571429  5.500000
```

Figure 9: T-test on technology employees motivation dependent on pivot type

```
 Welch Two Sample t-test
data:  dt.pivot[Q13 == 2 & Q3 == 1, Q5_1] and dt.pivot[Q13 == 2 & Q3 == 2, Q5_1]
t = -0.80296, df = 15.764, p-value = 0.4339
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -1.4168550  0.6390772
sample estimates:
mean of x mean of y
 5.111111  5.500000
```
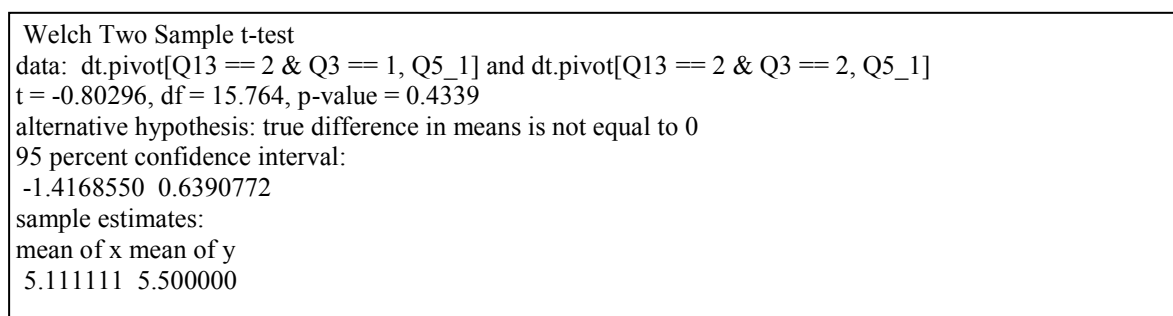
Figure 10: T-test on market & sales employees motivation dependent on pivot type

4.2.4 Level four analysis: Significance check with sub-sample analysis

Although only five respondents were affected negatively on their job motivation by pivots investigating their reasons might provide some insights about the thesis of the dark side of pivoting. This last level of analysis checks if this group of respondents shows certain characteristics in comparison to the upper quartile of respondents and thus be able to further explain the relationship between pivots and job motivation. In table 10 the means for several motivation factors and the number of experienced pivots are compared across the groups of lower quartile (respondents with overall motivation effects of pivots of 3 or lower) and upper quartile (respondents with overall motivation effects of pivot of 6 or higher). The upper quartile consists of 28 respondents and the lower quartile of 5 respondents.

	Lower Quartile	Upper Quartile	p-value
Number of pivots experienced	2,6	1,8	0.211
Job Security	3,8	4,6	0.013**
Challenging Job tasks	4,2	4,8	0.518
Independence at work	4,6	4,8	0.805
Responsibility	4,2	5,0	0.312
Salary/Bonus	3,4	4,5	0.134

Note: $*p<0.1; **p<0.05; ***p<0.01$

Table 10: Means of explanatory variables between upper and lower quartile respondents

While the control variables, which were used in previous models, such as employee type and industry had no effect in this analysis, the factors presented above show differences across means between the two groups in absolute values and were tested with "Welch" t-tests for the significance in differences. In particular the lower quartile group, who got affected negatively by pivots have on average experienced around 1 more pivot during their time in the startup. Also the motivation factors are lower for the lower quartile. Moreover the differences in job security (0.8), responsibility (0.8) and salary/bonus (1.1) are on average lower for the lower quartile. Hence pivots in the upper quartile had on average more positive effects on all motivational factors. Regarding the p-values only the factor job security shows significance on a $p<0.05$ level. From the remaining variables only salary/bonuses (p-value=0.134) and the number of pivots experienced (p-value=0.211) come close to the significance level $p<0.1$. Pivoting shows to have a negative impact on job security and thus the future outlook after experiencing a pivot seems to influence the respondents of the lower quartile negatively. Also higher amounts of pivots experienced and prospective lower salaries indicate the origin of overall lower motivation of the lower quartile.

4.3 Discussion

The overall goal was to analyze the impact of startups pivoting on employees' job motivation and through that, understanding whether a dark side of pivots affects employees in new ventures. The results from our first level analysis indicate that pivots have a positive impact on both motivation and commitment. As such we did not find any evidence of the presence of a dark side of picoting in technology-oriented startups. Pivoting is perceived as a motivation factor, mainly explained by positive expectations of the effects of pivots on salaries/bonuses. Such finding provides an initial answer to the research question R.Q.2. : What motivational framework describes the relationship between pivots and job motivation? The perceived effect on salaries explain why pivoting gave a positive effect on employees' overall motivation.

Pivots are designed to help startups be more successful. The more successful they become the higher wages they offer to employees. Our research findings strengthen the methodology of the lean startup from Eric Ries, since positive effects of pivots on salaries originate from the lean methodology and indicate increasing expected performance of startups through pivots, showing that in general there s a great belief in the outcomes of pivot. From the literature we also learned that compared to established firms, intrinsic motivation factors such as challenging job tasks play a bigger role in startups (Sauermann, 2017). Our results did not reveal negative effects of pivots on a more challenging job tasks, which would account for higher employee motivation. Established research shows that pivots keep jobs more challenging and increasing autonomy at job tasks avoids employees' boredom on the job (Fischerl, 1993), which could explain why the factor challenging job tasks is not a problem caused by pivots. Similarly however, the factor challenging job tasks does not explain the positive effects on motivation of pivots. A job in the dynamic environment of a startup seems to offer challenging job tasks even without pivoting.

Further analyses indicated that despite the overall positive effect of pivots in our sample, those respondents, who were affected negatively by pivots, show characteristics that indicate a dark side of pivots. We mentioned a scholar (McGinn, 2012) who criticized entrepreneurs for pivoting too much as it could lead startups' employees to loose motivation and faith in the entrepreneur and project. On average the higher number of pivots experienced indicates that there might be a limit to the number of pivots employees can accommodate, with too many changes affecting job security. These findings suggest that employees who experience too many pivots loose trust in the management and do not see the success of the startups guaranteed anymore and therefore fear for their job. Combining with the overall positive

results of pivoting on motivation we can say that pivoting is good up to a certain point, but after too many pivots, the changes in direction can be detrimental to employee's job motivation.

The analysis of the type of employee and the nature of pivot did not reveal any effect. So against to our reasoning the type of employee does not moderate the relationship between pivoting and job motivation, which is not aligned with the finding of Stern (2004) and Barrick et al. (2002) that sales persons and technology-oriented employees are characterized by certain motivational factors, differentiating them from each other. Surprisingly, the nature of pivots (technology vs. market pivot), which we assumed to have different effects on different employee types, since those pivots impact certain job areas of either technology or sales oriented workers more or less, does not moderate the relationship, either, Pivots seem to affect technology and market & sales employees indifferently. The factors, which explain the relationship pivoting – employee job motivation, namely the number of pivots and the extrinsic factors job security and salary seem to be job - and pivot type independent and hence pivots affect different employee types the same. Therefore both hypothesis H2a and H2b were rejected. We suggest that the nature of pivots would mostly affect the factor challenging job tasks, since the job tasks is the area, which differentiates the explanatory variable nature of pivot most. However, we already found this factor not to be relevant for the relationship between pivots and motivation.

CHAPTER 5: CONCLUSIONS AND LIMITATIONS

5.1 Main Findings & Conclusions

While the lean startup methodology and its inherent concept of pivoting is becoming more popular, this thesis has explored how pivots in startups affect the job motivation of startup's employees. Through a quantitative approach through an online survey, this thesis is able to make a number of contributions on the research area of the lean startup. The findings contribute to the literature on the lean startup methodology and entrepreneurial learning and have implications for theory and practice. In particular we would like to point two main conclusions.

The first main conclusion from the survey results is that we do not support the claim that pivots have a detrimental effect on employees' motivation. On the opposite, our results suggest a positive relationship of pivoting on individuals' job motivations and commitment.

The question what might affect employees' motivation in startup environments is an important one. However, neither results from technology nor sales oriented employees across different startup industries in our study showed the presence of a possible inherent dark side of pivoting. Among the 50 respondents from the survey 39 in total answered that pivots had positive effects on their motivation. Interestingly, our findings further indicate that the factor salary/bonuses best explains motivation. After employees have experienced pivots in their startup, salaries or bonuses have, on average, been positively affected. We can link this to our findings that pivots often are the way for startups to achieve a turnaround situation for their business. The rational is that pivots direct the business into a more successful direction. Therefore the pivot as a way to become a successful startup explains why pivots motivate employees in our sample.

This study also analyzed the impact of pivots on other motivational factors besides salary/bonuses, both intrinsic and extrinsic. Although pivots are substantial changes in the business plan and therefore do affect several parts of the jobs of employees we could not find significant explanations from intrinsic factors, namely from challenging job tasks and autonomy or from extrinsic factors such as responsibility at the job and job security, that explain the positive effects of pivots on overall job motivation.

Although pivots affect positively employees' motivation, there is also indication that there actually might be a possible dark side of pivoting after all. We find that employees who experienced several pivots were negatively employees' motivation, shows some main different characteristics than the employees, who were very positively affected. The number of pivots experienced in the startup was on average higher for employees who were negatively affected. We suggest that pivoting extensively can be a reason that employees get demotivated. Our literature review in this regard (McGinn, 2012) pointed out that if entrepreneurs change business directions too many times, important stakeholder groups such as employees loosing faith in the entrepreneurs' idea and ability and our results confirm this idea. Furthermore the job security was significantly lower for employees with negative effects of pivoting on motivation. This is another reason, which can be linked to the fact that pivoting might lead employees to loose faith in the startup and the founding team and hence fearing for successful prospective future of the project. Both findings suggest that most of the times pivoting is perceived as a positive thing helping the startup to be successful but at times, pivoting affects negatively job motivation, which could be transferred into inferior startup

performance. This subgroup however needs to be further analyzed and described with possibly bigger samples as described, which leads us to suggestions for further research and limitations.

5.2 Academic and Managerial Implications

Eric Ries (2011) developed the lean startup methodology with the concept of pivoting to help entrepreneurs build successful startups and our results support such effectiveness. Previous literature found that motivated employees are one of the most important factors for successful startups. Therefore our findings also strengthen the concept of pivoting, since pivots can be beneficial for employee motivation. Also literature (Sauermann, 2017) pointed to high importance of intrinsic motivation factors for employees in startups, however pivoting does not seem to affect them. Also our findings support McGinn (2012) that extensive pivoting can have negative effects, as our results show that those respondents who are affected negatively by pivots have on average experienced higher numbers of pivots in their startup.

For managers and entrepreneurs we want to highlight as well our findings that high numbers of pivots are perceived negatively by employees and indicate a dark side of pivoting. First the author suggests to avoid pivoting too many times as it could cost you the trust and motivation/commitment of your employees. If it is inevitable to pivot however, in order to avoid problems regarding employee motivation arising from pivoting it is recommendable and important to be credible and convincing with the strategy of a new pivot and to show your employees how this pivot can ensure job security and if possible even outline how a successful pivot could translate into bonuses or increasing wages for your employees.

5.3 Limitations and Further Research

We also want to discuss the appropriateness of our data collection methods and sample in order to effectively address our research questions. There are three main limitations to this empirical study. First, from the literature pivoting is described as a rather structured process. This is the ideal way pivoting works but it is possible that pivots are very unstructured and surprise employees. Even more, if pivots are badly communicated the effect might not be as the results of our thesis suggest. The author proposes that the positive effect on motivation that pivots had within the sample might be due to a well structured process of pivots, since in particular from the Websummit, where rather successful startups participated, a bias towards successfully structured pivots could be inherent within the sample. However the data

collection on the Websummit and additional sources ensured a sample with startups from many different nationals and also to reach directly more senior positions of startups' employees. The exclusion of respondents, who did not experience any pivot before is justified as only people, who actually got impacted by a pivot were interesting for the results. Furthermore an unstructured, badly performed pivot might have a more negative effect on motivation. There is little research regarding the process of structuring pivots, which could be another possible direction for research on pivoting. Possibly not the pivot itself, but the way it is communicated or structured might affect the motivation in a different way than the pivot itself. Interesting to link to this study would then be how the management team can avoid motivational negative effects, possibly by better communicating and involving the employees in the pivot decision making process.

The second limitation has to do with the underlying methodology of pivoting as concept of the lean startup approach. It is very hard to ensure in the survey that all startups that filled out the survey used and are familiar with the lean approach in their startup. We could only ensure for the whole sample that they pivoted and understand definitions of pivots, but not that the startups followed the methodology of Eric Ries. Although respondents being familiar with the lean startup could have affected the results, there is also the chance that this knowledge could have created more bias in favor of the lean approach.

Finally, a bigger sample size could have created more significant and possibly other results. Our sample included stratups from different industries, both founders and non-founders and employees with either technology or sales & market-oriented positions. Our last conclusion on the number of pivots experienced by employees and the claim about extensive pivoting as well as lower job security was based on a comparison between upper and lower quartile groups. The results indicate what we called the dark side of pivoting. However, the lower quartile group we analyzed, only consisted of five respondents. With an either bigger sample of each sub group or a more homogenous sample, such as respondents, who are all developers within the same industry, there would be a chance to get more significant answers explaining why a pivot was affecting employees negatively or positively. Besides, an increased sample could increase significance levels of the questionnaire results regarding the control variables, which could lead to identify the and also increase low R-squares in the computed regression models.

The results of the thesis offer the ground foundations for further research regarding the relatively young area of pivoting literature. A qualitative research approach could be an interesting way to analyze if the results regarding effects on motivation have other determinants and explanations. Furthermore having a stronger link on the causal relationship of performance and motivation would be value adding, since this study only assumes the link between motivation and performance. However data that would link increased motivation or decreased motivation to performance or also employee turnover would be an interesting addition to this study.

Another interesting research direction, which could complement the thesis is "to see pivoting as Function of Your Employees" as suggested by the techcrunch (2012). Engineers and programmers loose their skill fit with a startup after it has pivoted. Loose of skill fit with the startup could be another reason, which could explain the ex-post failure of pivots. (Karbasfrooshan, 2012)

As final words the author liked to emphasize how studying the impact of pivots on motivation have contributed to the knowledge and awareness of the author in particular on the importance of concepts of pivoting and the lean startup. The knowledge of the importance of always being able to adapt to changes both on an individual and organizational level and even getting motivation under uncertain and challenging circumstances can be of great advantage and personal value when entering the business life.

REFERENCE LIST

Amabile, T. M. (1997). Motivating creativity in organizations: On doing what you love and loving what you do. California management review, 40(1), 39-58.

Ardichvili, A., Cardozo, R., & Ray, S. (2003). A theory of entrepreneurial opportunity identification and development. Journal of Business venturing, 18(1), 105-123.

Bajwa, S. S., Wang, X., Duc, A. N., & Abrahamsson, P. (2016, June). How do software startups pivot? empirical results from a multiple case study. In International Conference of Software Business (pp. 169-176). Springer International Publishing.

Bajwa, S. S., Wang, X., Duc, A. N., & Abrahamsson, P. (2017). "Failures" to be celebrated: an analysis of major pivots of software startups. Empirical Software Engineering, 22(5), 2373-2408.

Barrick, M. R., Stewart, G. L., & Piotrowski, M. (2002). Personality and job performance: Test of the mediating effects of motivation among sales representatives. Journal of Applied Psychology, 87(1), 43.

Baum, J. A., & Silverman, B. S. (2004). Picking winners or building them? Alliance, intellectual, and human capital as selection criteria in venture financing and performance of biotechnology startups. Journal of business venturing, 19(3), 411-436.
Blank, S. (2013). Why the lean start-up changes everything. Harvard business review, 91(5), 63-72.

Bosch, J., Olsson, H. H., Björk, J., & Ljungblad, J. (2013). The early stage software startup development model: a framework for operationalizing lean principles in software startups. In Lean Enterprise Software and Systems (pp. 1-15). Springer, Berlin, Heidelberg.

Byrne, J. A. (2000). How a VC does it; Bob Davoli is a hands-on investor, and so far he hasn't picked a loser. Can he keep it up. Bus. Week, July, 24, 96.

Centers, R., & Bugental, D. E. (1966). Intrinsic and extrinsic job motivations among different segments of the working population. Journal of Applied Psychology, 50(3), 193.

Comberg, C., Seith, F., German, A., & Velamuri, V. K. (2014, January). Pivots in Startups: Factors Influencing Business Model Innovation in Startups. In ISPIM Conference Proceedings (p. 1). The International Society for Professional Innovation Management (ISPIM).

Cope, J. (2005). Toward a dynamic learning perspective of entrepreneurship. Entrepreneurship theory and practice, 29(4), 373-397.
Crant, J. M. (2000). Proactive behavior in organizations. Journal of management, 26(3), 435-462.

Deligianni, I., Voudouris, I., & Lioukas, S. (2017). Do effectuation processes shape the relationship between product diversification and performance in new ventures?. Entrepreneurship Theory and Practice, 41(3), 349-377.

Dutta, D. K., & Crossan, M. M. (2005). The nature of entrepreneurial opportunities: understanding the process using the 4I organizational learning framework. Entrepreneurship Theory and Practice, 29(4), 425-449.

Eisenmann, T. R., Ries, E., & Dillard, S. (2012). Hypothesis-driven entrepreneurship: The lean startup.

Fisherl, C. D. (1993). Boredom at work: A neglected concept. Human Relations, 46(3), 395-417.

Fishman, C. (1998). The war for talent. Fast Company, 16(August), 104-108.

Frese, M., & Fay, D. (2001). 4. Personal initiative: An active performance concept for work in the 21st century. Research in organizational behavior, 23, 133-187.

García-Gutiérrez, I., & Martínez-Borreguero, F. J. (2016). The Innovation Pivot Framework: Fostering Business Model Innovation in Startups: A new tool helps entrepreneurs design business models by identifying the sources of competitive advantage embedded in an innovation. Research-Technology Management, 59(5), 48-56.

Giardino, C., Paternoster, N., Unterkalmsteiner, M., Gorschek, T., & Abrahamsson, P. (2016). Software development in startup companies: The greenfield startup model. IEEE Transactions on Software Engineering, 42(6), 585-604.

Kane, T. J. (2010). The importance of startups in job creation and job destruction.

Katz, J., Aldrich, H., Welbourne, T., & Williams, P. (2000). Towards a new synthesis: Editors comments. Entrepreneurship: Theory and Practice, 25(1), 1-5.

Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. New Jersey: Prentice-Hall

Lindner, J. R. (1998). Understanding employee motivation. Journal of extension, 36(3), 1-8.
McDonald, Rory, and Cheng Gao. "Pivoting Isn't Enough: Principled Pragmatism and Strategic Reorientation in New Ventures." Harvard Business School Working Paper, No. 17-031, October 2016.

McGinn, D. (2012). Too Many Pivots, Too Little Passion What's wrong with today's entrepreneurism.

Meyer, J. P., Becker, T. E., & Vandenberghe, C. (2004). Employee commitment and motivation: a conceptual analysis and integrative model. Journal of applied psychology, 89(6), 991.

Mowrer, O. (1960). Learning theory and behavior.

Müller, R. M., & Thoring, K. (2012). Design thinking vs. lean startup: A comparison of two user-driven innovation strategies. Leading Through Design, 151.

Parker, M. (2000). Organizational culture and identity: Unity and division at work. Sage.

Pavia, T. M. (1991). The early stages of new product development in entrepreneurial high-tech firms. Journal of Product Innovation Management, 8(1), 18-31.

Ries, E. (2011). The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses. Crown Books.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. Contemporary educational psychology, 25(1), 54-67.

Sarasvathy, S., & Dew, N. (2008). Effectuation and Over- Trust: Debating Goel and Karri. Entrepreneurship Theory and Practice, 32(4), 727-737.

Sauermann, H. (2017). Fire in the belly? Employee motives and innovative performance in startups versus established firms (No. w23099). National Bureau of Economic Research.

Sauermann, H., & Cohen, W. M. (2008). What makes them tick? Employee motives and firm innovation (No. w14443). National Bureau of Economic Research.

Schank, R. C., Berman, T. R., & Macpherson, K. A. (1999). Learning by doing. Instructional-design theories and models: A new paradigm of instructional theory, 2, 161-181.

Stern, S. (2004). Do scientists pay to be scientists?. Management science, 50(6), 835-853.
Terho, H., Suonsyrjä, S., Karisalo, A., & Mikkonen, T. (2015, December). Ways to cross the rubicon: pivoting in software startups. In International Conference on Product-Focused Software Process Improvement (pp. 555-568). Springer, Cham.

Van Knippenberg, D. (2000). Work motivation and performance: A social identity perspective. Applied psychology, 49(3), 357-371.

Wiley, C. (1997). What motivates employees according to over 40 years of motivation surveys. International Journal of Manpower, 18(3), 263-280.

Young, H. P. (2009). Learning by trial and error. Games and economic behavior, 65(2), 626-643.

http://blog.minitab.com/blog/adventures-in-statistics-2/regression-analysis-how-do-i-interpret-r-squared-and-assess-the-goodness-of-fit

http://www.gemconsortium.org/

https://artplusmarketing.com/lean-vs-design-thinking-6ae7c04453a6

https://medium.com/marketing-and-entrepreneurship/why-startup-pivots-almost-never-work-a2a9c45fe62c

https://techcrunch.com/2012/01/28/to-pivot-or-not-to-pivot/

https://www.cbinsights.com/research/startup-failure-reasons-top/

https://www.inc.com/stanford-business/lean-startup-vs-design-thinking-what-works.html

https://www.startupgrind.com/blog/is-pivot-the-new-fail/

APPENDICES

Appendix 1: Online Survey

Survey Master Thesis

Intro
Switch to english or german survey on top right.

I am currently writing my Master thesis at Católica Lisbon School of Business and Economics on a topic, which focuses on pivoting in startups. Your answers can contribute to a great advance in knowledge within the lean startup research. All your answers will be treated completely confidential!

The survey is directed to people, who currently work or have worked in a startup. The questionnaire will take less than 3 minutes.

Pivot intro
<u>A short introduction:</u>
 Pivoting your business is about doing substantial changes in your business model. In more detail, a pivot is a structured course direction designed to test a new fundamental hypothesis about the product, business model and engine of growth.

We are interested in particular on the impacts of technology and market pivots, which adapt either the technology of the product/service or involves major changes in the target market.

⊙

Q1 Indicate how many pivots you have experienced since working for the startup.

▼0 (1) ... 5+ (6)

Q2 Regarding the nature of the pivots, which pivot had the biggest impact on your startup?

○ Technology pivot (1)

○ Market pivot (2)

Q3 Which type of pivot would affect your motivation most?

○ Technology pivot (1)

○ Market pivot (2)

○ There would be no difference (3)

Q4 Would you say that a pivot and thus working into a new direction feels sometimes frustrating?

○ Strongly agree (1)

○ Agree (2)

○ Somewhat agree (3)

○ Neither agree nor disagree (4)

○ Somewhat disagree (5)

○ Disagree (6)

○ Strongly disagree (7)

Q5 Now consider the pivot you were thinking about in Question 2. Rate on a scale 1-7 how these **changes in direction of the business** have **affected** your overall **motivation** at work?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
Effect on motivation (1)	○	○	○	○	○	○	○

Q6 Consider the same pivot. Rate on a scale 1-7 how these **changes in direction of the business** have **affected** your overall **commitment** at work?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
Effect on commitment (1)	○	○	○	○	○	○	○

Q7 Please again think about the pivot that had the biggest impact on your startup. Now consider your job situation after the pivot took place. How **did you perceive the pivot to affect the following factors** on a scale from 1-7?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
Job Security (1)	○	○	○	○	○	○	○
Challenging job tasks (2)	○	○	○	○	○	○	○
Independence at work (3)	○	○	○	○	○	○	○
Amount of responsibility (4)	○	○	○	○	○	○	○
Salary/Bonuses (5)	○	○	○	○	○	○	○

Intro 2 Thank you so far for the help. Could you now please fill out these general questions, which will take you less than 1 minute time before the survey is completed.

Q8 How old is the startup you are working for?

○ Less than 2 years (1)

○ 3 years (2)

○ 4 years (3)

○ More than 5 years (4)

Q9 How many employees are working for the startup?

○ less than 5 (1)

○ 5-10 (2)

○ 10-15 (3)

○ 15-20 (4)

○ more than 20 (5)

Q10 How many years have you been working for the startup?

▼1 (1) ... 10+ (10)

Q11 Which of the following options describes your startups' product or service the best?

○ Technology oriented (1)

○ Service oriented (2)

○ Software (3)

○ Scientific (4)

Q12 Please indicate, if you are part of the founding team.

○ Founder (1)

○ Non-Founder (2)

Q10 Considering the **position you are mainly pursuing at work**. Would you rather describe it as Technology oriented or as Market & Sales oriented?

○ Technology oriented (1)

○ Market & Sales oriented (2)

End of Block: General

Start of Block: Wrap up

Outro Thank you very much for your participation!

If you are interested to follow my research findings or have any questions regarding the survey you are very welcome to contact me by E-mail: **frederick.meiners@gmail.com**

X