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„The staging of a start-up and its interference with
motivational issues and the skill-task match of non-
founding employees”

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Table of Contents

1	Introduction	5
2	Theoretical Background	10
2.1	Start-Ups.....	10
2.2	Organizational Design & The Stages of a Start-Up	12
2.2.1	Organizational Design	12
2.2.1.1	Integration of Effort: Reward Provision and Information Provision (RP and IP)	15
2.2.1.2	Division of Labour: Task Division and Task Allocation (TD and TA).....	17
2.2.2	Stages of a Start-Up	19
2.2.2.1	Growing Process and its Effect on Employees	21
2.3	Employees and Motivational Issues.....	23
2.3.1.1	(Non) Self-Determination Theory	26
2.4	Employees and their Skill-Task Match.....	27
3	Research Question and Hypotheses.....	29
4	Method	29
4.1	Variables and Measurement.....	30
4.2	Instruments.....	31
4.2.1	Organizational Design Choices (Soft Facts), (Information provision, Reward Provision, Task Allocation, Task Division)	31
4.2.1.1	Information provision.....	31
4.2.1.2	Reward Provision	32
4.2.1.3	Task Allocation and Task Division	33
4.2.2	Control Variables for Organizational Design Choices (Hard Facts, CV Stages)	33
4.2.3	Intrinsic and Extrinsic Motivation	34
4.2.4	Skill-Task Match.....	34
4.3	Statistical Analyses	35
4.3.1	Statistical Procedures.....	35

4.3.1.1	Descriptive Statistics	35
4.3.1.2	Inference Statistical Procedures.....	35
4.4	Data and Participants	37
4.4.1	Response Rate	37
4.4.2	Sample Description	38
4.5	Results.....	38
4.5.1	Organizational Design & The Stages of a Start-Up.....	39
4.5.1.1	Organizational Design Choices due to RP, TA, TD, IP (Soft Facts)	39
4.5.1.2	Résumé Reward Provision, Task Allocation, Task Division and Information Provision ...	40
4.5.1.3	Control Variables for Organizational Design Choices (Hard Facts, CV Stages)	41
4.5.1.4	Accordance of the Organizational Design (Stages) due to Soft-Facts (Task Allocation, Task Division, Information Provision, Reward Provision) and Hard-Facts (CV stages, Organizational Design)	44
4.5.1.5	Hard Facts and Single Soft Facts (TA, TD, IP, RPE, RPI)	45
4.5.1.6	Résumé of Soft Facts (TATDIP, RPI, RPE) and Hard Facts (CV Stages, Organizational design) 46	
4.5.2	Employees and Motivational Issues.....	46
4.5.2.1	WEIMS (Work Extrinsic and Intrinsic Motivation Scale)	47
4.5.2.2	Hypotheses testing (H1, H1a).....	48
4.5.3	Employees and their Skill-Task Match.....	49
4.5.3.1	Skill-Task Match	49
4.5.3.2	PIAAC.....	51
4.5.3.3	Hypotheses testing (H2, H2a, H2b)	52
5	Limitations and Implication for Further Research	55
6	General Discussion.....	56
7	Conclusion.....	59
8	References	61
9	Figures.....	71

10	Tables.....	71
11	APPENDIX	72
11.1	Abstract English	72
11.2	Abstract German	73
11.3	Appendix A – WEIMS.....	76
11.4	Appendix B – Skill-Task Match.....	77
11.5	Appendix C – Reward Provision.....	78
11.6	Appendix D – Task Allocation and Task Division	79
11.7	Appendix E – Information Provision	79
11.8	Appendix F – Control Variables.....	80
11.9	Appendix G – Statistical Questions	81
11.10	Appendix H – Complete Questionnaire	82
11.11	Appendix I – List of Start-Ups Contacted	96

1 Introduction

Over the past few decades, the number of start-ups has increased substantially. In Austria alone, for example, there were 37,120 start-ups founded in 2014, while in 1993 there have only been 14,631 newly founded businesses (WKO, 2014, p.22). One study found that start-ups tremendously contribute to the job market by annually creating an average of 3 million new jobs just in the United States (Kane, 2010, p.6). Apparently, start-ups are also innovation-boosters (DerStandard, 2015).

The term human capital, defined as “*the economic value of an employee’s skill set*” (Investopedia, 2016: Definition of Human Capital) and “*health, knowledge, motivation and skills, the attainment of which is regarded as an end in itself*” (Business Dictionary, 2016: Definition of Human Capital) enforces the importance and dependency of an organization’s employees. An employee’s human capital such as competencies, knowledge and skills, also referred to as the so-called intellectual capital, is considered as crucial for an organization’s innovativeness (Business Dictionary, 2016: Definition of Human Capital). Human and social capital is believed to have an intense impact on firm performance, especially in early stages of a company (i.e. Bates 1990, Cooper et al. 1994, Colombo/Grilli 2005 in Koch/Späth/ Strotmann, 2012, p. 2).

Summing up, employees are crucial for business, therefore also for start-ups, and deserve further consideration.

Furthermore, a lot of information on small firms can be found (e.g. Cragg/King, 1993, p. 47 ff. – discussing applications growth and identifying motivators of growth, or Coetzer/Alan/Redmond/Janice/Barett/Rowena, 2014, p. 1 ff dealing with the importance of retaining small firm employees), but small firms differentiate from start-ups in the sense that the former is driven by profitability and a stable long-term value while the latter aims for top-end revenue and growth potential (Forbes, 2012). Additionally, a start-up is related to a new and progressive business created by state-of-the-art ideas. Also, they are more in need of financial support than they are for physical infrastructure in order to achieve business development (OECD, 2016, p.32).

Therefore, the focus is a different one and start-ups cannot easily be compared to small firms.

Until now there has been little empirical research on issues dealing with start-ups and their employees, particularly regarding non-founding employees. The following will give an overview of the studies

found within the literature review of this thesis. So far, emphasis has been on entrepreneurial research, highlighting entrepreneurial motives and incentives in comparison to large established firms (e.g. Amit et al 2000, p. 119 ff, Shane et al., 2012, Elfenbein et al., 2010, p. 1 ff, Astebro/Thompson, 2010, Sauermann, 2013, p.1 ff), or on analysing an entrepreneur's traits, skills and motivation in light of subsequent venture growth finding evidence, that specific characteristics in entrepreneurs are predictors for such growth (Baum/Locke, 2004, p.587 ff). Utilizing these three research approaches (entrepreneurial, organizational and ecological), successful factors for a start-up were identified, including competence, confidence and commitment, again focusing on entrepreneurs and referring to a start-up as a collective achievement (Van de Ven/Hudson/Schroeder 1984, p.1). Another study contrasted employee's motives and innovative performance in start-ups versus those in established firms. It found evidence that employees in start-ups tend to value salary and job security less and bear a higher risk tolerance than those of established firms. Higher intrinsic motives were proven as well (Sauermann, 2013, p. 22-23). Moreover, the issues of growth in early stages have been addressed (Santarelli/Vivarelli, 2007 in Koch/Späth/Strotmann, 2012, p.2). Literature provides also information about the impact of initial employment structure of start-ups in combination with flexible employment schemes (Koch/Späth/Strotmann, 2012, p.28).

As can be seen from the literature analysis above, more focus has to be put especially on non-founding employees in a start-up, as only few insights in this matter are given, although they are crucial for the company's performance in terms of human capital.

Motivated employees help the organization to reach its goal and to perform successfully. They also tend to be more productive. Therefore a manager needs to understand how to motivate his/her employees and where motivation is derived from (Lindner, 1998). In theory, several models discuss this motivational challenge, such as Maslow's hierarchy of needs (Maslow, 1943), or Herzberg's two-factor theory, introducing motivators and hygiene factors within working-conditions (Herzberg, 1959). Another model that elaborates on this issue is the job characteristics model by Hackman and Oldham. It describes that an employee will gain intrinsic motivation if the job generates certain psychological states (Hackman/Oldham, 1976, p. 255ff).

As the consideration above has shown, besides the Sauermann study no intense research on comparing intrinsic and extrinsic motivational factors of employees in start-ups has been fulfilled.

Thus it comes to no surprise that even the Sauermann study claims to have left room for further analysis of advantages and disadvantages for employees in start-ups (Sauermann, 2013, p.15).

Further, there is also little literature found in regards to start-ups and organizational design or structure. It supplies a lot of generalized models on organizational design and structure, such as Mintzberg's Framework (Mintzberg, 1980, p.322ff), Weber's Bureaucracy, Taylorism or the Human Relations Movement (Kieser 2006, p. 133ff). What can be found is a lot of informal advice on forums or advising websites (i.e. Benitez, 2017, Martin 2017).

Therefore, extended research on the organizational design and structure of start-ups in use is needed too.

Additionally, there is a vast amount of books, dealing with how to set up a start-up successfully, giving a lot of entrepreneurial advice what basic steps founders need to consider when setting up a start-ups business, however lacking detailed information about non-founding employees, their motivation and skills (i.e. Ahr/Schwenk/Matros, 2011, Ries, 2014, Woods, 2008).

Based on the research findings on these issues, the following factors are in need of further observation, which were used to form the research questions and hypotheses.

- **Organizational design** used in start-ups: For the thesis at hand defined in terms of task division, task allocation, reward provision and information provision (Purnanam/Alexy/Reitzig, 2014). This approach is chosen, since organizations are confronted with two basic problems: division of labour and integration of effort (Burton/Obel, 1984, Lawrence/Lorsch, 1967, March/Simon, 1958, Mintzberg, 1979 in Purnanam/Alexy/Reitzig, 2014, p. 165). These two issues can further be broken down into overall four issues: task allocation and task division (division of labour), reward provision and information provision (integration of effort) (Purnanam/Alexy/Reitzig, 2014, p. 165). Additionally, these four issues may be related to as "universals of organizing" which each organization has to face and present solutions for each four in order to justify its existence (Purnanam/Alexy/Reitzig, 2014,

p. 166-167). Since these issues are that important, this thesis tries to figure out a new approach of defining organizational design due to an organization's basic issues and how it is dealing with and how it may be adapting them the more the organization develops and changes over time (see 2.2 Organizational Design & The Stages of a Start-Up).

- **Non-founding employees** and their **motivation** for working in a start-up (intrinsic and extrinsic motivation) (Tremblay/Blanchard/Taylor/Pelletier/Villeneuve, 2009, Ryan/Deci, 2000, Ryan/Deci, 2000, Vallerand, 1997) (see 2.3 Employees and Motivational Issues).
- **Non-founding employees** and their **skill-match** (Perry/Wiederhold/Ackermann-Piek, 2014) for contributing to a start-up's success (task division and task allocation as well as self selection or authoritative instructions considering human capital) (see 2.4 Employees and their Skill-Task Match).

Literature is claiming for new approaches and theories fitting the changed environment and that it may be reasonable to assume that present theories dealing with organizational design and structure were built in a context which is no longer mirroring the reality (Purnanam/Alexy/Reitzig, 2014, p. 162). Therefore, this thesis tries to build a new theory by trying to define organizational design due to its four basic problems and its solutions to these four issues since these solutions justify its existence (Purnanam/Alexy/Reitzig, 2014, p. 166-167). It is searching for an approach how to measure task allocation, task division, information provision and reward provision in a way that makes it reasonable to draw relations to the prevailing organizational design of an organization. These four issues should provide a construct in order to identify the different stages of a start-up (may it either be in an early stage at the very beginning, in an expansion stage or in a latter stage, already close to being an established firm). It is true that for reward provision there is an existing set of questions how to measure intrinsic and extrinsic reward provision (Allen/Kilman, 1999, p. 117 ff). However for the issues of information provision, task allocation and task division no existing set of questions was found due to the research conducted within this thesis. Therefore this thesis is intended to figure out contribute to existing literature with the following three new issues:

- Two different approaches of **measurement for stages** of a start-up, having one approach of collecting TA, TD, IP and RP within one start-up at the same time and developing a survey

tool attempt. This is new, as within the literature review done within this thesis, until now there has only been information on organizational design in general, but no attempt of combining the universals of organizing and the staging of a start-up plus defining the stage due to so-called control variables (see 2.2 Organizational Design & The Stages of a Start-Up).

- **Combining the issues of motivation and staging** of a start-up by putting them into relation.

This is new, as within the literature review done within this thesis, no study was found combining the motivational issues with the staging of a start-up but studies claim for further research in this area (e.g. (Sauermann, 2013, p.1ff) (see 2.3 Employees and Motivational Issues)

- **Combining the issues of skill-task match and staging** of a start-up by putting them into relation. This is new, as within the literature review done within this thesis, no study was found combining the skill-task match with the staging of a start-up, but the information that within a start-up each employee is doing “a bit of each task” in start-ups (Reitzig, 2016) was identified (see 2.3 Employees and their Skill-Task Match)

Overall, this will not only highlight the importance of the four problems and the organization’s individual ways to address them, justifying their existence (Purnanam/Alexy/Reitzig, 2014, p. 166-167) but also trying to provide a new approach of measuring and analysing an organization’s design. Additionally it will put organizational design in context with results and implications of previous research, such as highlighting the importance of non-founding employees as previous studies mainly focuses on entrepreneurial research (e.g. Amit et al 2000, p. 119 ff, Shane et al., 2012, Elfenbein et al., 2010, p. 1 ff, Astebro/Thompson, 2010, Sauermann, 2013, p.1 ff), building on motivational (Sauermann, 2013, p. 22 - 23) and task issues (Sauermann, 2013, p. 14). Moreover, it will put the staging into context with motivational issues as well as the skill-task match of non-founding employees. Summing up, this thesis aims to explore the different problems of an organization in reference to the staging of a start-up as well as how these issues are addressed in the different stages. Additionally, a context between the staging and motivational issues as well as the skill-task match is further investigated.

2 Theoretical Background

The following section is supposed to provide a better understanding to the reader of the different terms used in this thesis through brief explanations of each, including a brief explanation on start-ups in general and their characteristics. Each section is followed by the research question that results out of the existing theory and giving a brief background, why each research question is set up and why further research on this topic is relevant.

2.1 Start-Ups

“A start-up is a company that is in the first stage of its operations. These companies are often initially bankrolled by their entrepreneurial founders as they attempt to capitalize on developing a product or service for which they believe there is a demand” (Investopedia, 2016: Definition of Startups).

The definition above is a quite general one, thus the FFG (Forschungsförderungsgesellschaft, Austria) narrows their definition down to the following: A start-up can be defined as an enterprise, which is younger than five years, and meets the criteria of being an SME (small and medium-sized enterprise) – having a maximum of 250 employees and a maximum of 50 million euro turnover/maximum of 43 million euro total assets. Moreover, the actual business has to be new for the company (FFG, 2016). A start-up is related to a new and progressive business created by state-of-the-art ideas (OECD, 2016, p.32). They want to revolutionize the market with their unique business model and turn into an established, huge business in the long-run while small firms rather want to stay as they are and are satisfied with long-lasting survival. However, this will take some time to achieve for a start-up and investments are needed although they may not generate results within the first few years or ever (Forbes, 2017). Also, they are more in need of financial support than they are for physical infrastructure in order to achieve business development (OECD, 2016, p.32). In reference to the funding methods, start-ups rather seek for big investments right from the start and also look for investors who meet their criteria, such as venture capitalists or angel investors, while small firms rather get financed via debt financing and small loans by banks or lenders online who invest rather small amounts of money (Forbes, 2017). They differentiate from small firms in the sense that the latter is driven by profitability and a stable long-term value while the former aims for top-end revenue and

growth potential (Forbes, 2012). Another differentiation between start-ups and small firms lies in the industry in which they focus. Start-ups rather elaborate within the tech industry (Forbes, 2017). The difference to established firms lies in the experience the latter can rely on and pull from (The Pedestal Group, 2017). Established companies also offer specialized jobs and task-allocation, classic wage agreements as well as a lot of indirect communication (Lehner, 2016). It needs to be highlighted that there is a vast amount of different, additional classifications and definitions when it comes to start-ups, such as performance-based definitions like high-growth enterprises, gazelles or high-impact entrepreneurs (OECD 2015a and Endeavor-GEM 2011 in OECD, 2016, p.33) as well as definitions relating to the business-branch or innovativeness and a variety of mixed definitions (OECD, 2016, p.33).

In general, start-ups have a completely different structure in comparison to large, established companies: tasks are more broadly defined, each employee is doing “a bit of everything” and the level of communication is way higher in start-ups (Reitzig, 2016). This will result in the number of activities executed by a single employee to be higher than in a large firm as there is less specialization. Moreover, start-ups will usually offer less salary than its established counterparts (Sauermann, 2013, p.14). Also, start-ups have a lower expected chance of survival resulting in future development. Therefore, the risk of losing one’s job is significantly higher. As generally the structure in start-ups is less formal, the leadership style is more personal and personal relationships are given a higher value. This is justified by the fact that the start-up manager may assume that introducing formal structures is not worthwhile yet (Strauß, 2015, p. 40-41). Additionally, acquisition of a start-up’s first employees often takes place by word-of-mouth, often limited to the circle of friends (Strauß, 2015, p.56).

These are job characteristics that were elaborated by explicit studies and/or books. However, there are also reports from experienced start-up workers.

The following job characteristics of start-ups were highlighted in those reports: responsibility (the team relies more on the single employees than big firms do - as there are less employees), passion and drive (start-ups expect their employees to share the passion for the product or service the same way the founders do), creativity and ideas (finding creative solutions having only a small and limited budget), flexible and welcome to change (the development of the product/service in the start-up is an iterative

process and the employees need to understand how and when to shift priorities) and capacity to learn (as in a start-up the employees are asked to operate in different areas of business) (Desai, 2017). Moreover, in a start-up employees can have a real impact, learn a lot and faster, will work together with peers, results will be experienced faster, the structure is relatively flat and less hierarchical and working hours are more flexible (Forbes, 2017) such as, i.e. four days of work and three days off (Clavijo-Barroso, 2015). Also, the chances that the office will be more creative (in a furnishing way) are high (Forbes, 2017).

2.2 Organizational Design & The Stages of a Start-Up

This section will give a brief overview on what has already been done within research regarding organizational design, where a research gap is still present and how this thesis may contribute to further findings within this area.

2.2.1 Organizational Design

As a fact, organizations have been present already in old civilizations such as in China, Greece or India – but nowadays an organization realizes almost any task a society is in need of in order to be working. There are loads of organizations and they are varying in their focus they have set, e.g. non-profit, non-religious, political or nongovernmental organizations. However organization in a form as it is commonly known today rose during the seventeenth and eighteenth centuries in the areas of America and Europe during the economic and political expansion at the time of the Enlightenment period. They increased due to its number and transformed in terms of structure, increasing the importance of personal relationships and contracts in order to follow the same interests (Starr, 1982: 148 in Scott, Davis, 2007 p.2 – 3). When it comes to the structure of an organization it is true that a “right” organizational structure does not induce success, a wrong structure results in inefficiency (Rao/Rao, 1999, p.15). The goal of organizational design is to find a good match between differentiation (the various departments of an organization) and integration (combining the various departments in an efficient way in order to achieve success) of the business activity within the frame of external environment (Business Dictionary, 2017, Definition of Organizational Design). Within the term of organizational design, organizational structure is often to be mentioned within the same

breath. But the latter rather focuses on the objectives of the organization and its strategy. It mainly relies on which goals the company is aiming to achieve and may be either centralized (CEO has the most power) or decentralized (where the lower levels have a right so say as well) and defines roles and power as well as the information flow (Business Dictionary, 2017, Definition of Organizational Structure). Overall, start-ups have little structure and organization in the beginning. It consists of a small group of people that are able to react quickly. Adjustment to strategies with a minimal effort of resources is possible. However, when the business starts to work out well and customers fancy the product, revenue starts to kick in and the start-up has to hire more people. At this point of time, the start-up starts to actually build up an organization (Galbraith, 2014).

Generally speaking, organizational design primarily refers to a system in which groups and individuals align their action, while having different preferences or interests and a different information level.

Theories about organizational design deal with how to transform conflicts into teamwork and utilize resources in order to ease the cooperated work (March/Simons, 1993). Although many different theories about organizational design exist, there are some main characteristics an organization always shows. It has to be a multi-agent system (meaning that there is more than just one agent), while having identifiable boundaries (such as definitions for a membership as well as principles for getting into the organization and leaving it). Moreover it shows system-level goals (having an overall goal) to which each individual agent contributes organization's environment (Purnanam/Alexy/Reitzig, 2014, p 165).

Due to the bureaucratic model these goals of the organization are known and clearly open for action (Aldrich, 2008, p14). This model induces seven characteristics which are also used in present research of organizational design: specialization (each role is specified due to its duties, giving each agent a fixed position), formalization/standardization (due to increasing bureaucracy, these duties get formalized by imposing rules), decentralization (routine tasks are fulfilled by departments, not by the chief executive officer), hierarchy (of authority), limited rewards to officeholders (resources are related to the office, not to the holder), universalistic performance standards (promoting and hiring decisions are made in reference to the competence of each person and due to universal standards) and career advancement opportunities. However, this model primarily assumes that the environment of an organization is given or that outside conditions are calculable (Aldrich, 2008, p. 10-13).

Also, the single agents within the organization and their efforts should contribute to the overall goal of the organization (Purnanam/Alexy/Reitzig, 2014, p 165). It is furthermore assumed that an organization is limited in its resources and information process. Therefore, effort compensation is needed. However not only in forms that are monetary or material (Simon, 1947, Williamson, 1975 in Purnanam/Alexy/Reitzig, 2014, p 165). Different researchers have set the assumption that organizations face two fundamental and connected problems: division of labour and integration of effort (Burton/Obel, 1984, Lawrence/Lorsch, 1967, March/Simon, 1958, Mintzberg, 1979 in Purnanam/Alexy/Reitzig, 2014, p. 165). One paper goes even further by bringing up these the following four issues within one theory and therefore combining them as “the universals of organizing”: task allocation and task division (division of labour), reward provision and information provision (integration of effort) (Purnanam/Alexy/Reitzig, 2014, p. 165). Moreover it is claimed that these four problems justify the existence of an organization by having solutions to each four (Purnanam/Alexy/Reitzig, 2014, p. 166). As one specific model shows, these issues are closely related: the information-processing model builds a connection between tasks and information provision. It suggests that the bigger the uncertainty of a task is, the higher is the need for information procession. On the contrary, the mechanistic model deals with the task division into subtasks, assigned to the various specialists and the integration of them in order to fit the comprehensive task, referred to as the problem of organizational design. When it comes to setting up design strategies, two approaches may be reasonable: Cutting down information-procession (creating slack resources, or self-contained tasks) or increasing capacity in order to be capable of more information (setting up vertical information systems, creating lateral relations) (Galbraith, 1974, p. 28-29).

The four issues task allocation, task division, reward provision, information provision are related to as the “universals of organizing” – defining a form of organizing as a mix of solutions to these four problems which any firm has to face to justify its existence. This identifies that single firms may organize themselves in various ways in order to address these issues however the problems are universal. How these problems are addressed may be related to as “model of organizing”. In order to classify a form of organizing as “new” it has to present solutions to those four problems in a new way when comparing this to present forms of organizing with similar goals (Purnanam/Alexy/Reitzig,

2014, p. 166-167). Literature claims that it may be reasonable to assume that existing theories regarding organizational structures were elaborated within a context that is no longer valid due to changes in reality. New approaches and new theories, fitting the developed reality are demanded (Purnanam/Alexy/Reitzig, 2014, p. 162). Therefore this thesis considers a new approach by defining organizational design due to the two fundamental and connected issues a company has to address: labour division (task division and task allocation) and integration of effort (reward provision and information provision) (Burton/Obel, 1984, Lawrence/Lorsch, 1967, March/Simon, 1958 in (Purnanam/Alexy/Reitzig, 2014, p. 165). This thesis furthermore tries to define the stage a start-up is currently set in by determining the progress made within the four problems of task allocation, task division, information provision or reward provision since this is said to be sufficient for an organization to operate. Therefore, these four issues will be discussed in greater detail in the following chapters. The allocation of whether the characteristics of a start-up will rather load to task allocation, task division, information provision or reward provision will be realized by the generated findings in section 2.1 Start-Ups to the best of the knowledge of the author. Further explanation on these terms will be given in the following chapters. Moreover, these four components will contribute to one classification for framing the phases of a start-up.

2.2.1.1 Integration of Effort: Reward Provision and Information Provision (RP and IP)

Integration of effort, further subdivided into reward provision and information provision is one of the two basic problems an organization has to face and having solutions to it in order to justify its existence (Purnanam/Alexy/Reitzig, 2014, p. 166). Since these factors are one out of two essentials for an organization to exist, the following chapter will deal with the terms per se, while later explaining how these two terms are measured and how it is adapted in order to set up a reasonable way how to measure the stage the start-up is currently set in.

Integration of effort in a business refers to the determination of how to cope with coordination issues as well as troubles cooperating (Gulati/Lawrence/Purnanam, 2005 and Lawrence/Lorsch 1967 in Purnanam/Alexy/Reitzig, 2014, p. 165). Problems in coordination may be solved with information while coordination issues may be counteracted with motivation. In order to be successful in implementing integration, both issues need to be addressed: a solution to one of the problems is not

sufficient (Camerer/Knez, 1996 and Heath/Staudenmayer, 2000 in Puranam/Alexey/Reitzig, 2014).

Integration of effort may further be broken down into the issues of reward provision and information provision (Puranam/Alexey/Reitzig, 2014, p. 165), which will further be described in the following chapter.

Reward provision or reward management refers to strategies of rewarding employees in a fair and equitably manner, in relation to their value to a business (Armstrong/Murlis, 2004, p.3). Its existence should conduce to motivate employees to contribute to the strategic goals of the company. However, it does not only relate to monetary issues but also to non-financial rewards, i.e. recognition, training, development or increasing responsibility (Armstrong, 2007, p.3). Any organization has to face these issues, may they be implicit or explicit, intrinsic or extrinsic – their employees need to be motivated in order to stay with the present organization (Simon, 1951 in Puranam/Alexey/Reitzig, 2014, p. 165). When looking at start-ups, the various parties involved will show different motivations to join the company. Especially non-founding employees will express different motives as they are not directly involved in the initial development of the business (Strauß, 2014, p. 40) and will also apply themselves not as founders but as “casual employees” (Lehner, 2016). Literature shows, that employees in start-ups earn significantly less than those in large established firms (Sauermann, 2013, p. 14). Therefore, employees in start-ups are assumed to have other motivational issues to work there such as challenge, independence, and responsibility (Sauermann, 2013, p. 12).

As a result it can be assumed, that intrinsic reward provision seems to be more important to employees of start-ups than extrinsic reward provision.

Within this thesis, (intrinsic and extrinsic) reward provision will be measured with a slight adaption of an existing set of questions in order to make it relatable to the different staging of the start-up. Basis for this is a study by Allen and Kilmann in which existing measurements items were used and then transformed in order to measure intrinsic and extrinsic motivational rewards (Allen/Kilmann, 1999, p. 118). Further explanation will be given in the section 4.1 Variables and Measurement.

Information provision arises from the fact that within an organization its single individuals are in need of information in order to fulfil their tasks and the need to adjust actions in dependence to those of the other agents. Therefore, an adequate information flow is required (Schelling, 1960 in

Puranam/Alexey/Reitzig, 2014, p. 166). Studies showed that the problem of information provision may be reduced by either one of the two following approaches: reducing the requirement of information (i.e. by implementing certain standards or plans) or by enhancing the channels which are needed for creating this information (i.e. by face-to-face communication or opportunities for electric communication possibilities) (March/Simon, 1958 in Puranam/Alexey/Reitzig, 2014, p. 166). There are two reasons why organizations process information: In order to cut down uncertainty and to reduce ambiguity (Daft/Lengel, 1986, p. 554). For organizing, reducing equivocality is a basic essence. It may seem to have similar characteristics as uncertainty has however the first one induces a rather chaotic area. Having new data or information arising it may be a bit irritating in the beginning and as a result create uncertainty. Therefore, equivocality is decreased rather by finding a solution than by generating a learning effect from new arising data (Weik, 1979 in Daft/Lengel, 1986, p. 554).

2.2.1.2 Division of Labour: Task Division and Task Allocation (TD and TA)

Division of labour, further subdivided into task division and task allocation is the other one out of two basic problems an organization has to face and having solutions to it in order to justify its existence (Puranam/Alexey/Reitzig, 2014, p. 166). Since these factors are one out of two essentials for an organization to exist, the following chapter will deal with the terms per se, while later explaining how these two terms are measured and how it is adapted in order to set up a reasonable way how to measure the stage the start-up is currently set in. As organizations have limited capacity, the problem of division of labour (task allocation and task division) among employees is a very crucial one.

While task division “*refers to the problem of mapping the goals of the organization into tasks and subtasks*” task allocation defines “*the problem of mapping the tasks obtained through task division to individual agents and groups of agents*” (Purnanam/Alexy/Reitzig, 2014, p. 165).

Task division refers to the division of a project into different tasks and subtasks it may be split up between different agents within the firm but maybe also outside the firm to various other firms. This division has to be fulfilled before the actual work starts. It may be reasonable however that the more the project moves forward, also the tasks will further get divided and distributed. However when taking a look at a totally divided project one will realize that all the single components and tasks can be put together in order to display the whole project in total. Summing it up one may be able to specify

the nature of task 1, which inputs it may get from other tasks within the projects and which outputs it may supply for other tasks (Von Hippel, 1988, p.2-3). In chapter 2.2.1 Organizational Design, the so-called information-processing model was briefly mentioned as it builds a connection between tasks and information provision (Galbraith, 1974, p. 28-29). It is closely related to task division and basically refers to a model where a so-called problem solver has to face a certain task. Then the task gets objectively defined due to the environment of the task. It is then further defined by the problem solver in order how to solve the task due to its problem space. There are generally speaking four messages: Some issues of the information-processing system are resistant to change due to the task and its problem solver. Moreover these issues are more than enough in order to realize that a task environment is given as an issue within the problem space while the solution to the problem has to be determined within this problem space. Additionally the environment of the task structures the problem space. And the problem space's structure defines how the problem may be solved (Simon/Newell, 1970, p.148-149).

Task allocation rather refers to the issue of allocating the different subtasks generated by task division to the single agents within the organization. Generally speaking in more traditional organizations the allocation and the hiring of agents in order to fit to the subtasks is usually made by congruent skill profiles (Puranam/Alexey/Reitzig, 2014, p. 165). For further details about skill-task match see the following chapter, 2.4 Employees and their Skills. When talking about tasks and its characteristics, the job characteristics model may be mentioned briefly as well since it highlights the importance of proper task allocation. It is a model, describing that the different characteristics of a job can directly influence the agent's behaviour and motivation at work and therefore highlighting the importance of task allocation to the different agents. Within this model, the core job dimensions show five characteristics, three of them considering the so-called experienced meaningfulness (describing how an agent perceives his/her job as important and valuable) of a job, such as skill variety (the extend of different actions needed to fulfil the work, requiring the agent to have a variety of talents), task identity (the extend to which a task is a whole piece, starting from the very beginning to finalizing the work and therefore represents an overall "whole") and task significance (the extend to which the piece of work affects other agents may they be internal or external). The other two being autonomy (experienced

responsibility, dealing with the extend of how much the agent himself/herself feels responsible for his/her results caused by him/her) and feedback (knowledge of results, the extend to which the agent knows how well and effectively the previous performance was) (Hackman/Oldham, 1976, p.254-256). Thus, the founder of a start-up faces the challenge to bundle tasks effectively and assigns them to certain employees in a way that they fit the skill profile of the employee. Often, this bundling takes place ad-hoc and with a lack of systematic order as the start-up is not very established yet because the start-up manager may assume that introducing formal structures is not worthwhile in the current stages. Also, the staff is still negligible and the bundled tasks may still vary or change (Strauß, 2015, p.40-41). Additionally, start-ups offer less specialisation in their activities (Sauermann, 2013, p. 14) and each of the employees are doing “a bit of each task” (Reitzig, 2016).

It can be seen, that in a start-up task division and task allocation are more flexible and include less specialized and broader tasks than those seen in large, established firms.

Through this thesis, task division and task allocation will be investigated with a self-developed set of questions, based on the characteristics of a start-up identified in section 2.1 Start-Ups. Therefore, the identified characteristics, which mainly describe task allocation and task division, will result to the respective factor. How this is implemented will be explained in greater detail in section 4. Method within chapter 4.2.1.3 Task Allocation and Task Division.

2.2.2 Stages of a Start-Up

Within this thesis it is assumed that you cannot only measure the stage of a start-up based on a certain number of years of operation or a specific amount of revenue. This assumption is taken into further consideration within chapter 4.2.2 Control Variables for Organizational Design Choices (Hard Facts, CV Stages). Many factors have to be taken into account. Therefore, the characteristics of the various stages were explained in greater detail and afterwards also tested through the survey. This may contribute to findings, wether the approach of defining organizational design through the four components reward provision, information provision, task allocation and task division is legit and wether overlapping results with the stages of a start-up defined in the following paragraph may be found.

When researching on the different phases or stages of a start-up, various models and graphs can be found - especially on different webpages (i.e. Startup Commons, 2017, Sammer, 2017) but also information on small businesses in general (i.e. Churchill/Lewis, 1983). However it is really hard to find information on the different stages, including their characteristic and finding a neat overview as well. Therefore, within this study the stages of a start-up are clustered based on two websites as in the following (Unternehmensfinanzierung, 2017, Deutsche Startups, 2017): The **early stage (phase 1)** may further be divided into the seed-phase, having a first idea about the product/service to be offered with the need of setting up a business plan and the organizational structure, and the start-up phase which includes issues such as business formation, research and development as well as deciding on a production and distribution system. Moreover, an advanced prototype is already existent and ideas about its market introduction are generated. The start-up may already be existent for a year in the start-up phase and customer acquisition has just started (Deutsche Startups, 2017). However, no revenue has been generated yet (Unternehmensfinanzierung, 2017, “Start-Up”). As for the ease of this study, the two sub-phases are combined into one phase, the early-stage (phase 1). Within the **expansion stage (phase 2)**, the start-up is working on the implementation of a distribution system, generating increasing revenues but not making any profits yet. Additionally, first competition arises. (Deutsche Startups, 2017/Unternehmensfinanzierung, 2017, “Second-Stage”). The **later stage (phase 3)** is mainly characterized by the start-up trying to raise further capital for restructuring, remediation or product diversification. Also experienced executives and further employees are needed. When it comes to revenue, it is increasing and also profits are finally made, the break-even point is reached (Deutsche Startups, 2017/Unternehmensfinanzierung, 2017, “Third-Stage”). As a result of the staging chosen within this thesis, it is reasonable to assume that the later stage is already very close to an established firm as the start-up is supposed to be closely at the end of its start-up existence but starting to built a proper business, respectively an established firm.

When it comes to the figure of employees working within the start-up and the stages, an approximate estimation may be made. The assumption made within this thesis is rather vague, however due to a classification by Fred Wilson (venture capitalist, blogger & American businessman) the following approach may be reasonable, when adapting the 3 phases to this thesis: 1-5 employees for the early

stage, 6-25 within the expansion stage and more than 25 employees when the start-up hits the later stage (Wilson, 2017).

2.2.2.1 Growing Process and its Effect on Employees

Starting out with an example: Accounting may have been previously performed in a task bundle, but the business grows, the amount of accountant work might require the hire of a separate accountant. If only one person founded the start-up, coordination and proper decision-making can get challenging. Therefore, the manager may consider promoting some of his/her experienced employees to a second management line. Once the discretionary competences are set, proper job-definition has to be made. Then, suitable and systematic job-allocation has to be done: on the one hand according to technical qualification, on the other hand based upon the motivation of the employee (Strauß, 2015, p.42-43). In general, start-ups are considered to have three different origins of growth: financial, strategic and organizational. Organizational growth is the one that is most important for this thesis and should therefore be investigated further. In order to keep track of the ongoing business and its activities, implementing formal organizational structure keeps the company under control while it is growing. Hereby, the company turns from an unexperienced start-up into an established firm (Strauß, 2015, p.56-57). By doing so, the start-up is well advised to follow approaches of traditional organizations (Lehner, 2016). It is true that the change to a more formal structure may be difficult. However it is a circumstance that cannot be avoided. Furthermore it is assumed that these start-ups, which do not only implement new communication tools or attend more social activities, but also face their situation and restructure task-allocation in terms of reasonableness, are more successful in implementing more formal structures (Reitzig, 2016). Generally speaking, employees stay in an organization if they are satisfied with the job or have no other alternatives (turnover research) or experience positive feelings because of the job. If the job is liked, people are committed to stay in the company (Mitchell/Holtom/Lee, 2001, p.102).

New approaches and new theories, fitting the developed reality are demanded (Purnanam/Alexy/Reitzig, 2014, p. 162). Therefore this thesis considers a new approach by defining organizational design due to the two fundamental and connected issues a company has to address: labour division (task division and task allocation) and integration of effort (reward provision and

information provision) (Burton/Obel, 1984, Lawrence/Lorsch, 1967, March/Simon, 1958 in (Purnanam/Alexy/Reitzig, 2014, p. 165). This thesis furthermore tries to define the stage a start-up is currently set in by determining the progress made within the four problems of task allocation, task division, information provision or reward provision since this is said to be sufficient for an organization to operate. Therefore, these four issues will be discussed in greater detail in the following chapters. The allocation of whether the characteristics of a start-up will rather load to task allocation, task division, information provision or reward provision will be realized by the generated findings in section 2.1 Start-Ups to the best of the knowledge of the author. Further explanation on these terms will be given in the following chapters. Moreover, these four components will contribute to one classification for framing the phases of a start-up.

From the inputs given in this section, such as in terms of organizational design where further research was claimed as present theories may no longer be valid due to a changing environment as well as the importance of the universals of organizing (Purnanam/Alexy/Reitzig, 2014, p. 162 - 165) it becomes clear that further research on this issue is needed. Therefore this thesis will combine these two issues. Moreover, as within the literature review of this thesis no overall staging for start-ups has been found, this thesis tries to figure out a new approach of how to measure the stages. In order to see whether this approach may be reliable, two different ways for measurement were chosen: One approach by defining the staging due to so-called soft facts, in reference to TA, TD, IP and RP by allocating the different characteristic of a start-up to the three issues (TA, TD, IP) and by slightly adapting the existing set of questions for RP (Allen/Kilmann, 1999) in order to allow a possible staging of the start-up. Another approach by defining the staging due to so-called hard facts, by evaluating how many characteristics of each stage (early, expansion or later) are applicable. Ideally, these two approaches would result in the same stage for each start-up.

Novelty is contributed due the two different approaches of measurement for stages of a start-up, having one approach of collecting TA, TD, IP and RP within one start-up at the same time and developing a survey tool attempt. From these inputs, the following research question 1 is generated:

RQ1: Can the stages of a start-up be measured by addressing the problems of organizing (task allocation, task division, information provision, reward provision)?

2.3 Employees and Motivational Issues

Motivation is a crucial factor when it comes to employees, as motivated ones tend to be more productive and help the organization to reach its goal and perform successfully. Thus, a manager needs to understand how to motivate (Lindner, 1998). In theory, several models exist such as Maslow's hierarchy of needs (Maslow, 1943), or Herzberg's two-factor theory, introducing motivators and hygiene factors within working-conditions (Herzberg, 1959) or the job characteristics model by Hackman and Oldham. It describes that an employee will gain intrinsic motivation if the job generates certain psychological states (Hackman/Oldham, 1976, p. 255ff). The nature of motivation may be very flexible, as it addresses various aspects of intention such as energy or persistence. It is that important as motivation leads to action and therefor produces something. However it makes people act due to very different issues, which may either be because of the value of an activity or of an external issue – it may vary from personal commitment to do something to fearing something. That basically sums up the contrasts between intrinsic motivational issues and extrinsic motivational issues and justifies the behaviour of people (Ryan/Deci, 2000, p. 69). Indeed intrinsic motivation arises already from the beginning of life, when babies get born they seem to be active and curious although they are not offered any external rewards (Harter, 1987 in Ryan/Deci, 2000, p. 70). While extrinsic motivation describes realizing an activity because of receiving an expected outcome (Ryan/Deci, 2000, p. 71). When talking about the motivational issues of people in order to work for companies, it can be said that i.e. entrepreneurs are motivated mainly through the following factors: increasing wealth, job growth as well as focusing on increasing export since these are the factors required for gaining the financial wealth which is desired by them. Those entrepreneurs who are primarily motivated by being independent do not really value growth issues. Rather they enjoy their freedom in decisions, e.g. not having to pay attention to a boss, while others enjoy doing simply what they like or a third type who enjoys having control (Hessels/van Gelderen/Thurik, 2008, p.413-414). Moreover, these types of entrepreneurs are rather not those who contribute substantially to a country's innovation, employment rate or economic growth as they generally speaking are less ambitious in business related terms (Davidsson 2006 in Hessels/van Gelderen/Thurik, 2008, p. 414). When speaking of employees it may be hard to imagine a situation without any extrinsic factors. In many situations where high intrinsic

factors are given, the employee usually seeks for a stable employment relationship. Personal relationships with colleagues, capitals to the job and to the boss are made. However when uncertainty about the future arises and if the employee feels discharged extrinsic issues are already present. As a result, what may be perceived as intrinsic motivation may be the employee's answer to extrinsic issues (Bernheim, 1994 in Kreps, 1997 p. 360-361). When jobs offer high intrinsic motivational issues in many cases they also offer a good task ambiguity. Moreover, creativity is an important issue as well as the work quality. So basically intrinsic motivation is achieved by a good variety of tasks with important other issues which are very hard to indicate which makes it even harder to find a good incentive rewarding (Holmstrom/Milgrom, 1991 in Kreps, 1997, p. 361). Therefore employees may perceive some issues, e.g. autonomy differently and when imposing certain extrinsic rewards in the company the work force obviously will be influenced and their mix may change (Kreps, 1997, p. 362). During a study conducted in 2013, evidence was found that those employees in a start up value salary and job security less than those in established firms (Idson/Feaster, 1990; Oi/Idson, 199 in Sauermann, 2013, p. 6). It was proven that employees of a larger employer earn a higher wage than what could be expected in a smaller business. The other way round is true for small businesses: Somebody working in a small business may expect a higher salary in a more established firm. Basically smaller firms would rather have more dynamic workers due to their "individual drive" and "level of independence" and they would rather work in a more informal surrounding (Idson/Feaster, 1990, p.116-117). That wage difference may be due to issues such as an established firm having more resources (Sauermann, 2013, p. 6) and bureaucracy (Idson 1990 in Sauermann, 2013, p.6). Challenge, independence, responsibility seem to be more important to them (Sauermann, 2013, p.1ff). Independence is supposed to be higher in start-ups as they offer more autonomy than in large firms as due to the higher bureaucracy mentioned previously (Idson 1990 in Sauermann, 2013, p.6). Challenge such as thrilling work and challenging the people intellectually is also rather driven in a more dynamic surrounding you rather find in a start-up than in an established firm as the non-founding employees are given the possibility to influence the company's growth and development (Freiberger/Swaine, 1984, Vascellaro/Morrison, 2008). Additionally, it is rather the new entrants to the industry which allow development and adoption of disruptive technology than established firms (Christensen, 1997, p.13)

which may also be more challenging and interesting for engineers or scientists to work rather for a start-up than for an established firm (Sauermann, 2013, p. 7). Also having employees participating within the decision-making process does increase productivity when it is allocated in a fairly manner. Moreover the productivity is also dependent on the level of return an employee gets (Benner/Jones, 1995, p.548). Based on motivational theories, the traits of an employee's intrinsic motivation and his/her perceived intrinsic rewards (such as sense of achievement, word of praise from seniors, recognition, taking pride from the job, autonomy) (Businessstopia, 2017: Definition of Intrinsic and Extrinsic Rewards with Examples), in regards to the job-characteristics of start-ups based on Herzberg's theory allows the assumption that motivation is depended on the work itself and the working-environment (Herzberg et al 1959). Sauermann's study does not discuss job-satisfaction in greater detail but only suggests that the lack of significant differences in job satisfaction across firm types may stem from start-ups displaying and provisioning different job characteristics as well as benefits. These benefits (e.g. job security) may be outweighed by other advantages (e.g. intellectual challenge), but it suggests further research on this issue (Sauermann, 2013, p.15). One thing that is clear from research is that if people like their job and are satisfied, they are more likely to stay (Mitchell/Holtom/Lee, 2001, p. 102).

Therefore, it should be analysed how non-founding employees in a start-up are motivated. It is further assumed that job-characteristics and therefore organizational design change over time. So it may be assumed that the longer the people stay in the start-up the less satisfied they are, as the original job-characteristics seem to be altered. As this study highlights, it is assumed that an employee's motivation to join a start-up will be more intrinsic, while extrinsic motivation appears to be weighted less, although it is not irrelevant. As a result it is reasonable to assume that the more the start-up turns into an established firm, i.e. developing over its life-time cycle from stage 1 to stage 3, the more extrinsic motivational issues arise.

That is legit and contributes to existing literature as the Sauermann study leaves the question of what happens if a start-up matures not answered (Sauermann, 2013, p. 14).

2.3.1.1 *(Non) Self-Determination Theory*

Since this section refers to motivational issues as well as rewarding values and moreover, (non) self-determined regulation as an important measurement for indicating motivation of subjects within this thesis, self-determination theory itself will briefly be mentioned here as it provides further subdivision of motivational issues and therefore contributes a basis for the measurement of motivation of this paper. When talking about motivational issues, self-determination theory (SDT) plays an important role, since it is a theory dealing not only with people's personality in social surroundings but also separating their motivation by being independent and dependent/controlled (Deci/Ryan, p. 416 in Lange/Kruglanski/Higgins 2011). The simplest differentiation is the one of extrinsic motivation (related to a divisible outcome, e.g. money) and intrinsic motivation (doing something as the activity itself is enjoyed). Organismic Integration Theory (OIT), another theory within the SDT analyses different cases addressing extrinsic motivation in greater detail: amotivation (missing tendency to do anything), external regulation (behaviour that is visible when satisfying an external request – those affected often feel quite controlled in those situations), introjected regulation (refers to control contingent self-esteem, in other words actions are fulfilled so people do not need to feel guilty), identification (fundamental, when people feel a certain identification with the action carried out, the behaviour becomes personally important for the person impacted), integration (already very close to intrinsic motivation, however there are still some extrinsic factors within the motivation – new regulations start to get congruent with one's values) and intrinsic motivation (prefiguration of autonomous or self-determined actions) (Ryan/Deci, 2000, p. 55 ff.).

Summing this up, amotivation is an extreme form of an overall lack of motivation, extrinsic motivation may be further divided (into external regulation, introjection, identification and integration) until one finally reaches intrinsic motivation and feels rewarded just by executing the activity itself (Ryan/Deci, 2000, p. 55 ff.). This underlying construct provides information about how and by which origin (non) self-determined people may be motivated. As a result, within the following chapters the term self determined regulation will synonymously be used for intrinsic motivation and the term non-self determined regulation will synonymously be used for extrinsic motivation. How this is implemented will be described in section 4.2.3 Intrinsic and Extrinsic Motivation. From the inputs

given in this section, such as the Sauerman study identifying higher intrinsic motivational issues in start-ups, claiming for additional research on this issue (Sauermann, 2013, p.1ff), it is reasonable to assume that the further the stage of a start-up, the higher the extrinsic motivational issues are and to do further studies on this topic. Indeed, there is a vast amount on motivational issues of employees, however due to the literature research done within this thesis, no study was found combining the motivational issues with the staging of a start-up. Therefore, this thesis will combine the issues of motivation and staging of a start-up by putting them into relation. Novelty is contributed by using the staging, generated through RQ1 and suggesting a context of motivation and the staging of a start-up. From these inputs, the following research question 2 is generated:

RQ2: “How do stages of a start-up effect the motivation of non-founding employees?”

Proposing the following hypotheses:

H1: “The less mature the start-up, the higher the intrinsic motivation of non-founding employees.”

H1a: “The less mature the start-up, the lower the extrinsic motivation of non-founding employees.”

2.4 Employees and their Skill-Task Match

At the beginning, it was explained that start-ups offer less specialisation in their activities which means that not only its founders will execute a large variety of tasks but also their employees (Sauermann, 2013, p. 14). As the start-up rises and begins to perform in the market, the founder faces the challenge not only to motivate employees but also to bundle tasks. Often, this bundling takes place ad-hoc and with a lack of systematic order (Strauß, 2015, p. 40-41). However, founders should be aware of the fact that each person needs to know what to do. Three different approaches may be addressed: Specialization, which is especially important when it comes to specific and typical company performances. Generalization occurs when the manager aims to summarize many different tasks in one position. Holism is also very important as it expresses a completed task in one position, which affects the motivation of the employee. Founders need to know that a completed task allocation is only possible, when there is complete certainty about the future, which seldom is the case. The problem of uncertainty can be addressed by introducing and assigning core tasks to the employees and having the employees choose from additional tasks by themselves (Dowling/Drumm, 2002, p. 189). As already mentioned, each employee may be doing “a bit of each task” in start-ups (Reitzig, 2016).

So it may be the case, that - i.e. a person is doing accounting alongside a number of other tasks (Strauß, 2015, p. 40-43). Generally speaking, the task allocation should be defined together, with the overall goal to contribute to the success of the company. Special attention to an individual's workload has to be paid. Furthermore the workload should be distributed equally among the team members to prevent overworking (Demant, 2014 p.43). Literature has indicated that employees should have the opportunity to choose their additional tasks themselves (Dowling/Drumm, 2002, p. 189).

This suggested self-selection in task allocation may also be considered as intrinsic motivation or intrinsic rewards for the employee, in contrast to authoritative task allocation.

Within this thesis, determining the skill-task match of the respondents plays an important role as well. This should contribute to finding answers to the allocation of the mentioned broader tasks in the early stages of a start-up and then implementation of on-going specialization during the growth process, see also section 4.2.4 Skill-Task Match.

From the inputs given in this section, such as that in start-ups each employee is doing “a bit of each task” in start-ups (Reitzig, 2016) it can be seen that also the skill-task match of an employee plays an important role and that it is reasonable to assume that this setting may change over the time of development of a start-up. Basically it can be assumed that the further the start-up grows and the more progressed the staging of a start-up is. Indeed, there is a lot of information on how to allocate tasks, and how this is done within start-ups but within the literature review of this thesis no research on the combination of the staging of a start-up and the skill-task match has been found. Therefore, this thesis will combine the skill-task match of an employee and the staging of a start-up by putting them into relation. Novelty is contributed by using the staging, generated through RQ1 and suggesting a context of the skill-task match and the staging of a start-up, meaning that the more developed the start-up, the higher may be the skill-task match of an employee, leading to the following research question,

RQ3: “How do stages of a start-up effect the skill-task match of non-founding employees?”

and the following hypotheses:

H2: “The less mature the start-up, the lower is the skill-match of non-founding employees.”

H2a: “The less mature the start-up, the more allrounder the non-founding employees are.”

H2b: “The less mature the start-up, the more self-selection of tasks is prevailing.”

3 Research Question and Hypotheses

From the previous theoretical background and the explanations why further research on the various issues is required as well as the derivation of the research questions and hypotheses, the following will give a brief overview of the research questions and hypotheses that will be covered within this thesis.

The overall topic, “*The staging of a start-up and its interference with motivational issues and the skill-task match of non-founding employees*” is further broken down into the following research questions and hypotheses:

RQ1: Can the stages of a start-up be measured by addressing the problems of organizing (task allocation, task division, information provision, reward provision)?

RQ2: “How do stages of a start-up effect the motivation of non-founding employees?”

H1: “The less mature the start-up, the higher the intrinsic motivation of non-founding employees.”

H1a: “The less mature the start-up, the lower the extrinsic motivation of non-founding employees.”

RQ3: “How do stages of a start-up effect the skill-task match of non-founding employees?”

H2: “The less mature the start-up, the lower is the skill-match of non-founding employees.”

H2a: “The less mature the start-up, the more allrounder the non-founding employees are.”

H2b: “The less mature the start-up, the more self-selection of tasks is prevailing.”

So basically this thesis will try to provide a new approach of measuring the staging of a start-up by developing a survey tool and put the staging in reference to the motivational issues and the skill-task match of non-founding employees. Moreover it aims to explore the different problems of an organization (task allocation, task division, reward provision, information provision) within its stages and how the organization is dealing with each in its current stage, putting it into relation of issues of motivation and the skill-task match of non-founding employees.

4 Method

For the purpose of this thesis a quantitative approach utilizing a survey was identified as the most useful method. With the tool “umfrageonline.com” an online questionnaire was set up online, open

from 16th October 2017 to 7th December 2017. All start-ups were directly contacted via e-mail or Facebook, assuming that within one start-up several potential respondents who meet the inclusion criteria (the business had to be an actual start-up and the respondents had to be non-founding employees) can be targeted. The list was assembled through research on the Internet for present start-ups in Austria, Germany and Switzerland in order to ensure, that primarily real start-ups were addressed. The start-ups were either contacted via their given e-mail address or, in case no e-mail address was available, they were left a message on Facebook or directly via their homepage. For a detailed list of the start-ups contacted, see Appendix I. Additionally, the survey-link was distributed on the author's private Facebook account in order to reach even more possible subjects. No incentives for completing the survey were promised; all respondents participated without any rewards. The e-mail text was written in German as well as English. The whole survey was written in English though, not only the questions themselves, but also the instruction as well as questions concerning sociodemographics. First, the introduction was displayed to the potential respondent, explaining the purpose of the study and assuring that the data will be treated confidentially. Through the first two questions in the survey – (1) whether the business they work for is officially considered a start-up and (2) whether the respondents were involved in the founding process - it was ensured that only those who really do work in a start-up and non-founding employees were conclusively able to access the residual questions of the survey. Almost each question through the survey was mandatory so the respondent could not simply skip through it. Two questions were not compulsory: the questions about the start-up's current sales and its current profit. After collecting all the data, an analysis with the statistical software SPSS was conducted. Data acquisition as well as the survey was treated anonymously without any inference due to the individual participants. Therefore, no relation between the respondents, their answers and their start-ups they are currently employed at, is given. Hence, the data protocols of the participants were treated as independent and as if they were given from different start-ups. The complete survey can be found in section 11.10. Appendix H – Complete Questionnaire.

4.1 Variables and Measurement

In order to find answers to the overall research question and the hypothesis the following variables were identified:

Independent Variable: Organizational Design Choices. As already mentioned, the organizational design choice in this thesis is tried to be constituted of task allocation, task division, reward provision and information provision. These design choices should contribute to define the maturity of the start-up and which stage the start-up is currently in. The less mature the start-up, the more characteristics of a start-up may be applicable. The more mature it is the less characteristics of a start-up should be applicable. Therefore, the maturity of the start-up under observation is crucial in this research and will be measured with the items below.

Dependent Variables: Intrinsic and extrinsic motivation, skills. The (non) self-determined regulation, derived from the SDT, does not only include intrinsic and extrinsic motivation but also subscales of extrinsic motivation and the skills, referring to the skill match/mismatch of executed tasks as dependent variables within this thesis.

4.2 Instruments

The following section is giving an overview about the various instruments used in the survey, describing how they were used/adapted for measurements.

4.2.1 Organizational Design Choices (Soft Facts), (Information provision, Reward Provision, Task Allocation, Task Division)

Those items, which indicate these components, should contribute to define the maturity of a start-up. The less mature, the more characteristics of a start-up in their earlier phase should be applicable and the other way round. In this thesis at hand, these components are denoted as a self-assessment of the start-up due to the respondents and will be labeled as soft-facts in the following chapters.

4.2.1.1 Information provision

Since the thesis at hand tries to define information provision as a part of organizational design a construct to measure in which phase the start-up is currently situated based on the degree of information provision, was implemented. No existing tool as researched for this thesis was found. Therefore, the following approach was chosen: Based on the findings in section 2.1 Start-Ups and section 2.2.1.1. Integration of Effort: Reward Provision and Information Provision (RP and IP) it is

reasonable to assume that the earlier the phase of a start up, the higher is the level of communication, the flatter the hierarchy, the more important are personal relationships and creativity and the more flexible to change the business is. Therefore, a Likert-Scale was developed, measuring how well statements on these issues correlate to the perception of the respondents on a scale from 1 (does not correspond at all) to 6 (corresponds exactly) (see Appendix E – Information Provision). The allocation of information provision to the various statements took place to the best of the author's knowledge in accordance to the findings within the literature. Additionally, the statements were formulated in a way that the more they correspond, the younger the start-up is assumed to be. Ticking 1 or 2, indicates phase 3, ticking 3 or 4 phase 2 and by ticking 5 or 6 presumed the respondent's start-up to be in the early stage, phase 1.

4.2.1.2 Reward Provision

A study by Allen and Kilmann identified 13 items to measure intrinsic and extrinsic rewards for employees. Seven intrinsic and six extrinsic issues contribute to the measurement of the reward system within an organization (see Appendix C – Reward Provision). Respondents are asked to estimate, how many per cent of the employees within their organization receive these kinds of extrinsic/intrinsic rewards (Allen/Kilmann, 1999, p. 117 ff). This thesis slightly adopted the underlying construct in order to use it to measure organizational design in the following way, the items themselves remained the same however: In section 2.2.2 Stages of a Start-Up it is assumed that the organizational design of the start-up can be divided into three different stages: phase 1 – early stage, phase 2 – expansion stage, phase 3 – later stage. Since extrinsic rewards seem to be less important in the beginning of a start-up (see 2.2.1.1 Integration of Effort: Reward Provision and Information Provision (RP and IP)) it is reasonable to assume that within phase 1 none to some (0 – 40%) employees receive extrinsic rewards, within phase 2 about half to most (41-80%) and within phase 3 almost all to all (81-100%) do so. Obviously, for intrinsic rewards the other way round may be assumed: Within phase 1 almost all to all (81-100%) receive intrinsic rewards, within phase 2 about half to most (41-80%) and within phase 3 none to some (0-40%) do so.

4.2.1.3 Task Allocation and Task Division

Since the thesis at hand defines task allocation and task division as a major part of organizational design a construct to measure the phase the start-up is currently set according to the degree of task allocation and division was implemented. Due to the research done within this thesis, no existing questionnaire was found. Additionally it is assumed that the phase of a start-up is not identifiable only due to certain figures such as years of operations, number of employees or profit. Therefore, the following approach was chosen: Based on the findings in section 2.1 Start-Ups and section 2.2.1.2. Division of Labour: Task Division and Task Allocation (TD and TA) it is reasonable to assume that in the earlier stage of a start up, tasks are broader defined, less specialization in tasks is given, higher responsibility is prevailing, passion is valued higher, new things are learned and more flexible working hours are given. Therefore, Likert-Scale items were developed, measuring how well statements on these issues correlate to the perception of the respondents on a scale from 1 (does not correspond at all) to 6 (corresponds exactly) (see Appendix D – Task Allocation and Task Division). The allocation of task division and task allocation to the various statements took place to the best of the author's knowledge in accordance to the findings within the literature. Additionally, the statements were formulated in a way that the more they correspond, the younger the start-up is. By ticking 1 or 2, the respondent's start-up is assumed to be in phase 3, by ticking 3 or 4 it identifies phase 2 and by ticking 5 or 6 the start-up is facing the early stage, phase 1.

4.2.2 Control Variables for Organizational Design Choices (Hard Facts, CV Stages)

Referring to the identification of the different stages of a start-up and their characteristics as in section 2.2.2 Stages of a Start-Up and 2.1 Start-Ups, some self-developed questions were implemented in the survey in order to check the current status of the start-up analysed. This should contribute to identify whether there is congruence between the identified soft facts (information provision, reward provision, task allocation and task division) and the hard facts describing the different phases of a start-up.

The questions were simple yes/no questions, including an "I don't know option", the question on number of employees a single-choice question. Some optional questions on the business' duration of operation in years, revenue and profit were added (see Appendix F – Control Variables). Those items, which indicate the phase, should indicate the maturity of a start-up. In this thesis, these components

are denoted as an objective perception of the start-up due to the respondents and will be labeled as hard-facts, respectively CV stages, in the following chapters.

4.2.3 Intrinsic and Extrinsic Motivation

In order to measure the motivational issues of employees, the so-called WEIMS (Work Extrinsic and Intrinsic Motivation Scale) (Tremblay/Blanchard/Taylor/Pelletier/Villeneuve, 2009) was used as it measures not only intrinsic and extrinsic motivation but also the degree of motivation. How the underlying constructs of the WEIMS are related to intrinsic and extrinsic motivation and which role the self-determination takes here, was already explained in section 2.3.1.1 (Non) Self-Determination Theory. The WEIMS is a tool consisting of 18-items (see Appendix A - WEIMS) relating to the different characteristics of motivation. Respondents are asked to indicate to which extent each of the items corresponds to the reason why they are currently involved in their work on a Likert-Scale ranging either from 1-7 or from 1-5. When evaluating the score, the W-SDI (work self-determination index) (W-SDI; Vallerand, 1997 in Tremblay/Blanchard/Taylor/Pelletier/Villeneuve, 2009, p. 216) should help to either identify a positive score (self-determined profile) or a negative score (non self-determined profile). Therefore, the following equation to generate the weighted additive index was applied (by multiplying the mean of each subscale): **W-SDI = (+3 x IM) + (+2 x INTEG) + (+1 x IDEN) + (-1 x INTRO) + (-2 x EXT) + (-3 x AMO)**

(Tremblay/Blanchard/Taylor/Pelletier/Villeneuve, 2009, p. 216). For this thesis, a Likert-Scale from 1-5 was chosen. Additionally, the score for the self-determination (W-SDM) can be calculated by summing the means of the intrinsic subscales (i.e., IM, INTEG, and IDEN) as well as for the non self-determination (W-NSDM) extrinsic subscales (i.e. INTRO, EXT, and AMO)

(Tremblay/Blanchard/Taylor/Pelletier/Villeneuve, 2009, p. 220). The severity of the two scores may rank between one and 15 points, high values indicating a more pronounced expression of intrinsic or extrinsic properties.

4.2.4 Skill-Task Match

In order to evaluate the skill-task match, the self-reported skill mismatch in PIAAC (Program for the International Assessment of Adult Competencies) that consists of two simple yes/no questions was

used. If both questions were answered with “yes” it may either be an over-skilled or under-skilled fit, two “nos” refer to a well-match, answering the first question with “yes” and the second with “no” signals an under-skilled worker and the other way round refers to an over-skilled employee (Perry/Wiederhold/Ackermann-Piek, 2014, p.148). In order to investigate whether the self-reported skill (miss) match is applicable or not and whether the answers to the PIAAC questions cover the respondent’s actual knowledge and background experience, the survey was enlarged with some further, self-developed questions. Additional questions regarding tasks executed and education were offered through multiple-choice answers (see Appendix B – Skill-Task Match).

4.3 Statistical Analyses

For descriptive and inferential analysis, the statistical software IBM SPSS® 22 for MacOSX was used. In advance the level of significance, considering the probability of error, was set at $\alpha = 5\%$ in order to label a result with $p \leq .05$ as significant when it comes to the testing of hypotheses.

On the basis of the given sample size ($n = 29$) and based on the validity of the “strong law of large numbers”, it is reasonable to assume a normal distribution of the data (Bortz/Döring, 2006, p. 218, p. 411).

4.3.1 Statistical Procedures

4.3.1.1 Descriptive Statistics

In order to describe descriptive-statistical parameters of metric variables, the mean, the standard deviation and, if the circumstances required, the minimum and maximum as well as the median were used as alternative measurement. For nominal-scaled variables, frequencies and percentages were ascertained. To illustrate the distribution of metric data, histograms and boxplots were generated. For visualizing the relation between two metric variables, bivariate scatterplot were created. Categorical variables, frequencies and percentages were illustrated with pie charts.

4.3.1.2 Inference Statistical Procedures

The following inference statistic procedures were used for hypothesis testing. To test differences of ordinal-scaled variables between two independent groups, the non-parametric U-test by Mann &

Whitney was applied. This procedure has to be considered as a parameter-free alternative of the t-test for independent samples, if the data is distributed skew or at least not interval-scaled, meaning at least an ordinal scale-level is assumed (Bortz/Schuster, 2010, p. 132 ff).

To test differences of metric, at least interval-scaled variables between more than two independent groups, the Welch's-ANOVA was applied. This procedure has to be considered as a robust alternative of the one-way ANOVA for independent samples, if the distribution of the data is skewed or displays heterogeneous variances. This procedure stops the uncontrollable growth of the α -inflation (Kubinger/Rasch/Moder, 2009, p. 26-27, Field, 2009, p. 379). If the Welch ANOVA turned out to be significant, pairwise comparisons post-hoc due to Games-Howell were made (Field, 2009, p. 374-375). For the analysis of relation between metric and at least interval scaled variables, the coefficient of the product moment correlation by Pearson was applied. This procedure is testing whether two, at least interval scaled characteristics accompany when assuming a linear coherence. Besides the strength it also indicates the direction of the connection. With the use of bivariate scatterplots, strength and direction of coherence were illustrated graphically. In case of ordinal-scaled or skewed variables the Spearman's rank correlation r_s was applied. This non-parametric form of correlation is suitable for skewed distributed measurement or data with an ordinal-scaled level (Bortz/Schuster, 2010, p. 153 ff). The chi-squared goodness of fit test was used on the basis of cross tabulations in order to test for coherence of nominal-scaled variables. The χ^2 -distributed test statistics analyses whether the observed frequencies of the characteristics-combinations differ significantly from the expected frequencies. When having a given association between two variables, it is possible to test whether a significant relationship is given or whether a difference in distribution of the dependent, regarding the independent variable is prevailing (Bortz/Döring, 2006, p. 613-614). As far as the expected values reach more than 20% of the cells <5 , the correction of the test statistic with the exact test by Fisher is required (Bühl, 2012, p.299). When showing dependent data within the scope of tables of contingency, the extend of the coherence with the association measurement Cramer's V was specified (Bühl, 2012, p. 307), respectively for the interrater reliability, the coefficient Cohen's Kappa was reported (Bortz/Döring, 2006, p.276).

4.4 Data and Participants

4.4.1 Response Rate

Overall seven Austrian start-up platforms, 131 Austrian start-ups, 108 German start-ups and 76 Swiss start-ups were contacted. Assuming that within any of these start-ups there were possibly more than one respondent, it is reasonable to assume that more than one non-founding employee is working at any given start-up. These contacts resulted in 90 responses. The following flow-chart (*Figure 1*) will describe how many valid surveys were generated and used for further investigation:

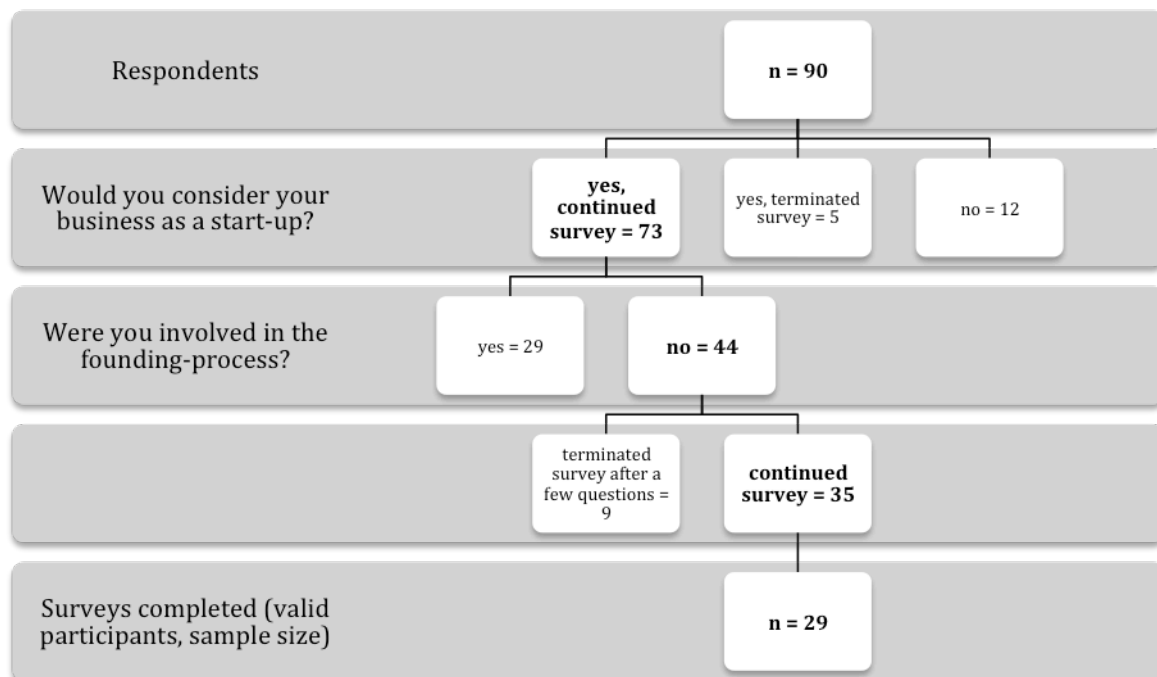


Figure 1. Flow-Chart, prerequisite for the description of valid participants

Explaining the given chart in greater detail, the reader may recognize that overall 90 potential start-upper clicked the link of the survey. Twelve respondents of them did not consider their business as a start-up and therefore the survey terminated automatically for them. Moreover five respondents said that they are working in a start-up but ended the questionnaire themselves. However, 73 considered their business a start-up and were able to continue with the second question. Then, 29 turned out to be founders of the start-up and were automatically forwarded to the end of the survey as well. This left 44 possible respondents, 9 terminated the survey after just a few questions, 6 quitted after some more, resulting in 29 (32.2%) valid respondents which answered the full survey for further analyses.

Therefore, the reader needs to be aware that all the following analyses and interpretations are referring

to the answers of these 29 surveys. From the data gathered, it can neither be identified at which start-ups respondents worked, nor whether multiple employees within one start-up responded.

4.4.2 Sample Description

Out of the 29 total responses, 17 were male and 12 female participants. This accounts for more than half of the interviewees being male (58.6%). On average, the respondents were 29.6 ± 5.8 (standard deviation) years old. In detail, women were on average 27.2 ± 2.5 ($Md = 29$) and men 31.0 ± 7.1 ($Md = 30$) years old at the time of the survey (see *Figure 2*).

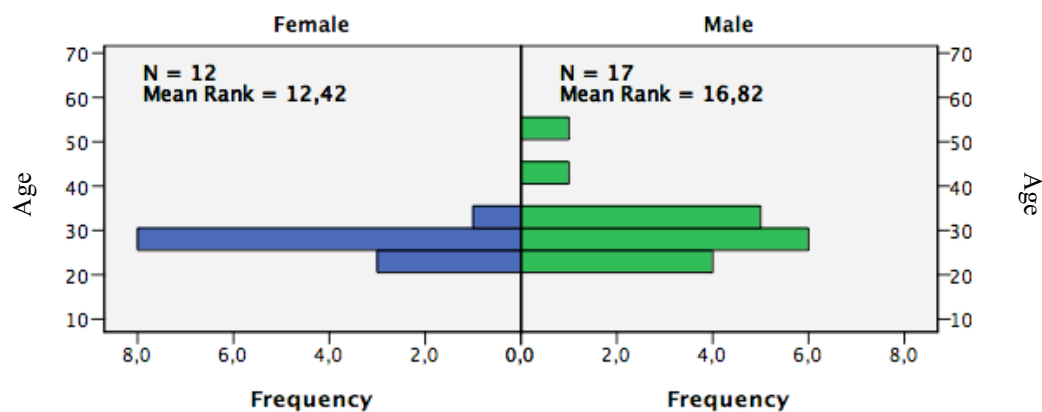


Figure 2. Age distribution at the time of the survey regarding gender

The validity of the age difference between female and male participants by the use of Mann-Whitney's U-Test generated a non-significant result ($p = .180$). This results in the assumption that the recorded ages of both, male and female participants, is comparable.

The average processing time per survey amounted to 11 minutes, 6 minutes being the absolute minimum while 86 minutes refer to the maximum of time.

As the survey was distributed among DACH countries, locations of the start-ups the start-ups each respondent was working in should be highlighted. The survey generated 21 (72.4%) responses in the European Union, 16 indicated Austria as their working country, 4 Germany and one Ireland.

Participants of Switzerland accounted for 8 (27.6%) valid cases.

4.5 Results

The following section is providing an overview about the various results gained from the gathered data as well as how they contribute to the research questions and hypotheses of this thesis.

4.5.1 Organizational Design & The Stages of a Start-Up

Organizational design refers to the phase of the start-up in which it is situated. This phase affiliation is methodically collected with intrinsic and extrinsic reward provision on the one hand and with the three components task allocation, task division and information provision on the other. Given this information, the classification of the stage (phase 1 - early, phase 2 - expansion, phase 3 - later stage) should be derived. This first part of the results will contribute all the necessary tests and analyses, which are needed in order to investigate *RQ1*: “*Can the stages of a start-up be measured by addressing the problems of organizing (task allocation, task division, information provision, reward provision)?*” followed by a summary.

4.5.1.1 Organizational Design Choices due to RP, TA, TD, IP (Soft Facts)

Reward provision consists of two components: intrinsic reward provision (RPI, seven items) and extrinsic reward provision (RPE, six items) where the respondents were given a seven-staged scale for answering. For both components of reward provision (intrinsic and extrinsic) the following scale's terminal points were defined as following: (1) *none, 0%* to (7) *all, 100%*. However, the allocation for the stages (early, expansion, later stage) was complementary (see 2.2.1.1 Integration of Effort: Reward Provision and Information Provision (RP and IP)). The consolidation of these seven intrinsic reward provision items to one index was reasonable since the consistency analysis resulted in a reliability coefficient a Cronbach Alpha of .84, indicating a sufficiently high measurement reliability (Rost, 2004, p. 379). In the first step, those six extrinsic reward provision items were inversely adjusted to match the intrinsic reward provision scale. Based on a too low corrected item – total correlation of $r_{it} < .30$ (Rost, 2004, p. 369), two items (no. 3 and no. 4) of the extrinsic scale had to be excluded. This procedure resulted in an index for this scale of only four items and a Cronbach Alpha of .68 (Rost, 2004, p. 379). Given these two scores, a division into the stages was possible. The division was made based on the assumptions made in section 2.3 Employees and Motivational Issues, that within a start-up, intrinsic rewards outweigh extrinsic rewards. The reward provision scale consisted of a Likert-Scale with 7 sections, leaving space for 6 intervals (7-1). This was equally divided (6/3), therefore in intervals of two for each phase. Leading to the following division: 7 – 5.01 (phase 1, early stage), 5.0 – 3.01 (phase 2, expansion stage), 3.0 – 1 (phase 3, later stage). Thus, for intrinsic reward provision

three (10.3%) respondents were classified in phase 1, early stage, 10 (34.5%) in phase 2, expansion stage and in phase 3, later stage 16 (55.2%) interviewees were identified. Thus, for extrinsic reward provision 23 (79.3%) respondents were classified in phase 1, early stage, 6 (20.7%) in phase 2, expansion stage and in phase 3, later stage, no interviewees were identified.

Task allocation, task division and information provision (TA, TD, PI) were measured with a total of eleven self-developed, six-staged items. The following scale's terminal points were defined: (1) *does not correspond at all* to (6) *corresponds exactly* – a high severity indicated an early stage of a start-up. The consolidation of these eleven items to one index was reasonable since the consistency analysis resulted in a reliability coefficient of Cronbach Alpha of .72, indicating a sufficiently high measurement reliability (Rost, 2004, p. 379). This score allowed a second division into these stages. The division was made based on the assumptions as explained in section 4.2.1.3 Task Allocation and Task Division, that the earlier the phase of a start-up, the more characteristics of a start-up do apply and the more the start-up develops into an established firm, they seem to vanish. The reward provision scale consisted of a Likert-Scale with 6 sections, leaving space for 5 intervals (6-1). This was equally divided (5/3), therefore in intervals of 1.67 for each phase. Leading to the following division: 6 – 4.33 (phase 1, early stage), 4.32 – 2.67 (phase 2, expansion stage), 2.66 – 1 (phase 3, later stage).

Given this information, 19 start-ups have reached phase 1, the early stage, ten further start-ups were found in phase 2, the expansion stage while no case could be observed in phase 3, the later stage.

4.5.1.2 *Résumé Reward Provision, Task Allocation, Task Division and Information Provision*

Referring to reward provision, intrinsic as well as extrinsic mindsets were ascertained. Mainly, the respondents were found not to be in the same start-up stage when comparing their intrinsic and extrinsic mindsets – rather they appeared contrary. The study showed that both, the two components (intrinsic and extrinsic reward provision) are associated complementary. If non-founding employees are rewarded rather intrinsically, the less extrinsic rewarded they are. Mainly, an intrinsic reward provision cannot be arranged with an extrinsic reward provision. As further information for the staging, task allocation, task division and information provision was consulted. That is, when connecting all this information, the start-ups display a heterogeneous profile, as shown in Table 1. For example, nine cases show a profile of phase 1, the early stage when using the staging with task

allocation, task division, information provision (TATDIP), phase the later stage when using the staging with reward provision intrinsic (RPI) and the early stage when using the staging with reward provision extrinsic (RPE). Entirely homogeneous patterns – e.g. early/early/early and expansion/expansion/expansion due to TATDIP, RPI and RPE staging were identified in one case each.

Table 1. *Summary of the division of stages of a start-up (early, expansion, later stage) due to self-awareness of TATDIP, RPI and RPE (n=29)*

Stage TATDIP			Stage RPE		Total
			Early	Expansion	
Early	Stage RPI	Early	1	1	2
		Expansion	4	3	7
		Later	9	1	10
	Total		14	5	19
Expansion	Stage RPI	Early	1	0	1
		Expansion	2	1	3
		Later	6	0	6
	Total		9	1	10

Note: For the RPE category, no later stages were observed.

Summing it up: These three prompted areas display broadly independent characteristics. Therefore a summery into three superior, uniformed phases (early, expansion, later) within the scope of staging cannot be confirmed. Instead the stage-patterns indicate a rather individual character of start-ups.

4.5.1.3 Control Variables for Organizational Design Choices (Hard Facts, CV Stages)

Moreover, the participants were asked to value the fulfilment or non-fulfilment of various organizational criteria by reference to within this thesis, the so-called control variables (hard facts). The answer options were dichotomous (yes / no). In addition, it was also allowed to answer the questions with "I don't know". For the identification of the early stage, six items were specified, for the expansion stage three items and for the later stage four items. As a result three indices were created, which state the position of the start-up within these three phases on a range from 0 to 1 (respectively 0 - 100%) within these three phases. Thus, three values for each start-up were ascertained. In each case, the highest value was used as characteristic for the current phase of the start-up, e.g. start-up 1 in cell 1 (start-up 1 is stated in phase 1 as the value for the early stage = .67, the other phases are set below that score). When showing a draw, the higher value was used as indicator

for the prevailing phase as it is assumed that the criteria of previous phases are already fulfilled, cf. start-up 2 in cell 2 (start-up 2 is stated in phase 3 as the value for the later stage = 1, just the same as it is for phase 2, however due to the assumption made in this thesis, the criteria of phase 2 have already been met and therefore the start-up is indicated to be in phase 3. In addition to the allocation of the phases, the given age of the start-up is listed in Table 2.

Table 2. *Extend 0-1 expressing the stage affiliation (early, expansion, later) for each start-up*

Start-Up (#)	Early Stage (1)	Expansion Stage (2)	Later Stage (3)	Stage	Age (years)
1	.67	.33	.50	1	5.0
2	.33	1.0	1.0	3	5.0
3	.83	.67	.50	1	2.0
4	.17	1.0	1.0	3	5.0
5	.33	.67	.50	2	2.0
6	.33	.00	.50	3	2.0
7	.50	.67	1.0	3	1.5
8	1.0	1.0	.67	2	1.0
9	.33	1.0	1.0	3	2.0
10	.33	.33	1.0	3	2.0
11	.33	.67	.75	3	2.0
12	1.0	1.0	.25	2	5.0
13	.17	.33	.75	3	7.0
14	.0	.67	.67	3	3.0
15	1.0	1.0	1.0	3	10.0
16	.33	.33	.50	3	3.0
17	.67	1.0	.75	2	3.0
18	.33	.67	.0	2	4.0
19	.33	.33	.50	3	3.0
20	.17	1.0	.50	2	3.0
21	.60	.33	.25	1	4.0
22	.33	.33	1.0	3	4.0
23	.17	.33	.25	2	4.0
24	.33	.0	.0	1	3.0
25	1.0	1.0	.75	2	2.0
26	.17	.67	.75	3	20.0
27	.50	.67	.25	2	4.0
28	.67	.33	.50	1	3.0
29	.33	1.0	1.0	3	2.0
Total $M \pm SD$	44.0 \pm 28.8%	62.1 \pm 31.8%	62.9 \pm 30.8%		4.02 \pm 3.58

Based on this organizational classification, five (17.2%) start-ups are situated in the early stage, nine (31.0%) in the expansion stage and 15 (51.7%) in the later stage. The actual age of the business has to be reviewed separated from the organizational level (stage). Thus, the average age for the early stage

start-ups accounts for 3.4 ± 1.1 , for start-ups in the expansion stage 3.1 ± 1.3 and for start-ups in the later stage 4.8 ± 4.8 years. The median age of the start-ups was 3.0 years (*Figure 3*) in each stage. Therefore, it is quite possible that elderly start-ups are still set in the early stage but also the other way around, start-ups that have existed for just one year may already being in the later stage.

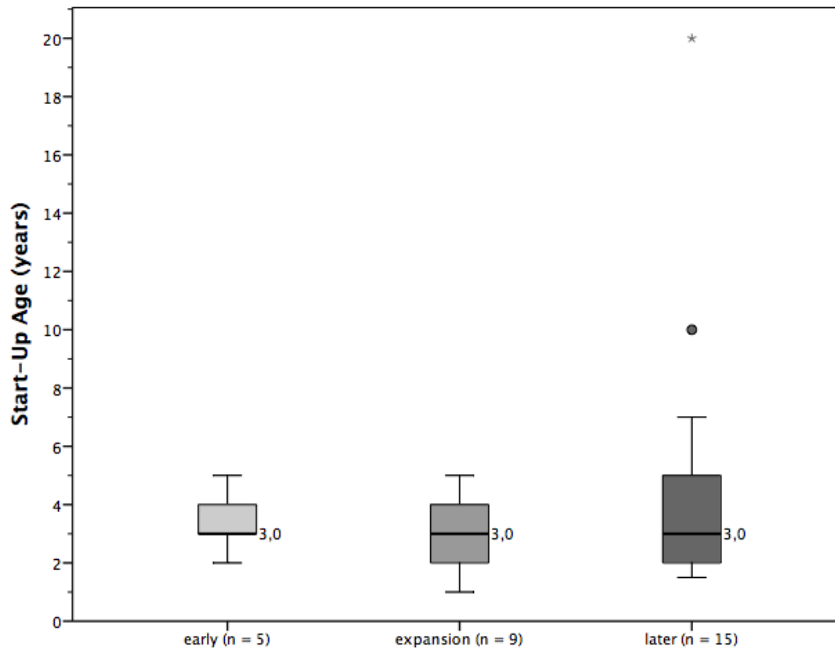


Figure 3. Start-up age since foundation in dependency of the organizational stage

The number of employees was summarized in three categories (1-5, 6-25, >25) and furthermore connected with the organizational stages. On the basis of the table of contingency in in Table 3 the connection was tested with the help of goodness of fit chi square test.

Table 3. Frequencies and percentages (row %) of number of employees in dependency of the organizational stage

CV Stage		Number of employees			Total
		1-5	6-25	>25	
Early	Count% within phase	0	4 (80.0%)	1 (20.0%)	5 (100%)
Expansion		0	7 (77.8%)	2 (22.2%)	9 (100%)
Later		2 (13.3%)	12 (80.0%)	1 (6.7%)	15 (100%)
Total		2 (6.9%)	23 (79.3%)	4 (13.8%)	29 (100%)

With $\chi^2(\text{c.F.}) = 2.862$, $p = .659$ the test value showed a non-significant result, constituting no association between the organizational stage and the number of employees.

4.5.1.4 *Accordance of the Organizational Design (Stages) due to Soft-Facts (Task Allocation, Task Division, Information Provision, Reward Provision) and Hard-Facts (CV stages, Organizational Design)*

For this purpose, hard-facts will be used as criteria to indicate the information regarding the soft-facts. The cells on the main diagonal indicate an accordance of the different stage-measurements. In particular, these are contingency tables with dependent data. CV and TATDIP stages show an overall accordance of 7 (24.1%) as can be seen in Table 4. As measurement for correlative association Cramer's $V = .152$ ($p = .715$) and for interrater reliability the coefficient Cohen's kappa (κ) = .027 ($p = .722$) (Bortz/Döring, 2006, p.276) were indicated and therefore showing a non-significant coherence.

Table 4. *Frequencies and percentages (cell %) for CV and TATDIP stage-affiliation*

CV stage		Stage TATDIP		Total
		Early stage	Expansion stage	
Early	Count (%)	4 (13.8%)	1 (3.4%)	5 (17.2%)
Expansion	Count (%)	6 (20.7%)	3 (10.3%)	9 (31.0%)
Later	Count (%)	9 (31.0%)	6 (20.7%)	15 (51.7%)
Total		19 (65.5%)	10 (34.5%)	29 (100.0%)

Note: Accordance is highlighted in bold within the cells at the main diagonal. For the TATDIP category, no later stages were observed.

CV and RPI stage show an overall accordance of 17 (58.6%), as can be seen in Table 5. As measurement for correlative association Cramer's $V = .408$ ($p = .047$) and for interrater reliability the coefficient Cohen's kappa (κ) = .298 ($p = .033$) (Bortz/Döring, 2006, p.276) were indicated and therefore showing a non-significant coherence.

Table 5. *Frequencies and percentages (cell %) for CV und RPI stage-affiliation*

CV stage		Stage RPI			Total
		Early stage	Expansion stage	Later stage	
Early	Count (%)	0	3 (10.3%)	2 (6.9%)	5 (17.2%)
Expansion	Count (%)	2 (6.9%)	5 (17.2%)	2 (6.9%)	9 (31.0%)
Later	Count (%)	1 (3.4%)	2 (6.9%)	12 (41.4%)	15 (51.7%)
Total		3 (10.3%)	10 (34.5%)	16 (55.2%)	29 (100.0%)

CV and RPE stage show an overall accordance of 7 (24.1%), as can be seen in Table 6. As measurement for correlative association Cramer's $V = .530$ ($p = .017$) is significant and for interrater reliability the coefficient Cohen's kappa (κ) = .051 ($p = .430$) (Bortz/Döring, 2006, p.276) is not significant, indicating no interrater accordance when having a moderate association. Kappa resulted that low because this measure is very sensitive towards strong divergences from the main diagonal (Caspar/Wirtz, 2002).

Table 6. *Frequencies and percentages (cell %) for CV and RPE stage-affiliation*

CV stage		Stage RPE		Total
		Early stage	Expansion stage	
Early	Count (%)	3 (10.3%)	2 (6.9%)	5 (17.2%)
Expansion	Count (%)	5 (17.2%)	4 (13.8%)	9 (31.0%)
Later	Count (%)	15 (51.7%)	0	15 (51.7%)
Total		23 (79.3%)	6 (20.7%)	29 (100.0%)

Note: For the RPE category, no later stages were observed.

4.5.1.5 Hard Facts and Single Soft Facts (TA, TD, IP, RPE, RPI)

The single soft facts TA, TD, IP as well as RPE and RPI were tested regarding their differences in relation to the staging. Table 7 shows the average score of extrinsic (1-7 scale) and intrinsic (1-7 scale) reward provision as well as of task allocation, task division and information provision (1-6 scale) due to the three stages of start-ups based on hard facts. The testing was done by a Welch's one-way ANOVA.

Table 7. *Parameter of RPE-, RPI-, TA-, TD-, IP- scales due to stages (based on hard facts)*

Phase (hard facts)		RPE	RPI	TA	TD	IP
early (n=5)	$M \pm SD$	5.45 \pm 1.50	3.09 \pm 1.19	4.80 \pm .87	4.20 \pm .61	4.96 \pm .68
	Md	5.25	3.86	4.67	4.33	4.80
expansion (n=9)	$M \pm SD$	5.06 \pm 1.17	4.32 \pm 1.01	4.81 \pm .77	3.63 \pm .75	5.11 \pm .46
	Md	5.50	4.57	5.00	3.67	5.20
later (n=15)	$M \pm SD$	6.38 \pm .55	2.32 \pm 1.29	4.62 \pm .94	3.91 \pm .97	4.60 \pm .92
	Md	6.50	2.00	4.67	4.33	4.60
Total (N=29)		$F(df_1, df_2)$				
		p				
		5.31(2, 8.04)	8.43 (2, 11.05)	0.16 (2, 11.08)	1.14 (2, 12.98)	1.55 (2, 11.08)
		.034*	.006**	.854	.351	.255

In terms of RPE the test statistic resulted in $p = .034$, in terms of RPI in $p = .006$, being significant. Post-hoc pairwise comparison with Games-Howell procedure resulted in a significant higher characteristic of RPE in

start-ups in later stages compared with start-ups in an expansion stage ($p = .0001$). For task allocation, task division and information provision no significant difference between the three stages was observed. Summing up, it was observed that start-ups differ only in terms of staging between expansion and later stage, but only when it comes to terms of reward provision (intrinsic as well as extrinsic).

4.5.1.6 *Résumé of Soft Facts (TATDIP, RPI, RPE) and Hard Facts (CV Stages, Organizational design)*

In summary of the results found above, the criteria CV stage, in comparison with soft facts, is most closely associated with extrinsic reward provision (RPE). Here, the highest connection was identified. Followed by intrinsic reward provision (RPI). Comparatively, the criteria of TATDIP (task allocation, task division, information provision) resulted in the weakest association with the criteria CV stage.

However, no overall accordance between soft and hard facts was found.

Summing up, the **first research question** “*RQ1: Can the stages of a start-up be measured by addressing the problems of organizing (task allocation, task division, information provision, reward provision)?*”, considering the results gained above have shown that the different problems of organizing show rather independent characteristics. Therefore a summery into uniformed phases (early, expansion, later) within the scope of staging cannot be confirmed. As a result, the stages cannot be measured by addressing the problems of organizing with the approach that was chosen within this thesis. Therefore, the hypotheses testing will always take place once with the hard facts (CV stages), since it is assumed that these give a better picture of the current stage of the start-up than the soft facts (TATDIP, RPI, RPE) and once with the stated age of the start-up in order to see how the length of existence of the start-up may influence the assumptions.

4.5.2 **Employees and Motivational Issues**

This second part of the results will contribute all the necessary tests and analyses, which are needed in order to investigate *RQ2: “How do stages of a start-up effect the motivation of non-founding employees?”* and the attached hypotheses *H1: “The less mature the start-up, the higher the intrinsic motivation of non-founding employees”* and *H1a: “The less mature the start-up, the lower the extrinsic motivation of non-founding employees”* followed by a summary.

4.5.2.1 WEIMS (Work Extrinsic and Intrinsic Motivation Scale)

The participant's characteristics in terms of self-determination, expressed with the W-SDI, may reach a score between -24 and +24 points and is displayed in *Figure 4*. The average expression (mean) was found at 9.20 ± 5.43 (min. -6, max. +19). The median was detected at 9.33. The measured values were subjected to a normal distribution (skewness $S = -.785$, standard error $SE = .434$; $z_S = S / SE$) as the standardised skewness $z = 1.81$; $< |1.96|$ was not significant (Field, 2009, p. 139).

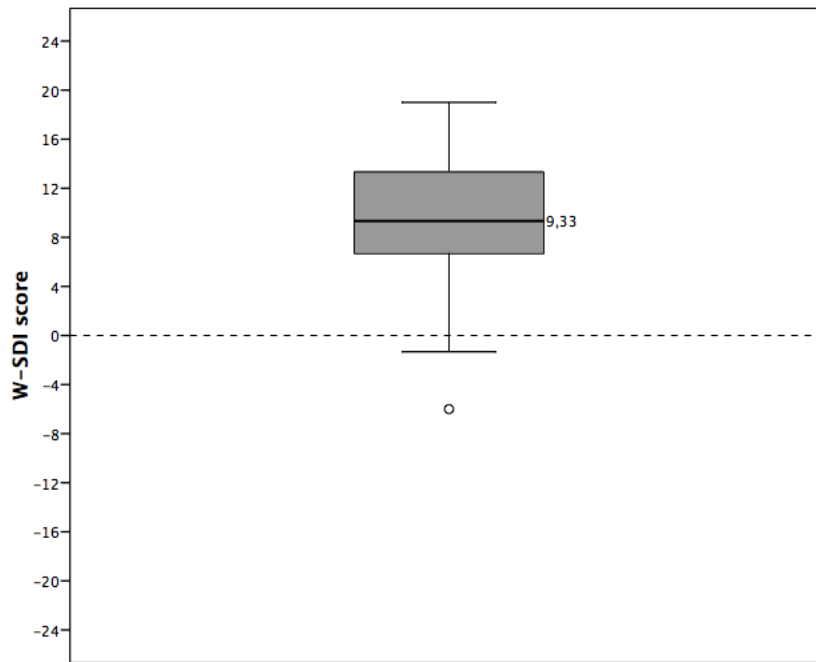


Figure 4. Distribution and position (median 9.33) of self-determination (W-SDI)

According to this given distribution, the sample prevalingly shows a self-determined profile, respectively rather intrinsically motivated. Out of that, two respondents were found within the negative range. Additionally, the consensus of the two scores for self-determination (W-SDM) as well as for non-self-determination (W-NSDM) are displayed in *Figure 5*, indicating no significant correlation ($r(29) = .217$ ($p = .257$, two-tailed)). The two components of motivation are, to a large extend, independent from each other.

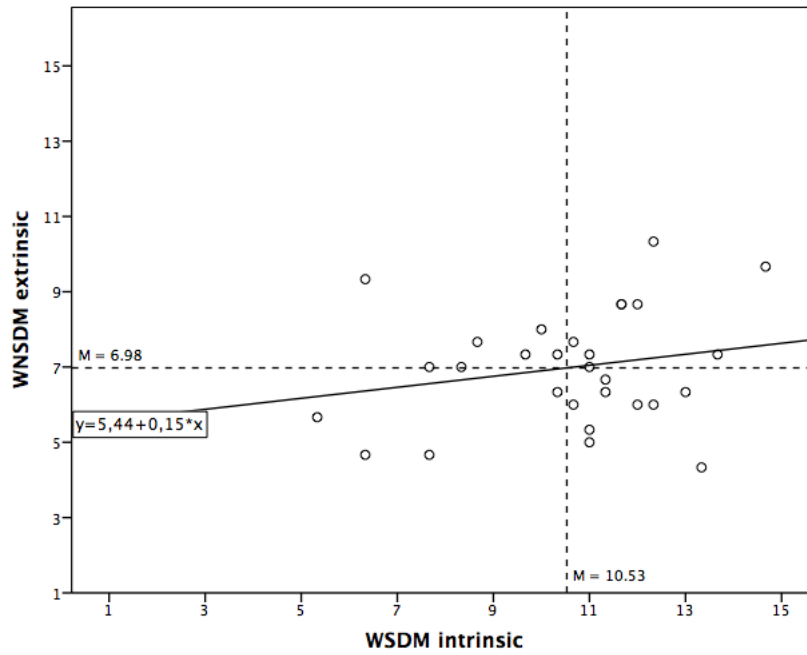


Figure 5. Bivariate scatterplot of the coherence between WNSDM extrinsic and WSDM intrinsic with regression curve (n=29)

For intrinsic motivation, an average score of 10.53 ± 2.27 and for extrinsic motivation of 6.98 ± 1.53 was found.

4.5.2.2 Hypotheses testing (H1, H1a)

For hypotheses block 1, H1: “The less mature the start-up, the higher the intrinsic motivation of non-founding employees” and H1a: “The less mature the start-up, the lower the extrinsic motivation of non-founding employees” concerning relation between the maturity of the start-up and self-determined regulation, the coefficient r by Pearson’s product moment correlation was applied, when the maturity of the start-up was indicated with the stated metric age of the start-up. In an alternative approach for indicating the maturity of the start-up, the ordinaly scaled CV stages were used: in this case, the Spearman’s rank correlation was the expedient method.

For the comparison of the stated age with the WSDM, with $r(29) = -.132$ ($p = .247$) a weak, as expected negative, but not significant correlation was observed.

For the connection with intrinsic motivation with $r(29) = -.025$ ($p = .450$) no correlation was observed, assuming independence of these two aspects.

For the connection of extrinsic motivation with $r(29) = .116$ ($p = .274$) a weak, as expected positive, but not significant correlation was observed.

For the comparison of the CV stages with the WSDM with $r_s(29) = -.058$ ($p = .383$) a very weak, as expected negative but not significant correlation was observed.

For the connection of intrinsic motivation with $r_s(29) = .097$ ($p = .309$) a very weak, positive but not significant correlation was observed.

For the connection with extrinsic motivation, with $r_s(29) = .332$ ($p = .039$) a moderate, as expected positive, significant correlation was observed.

In terms of **research question 2**, “*How do stages of a start-up effect the motivation of non-founding employees?*” the answer may be twofold. As the different approaches (CV staging and stated age) lead to the following summary: The hypothesis *H1* for the connection of the stated age, respectively CV stage with intrinsic motivation had to be rejected. The correlation hypothesis *H1a* can be accepted, if the maturity of the start-up is measured with the CV stage. It was confirmed that the less mature the start-up, the lower is the extrinsic motivation of non-founding employees.

4.5.3 Employees and their Skill-Task Match

4.5.3.1 Skill-Task Match

The participants were asked questions about the tasks assigned to them; Table 8 shows the distribution of the sample.

Table 8. *Frequencies and percentages of executed tasks (multiple-choices possible), $n = 29$*

Tasks Executed	Count	Percentage
Project Management	16	55.2%
Communications	13	44.8%
Marketing	12	41.4%
Sales	11	37.9%
Customer Service	10	34.5%
Administrative Issues	9	31.0%
Research & Development	9	31.0%
Technical Support	7	24.1%
Back Office	6	20.7%
Human Resources	5	17.2%
Legal Issues	5	17.2%
Purchasing	5	17.2%
Accounting	4	13.8%
Front Office	4	13.8%
Finance	3	10.3%
Inventory	2	6.9%

The following three pie charts deal with the current tasks that respondents execute and whether they have a say in choosing their tasks and if they have prior educational background and/or experience. Participants were asked about their say in their tasks executed. The figure below shows that only one person does not have any say when it comes to his/her tasks executed. The other 28 respondents have at least a partial say (14).

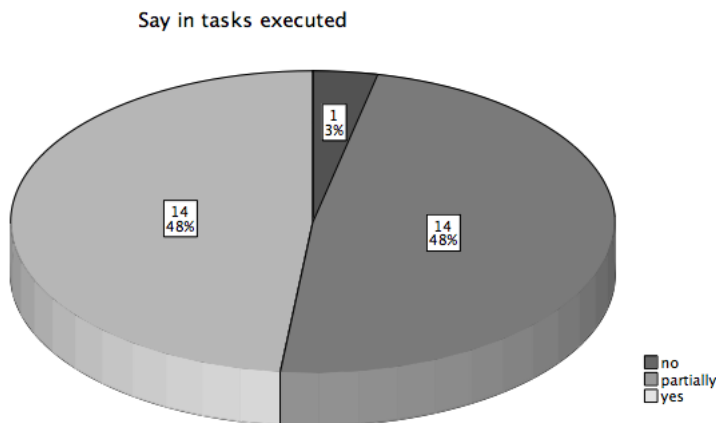


Figure 6. Frequencies and percentage, say in tasks executed (n = 29)

Also, the respondents were asked whether they boast educational background in the current tasks they are executing. Almost three quarters confirmed this question (76%), as shown in Figure 7.

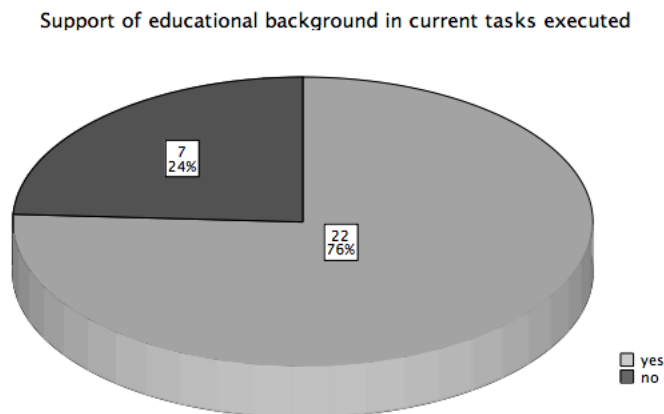


Figure 7. Frequencies and percentage, educational background in current tasks executed (n = 29)

Taking a closer look at the sample, as shown in Table 9, 18 (62.1%) participants had both prior experience and an educational background in their tasks executed. One may detect the trend that the educational background is crucial when choosing a job and that respondents also make use of their education also in their working life.

Table 9. Count and percentage (cell %) for educational background & prior experience in tasks executed

			<u>Prior experience in tasks executed</u>		
			Yes (+)	No (-)	Total
<i>Educational background in tasks executed</i>	Yes (+)	Count (%)	18 (62.1%)	4 (13.8%)	22 (75.9%)
	No (-)	Count (%)	5 (17.2%)	2 (6.9%)	7 (24.1%)
Total		Count (%)	23 (79.3%)	6 (20.7%)	29 (100.0%)

Prior experience in the current tasks is displayed in Figure 8.

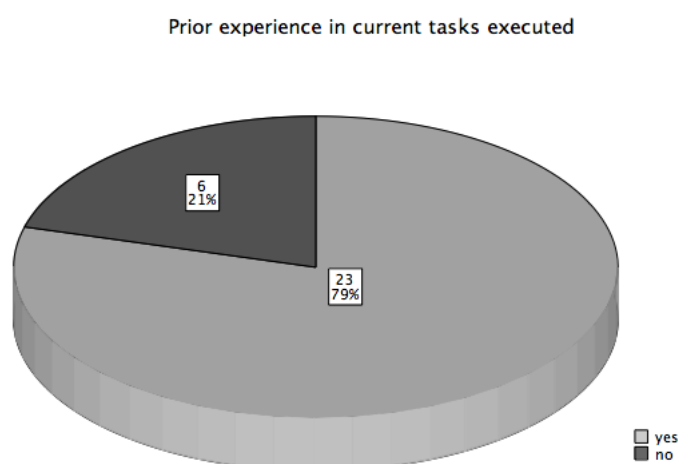


Figure 8. Frequencies and percentage, prior experience (n = 29)

4.5.3.2 PIAAC

With the help of the questions of PIAAC, a self-report on skill-match or skill-mismatch was evaluated.

Table 10 shows the relation of the need for additional training for present duties and the feeling of having skills in order to cope with more demanding duties than the current job requires.

Table 10. Frequencies and percentages (cell %) for “further training needed” in dependence of “skills for more demanding duties”

			<u>Skills for more demanding duties</u>		
PIAAC			Yes (+)	No (-)	Total
<i>Further training needed (present duties)</i>	Yes (+)	Count (%)	13 (44.8%)	1 (3.4%)	14 (48.3%)
	No (-)	Count (%)	14 (48.3%)	1 (3.4%)	15 (51.7%)
Total		Count (%)	27 (93.1%)	2 (6.9%)	29 (100.0%)

Overall, 13 (44.8%) respondents are in need fore further training for their present duties but having skills for more demanding duties at the same time, being over-skilled as well as under-skilled, 14 participants (48.3%) said to be over-skilled. One person was under-skilled and one person well

matched. The self-rated qualification due to education and experience (Table 9) of the respondents was set in context to PIAAC and the need for further training. The relation of these two components is shown in Table 11.

Table 11. *Frequencies and percentage (column %) of educational background and prior experience in tasks executed depending on PIAAC further training needed*

			<i>Education and experience in tasks executed</i>				Total
			+ / +	+ / -	- / +	- / -	
<i>PIAAC further</i>	Yes (+)	Count (%)	12 (66.7%)	2 (50%)	0	0	14 (48.3%)
<i>training needed</i>	No (-)	Count (%)	6 (33.3%)	2 (50%)	5 (100%)	2 (100%)	15 (51.7%)
Total		Count (%)	18 (100.0%)	4 (100%)	5 (100%)	2 (100%)	29 (100%)

The test value revealed with χ^2 (corrected with Fisher's exact test, c.F.) = 8.528, $p = .015$ a significant difference in distribution of the estimate of further training needed, regarding education and experience in tasks executed. It was observed that the respondents that evaluated themselves as well educated and well experienced would need further training, which is true for 12 people (66.7%). Of the eleven people who either responded that they have no education or experience in prior tasks or are lacking both, nine indicated that they need no further training.

4.5.3.3 Hypotheses testing (H2, H2a, H2b)

For hypothesis 2,

H2: The less mature the start-up, the lower is the skill-match of non-founding employees

the relation between the maturity of the start-up and the skill-match a comparison of the extreme groups (Bortz, Döring, 2006, p.530) between “over-skilled as well as under-skilled” vs. “over-skilled” from the self-reported skill mismatch in PIAAC was run. For this comparison of extreme groups, two cases had to be excluded since the categories “under-skilled” and “well-matched” only showed one subject in each group. To define the maturity of the start-up, the stated age of the start-up was used for further investigation. For an alternative approach, the maturity of the start-up was indicated with the CV stages: in the latter case, a cross tabulation with a chi-square goodness of fit test was used.

For the comparison of the stated age and the skill-match a U-test by Mann & Whitney over the scope of a comparison of extreme groups between “over-skilled as well as under-skilled” vs. “over-

skilled” of the self-reported skill mismatch in PIAAC was run. The group “over-skilled as well as under-skilled” ($n = 13$) with an start-up age of $M = 4.15 \pm 4.90$ ($Md = 3.0$) years differed from the group “over-skilled” ($n = 14$) with $M = 4.14 \pm 2.21$ ($Md = 3.5$) years with $U = 66.0$ ($z = -1.242$), $p = .239$ (exact significance) non significant.

For the comparison with the CV stage and the skill-match a cross tabulation described the difference of distribution of the PIAAC categories, as shown in Table 12.

Table 12. *Frequencies and percentages (column %) of the PIAAC category in dependence of the CV stage ($n = 27$)*

PIAAC category		CV stage			Total
		Early	Expansion	Later	
Over-skilled & under-skilled	Count (%)	1 (20.0%)	4 (50.0%)	8 (57.1%)	13 (48.1%)
Over-skilled	Count (%)	4 (80.0%)	4 (50.0%)	6 (42.9%)	14 (51.9%)
Total		5 (100.0%)	8 (100.0%)	14 (100.0%)	27 (100.0%)

The test value with χ^2 (c.F.) = 1.965, $p = .456$ was not significant, indicating no noticeable correlation between CV stage and skill-match due to PIAAC (“over-skilled as well as under-skilled” vs. “over-skilled”).

Summing up, the skill-match neither shows a correlation with the CV stage nor with the stated age. H2 has to be rejected.

Testing the correlation hypothesis, H2a: “*The less mature the start-up, the more all-rounded are non-founding employees.*” the given broadness of definition of tasks (see question “My tasks are broadly defined and I do a bit of everything.”) was set in connection with the stated age of the start-up on the one hand, and on the other hand with the identified CV stage.

The identified, weak positive connection with the stated age was found with the coefficient Spearman’s rank correlation of $r_s(29) = .103$ ($p = .297$) to be non significant.

When using the alternative approach, a weak negative coherence of the CV stage with $r_s(29) = -.103$ ($p = .297$) revealed a not significant result as well.

Thus, H2a has to be rejected, indicating no correlation between the broadness of definition of tasks and the maturity of the start-up.

Testing the hypothesis *H2b*: “*The less mature the start-up, the more self-selection of tasks prevails*” the distribution of the given right to a say was analysed based on the CV stage. The given pie chart “say in tasks executed” from section 4.2.4. Skill-Task Match describing the extend of the say in tasks executed, was set in context, as can be seen in Table 13.

Table 13. *Frequencies and percentages (row%) for CV stage and right to a say in tasks executed*

CV stage		Right to a say in tasks executed			Total
		No	Partially	Yes	
Early	Count (%)	0	3 (60.0%)	2 (40.0%)	5 (100.0%)
Expansion	Count (%)	0	3 (33.3%)	6 (66.7%)	9 (100.0%)
Later	Count (%)	1 (6.7%)	8 (53.3%)	6 (40.0%)	15 (100.0%)
Total		1 (3.4%)	14 (48.3%)	14 (48.3%)	29 (100.0%)

With $\chi^2(\text{c.F.}) = 2.853$, $p = .721$ the test value showed a non-significant result, constituting a similar distribution between the right to a say in tasks executed depending on the CV stages.

H2b, the coherence between the right to a say in tasks executed and the CV stage has to be rejected.

When analysing the stated age of the start-up and the relation to the right to a say, with $r_s(29) = -.179$ ($p = .176$) a weak, as expected negative, but not significant relation was shown.

H2b, the coherence between the right to a say in tasks executed and the stated age of the start-up has to be rejected.

In terms of **research question 3**, “*How do stages of a start-up effect the skill-task match of non-founding employees?*” and in reference to the results of hypotheses block 2, the following can be summarized: The skill-match shows no correlation with the CV stage nor with the stated age, no correlation between the broadness of definition of tasks and the maturity of the start-up prevails and neither was any coherence between the right to a say in tasks executed and the CV stage or the stated age found.

5 Limitations and Implication for Further Research

Overall the new approach of defining and testing organizational design due to the four issues each organization has to address and to find solutions to (Purnanam/Alexy/Reitzig, 2014, p. 166-167) did not result into congruence with the definition of a start-up's stages (early, expansion, later). Reasons why this may be the case or why this approach did not work out are now discussed in greater detail. Moreover, suggestions where further research may build on to are given. The small sample size ($n = 29$) is considered to be the biggest limitation. Also, neither the underlying construct of testing the phases (early, expansion, latter/CV stages) of the start-up based on task allocation, task division, (intrinsic and extrinsic) reward provision or information provision was pre-tested. As results show, no strong connection between these two approaches was found, with a small exception between CV stages which are most closely associated with extrinsic reward provision (RPE) where the highest association was identified. The different items contributing to the variable (intrinsic and extrinsic) reward provision were assigned to the different stages of a start-up to the best of the author's knowledge. Also, the classification of organizational design due to task allocation, task division and information provision is not based on any pre-tests but again only on the author's best knowledge. To split (intrinsic and extrinsic) reward provision in the different stages of a start-up an existing tool was slightly self-adapted. For splitting and defining task allocation, task division and information provision for the different stages of a start-up, the set of questions, which should measure its characteristics, was fully self-developed. The classification of the start-ups for the control variables (early, expansion, later stage) is another limitation of this study. The reader needs to be aware of the fact that this division displays a combination of information from two different websites but no pre-studies on the classification of different stages that a start-up may go through within their life cycle as were found in the literature review conducted in this thesis. As a result, the following implications for further research may be applicable. Additional examinations with higher cases are advisable in order to validate observed trends and results of this thesis. The thesis further shows that it is very difficult to find a general approach for the staging (early, expansion, later) of a start-up. Different approaches were tested (CV staging and staging due to task allocation, task division, (intrinsic and extrinsic) reward provision as well as information provision and the stated age of the business), showing no

homogeneous pattern. Therefore, this may be an issue where further research can draw on, focused on developing a set of questions and measuring the different stages of a start-up within its life cycle in terms of task allocation, task division, information provision and reward provision. It may also be the case that the questions within this thesis asking for these four items were not sufficient. Maybe more questions are needed in order to measure it properly. Possibly also another division of stages other than early, expansion or later stage may be legitimate. This is up to future studies to find out. Further studies should build further on the approach of trying to define organizational design due to the four problems an organization has to address and its solutions to it, since this thesis did not find congruence between how these four issues were measured and the overall approach of how an early, expansion and later stage of a start-up may be defined. Future studies may be well advised to choose another research method, such as qualitative ones. It may help to gain a better understanding of the situation of non-founding employees in a face-to-face situation, e.g. in in-depth interviews. Additionally, an analysis over a longitudinal timeline may be advisable in order to see how task allocation, task division, (intrinsic and extrinsic) reward provision and information provision may change over time. This may especially support finding possible results for the staging of a start-up, when investigating them over a longer period of time, from the very beginning through their whole life cycle, may it either be a breakthrough or a failure. Moreover, this could help to generate insights on how the growth process of a start-up and its associated changes in organizational design may influence motivational issues and the skill-match of non-founding employees.

6 General Discussion

In terms of organizational design and research question 1 “*Can the stages of a start-up be measured by addressing the problems of organizing (task allocation, task division, information provision, reward provision)?*”, overall a rather flat hierarchy was identified in start-ups, since the say in tasks executed was shown to be very high (see *Figure 6*. Frequencies and percentage, say in tasks executed ($n = 29$)). This flat hierarchy was detected in all three CV stages. Taking a closer look at *Table 1. Summary of the division of stages of a start-up (early, expansion, later stage) due to self-awareness of TATDIP, RPI and RPE (n=29)*, the main result showed that the three prompted areas (TATDIP, RPI and RPE)

display broadly independent characteristics. Therefore a summery into three superior, uniformed phases (early, expansion, later) within the scope of staging based on task allocation, task division (intrinsic and extrinsic) reward provision or information provision cannot be confirmed. Instead the stage-patterns indicate a rather individual character of start-ups. Contrasting these individual stage-patterns in comparison with the CV stages, the greatest overlap was found with extrinsic reward provision (RPE). Followed by intrinsic reward provision (RPI). Comparatively, the criteria of TATDIP (task allocation, task division, information provision) resulted in the weakest association with the criteria CV stage. Therefore, task allocation, task division and information provision are no suitable measurements for indicating the stage of a start-up, rather they indicate aspects that are independent of a start-up's age. These three components are less meaningful when measuring the stage of development of a start-up but may be assembled to an internal consistent scale, indicating organizational aspects, working-flows or methods. Moreover, as can be seen in Table 2. *Extend 0-1 expressing the stage affiliation (early, expansion, later) for each start-up*, no accordance with the stated age of a start-up can be found neither. This resulted in the conclusion that some start-ups have already existed over a longer period (higher number of stated age) but are still stuck in the early stage. This also means that some start-ups may exist only for, e.g. a year, but have reached the later stage already. Thus it can be concluded that the age of a start-up does not have to equal its stage. Neither is there any coherence between the organizational staging and the number of employees, as Table 3 Frequencies and percentages (row%) of number of employees in dependency of the organizational stage showed. Due to the lack of association between the soft and hard facts, the hypothesis testing had to take place with two different approaches: One based on the CV staging and the other on the stated age of the start-up.

In terms of motivation and research question 2 *“How do stages of a start-up effect the motivation of non-founding employees?”*, the hypotheses, H1: *The less mature the start-up, the higher the intrinsic motivation of non-founding employees* had to be rejected when testing the maturity of the start-up with the CV staging and the stated age of the start-up as no significant correlation was found. H1a: *The less mature the start-up, the lower the extrinsic motivation of non-founding employees*, could only be

accepted when measuring the maturity of the start-up with the CV staging as results indicated a moderate, as expected positive, significant correlation.

In reference to research question 3 “*How do stages of a start-up effect the skill-task match of non-founding employees?*”, analysing *Figure 7*. Frequencies and percentage, educational background in current tasks executed (n = 29) and *Figure 8*. Frequencies and percentage, prior experience (n = 29) one may detect the trend that the educational background is crucial when choosing a job and that the respondents to make use of their education also in their working life. The same is true for prior working experience of their current tasks executed. Discussing Table 10. *Frequencies and percentages (cell %) for “further training needed” in dependence of “skills for more demanding duties”*, the main result showed that $\frac{2}{3}$ of those, who said to be well experienced and educated still wish for further training, which may indicate ambition, since they still try to get better at what they do. This was not directly expected rather it was assumed that people who are well educated and show experience do not need further training. Analysing H2: *The less mature the start-up, the lower is the skill-match of non-founding employees*, both approaches of measuring the maturity of the start-up resulted in rejecting the hypothesis. H2a: *The less mature the start-up, the more all-rounded are non-founding employees* also had to be rejected since no correlation between the broadness of definition of tasks and the maturity of the start-up was found. Also H2b: *The less mature the start-up, the more self-selection of tasks prevails* had to be rejected as no relationship between the right to a say in tasks executed and the maturity of a start-up has been indicated.

Summing up the results generated for hypotheses testing within this thesis, in reference to the researched literature for the study at hand, the following conclusion can be drawn. The reader has to be aware of the fact that the organizational design stages of the start-up were measured with two different approaches, leading to different results and therefore always having discussed these issues separately. As new approach of trying to find a way to implement measurement for organizational design in terms of the four general problems a company has to address did not show any significant results, therefore hypotheses could only be tested with the stated age and the hard facts of a start-up. However, some congruence with present literature was still found. When taking a closer look at the results due to intrinsic and extrinsic motivation and assuming that motivation is depended on the work

itself and the working environment (Herzberg et al 1959) it was found that the less mature the start-up is (due to the CV stages), the lower is the extrinsic motivation of non-founding employees (see 4.5.2.2 Hypotheses testing (H1, H1a)). This is also underpinned by the findings in section 4.5.2.1 WEIMS (Work Extrinsic and Intrinsic Motivation Scale), where a higher intrinsic motivation score was found. This could be set in accordance to literature, where it states that employees in start-ups tend to value salary and job security and bear a higher risk tolerance than those of established firms, proving higher intrinsic motives when working for a start-up (Sauermann, 2013, p. 22-23). However, when taking a closer look at the results due to the stated age of a start-up, no significant correlations in terms of self-determined regulation, intrinsic or extrinsic motivational issues were found. This is congruent with the assumption from 2.2 Organizational Design & The Stages of a Start-Up, proven in Table 2 Extend 0-1 expressing the stage affiliation (early, expansion, later) for each start-up, that the stated age is independent from its growth-stage or the phase the start-up is currently set in since some start-ups may be in an early phase for years while others grow faster being already e.g. in the expansion phase just after one year. When taking a closer look at the block of hypothesis 2 and the skill-match, no correlation between the CV stage nor the stated age was found. Neither was any correlation found when analyzing the fact if the non-founding employees are more all-rounded in the beginning of a start-up, nor the right to a say when choosing the executed tasks gave any significant results. Therefore, no statement in reference to existing literature where it is assumed that a start-up, especially in the beginning, offers less specialisation in their activities and a large variety of tasks (Sauermann, 2013, p. 14) may be stated. This result may be due to the small sample size.

Summing up, this thesis was trying to identify a new approach of defining organizational design when considering start-ups and testing assumptions in reference to motivational issues (intrinsic and extrinsic) as well as the skill-task match of non-founding employees. However, this approach did overall not generate many significant results, giving space for further literature to build on.

7 Conclusion

As has already been mentioned, the new approach of defining and testing organizational design due to the four issues each organization has to address and to find solutions to (Purnanam/Alexy/Reitzig,

2014, p. 166-167) did not result into congruence with the definition of a start-up's stages (early, expansion, later). Reasons why this may have been the case were already given, also how and what further research may generate from these new insights and implications for the future were suggested. As no congruence between the soft facts (the four main problems of an organization: task allocation, task division, information provision and reward provision) (Purnanam/Alexy/Reitzig, 2014, p. 166-167) the hypotheses of this thesis were examined with two different approaches: Due to the CV staging (by using the hard facts) and once due to the stated age of the start-up, knowing that the statements in relation to the stated-age are rather vague since this thesis assumes that the age of a start-up is not too expressive as it does not tell too much about the current stage of a start-up. Overall, the results of the research and studies conducted can be pinned down to the following: A flat hierarchy prevails in all the different stages of a start-up. Despite using two different approaches to attempt to measure the stages of a start-up, the study showed no homogeneous pattern when using task allocation, task division, (intrinsic and extrinsic) reward provision and information provision for the staging. Rather they indicate aspects that are independent of the start-up's age. Stage-patterns indicate a rather individual character of start-ups as no accordance with the stated age of a start-up was discovered. Thus, it was found that start-ups could exist over a longer period of time and still be in an earlier stage or vice versa. Further, no relationship between the organizational staging and the number of employees was found. The assumption the less mature the start-up, the lower the extrinsic motivation was accepted when measuring the maturity of the start-up with the CV staging as results indicated a moderate, as expected positive, significant correlation. Moreover, educational background, as well as prior works experience is crucial when choosing a job. Non-founding employees tend to be more ambitious as they wish for further training for current duties although they stated to be well experienced and educated. No correlation between the CV stage nor the stated age, the all-roundness or the right to a say when choosing executed tasks gave any significant results. Results may be due to the limitation of the small sample size, therefore further research and as suggested in 5. Limitations and Implication for Further Research, alternative approaches and methods are recommended.

8 References

- Ahr C., Schwenk J., Matros K., 2011. *Start up! Grundlagen, Tipps & Tricks für deine Existenzgründung*. Wiley-VCH Verlag & Co. KGaA, Weinheim, Germany, 1. Auflage
- Aldrich, H. E., 2008: “*Organizations and Environments*”, Stanford University Press, Stanford California
- Allen R. S., Kilmann R. H., 1999. The role of the reward system for a total quality management based strategy, *Journal of Organizational Change Management*, Vol. 14, No. 2., 2001, pp. 110-131, MCB University Press 0953-4814
- Amit R., MacCrimmon K. R., Zietsma C. and Oesch, John M., 2000. Does money matter?: Wealth attainment as the motive for initiating growth-oriented technology ventures. *Journal of Business Venturing*, 16, p. 119-143, Elsevier Science Inc.
- Armstrong M., 2007. *A handbook of employee reward management and practice*. 2nd edition, Philadelphia: Kogan Page, p.3
- Armstrong M., Murlis H., 2004. *Reward management: a handbook of remuneration strategy and practice*. 5th edition, London [u.a.]: Kogan Page, p. 3
- Astebro T., Chen J. and Thompson P., 2010. Stars and Misfits: Self-Employment and Labor Market Frictions. *Economics Research Working Paper Series*, 24.
- Bates T., 1990. Entrepreneur human capital inputs and small business longevity. *Review of Economics and Statistics*, 72, p. 551-559 in Koch A., Späth J., Strotmann H., 2012. The Role of Employees for Post-Entry Firm Growth. *IAW Discussion Paper*, No. 78 February 2012
- Baum J. R. and Locke E. A., 2004. The Relationship of Entrepreneurial Traits, Skills and Motivation to Subsequent Venture Growth. *Journal of Applied Psychology*, Vol. 89, No. 4, p 587-598
- Benitez, C. J., 2017. How to Develop an Effective Organizational Structure for your Startup. <https://www.business.com/articles/how-to-develop-an-effective-organizational-structure-for-your-startup/> (19th February 2017)
- Benner A., Jones D. C., 1995. Employee Participation, Ownership, and Productivity: A Theoretical Framework. *Industrial Relations*, Vol. 34, No 4, Regents of the University of California Published by Blackwell Publishers

- Bernheim, D. B., 1994. A Theory of Conformity, *Journal of Political Economy*, October 1994, 102 (5), pp. 841-77
- Bortz J., Döring N., 2006. *Forschungsmethoden und Evaluation für Human- und Sozialwissenschaftler*. Heidelberg, Springer Medizin Verlag, p. 218, p. 276 f., p. 411, p.530, p. 613-614)
- Bortz J., Schuster C., 2010. *Statistik für Human- und Sozialwissenschaftler*. Springer-Verlag Berlin Heidelberg, p. 132 ff, p. 153 ff.
- Bühl A., 2012. *SPSS 20 – Einführung in die modern Datenanalyse*. Pearson, München, 13. aktualisierte Auflage, p. 299, p. 307
- Burton, R. M., Obel, B., 1984: “Designing efficient organizations: Modelling and experimentation.”, Amsterdam: North-Holland
- Business Dictionary, 2016. Definition of Human Capital.
<http://www.businessdictionary.com/definition/human-capital.html> (18th March 2017)
- Business Dictionary, 2017. Definition of „Organizational Design”.
<http://www.businessdictionary.com/definition/organizational-design.html> (1st September 2017)
- Business Dictionary, 2017. Definition of „Organizational Structure”.
<http://www.businessdictionary.com/definition/organizational-structure.html> (1st September 2017)
- Businesstopia, 2017. Definition of Intrinsic and Extrinsic Rewards with Examples.
<https://www.businesstopia.net/human-resource/intrinsic-and-extrinsic-rewards> (27th March 2017)
- Camerer C. F., Knez M., 1996. *Coordination, organizations: A game-theoretic perspective*. in Z. Shapira (Ed.), *Organizational decision making*: 158-188. Cambridge: Cambridge University Press. In Puranam P., Alexy O., Reitzig M., 2014. What’s „new“ about new forms of organizing. *Academy of Management Review*, Vol. 39, No. 2, p. 162-180
- Casper F., Wirtz M., 2002. *Beurteilerübereinstimmung und Beurteilerreliabilität. Methoden zur Bestimmung und Verbesserung der Zuverlässigkeit von Einschätzungen mittels Kategoriensystemen und Ratingskalen*. Hogrefe Verlag GmbH & Co. KG, Göttingen

- Churchill N. C., Lewis V. L., 1983. The Five Stages of Small Business Growth. *Harvard Business Review*
- Christensen C. M., 1997. The Innovator's Dilemma. When New Technologies Cause Great Firms to Fail, *Harvard Business School Press*
- Clavijo-Barroso M., 2015. Wie Start-ups das Arbeiten neu erfinden. In an interview with Die Presse, <http://diepresse.com/home/wirtschaft/economist/4784695/Wie-Startups-das-Arbeiten-neu-erfinden> (1st April 2017)
- Coetzer, Alan, Redmond, Janince, Barrett, Rowena, 2014. Job embeddedness and the importance of retaining small firm employees. In *Proceedings of the 28th Australian and New Zealand Academy of Management Conference (ANZAM 2014): Reshaping Management for Impact*, ANZAM, Sydney, Australia, p.1-20
- Colombo M.G., Grilli L., 2005. Founders' human capital and the growth of new technology-based firms: A competence-based view. *Research Policy*, 34., p. 795-816 in Koch A., Späth J., Strotmann H., 2012. The Role of Employees for Post-Entry Firm Growth. *IAW Discussion Paper*, No. 78 February 2012
- Cooper A.C., Gimeno-Gascon, F.C., Woo, C., 1994. Initial human and financial capital as predictors of new venture performance. *Journal of Business Venturing*, 9, 371-395 in Andreas K., Späth J., Strotmann H., 2012. The Role of Employees for Post-Entry Firm Growth. *IAW Discussion Paper*, No. 78 February 2012
- Cragg P. B., King M., 1993. Small-Firm Computing: Motivators and Inhibitors. *MIS Quarterly*, Vol. 17, No. 1, pp. 47-60,
- Daft, R. L, Leng R. J., 1986: "Organizational Information Requirements, Media Richness and Structural Design", *Management Science*, Vol. 32, No. 5, Organization Design, p. 554-571
- Davidsson, P., 2006. Nascent entrepreneurship: empirical studies and developments. *Foundations and Trends in Entrepreneurship*, 2(1), 1-76
- Deci E. L., Ryan R. M., 2011. Self-Determination Theory. In Van Lange Paul M, Kruglanski Arie W., Higgins E. T. *The Handbook of Theories of Social Psychology: Collection: Volumes 1 & 2*, SAGE Publications Ltd; 1 edition

- Demant C., 2014. *Erfolgreich ein Software-Startup gründen: Tipps und Erfahrungen eines versierten Unternehmers*. Springer Vieweg, Springer Verlag Berlin Heidelberg 2014, p.43
- Der Standard, 2017. Start-ups sind als Innovationstreiber wichtig.
<http://derstandard.at/2000054448596/Start-ups-sind-als-Innovationstreiber-wichtig> (19th July 2017)
- Desai Y., 2017. The top 5 characteristics for working in a startup. UK Startup Jobs,
<http://www.ukstartupjobs.com/career-advice/top-5-characteristics-working-startup/> (27th March 2017)
- Deutsche Startups, 2017. Investitionsphasen.
<https://www.deutsche-startups.de/lexikon/investitionsphasen/> (3rd September 2017)
- Dowling M., Drumm H. J., 2002. *Gründungsmanagement: Vom erfolgreichen Unternehmensstart zu dauerhaftem Wachstum*. Springer Verlag, p. 189
- Elfenbein, D. W., Hamilton, B. H. & Zenger, T. R., 2010. The small firm effect and the entrepreneurial spawning of scientists and engineers. *Management Science, Articles in Advance*, pp.1-23
- Field A., 2009. *Discovering Statistics Using SPSS*. London: SAGE Publications Ltd., p. 379, p. 374 - 375
- FFG (Forschungsförderungsgesellschaft), 2016.
<https://www.trendingtopics.at/start-up-definition-foerderungen/> (11th February 2017),
<https://www.ffg.at/start-foerderung-bedingungen> (11th February 2017)
- Forbes, 2012. Are You Building A Small Business – Or A Startup?
<https://www.forbes.com/sites/theyec/2012/08/15/are-you-building-a-small-business-or-a-startup/#49a9b068a528> (19th March 2017)
- Forbes, 2017. 10 Reasons for Recent Grads to join a Startup.
<https://www.forbes.com/pictures/emjl45fgel/10-reasons-for-recent-grads-to-join-a-startup/#742fc716557c> (27th March 2017)
- Forbes, 2017. The Key Differences Between a Startup and a Small Business.

- <https://www.forbes.com/sites/jaredhecht/2017/12/08/are-you-running-a-startup-or-small-business-whats-the-difference/2/> (21st Mai 2018)
- Freiberger P., Swaine M., 1984. *Fire in the Valley: The Making of the Personal Computer*. Berkeley, Calif: Osborne/McGraw-Hill
- Galbraith J. R., 1974: "Organization Design: An Information Processing View.", *Interfaces*, Vol. 4, No. 3, May 1974
- Galbraith J. R., 2014: *Designing Organizations: Strategy, Structure and Process at the Business Unit and Enterprise Levels.*", Chapter: The Evolution from Start-up, Third Edition, Jossey-Bass
- Gulati R., Lawrence P.R., Puranam P., 2005. Adaption in vertical relationships: Beyond incentive conflict. *Strategic Management Journal*, 26: 415-440 in Puranam P., Alexy O., Reitzig M., 2014. What's „new“ about new forms of organizing? *Academy of Management Review*, Vol. 39, No. 2, p. 162-180
- Hackman J. R. and Oldham G. R., 1976. Motivation through the Design of Work: Test of a Theory. *Organizational Behavior and Human Performance* 16, 250 - 279
- Harter, S., 1978. Effectance motivation reconsidered: Toward a developmental model. *Human Development*, 1, 661-669
- Heath C., Staudenmayer N., 2000. Coordination neglect: How lay theories of organizing complicate coordination in organizations. *Research in Organizational Behavior*, 22: 153-191 in Puranam P., Alexy O., Reitzig M., 2014. What's „new“ about new forms of organizing? *Academy of Management Review*, Vol. 39, No. 2, p. 162-180
- Herzberg, F., Mausner, B., Snyderman, B. B., 1959. *The Motivation to Work*. 2nd edition, New York: John Wiley & Sons
- Hessels J., van Gelderen M., Thurik R., 2008. Drivers of entrepreneurial aspirations at the country level: the role of start-up motivations and social security. *Int. Entrep Manag J*, 4: 401 – 417, Springer Science + Business Media, LLC 2008
- Holmstrom B., Milgrom P., 1991. Multi Task Principal – Agent Analysis. *Journal of Law, Economics, and Organizations*, Special Issue 1991, 7, pp. 24-52

- Idson, T. L., Feaster, D. J., 1990. A selectivity model of employer-size wage differentials. *Journal of Labor Economics*, 8 (1): 99-122
- Idson, T. L., 1990. Establishment size, job-satisfaction and the structure of work. *Applied Economics*, 22 (8): 1007-1018
- Investopedia, 2016. Definition of Human Capital.
<http://www.investopedia.com/terms/h/humancapital.asp> (18th March 2017)
- Investopedia, 2016. Definition of Startups.
<http://www.investopedia.com/terms/s/startup.asp#ixzz4YNcZxvKm> (11th February 2017)
- Kane T., 2010: "The Importance of Startups in Job Creation and Job Destruction.", *Kauffman Foundation Research Series: Firm Formation and Economic Growth*, p.6
- Kieser A., 2006: „Human Relations-Bewegung und Organisationspsychologie.“ In:
Organisationstheorien. Stuttgart 2006, p. 133ff.
- Koch A., Späth J., Strotmann H., 2012. The Role of Employees for Post-Entry Firm Growth. *IAW Discussion Paper*, No. 78 February 2012
- Kreps D. M., 1997. Intrinsic Motivation and Extrinsic Incentives. *The American Economic Review*, Vol. 87, No. 2, Papers and Proceedings of the Hundred and Fourth Annual Meeting of the American Economic Association, p. 359-364
- Kubinger K.D., Rasch D., Moder K., 2009: „Zur Legende der Voraussetzungen des t-Tests für unabhängige Stichproben.“, *Psychologische Rundschau*, Göttingen: Hogrefe, p. 26-27
- Lawrence P. R., Lorsch J. W., 1967. Organization and environment: Managing differentiation and integration. *Boston: Harvard University Press*
- Puranam P., Alexy O., Reitzig M., 2014. What's „new“ about new forms of organizing? *Academy of Management Review*, Vol. 39, No. 2, p. 162-180
- Lehner B. (von Austrian Start-Ups), 2016. Start-ups: Wovon Erfolg und Misserfolg abhängen. In an interview with Der Standard, <http://derstandard.at/2000034446845/Startups-Wovon-Erfolg-und-Misserfolg-abhaengen>, (1st April 2017)
- Lindner J. R., 1998. Understanding Employee Motivation. *The Journal of Extension*, Vol. 36, No. 3, Research in Brief, Extension Journal, Inc.

- March J.G., Simon H. A., 1958: "Organizations." New York: Wiley
- March J. G., Simons, H.A., 1993: Introduction to the second edition. In J. G. March, H. A. Simon (Eds.), *Organizations* (2nd ed.): 1-19 New York: Wiley
- Martin, M. J, 2017. Smallbusiness.chron.com.
<http://smallbusiness.chron.com/organizational-structure-startups-24531.html> (19th February 2017)
- Maslow A. H, 1943. A theory of human motivation. *Psychological review*
- Mintzberg H., 1979: "The structuring of organizations: A synthesis of the research.", Englewood Cliffs, NH: Prentice Hall.
- Mintzberg H., 1980. Structure in 5's: A Synthesis of the Research on Organization Design.
Management Science Vol. 26, No. 3, Printed in U.S.A, p. 322-342
- Mitchell T. R., Holtom B. C., Lee T. W., 2001. How to keep your best employees: Developing an effective retention policy. *Academy of Management Executive*, 2001, Vol. 15, No. 4, p.102
- OECD, 2016. Start-Up, Latin America 2016: Building an Innovative Future, Development Centre Studies. *OECD Publishing*, Paris, p. 32-33
- Oi, W. Y. Idson, T. L., 1999. Firm size and wages. In O. Ashenfelter, & D. Card (Eds.), *Handbook of Labor Economics*, Vol. 3B: 2165-2214. Amsterdam: Elsevier
- Perry A., Wiederhold S., Ackermann-Piek D., 2014. How Can Skill Mismatch be Measured? *methods, data, analyses*, Vol. 8(2), pp. 137-174)
- Puranam P., Alexy O., Reitzig M., 2014. What's „new“ about new forms of organizing? *Academy of Management Review*, Vol. 39, No. 2, p. 162-180
- Rao M. G., Rao V. S. P. M., 1999. *Organization Design Change and Development*. Discovery Publishing House, New Delhi-110 002, p.15
- Reitzig M., 2016. Start-ups: Wovon Erfolg und Misserfolg abhängen. In an interview with Der Standard <http://derstandard.at/2000034446845/Startups-Wovon-Erfolg-und-Misserfolg-abhaengen> (1st April 2017)
- Ries E., 2014. *Lean Startup. Schnell, risikolos und erfolgreich Unternehmen gründen*. 3. aktualisierte und überarbeitete Neuauflage 2014, Redline Verlag, München

- Rost J., 2004. *Lehrbuch Testtheorie-Testkonstruktion*. p. 369, p. 379, zweite, überarbeitete und erweiterte Auflage, Verlag Hans Huber, Bern Göttingen, Toronto, Seattle
- Ryan R. M. Deci Edward L., 2000. Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology* 25, 54-67 by Academic Press
- Ryan R. M., Deci E. L., 2000. Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *the American Psychological Association*, Vol. 55, No. 1, 68-78
- Ryan R. M., Deci E. L., 2000. Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology* 25, 54-67, Academic Press
- Sammer W., 2017. Startup Life is a Rollercoaster: Der Startup Lebenszyklus.
<https://utl1.net/blog/startup-phasen/> (3rd September 2017)
- Santarelli E., Vivarelli M., 2007. Entrepreneurship and the Process of Firm's Entry, Survival and Growth. *Industrial and Corporate Change*, 16, 455-488 in Koch A., Späth J., Strotmann H., 2012. The Role of Employees for Post-Entry Firm Growth. *IAW Discussion Paper*, No. 78 February 2012
- Sauermann H., 2013. Fire in the Belly? Employee Motives and Innovative Performance in Startups versus Established Firms. Georgia Institute of Technology, Scheller College of Business, p.1-40
- Schelling, T. C., 1960: "The strategy of conflict." Cambridge, MA: *Harvard University Press*.
- Scott W. R., Davis G. F., 2007: "*Organizations and Organizing, Rational, Natural, and Open System Perspectives*", Routledge Taylor & Francis Group, London and New York
- Shane S., Locke E. A., Collins C. J., 2012. Entrepreneurial motivation. [Electric Version]. Retrieved 19th July 2017, from Cornell University, ILR School site:
<http://digitalcommons.ilr.cornell.edu/articles/830>
- Simon, H. A., Newell, A., 1970: „Human Problem Solving: The State of the Theory in 1970.“, Carnegie-Mellon University
- Simon, H. A., 1974: „Administrative behavior.“, New York, Macmillan.

- Simon, H. A., 1951: „A formal theory of the employment relationship. *Econometrica*“, 19: 293-305 in
- Puranam P., Alexy O., Reitzig M., 2014. What's „new“ about new forms of organizing?
Academy of Management Review, Vol. 39, No. 2, p. 162-180
- Startup Commons, 2017. Startup Development Phases.
<http://www.startupcommons.org/startup-development-phases.html> (3rd September 2017)
- Statistik Austria, Hochschulstatistik, 2016. Belegte ordentliche Studien an öffentlichen Universitäten
2015/16 nach Studienart und Hauptrichtung
- Strauß E., 2015. *Praxishandbuch Start-Up Management. Von der Idee zum erfolgreichen Unternehmen*. Wiley-VCH Verlag GmbH & Co. KGaA, p. 11ff
- The Pedestal Group, 2017. Established Company vs. Startup.
<http://www.thepedestalgroup.com/establishedco-vs-startup/> (19th March 2017)
- Tremblay M. A., Blanchard C. M., Taylor S., Pelletier L. G., Villeneuve M., 2009. Work Extrinsic and
Intrinsic Motivatoion Scale: Its Value for Organizational Psychology Research. *Canadian
Journal of Behavioural Science*, Vol. 41, No. 4, 213-226
- Unternehmensfinanzierung, 2017. Die Expansionsphase (Later-Stage – Second Stage, Third Stage).
<http://www.unternehmensfinanzierung.at/basiswissen/finanzierungsphasen/die-expansionsphase/> (3rd September 2017)
- Unternehmensfinanzierung, 2017. Die Gründungsphase (Early-Stage).
<http://www.unternehmensfinanzierung.at/basiswissen/finanzierungsphasen/die-gruendungsphase/> (3rd September 2017)
- Van Lange P. M, Kruglanski A. W., Higgins E. Tory. *The Handbook of Theories of Social Psychology: Collection: Volumes 1 & 2*. SAGE Publications Ltd; 1 edition
- Vallerand R. J., 1997. Toward a hierarchical model of intrinsic and extrinsic motivation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 271-360). San Diego, CA: Academic, in Tremblay Maxime A., Blanchard Céline M., Taylor Sara, Pelletier Luc G., Villeneuve Martin, 2009. Work Extrinsic and Intrinsic Motivation Scale: „Its Value for Organizational Psychology Research. *Canadian Journal of Behavioural Science*, Vol. 41, No. 4, 213-226

- Van de Ven A. H., Hudson R., Schroeder D. M., 1984. Designing New Business Startups: Entrepreneurial, Organizational and Ecological Considerations. SAGE Social Science Collections, *Journal Management*, Vol. 10, No. 1, 87-107
- Vascellaro, J., Morrison, S. 2008. Google gears down for tougher times. *Wall Street Journal*, A1
- Von Hippel, E., 1988: „Task Partitioning: An Innovation Process Variable.“, Massachusetts Institute of Technology, 50 Memorial Drive Cambridge, Massachusetts 02139
- Weik, K., E., 1979: „The Social Psychology of Organizing“, Addison-Wesley, Reading, Mass.
- Williamson, O. E., 1975: „Markets and hierarchies: Analysis and antitrust implications.“, New York: Free Press
- Wilson F., in Openview, 25th June 2017, [http://labs.openviewpartners.com/startup-headcount-how-many-employees-to-hire-when/#.WUT_TBj5zdQ%20\)%20%20https://en.wikipedia.org/wiki/Fred_Wilson_\(financier\)](http://labs.openviewpartners.com/startup-headcount-how-many-employees-to-hire-when/#.WUT_TBj5zdQ%20)%20%20https://en.wikipedia.org/wiki/Fred_Wilson_(financier)) (3rd September 2017)
- WKO 2014, Bundesministerium für Wissenschaft, Forschung und Wirtschaft (BMFWF), Broschüre „Land der Gründer“, p.22
- Woods C., 2008. *Brilliant Start-Up. How to set up and run a brilliant business*. Pearson Education Limited, Great Britain

9 Figures

<i>Figure 1. Flow-Chart, prerequisite for the description of valid participants.....</i>	<i>37</i>
<i>Figure 2. Age distribution at the time of the survey regarding gender</i>	<i>38</i>
<i>Figure 3. Start-up age since foundation in dependency of the organizational stage.....</i>	<i>43</i>
<i>Figure 4. Distribution and position (median 9.33) of self-determination (W-SDI).....</i>	<i>47</i>
<i>Figure 5. Bivariate scatterplot of the coherence between WNSDM extrinsic and WSDM intrinsic with regression curve (n=29).....</i>	<i>48</i>
<i>Figure 6. Frequencies and percentage, say in tasks executed (n = 29)</i>	<i>50</i>
<i>Figure 7. Frequencies and percentage, educational background in current tasks executed (n = 29).....</i>	<i>50</i>
<i>Figure 8. Frequencies and percentage, prior experience (n = 29).....</i>	<i>51</i>

10 Tables

<i>Table 1. Summary of the division of stages of a start-up (early, expansion, later stage) due to self-awareness of TATDIP, RPI and RPE (n=29).....</i>	<i>41</i>
<i>Table 2. Extend 0-1 expressing the stage affiliation (early, expansion, later) for each start-up</i>	<i>42</i>
<i>Table 3. Frequencies and percentages (row %) of number of employees in dependency of the organizational stage</i>	<i>43</i>
<i>Table 4. Frequencies and percentages (cell %) for CV and TATDIP stage-affiliation</i>	<i>44</i>
<i>Table 5. Frequencies and percentages (cell %) for CV und RPI stage-affiliation.....</i>	<i>44</i>
<i>Table 6. Frequencies and percentages (cell %) for CV and RPE stage-affiliation</i>	<i>45</i>
<i>Table 7. Parameter of RPE-, RPI-, TA-, TD-, IP – scales due to stages (based on hard facts).....</i>	<i>45</i>
<i>Table 8. Frequencies and percentages of executed tasks (multiple-choice possible), n = 29</i>	<i>49</i>
<i>Table 9. Count and percentage (cell %) for educational background & prior experience in tasks executed</i>	<i>51</i>
<i>Table 10. Frequencies and percentages (cell %) for „further training needed“ in dependence of „skills for more demanding duties“</i>	<i>51</i>

Table 11. <i>Frequencies and percentages (column %) of educational background and prior experience in tasks executed depending on PIAAC further training needed</i>	52
Table 12. <i>Frequencies and percentages (column %) of the PIAAC category in dependence of the CV stage (n=27)</i>	53
Table 13. <i>Frequencies and percentages (row %) for CV stage and right to a say in tasks executed</i>	54

11 APPENDIX

11.1 Abstract English

The research conducted for the master thesis highlights tremendous importance of start-ups, not only in terms of their major contribution to the job market (Kane, 2010, p.6) but also in terms of innovation creation (DerStandard, 2015). Employees as an essential part of a business' success (Business Dictionary, 2016: Definition of Human Capital) are given particular consideration in the conducted research. The literature review for this thesis suggests a lot of room for further investigations as empirical research so far is mainly focused on entrepreneurial motives compared to those of large firms (e.g. Amit et al 2000, p. 119 ff, Shane et al., 2012, Elfenbein et al., 2010, p. 1 ff, Astebro/Thompson, 2010, Sauermann, 2013, p.1 ff), or on analysing entrepreneur's traits, skills and motivation (Baum/Locke, 2004, p.587 ff). The thesis at hand draws closer attention to start-ups. It highlights non-founding employees and their skill-task match (self-reported skill mismatch in PIAAC ((Perry/Wiederhold/Ackermann-Piek, 2014, p.148)) as well as their drivers of motivation (Work Extrinsic and Intrinsic Motivation Scale, WEIMS (Tremblay/Blanchard/Taylor/Pelletier/Villeneuve, 2009) and puts these issues in context to the organizational design of start-ups. Organizational design within this thesis will be defined in terms of a new approach by highlighting and analyzing task allocation, task division, (intrinsic and extrinsic) reward provision and the information provision (soft facts). Additionally, control variables based on hard facts (Control Variables stages, CV stages) were developed in order to examine if there is any accordance in terms of the assumed stage (early, expansion or later stage) of the start-up due to its task allocation, task division, (intrinsic and extrinsic) reward provision and the information provision (soft facts). For further investigation an online survey

was conducted, resulting in 29 valid responses ($n = 29$). Results showed that within the scope of the developed frame of the study at hand, no connection between the staging of a start-up (CV stages) nor the stated age of the start-up and its task allocation, task division, (intrinsic and extrinsic) reward provision or information provision is prevailing. When screening the single soft facts (task allocation, task division, intrinsic and extrinsic reward provision and information provision) in comparison with the hard facts (CV stages), the highest connection was identified when looking at extrinsic reward provision (RPE). Moreover, it was found that the stated age of the start-up does not necessarily give information about the stage (early, expansion, later) of the business. Therefore, various approaches for testing the hypotheses were used since no homogeneous procedure for defining the stage (maturity) of start-ups was determined. No connection between maturity of a start-up and the self-determined regulation, respectively the intrinsic motivation of non-founding employees was found. Only when considering the maturity of a start-up due to the CV stages (hard facts), connection between the maturity of a start-up and the extrinsic motivation of non-founding employees was identified. No connection was found between skill-match, specialization or self-selection of tasks and the maturity of a start-up. Results may be limited by the small sample size ($n = 29$) on the one hand; on the other hand there may be other approaches for measuring and defining the stages of a start-up. Therefore, it is advised to perform further studies, especially when it comes to identifying the stage of a start-up with a larger sample size in order to test the observed trends and results of this thesis.

Keywords: start-up(s), non-founding employee(s), work extrinsic and intrinsic motivation scale, WEIMS, motivation, (non) self-determined regulation, skill-task match, organizational design, division of labour, integration of effort, task allocation, task division, (intrinsic and extrinsic) reward provision, information provision, staging, stages of a start-up

11.2 Abstract German

Die im Rahmen dieser Masterarbeit durchgeführte Studie zeigt die enorme Bedeutung von Start-Ups auf – nicht nur hinsichtlich ihres Beitrags zum Arbeitsmarkt (Kane, 2010, p.6) sondern auch in Bezug auf ihren Beitrag als Innovationsbooster (DerStandard, 2015). Als maßgeblicher Bestandteil bezüglich des Firmenerfolgs wird auch auf die Mitarbeiterinnen und Mitarbeiter (Business Dictionary, 2016: Definition of Human Capital) ein besonderes Hauptaugenmerk innerhalb dieser Studie gelegt. Die

Literaturrecherche, welche im Rahmen dieser Arbeit durchgeführt wurde zeigt viele Möglichkeiten für weitere Untersuchungen, da sich die aktuell vorliegende, empirische Forschung hauptsächlich auf Motive von Unternehmern in großen Firmen fokussiert (z.B. Amit et al 2000, p. 119 ff, Shane et al., 2012, Elfenbein et al., 2010, p. 1 ff, Astebro/Thompson, 2010, Sauermann, 2013, p.1 ff), oder auf die Analyse der Eigenschaften, Fähigkeiten bzw. Motivationen der Unternehmer (Baum/Locke, 2004, p.587 ff). Die vorliegende Arbeit betrachtet Start-Ups näher im Detail. Mitarbeiter und Mitarbeiterinnen, die nicht im Gründungsprozess involviert waren sowie deren Skill-Task Match (in wie fern die Qualifikation jeweils mit den Aufgabenstellungen einher geht) (self-reported skill mismatch in PIAAC ((Perry/Wiederhold/Ackermann-Piek, 2014, p.148)) und deren Motivatoren (Work Extrinsic and Intrinsic Motivation Scale, WEIMS (Tremblay/Blanchard/Taylor/Pelletier/Villeneuve, 2009) werden genauer untersucht. Diese beiden Faktoren werden in Kontext zum Organisationsdesign des Start-Ups gesetzt. Das Organisationsdesign in dieser Arbeit wird über einen neuen Ansatz definiert, nämlich durch die Aufgabenzuordnung, Aufgabenteilung, (intrinsische und extrinsische) Entlohnung sowie die Informationsbereitstellung (soft facts). Zusätzlich werden Kontrollvariablen, basierend auf “hard facts” (Kontrollvariablen, CV Stufen), entwickelt um etwaige Zusammenhänge bezüglich der angenommenen Phase (Früh-, Wachstums-, oder Spätphase) des Start-Ups hinsichtlich Aufgabenzuordnung, Aufgabenteilung, (intrinsische und extrinsische) Entlohnung sowie Informationsbereitstellung (soft facts) zu erkennen. Zur Untersuchung wurde eine Online-Umfrage durchgeführt welche 29 valide Antworten (n=29) ergab. Ergebnisse zeigten, dass innerhalb des entwickelten Rahmen der vorliegenden Studie, weder zwischen der Phasenzuordnung eines Start-Ups (CV stages) noch zwischen des genannten Betriebsalter des Start-Ups und dessen Aufgabenzuordnung, Aufgabenteilung, (intrinsische und extrinsische) Entlohnung sowie Informationsbereitstellung zu erkennen war. Bei der Überprüfung der einzelnen Softfacts (Aufgabenzuordnung, Aufgabenteilung, (intrinsische und extrinsische) Entlohnung, Informationsbereitstellung) im Vergleich zu den Hardfacts (CV Stufen) wurde der höchste Zusammenhang mit extrinsischer Entlohnung (RPE) identifiziert. Außerdem kam die Studie zu dem Ergebnis, dass das genannte Betriebsalter des Start-Ups nicht unbedingt Rückschlüsse auf die Phase (Früh-, Wachstums-, Spätphase) zulässt. Da kein homogener Prozess für die Definition der

Phase (Reife) des Start-Ups bestimmt werden konnte wurden verschiedene Ansätze zum Testen der Hypothesen herangezogen. Es wurde kein Zusammenhang zwischen der Reife eines Start-Ups und der Selbstbestimmung bzw. intrinsischen Motivation des nicht im Gründungsprozess involvierten Mitarbeiters bzw. der Mitarbeiterin identifiziert. Lediglich wenn die Reife des Start-Ups durch die CV Stufen (Hardfacts) betrachtet wurde, konnte eine Verbindung zur Reife des Start-Ups und der extrinsischen Motivation gefunden werden. Des Weiteren wurde keine Verbindung zwischen dem Skill-Match, Spezialisierung oder Selbstauswahl der Aufgaben und dem Reifegrad des Start-Ups identifiziert. Mögliche Limitationen der Studie sind zum einen die geringe Stichprobengröße (n=29). Zum anderen können andere Ansätze zur Messung und Definition der Phase eines Start-Ups möglich sein. Daher sollten weitere Studien die sich ebenfalls mit der Identifizierung der Stufen der Start-Ups beschäftigen und größere Stichprobengrößen für Analysen heranziehen um die hier identifizierten Trends und Ergebnisse weiter zu erforschen.

Keywords: Start-Up(s), Mitarbeiterinnen und Mitarbeiter nicht im Gründungsprozess involviert, intrinsische und extrinsische Motivation, WEIMS, (non) self-determined regulation, skill-task match, Organisationsdesign, Aufgabenzuordnung, Aufgabenteilung, (intrinsische und extrinsische) Entlohnung, Informationsbereitstellung, Phasen, Phasenzuordnung eines Start-Ups

11.3 Appendix A – WEIMS

WEIMS ITEMS
Because this is the type of work I chose to do to attain a certain lifestyle. IDEN
For the income it provides me. EXT
I ask myself this question. I don't seem to be able to manage the important tasks related to this work. AMO
Because I derive much pleasure from learning new things. IM
Because it has become a fundamental part of who I am. INTEG
Because I want to succeed at this job, if not I would be very ashamed of myself. INTRO
Because I chose this type of work to attain my career goals. IDEN
For the satisfaction I experience from taking on interesting challenges. IM
Because it allows me to earn money. EXT
Because it is part of the way in which I have chosen to live my life. INTEG
Because I want to be very good at this work, otherwise I would be very disappointed. INTRO
I don't know why, we are provided with unrealistic working conditions. AMO
Because I want to be a "winner" in life. INTRO
Because it is the type of work I have chosen to attain certain important objectives. IDEN
For the satisfaction I experience when I am successful at doing difficult tasks. IM
Because this type of work provides me with security. EXT
I don't know, too much is expected of us. AMO
Because this job is a part of my life. INTEG

On a scale from 1 (does not correspond at all) to 5 (corresponds exactly) respondents were asked to indicate to what extent each of the statements of the items above corresponds to the reason why they are presently involved in their work. (Tremblay/Blanchard/Taylor/Pelletier/Villeneuve, 2009)

11.4 Appendix B – Skill-Task Match

PIAAC
1.) Do you feel that you need further training in order to cope well with your present duties?
2.) Do you feel that you have the skills to cope with more demanding duties than those you are required to perform in your current job?

Respondents were asked to answer each question either with “yes” or “no”

(Perry/Wiederhold/Ackermann-Piek, 2014)

Additional questions
What are the current tasks that you are executing? Project Management/Accounting/Finance/Purchasing/Sales/Legal Issues/Inventory/Administrative Issues/Front Office/Research & Development/Back Office/Human Resources/Marketing/Technical Support/Communication/Customer Service/Other: _____
I have the right to a say which tasks I want to execute. yes/no
Do you think that your educational background supports you in the current tasks that you are executing? yes/no
Do you have prior experience in the current tasks that you are executing? yes/no
What is the highest degree or level of school you have completed? no schooling completed/high school graduate/Bachelor’s Degree/Master’s Degree/Doctorate’s Degree, Other: _____
In which studies did you focus? Theology/Law/Economics/Medical Studies/Humanities/Natural Sciences/Engineering/Musical Studies/Agriculture and Forestry/Other: _____

Self-developed questions by the author of this thesis. The answers for the question about the studies are the most popular studies from Statistik Austria, 2016.

11.5 Appendix C – Reward Provision

Intrinsic Rewards	Extrinsic Rewards
Non-monetary forms of recognition to acknowledge achievement of quality improvement goals such as plaques, certificates, letters, complimentary tickets, merchandise, etc.	Profit sharing wherein the organization shares some portion of profits with employees.
Celebrations to acknowledge achievement of quality improvement goals such as lunches, dinners, special events, etc.	Gainsharing wherein portions of individual work unit gains in productivity, quality, cost effectiveness or other performance improvements are shared with employees in the form of bonuses based on a predetermined formula.
Regular expressions of appreciation by managers/leaders to employees to acknowledge achievement of quality improvement goals such as praise or "pats on the back".	Employment security such as having a corporate policy or union contract designed to prevent layoffs.
360 degree performance appraisals wherein feedback from co-workers (other than just the immediate supervisor) and/or customers is incorporated into performance appraisals.	Comp time wherein workers are given the option to be compensated for overtime hours worked in the form of additional time off rather than additional pay.
Having a suggestion system available for individuals to make quality improvement suggestions, such as a suggestion box.	Individual based performance system wherein performance appraisals and pay increases are based primarily on individual achievements.
Use of a developmental based performance appraisals wherein performance appraisals are used primarily for developing employees to perform better in the future rather than for evaluating their past accomplishments and	Quantity based performance appraisals wherein performance appraisals are based primarily on achieving quantity related goals.

failures.	
Quality based promotions wherein promotions are based primarily on the achievement of quality-based goals as opposed to quantity based goals.	

Respondents were asked to estimate how many per cent of the employees in their organization are covered by each type of reward stated in the table above, ranging from 1 (none, 0%), 2 (almost none, 1-20%), some (21-40%), 3 (some, 21-40%), 4 (about half, 41-60%), 5 (most, 61-80%), 6 (almost all, 81-99%), 7 (all, 100%) (Allen/Kilman, 1999)

11.6 Appendix D – Task Allocation and Task Division

TASK ALLOCATION AND TASK DIVISION
My tasks are broadly defined and "I do a bit of everything". TD
I only have little specialization in my executed tasks. TD
I have a high responsibility in my job. TA
Passion and the drive for work are valued high in our company. TA
I learn a lot of new things while working here. TD
Our working hours are very flexible. TA

Self-developed questions due to the job-characteristics of a start-up.

11.7 Appendix E – Information Provision

INFORMATION PROVISION
The level of communication is high. IP
The hierarchy is rather flat. IP
Personal relationships are valued high. IP
Creativity and new ideas are very important to our company. IP
We are very flexible and favourable to change. IP

Self-developed questions due to the job-characteristics of a start-up.

11.8 Appendix F – Control Variables

EARLY STAGE (PHASE 1)
You have an idea about the product or service you want to offer and are currently working on your prototype.
You are currently developing your business plan and the organizational structure.
Your product or prototype is almost finished and you are currently working on its market introduction.
You are currently deciding on where and how to produce your product / service
Customer acquisition has just started.
You do not make any revenues yet.
EXPANSION STAGE (PHASE 2)
You are currently implementing a distribution system.
Your revenue is increasing but you are not making any profits yet.
You already face your first competition.
LATER STAGE (PHASE 3)
You are currently looking for further capital for restructuring, remediation or product diversification.
You are currently looking for experienced executives.
You are currently looking for further employees.
Your revenue is increasing and you start to make profit as well.

Self-developed yes/no questions (Unternehmensfinanzierung.at, 2017/Deutsche Startups, 2017).

FURTHER QUESTIONS
How many employees does the company you are currently working in have? 1-5/6-25/>25
For how many years does the company you are currently working in operate? (open question)
OPTIONAL QUESTIONS (open-ended)
What is your business' current revenue?
What is your business' current profit?

Self-developed questions.

11.9 Appendix G – Statistical Questions

Age – Please type in your age in years.

Gender – Female/male

In which country are you currently working? Austria/Germany/Switzerland/Other: _____

11.10 Appendix H – Complete Questionnaire

Research on Start-Ups

Page 1

Dear Start-Upper,

Many thanks for taking your time to answer this survey. It may not take you longer than 10 minutes.

As a part of my master thesis at the University of Vienna I am currently running a survey on the topic how organizational design choices of a start-up may interfere with (non) self-determined regulation and skills of non-founding employees when also considering the growing process of a start-up. With your participation you may contribute not only to my thesis but also to interesting findings in this area.

Of course, all information gained through this survey is treated strictly confidentially and very discretely.

Ready? Set! GO!

Page 2

Would you consider your business as a start-up? *

- ☐ yes
☐ no

Page 3

Were you involved in the founding process of the start-up? *

- ☐ yes
☐ no

Page 4

Using the scale below, please indicate to what extent each of the following items corresponds to the reason why you are presently involved in your work. *

	Doesn't correspond at all					Corresponds exactly
Because this is the type of work I chose to do to attain a certain lifestyle.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
For the						

income it provides me. I ask myself this question. I don't seem to be able to manage the important tasks related to this work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I derive much pleasure from learning new things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it has become a fundamental part of who I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I want to succeed at this job, if not I would be very ashamed of myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I chose this type of work to attain my career goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the satisfaction I experience from taking on interesting challenges.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it allows me to earn money.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it is part of the way in which I have chosen to live my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because I want to be very good at this work, otherwise I would be very disappointed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't know why, we are provided with unrealistic working conditions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Because I want to be a "winner" in life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because it is the type of work I have chosen to attain certain important objectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the satisfaction I experience when I am successful at doing difficult tasks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because this type of work provides me with security.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't know, too much is expected of us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because this job is a part of my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 5

Do you feel that you need further training in order to cope well with your present duties? *

- ☐ yes
- ☐ no

Do you feel that you have the skills to cope with more demanding duties than those you are required to perform in your current job? *

- ☐ yes
- ☐ no

Page 6

What are the current tasks that you are executing? *

Multiple answers to this question are possible.

- ☐ Project Management
- ☐ Accounting
- ☐ Finance
- ☐ Purchasing
- ☐ Sales
- ☐ Legal Issues
- ☐ Inventory
- ☐ Administrative Issues
- ☐ Front Office
- ☐ Back Office
- ☐ Research & Development
- ☐ Human Ressources
- ☐ Marketing
- ☐ Communication
- ☐ Technical Support
- ☐ Customer Service
- ☐ Other

I have the right to a say which tasks I want to execute. *

- ☐ yes
- ☐ no
- ☐ partially

Do you think that your educational background supports you in the current tasks that you are executing? *

- ☐ yes
- ☐ no

Do you have prior experience in the current tasks that you are executing? *

- ☐ yes
- ☐ no

What is the highest degree or level of school you have completed? * 

- ☐ No schooling completed
- ☐ High School Graduate
- ☐ Bachelor's Degree
- ☐ Master's Degree
- ☐ Doctorate's Degree
- ☐ Other:

In which studies did you focus? *

If you studied more than one subject please mark the one that you put the most focus on.

☐ I did not study at an university/college.

☐ Theology

☐ Law

☐ Economics

☐ Medical Study

☐ Humanities

☐ Natural Sciences

☐ Engineering

☐ Musical Studies

☐ Agriculture and Forestry

☐ Other studies:

Page 7

Indicate to which extent each of the following items corresponds to the organization you are currently working in. *

	Doesn't correspond at all					Corresponds exactly
My tasks are broadly defined and "I do a bit of everything".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The level of communication is high.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I only have little specialization in my executed tasks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The hierarchy is rather flat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal relationships are valued high.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a high responsibility in my job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Passion and the drive for work are valued high in our company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creativity and new ideas are very important to our company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We are very flexible and favourable to change.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I learn a lot of new things while working here.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our working hours are very flexible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page 8

Estimate how many percent of the employees in your organization are covered by each type of reward stated in the table below. *

It is not assumed that you know the exact percentage for sure, so please just try to estimate the interval.

	none 0%	almost none 1-20%	some 21-40%	about half 41-60%	most 61-80%	almost all 81-99%	all 100%
Non-monetary forms of recognition to acknowledge achievement of quality improvement goals such as plaques, certificates, letters, complimentary tickets, merchandise, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Celebrations to acknowledge achievement of quality improvement goals such as lunches, dinners, special events, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regular expressions of appreciation by managers/leaders to employees to acknowledge achievement of quality improvement goals such as praise or "pats on the back".	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
360 degree performance appraisals wherein feedback from co-workers (other than just the immediate supervisor) and/or customers is incorporated into performance appraisals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having a suggestion system available for individuals to make quality improvement suggestions, such as a suggestion box.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Use of a developmental based performance appraisals wherein performance appraisals are used primarily for developing employees to perform better in the future rather than for evaluating their past accomplishments and failures. Quality based promotions wherein promotions are based primarily on the achievement of quality-based goals as opposed to quantity based goals.

☐ ☐ ☐ ☐ ☐ ☐ ☐
☐ ☐ ☐ ☐ ☐ ☐ ☐

Page 9

Estimate how many percent of the employees in your organization are covered by each type of reward stated in the table below. *

It is not assumed that you know the exact percentage for sure, so please just try to estimate the interval.

	none 0%	almost none 1-20%	some 21-40%	about half 41-60%	most 61-80%	almost all 81-99%	all 100%
Profit sharing wherein the organization shares some portion of profits with employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gainsharing wherein portions of individual work unit gains in productivity, quality, cost effectiveness or other performance improvements are shared with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

employees in the form of bonuses based on a predetermined formula.

Employment security such as having a corporate policy or union contract designed to prevent layoffs.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Comp time wherein workers are given the option to be compensated for overtime hours worked in the form of additional time off rather than additional pay.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Individual based performance system wherein performance appraisals and pay increases are based primarily on individual achievements.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Quantity based performance appraisals wherein performance appraisals are based primarily on achieving quantity related goals.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Page 10

The following statements serve to identify the stage your start-up is currently set in.
Please answer them according to your current working place simply to the best of your knowledge.

You have an idea about the product or service you want to offer and/or are currently working on your prototype. *

- ☐ yes
- ☐ no
- ☐ i don't know

You are currently developing your business plan and the organizational structure. *

- ☐ yes
- ☐ no
- ☐ i don't know

Your product or prototype is almost finished and/or you are currently working on its market introduction. *

- ☐ yes
- ☐ no
- ☐ i don't know

You are currently deciding on where and how to produce your product/service. *

- ☐ yes
- ☐ no
- ☐ i don't know

Customer acquisition has just started. *

- ☐ yes
- ☐ no
- ☐ i don't know

Do you already make any revenues? *

- ☐ yes
- ☐ no
- ☐ i don't know

You are currently implementing a distribution system. *

- ☐ yes
- ☐ no
- ☐ i don't know

Your revenue is increasing but you are not making any profits yet. *

- ☐ yes
- ☐ no
- ☐ i don't know

Do you already face competitors in your business field? *

- ☐ yes
- ☐ no
- ☐ i don't know

You are currently looking for further capital for restructuring, remediation or product diversification. *

- ☐ yes
- ☐ no
- ☐ i don't know

You are currently looking for experienced executives. *

- ☐ yes
- ☐ no
- ☐ i don't know

You are currently looking for further employees. *

- ☐ yes
- ☐ no
- ☐ i don't know

Your sales are increasing and you start to make profits as well. *

- ☐ yes
- ☐ no
- ☐ i don't know

Page 11

How many employees does the company you are currently working in have? *

- ☐ 1-5 employees
- ☐ 6-25 employees
- ☐ > 25 employees

For how many years does the organization you are currently working in already operate/exist? *

Please type in the number in years.

What are your business' current sales?

Answering this question is optional.

What is your business' current profit?

Answering this question is optional.

Page 12

CONGRATS!

You are almost done. The following questions are very short and serve for statistical purpose only.

Age *

Please type in your age in years.

Gender *

☐ Female

☐ Male

In which country are you currently working? *

☐ Austria

☐ Germany

☐ Switzerland

☐ Other:

» **Umleitung auf Schlussseite von Umfrage Online**

11.11 Appendix I – List of Start-Ups Contacted

http://forbes.co.at/startup/ (30th June 2017)		
Appers	https://appers.co	hello@appers.co
Blossom	https://www.blossom.co	hello@blossom.co
Cashpresso	https://www.cashpresso.com	support@cashpresso.com
ChillBill	https://www.chillbill.co	office@chillbill.co
Firstbird	https://www.firstbird.com	hello@firstbird.com
FlyingTent		https://www.facebook.com/flyingtent7seconds/
FoodNotify	https://www.foodnotify.com	office(@)foodnotify.com
Girls n Code	http://girlsncode.com	girlsncode@gmail.com
Goalify	https://goalifyapp.com	office@onebytezero.com
GoFoxBox	http://www.gofoxbbox.com	hallo@gofoxbbox.com
Grape	https://www.chatgrape.com/de/	sales@chatgrape.com
Greetzly	https://www.greetzly.com	info@greetzly.com
HAS.TO.BE	https://beenergised.com/ueberuns	support@beenergised.com
Helioz	https://www.helioz.org	office@HELIOZ.org
JobRocker	https://www.jobrocker.com	contact via homepage
LED Air Motion	http://www.ledairwall.com/referenzen.html	office@ledairwall.com
Livin Farms	https://www.livin farms.com	contact via homepage
Luke Roberts	https://luke-roberts.com	contact via homepage
Meine perfekte WG	https://www.meineperfektewg.com	hello@MeinePerfekteWG.com
myClubs	https://www.myclubs.com/at/de?country=AT	hello@myclubs.com
MyEsel	https://www.my-esel.com	office@my-esel.com
MyMovieGuru	http://www.mymovie.guru	office@mymovie.guru
Orat.at	https://orat.io	https://www.facebook.com/teamoratio/
Playbrush	http://www.playbrush.com/de/	support@playbrush.com
Recordbird	https://www.recordbird.com	https://www.facebook.com/RecordBird
Sportvideos365	http://www.sportvideo365.tv	https://www.facebook.com/sportvideos365/
StoreMe	https://www.store.me	contact via homepage
Swell	https://www.swell.wtf	info@swell.wtf
TEC-Innovation	http://de.tec-innovation.com	contact via homepage
Timeular	-	https://www.facebook.com/timeular/
Viratechnologies	https://www.viracube.com	office@viracube.com
xeet	https://xeet.me/de	hello@xeet.me
YOUNITED CULTURES	https://younitedcultures.eu/de/	andra@younitedcultures.eu
Zizoo	https://www.zizoo.com/de/	customers@zizoo.com

http://www.inits.at/startups/ (1st July 2017)		
23 °	http://www.23degree.org	info@wefeeltheworld.org
Afforest4future	http://afforest4future.com/	vesela.tanaskovic@afforest4future.com
AUTONOM TALENT	http://www.autonomtalent.com/	office@autonomtalent.com
bgood	http://www.bgood.io	office@bgood.at
Crystasol	http://www.crystalsol.com	info@crystalsol.com
Cyberith	http://www.cyberith.com	t.cakmak@cyberith.com

Data Science Service	http://www.dataservice.at	office@ds-s.at
Dutalys	http://www.dutalys.com	office@dutalys.com
Dynamic Perspective	http://dynamicperspective.com/home/	office@dynamicperspective.com
ECODESIGN company	http://www.ecodesign-company.com	contact@ecodesign-company.com
ECOP	http://www.ecop.at	office@ecop.at
EMCOOLS	http://www.emcools.com/	s.schneider@emcools.com
Exomys	http://www.exomys.com/	office@exomys.com
F-star	http://www.f-star.com	office@f-star.com
Fluidtime	http://www.fluidtime.com	office@fluidtime.com
Forceboard	http://www.forceboard.at	marc.payer@aon.at
Happy Plating	http://www.happyplating.eu	office@happyplating.at
Happymed	http://www.happymed.org	pa@happymed.org
Heliovis	http://www.heliovis.com/	office@heliovis.com
ILLUMINETSYS	http://www.illuminetsys.com	info@illuminetsys.com
Image Biopsy Lab	http://www.imagebiopsy.com/	mail@imagebiopsy.com
indoo.rs	http://www.indoo.rs	contact@indoo.rs
KiwiSecurity	http://www.kiwisecurity.com/	office@kiwisecurity.com
Lithoz	http://www.lithoz.com	office@lithoz.com
Marinomed	http://www.marinomed.com	office@marinomed.com
myclubs	http://www.myclubs.com	team@myclubs.at
Medicus	http://medicus.ai/	baher@medicus.ai
Miracor Medical Systems	http://www.miracormedical.com/	office@miracormedical.com
MVT Biotechnology	http://www.mvtbio.com	info@mvtbio.com
mySugr	http://www.mysugr.com	support@mysugr.com
Nativy	http://www.nativy.com/	office@nativy.com
ORIGIMM	http://www.origimm.com/	office@origimm.com
PIDSO	http://www.pidso.com/	office@pidso.com
Plasmics	http://www.plasmics.com/	konrad@plasmics.com
predicR	http://predictr.eu	info@predictr.eu
proactivaudio	http://www.proactivaudio.pro	luis.weruaga@proactivaudio.pro
Profem	-	marion.noel@chello.at
Quantared Technologies	http://www.quantared.com	office@quantared.com
Qidenus Technologies	http://www.qidenus.com	digitse@qidenus.com
Radiant Minds	http://www.radiantminds.com/	contact@radiantminds.com
RD&C	http://www.rdc-impurity.com	office@rdc-impurity.com
ROBO TECHNOLOGIES GMBH	http://www.startrobo.com	anna@startrobo.com
S-TARget therapeutics GmbH	http://www.s-target.com	geert.mudde@s-target.com
Shpock	http://www.shpock.com/	info@shpock.com
Smart Information Systems	http://smartassistant.com/	office@smartassistant.com
Sofasession	http://www.sofasession.com	contact@sofasession.com
SOLABOTIC	http://www.solabolic.com	ahmed.adel@solabolic.com
SOREX Wireless Solutions	http://www.sorex.eu/	office@sorex.eu
Stealthball	http://www.stealthgam.es	office@stealthgam.es
Themis Bioscience	http://www.themisbio.com/	office@themisbio.com
Treventus	http://www.treventus.com	sales@treventus.com

Tubolito	http://www.tubolito.com	office@tubolito.com
UBIMET	http://www.ubimet.com	austria@ubimet.com
zoomsquare	http://www.zoomsquare.com	info@zoomsquare.com

http://www.eu-startups.com/2017/01/7-austrian-startups-to-look-out-for-in-2017/ (1st July 2017)		
Byrd	https://getbyrd.com	contact@getbyrd.com
Intellyo	https://intellyo.com	concat via homepage
MineBox	https://minebox.io	https://www.facebook.com/mineboxio/
PowUnity	https://powunity.com	info@powunity.com
pwnwin	https://www.pwnwin.com	info@pwnwin.com
TaskWunder	https://taskwunder.com	kontakt@taskwunder.com
Ticksa	https://www.ticksa.com	michah.himmelman@ticksa.com

https://investinaustria.at/de/startups/österreichische-erfolge.php (1st July 2017)		
AFFiRis	http://www.affiris.com	office@affiris.com
Bwin	https://www.bwin.com/de	contact via homepage
Kiwen	https://kiwen.com/at/	office@kiwen.com
Lithoz	http://www.lithoz.com	office@lithoz.com
Paysafecard	https://www.paysafecard.com/de-at/	info@paysafecard.com
Robo	http://robowunderkind.com	info@robowunderkind.com
Runtastic	https://www.runtastic.com/de/	office@runtastic.com
Scarletred	https://scarletredvision.com	office@scarletred.com

investinaustria.at (29th October 2017)		
kiwen	https://kiwen.com/de	office@kiwen.com
shpock	https://www.shpock.com	support@shpock.com

futurezone.at (29th October 2017)		
codeship		contact@codeship.com
linemetrics	https://www.linemetrics.com/de/	office@linemetrics.com
usersnap	https://usersnap.com	help@usersnap.com

innovatives-oesterreich.at (29th October 2017)		
rublys	https://www.rublys.com	office@rublys.com

http://www.ig-lebenszyklus.at/digital-building-solutions/ (4th November 2017)		
Allthings	http://www.allthings.me	info@allthings.me
Cleverciti	https://www.cleverciti.com	info@cleverciti.com
comfilight	https://www.comfilight.com	team@comfilight.com
Doozer	http://dasist.doozer.de/?referrer=%2F	info@doozer.de
Group Builder Oy	https://www.gbuilder.com/de/	andy@gbuilder.com
Gustav	https://hellogustav.com	team-us@hellogustav.com

inside it	https://www.insite-it.net/de/start	office@insite-it.net
Moderan Solutions OÜ	http://www.moderansolutions.com	info@moderan.net
Payuca	http://www.payuca.com	office@payuca.com
PlanRadar	https://www.planradar.com/de/	info@localhost
Sablono	https://www.sablono.com	office@sablono.com
Senvisys	https://www.senvisys.de	info@senvisys.de
Symvaro	https://symvaro.com	office@symvaro.com
Tablet Solutions	https://www.tabletsolutions.at	office@tabletsolutions.at
Tedalos	http://www.tedalos.net	office@tedalos.net

Additional (Start-Up known privately)		
Pagestrip	pagestrip.com	helga@pagestrip.com
taskrookie	www.taskrookie.com	sh@taskrookie.com

Platforms		
Austrian Startups	https://www.austrianstartups.com	vienna@austrianstartups.com
Austrian Startup Monitor	http://austrianstartupmonitor.at	
Invest in Austria	https://investinaustria.at	b.reiter-braunwieser@aba.gv.at
Start Ups Vienna	http://www.startupsvienna.at	info@startupsvienna.at
Start-Up House Vienna		https://www.facebook.com/pg/StartupHouseVienna/about/?ref=page_internal

https://www.puls4.com/2-minuten-2-millionen/staffel-4 (23rd November 2017)		
DIE KOJE	https://www.diekoje.com	wien@diekoje.com
MOOCI	https://www.mooci.at	contact@mooci.at
PIXELRUNNER	https://pixelrunner.com	office@pixelrunner.com
SIMSIS CIRCUS	http://www.simsis-circus.com	office@simsis-circus.com
SK-x	https://www.sk-x.eu	office@sk-x.eu

https://www.wired.de/collection/business/10-unbekannte-startups-die-ihr-2017-im-auge-behalten-solltet (4th November 2017)		
Green City Solutions	https://greencitysolutions.de	sales@mygcs.de
Hello	http://www.hello.com/en/index.html	support@hello.com
Houseparty	https://joinhouse.party	hello@houseparty.com
Look	http://www.look-app.net	hello@look-app.net
Lucid Motors	https://lucidmotors.com/car	https://www.facebook.com/LucidMotors/
Modal VR	http://www.modalvr.com	https://www.facebook.com/ModalSystems
nutonomy	http://www.nutonomy.com	info@nutonomy.com
Octane AI	https://octaneai.com/	https://www.facebook.com/octaneai
Zipline	http://www.flyzipline.com	info@flyzipline.com

https://www.fuer-agruender.de/fileadmin/mediapool/Publikation/Gruenderwettbewerbe_in_Deutschland_2017.pdf (4th November 2017)		
Artiminds Robotics	https://www.artiminds.com/?page_id=1454&lang=de	contact@artiminds.com

Ad-O-Lytics	https://www.adolytics.com	info@adolytics.com
ASK HELMUT	https://askhelmut.com/berlin?locale=de	mail@askhelmut.com
Baqend	https://www.baqend.com	support@baqend.com
Betterspace	https://betterspace360.com/de/	info@betterspace.de
bettervest	https://www.bettervest.com/de/	mail@bettervest.com
Bone Brox	https://bonebrox.com/shop/?gclid=EAlaQobChMIz_a-xlHQ1wIVBirTCh09eQzfEAAyASAAEgIX_vD_BwE	support@bonebrox.de
Celonis	https://www.celonis.com/de/	info@celonis.com
climbtrack	-	info@climbtrack.com
COLDPLASMATECH	http://www.coldplasmatech.de	mahrenholz@coldplasmatech.de
Coolar	http://coolar.co	christoph@coolar.co
Cryptomator	https://cryptomator.org/de/	press@cryptomator.org
Dispendix	http://www.dispendix.com	info@dispendix.com
ElasticVision	-	christian.poepperl@th-koeln.de
FahrradJäger	https://fahrradjaeger.de	willkommen@fahrradjaeger.de
feelSpace	https://www.feelspace.de	info@feelspace.de
FerroSens	http://ferrosens.de	info@ferrosens.de
figo	https://www.figo.io	contact@figo.io
Frankfurter Brett	https://www.frankfurter-brett.de	info@frankfurter-brett.de
Ginmon	https://www.ginmon.de	service@ginmon.de
Hydrogenious Technologies	http://www.hydrogenious.net/de/start/	info@hydrogenious.net
Ilmsens	https://www.uwb-shop.com	info@ilmsens.com
Inspirient	https://www.inspirient.com	contact@inspirient.com
JENETRIC	http://www.jenetric.de/start.html	info@jenetric.com
Landpack	https://landpack.de	info@landpack.de
matoi	https://www.matoi.de	info@matoi.de
matteco	http://www.matteco.de	info@matteco.de
NanoWired	http://www.nanowired.de	info@nanowired.de
Nelumbox	http://nelumbox.com/de/home_de/	info@nelumbox.com
Oculyze	https://www.oculyze.de/de/	info@oculyze.de
otego	http://www.otego.de/de/	info@otego.de
ParkHere	http://park-here.eu	info@park-here.eu
PEAT	http://peat.technology	contact@peat.ai
PHYSEC	https://www.physec.de	info@physec.de
PreOmics	http://preomics.com	info@preomics.com
prosumergy	http://prosumergy.de	info@prosumergy.de
Redwave Medical	http://www.redwave-medical.com	tellmemore@redwave-medical.com
Rhebo	https://rhebo.com/de/	info@rhebo.com
Seedmatch	https://www.seedmatch.de	info@seedmatch.de
Social-Bee	https://www.social-bee.eu	info@social-bee.de
Swarm Protein	http://swarmprotein.com	INFO@SWARMPROTEIN.COM
TerraLoupe	http://www.terraloupe.com	info@terraloupe.com
Toposens	https://toposens.com	info@toposens.de
UNIQ	http://www.un-iq.de/de/	info@un-iq.de

Urban Invention	http://urban-invention.com/homepage_de-2/	contact@urban-invention.com
Uvphotonics NT	http://uvphotonics.de	info@uvphotonics.de
Wearable Life Science	https://antelope.club	info@antelope.club
XARION Laser Acoustics	https://xarion.com	opticalmicrophones@xarion.com

http://www.horizont.net/marketing/charts/Start-ups-Das-sind-die-25-heissesten-jungen-Unternehmen-aus-Deutschland-136160 (21st November 2017)		
Auto1 Group	auto1.com	customercare-austria@auto1.com
BioWink	https://www.helloclue.com/de/index.html	hello@helloclue.com
Blinks Labs	https://www.blinkist.com/de/	support@blinkist.com
Bonativo	bonativo.de	hilfe@marktschwaermer.de
eMio	emio-sharing.de	kontakt@emmy-sharing.de
Freeletics	https://www.freeletics.com/de	support@freeletics.com
Kiwi.ki	https://kiwi.ki	info@kiwi.ki
Kreditech	https://www.kreditech.com	info@kreditech.com
Mobile Motion	http://www.dubsmash.com	impressum@dubsmash.com
Number 26	https://next.n26.com/de-at/?lang=de	imprint@n26.com
OnePage.org	https://de.ryte.com	info@ryte.com
QuantifiedCode	https://www.quantifiedcode.com	andreas@quantifiedcode.com
SharetheMeal	https://sharethemeal.org/de/	support@sharethemeal.org
SimScale	https://www.simscale.com	mail@simscale.com
Sonormed	http://www.tinnitracks.com/de	service@tinnitracks.com
Spotted	http://www.spotted.de	info@spotted.de
Touchables	http://www.touchables.io	info@touchables.io
Tripdelta	https://tripcombi.com	team@tripcombi.com
Vidiventi	https://spottster.com/de/home	info@spottster.com
Viorama	https://spil.ly	contact@spil.ly
Webdata Solutions	http://webdata-solutions.com	info@webdata-solutions.com
Workaround	http://www.proglove.de	founder@proglove.de

http://www.computerbild.de/fotos/33-coole-Start-ups-10954372.html (24th November 2017)		
Anydesk	https://anydesk.de/remote-desktop	info@anydesk.com
Barzahlen	https://www.barzahlen.de/de/	info@barzahlen.de
Conichi	https://www.conichi.com/de/	contact@conichi.com
Dubsmash	http://www.dubsmash.com	impressum@dubsmash.com
Familonet	https://www.familo.net/de/	info@familo.net
Juicies	https://www.juicies.com	hello@juicies.com
Kitchen Stories	https://kitchenstories.io/de	hello@kitchenstories.de
Leinentausch	http://www.leinentausch.at	kontakt@leinentausch.de
Lirdy	http://blog.lirdy.com	mail@lirdy.com
Movinga	https://www.movinga.de	service@movinga.de
Offtime	http://offtime.co/de/	on@offtime.co
Opentabs	http://www.opentabs.de	mail@perfect-delivery.de
Panono	https://www.panono.com	info@panono.com

Protonet	https://protonet.com/de/	team@protonet.com
Readfy	https://www.readfy.com/de/	info@readfy.com
Scanbot	https://scanbot.io/de/index.html	hello@scanbot.io
Scondoo	https://scondoo.de	info@scondoo.de
Shoemates	https://www.shoemates.de	info@shoemates.de
Spottster	http://www.spottster.com	info@spottster.com
Tado	https://www.tado.com/at/	contact@tado.com
Tinkerbots	https://www.tinkerbots.de/?gclid=EAIaIQobChMIsr3-7-jW1wIVGfEbCh0R6wdwEAAAYASAAEgKRGfD_BwE	hello@tinkerbots.com
Zenmate	https://zenmate.at	support@zenmate.com

https://www.fuer-gruender.de/blog/2017/01/startup-trends-2017/ (24th November 2017)		
CardioSecur	https://www.cardiosecur.com/de/	info@cardiosecur.com
Cryptomator	https://cryptomator.org/de/	support@cryptomator.org
Ginmon	https://www.ginmon.de	service@ginmon.de
growney	https://growney.de	service@growney.de
otego	http://www.otego.de/de/#body	info@otego.de
senic	https://www.senic.com/de/	hi@senic.com
smartpatient	http://www.smartpatient.eu/de/	info@smartpatient.de

https://www.startup.ch/index.cfm?page=129574 (4th November 2017)		
Advanon AG	https://www.advanon.com/de	info@advanon.com
Aerotain AG	http://www.aerotain.com	info@aerotain.com
AKSELOS SA	https://www.akselos.com	info@akselos.com
Allthings Technology AG	https://www.allthings.me	david.gundlach@allthings.me
Altoida AG	http://www.altoida.com	hello@altoida.com
Amal Therapeutics SA	http://www.amaltherapeutics.com/site/en/	contact@amaltherapeutics.com
Artmyn SA	https://www.artmyn.com	contact@artmyn.com
Batte.re AG	https://battere.ch	support@battere.ch
Beekeeper AG	https://www.beekeeper.io/de	contact@beekeeper.io
Bestmile SA	https://bestmile.com	info@bestmile.com
bexio AG	https://www.bexio.com/de-AT/	kunden@bexio.com
Bluebox Shop AG	https://www.amorana.ch	service@amorana.ch
Bricks & Bytes	https://crowdhouse.ch/de/	info@crowdhouse.ch
Cellestia Biotech AG	https://www.cellestia.com	info@cellestia.com
Cleverdist SA	http://www.cleverdist.com	info@cleverdist.com
Coat X AG	http://coat-x.com	info@coat-x.com
Contovista AG	https://www.contovista.com	info@contovista.com
Crispr Therapeutics AG	http://crisprtx.com	info@crisprtx.com
DEPsys SA	https://www.depsys.ch	info@depsys.ch
DillySocks AG	https://dillysocks.com/de/	contact@dillysocks.com
Diviac AG	https://diviac.com	info@diviac.com
Equippo	http://www.equippo.com	info@equippo.com

Farmy AG	https://www.farmy.ch	service@farmy.ch
felfel AG	http://www.felfel.ch	info@felfel.ch
flatev AG	http://flatev.com	hello@flatev.com
Flyability SA	http://www.flyability.com	info@flyability.com
Frontify AG	https://frontify.com	hello@frontify.com
G Therapeutics AG	http://www.gtherapeutics.com	info@gtherapeutics.com
Glycemicon AG	http://www.glycemicon.com	media@glycemicon.com
Gnubiotics Sarl	https://www.gnubiotics.com	info@gnubiotics.com
Goodwall SA	https://www.goodwall.org	contact@goodwall.org
GRZ Technologies AG	http://www.grz-technologies.com	info@grz-technologies.com
Haelixa Gmbh	http://haelixa.com/index.html	info@haelixa.com
imperix SA	https://imperix.ch	info@imperix.ch
Inositac AG	http://inositec.com	info@inositec.com
Insightness AG	http://www.insightness.com	info@insightness.com
Intento AG	http://www.intento.ch	info@intento.ch
InterAx Biotech AG	http://www.interaxbiotech.com	contact@interaxbiotech.com
Irsweep AG	https://irsweep.com	info@irsweep.com
LESS SA	http://less-sa.com/home/	info@less-sa.com
Lunaphore Technologies SA	http://www.lunaphore.ch	contact@lunaphore.com
MaxWell Biosystems	https://www.mxwbio.com	info@mxwbio.com
Mindmaze SA	https://www.mindmaze.com	info@mindmaze.ch
Nanolive SA	http://nanolive.ch	lisa@nanolive.ch
NBE Therapeutics LLC	http://www.nbe-therapeutics.com/template/index.php	info@NBE-Therapeutics.com
Nexiot AG	http://nexiot.ch	info@nexiot.ch
Nezasa AG	http://www.nezasa.com	contact@nezasa.com
Nomoko AG	https://www.nomoko.world	website@nomoko.world
OrbiWise SA	https://www.orbiwise.com/home	contact@orbiwise.com
Perceptiko AG	https://www.catch-eye.com	team@catch-eye.com
Peripal AG	http://www.peripal.com	info@peripal.com
Perspective Robotics AG	https://fotokite.com	contact@fotokite.com
Pharmabiome AG	https://www.pharmabiome.com	info@pharmabiome.com
Piavita AG	http://www.piavita.com	info@piavita.com
Polyneuron Pharmaceuticals AG	http://polyneuron.com	info@polyneuron.com
Pregnoia AG	https://www.pregnoia.com	info@pregnoia.com
Privately SA	http://www.privately.eu	contact@privately.eu
Prvy AG	https://pryv.com	info@pryv.com
Real Look AG	https://www.selfnation.ch	LENA@SELFNATION.CH
recapp IT AG	https://www.recapp.ch/de/	bern@recapp.ch , visp@recapp.ch , martigny@recapp.ch
Relish Brothers AG	https://relish.swiss	info@relish.swiss
Rovenso SA	http://www.rovenso.com	info@rovenso.com
rqmicro AG	https://www.rqmicro.ch	info@rqmicro.com
Scan Trust SA	https://www.scantrust.com	contact@ScanTrust.com
SensArs	http://www.sensars.com	office@sensars.com
ShoeSize.me AG	https://www.shoesizeme.com	info@shoesize.me
Swiss Wood Solutions AG	http://swisswoodsolutions.ch	oklaeusler@ethz.ch , k.leuker@web.de

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Testing Time AG	https://www.testingtime.com	contact@testingtime.com
Topadur Pharma AG	http://www.topadur.com	info@topadur.com
Twenty Green AG	http://www.twentygreen.com	hello@twentygreen.com
Versantis AG	http://www.versantis.ch	info@versantis.ch
VIU VENTURES AG	https://eu.shopviu.com/de/?env=at-eur&_ga=2.246674884.1553712392.1511535755-806765821.1511535755	kontakt@shopviu.com
Wingtra AG	https://wingtra.com/de/	hello@wingtra.com
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