

Highway One to Nairobi

A case study of U.S. company development theories' validity in Frontier markets

Abstract

Frontier markets have had an increased impact on global economy in recent years. The high market growth rate has attracted investors with desire to seize opportunities for successful return on investments, from all over the world. Nonetheless, the lack of understanding of company development in Frontier markets has built an investment barrier between investors and companies in Frontier markets. Theories on company development has the potential to increase insights in potential investment prospects for investors. However, the current most prominent company development theories have been developed and empirically tested in the U.S. while not validated in Frontier markets. Substantial critique has been directed towards the failure among company development theories to acknowledge the impact of environmental factors on company development. Against this background this thesis set out to stress test company development theories in Frontier markets through a multiple case study of three African countries. By merging a selection of popular company development theories to an aggregated model the thesis strived to identify possible deviations between empirical findings and the constructed theoretical benchmark. When deviations from theories were identified, we investigated environmental factors present in Frontier markets for their ability to explain these deviations. The results from the case study suggests that company development theories fail to correctly depict company development in Frontier markets. Conclusions regarding which environmental factors impacts company development must be drawn while bearing in mind the sources of errors that may erode the reliability of results. Four environmental factors are suggested to impact company development in Frontier markets. The framework developed to observe and explain deviations between theory and empirical findings was proven useful and is suggested to be applicable in Frontier markets outside this case study.

Keywords Company Development; Environmental Factors; Frontier Markets; Tech Companies;
Foreign Investment

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Core Concepts

A list of definitions and core concepts are presented below.

Aggregated Model - The model describing the first four stages of company development aggregated from five selected established company development theories.

Business environment - Describe the hostility and competitiveness in the environment

Company Development Theory - Theories proposing projections of company development along predictable patterns with phases of typical characteristics. (Hanks, 93)

Emerging markets - Markets not meeting the standards of a developed market. Often connected to growth figures higher than developed markets. (Forbes, 2010)

Fintech - An industry which use of technology to make financial services more efficient (Wharton Fintech, 2015)

Frontier markets - The definition is subjective by nature but in this thesis defined as markets less developed than Emerging markets but more developed than the least developed markets (Nellor, 2008). Countries belonging to Frontier markets are described in Appendix 1.

FTSE - Financial Times Share Index (Business Dictionary)

Integrated model - The aggregated model combined with macro environmental factors which together can give explanations to possible deviations between the theoretical benchmark and empirical results.

Investment barrier - Factors decreasing the ability or attractiveness to invest in a certain area (Investment Policy Central, 2012)

Investor - Angel investors, venture capitalists and other institutions who provide capital to companies both actively and inactively (Essentials of Investment, 2012)

Macro environmental factors (MEFs) - Exogenous factors such as economic growth, political systems and demography, with the potential of affecting people and organizations positively and negatively. (Multinational Business Review, 1999)

Micro Enterprise - An enterprise with less than ten employees and less than 2M euro in turnover. (European Commission, 2013)

Rate of return - The monetary value today minus the acquisition cost, divided by the acquisition cost. (The financial dictionary, 2016)

Silicon Savannah - The technological ecosystem of Kenya being one of the most vivid markets for tech companies in Africa (Graham & Mann, 2013).

Silicon Valley - The southern part of San Francisco, hosting thousands of tech-startup companies (Kenney, 2000)

SME - Small and Medium sized Enterprise. Ten to 50 employees with a turnover less than 50M Euro. (European Commission, 2013)

Technological/Tech company - A Company with focus on developing and manufacturing technological products or services, hardware as well as software. (Andreessen Horowitz, 2014)

1. Introduction

The following section will discuss the contemporary global context and why this thesis is of relevance. The first section describes globalization, theories on company development and ends with the thesis aim and overall purpose. Then follows a discussion of intended knowledge added and delimitations.

1.1 Background

Globalization, defined as the process of transnational and transcultural integration of activities (GCSP, 2006) is driven mainly by improved transportation infrastructure, communication possibilities and freedom of trade (BBC, 2014). A high awareness of business opportunities around the world has emerged as a consequence of increased globalization. During 2015 the global foreign investment increased by 37% to an estimated 1.7 trillion USD (United Nations, 2016). Despite increased globalization there is substantial room for improvement in the business relationship between developed and developing markets (Ashrena, 2012). Among developing markets, the most promising future is forecasted for Frontier markets. They are projected by the International Monetary Fund (2014) to outpace both developed and Emerging markets over the next three decades. Moreover, the tech industry has recently flourished in Frontier markets and is an important driving force to the growth (Harvard Business Review, 2016).

However, economic growth does not always translate to profitable investments in Frontier markets. Lack of knowledge in businesses behavior cause an investment barrier (Inderst and Stewart, 2014; Lazard, 2015). The use of company development patterns constitute an important information platform for investors to understand current states and projections of investment prospects (Churchill & Lewis, 1983; Dodge & Robbins, 1992). Company development models should therefore in theory be able to decrease the mentioned knowledge-gap (Churchill & Lewis, 1983; Dodge & Robbins, 1992). The inability to decrease the knowledge-gap can be explained by critique suggested by Stubbart & Smalley, (1999) and Rutherford et al, (2003): Disregarding environmental differences from empirically tested contexts (U.S. in most cases) is proposed to be a factor that erodes validity and thus usefulness of company development theories.

Against this context, delimitations concern the focus of (I) Frontier markets, as markets for foreign investment, (II) Tech-industry, as chosen companies and (III) the primary stages of company development. Limitations are chosen to increase the validity and to increase the focus on industries of relevance. Tech-industry and the primary stages of company development are of great interest for venture investors, because they offer high a rate-of-return (HBR, 2016; Graham & Mann, 2013). An aggregated model on company development along with theories on Frontier markets are used as the framework to test the proposition suggested by Stubbart & Smalley, (1999) and Rutherford et al, (2003) within implied delimitations. The company development theories of choice are Churchill & Lewis (1983), Miller &

Friesen's (1984), Scott & Bruce (1987), Hanks et. al. (1993), Sarason & Tegarden (2000). The framework will connect the relevance of Macro Environmental Factors (MEFs) to a company development context, by accurately mapping company development and MEFs in Frontier markets. Therefore, the framework will be useful when analysing the effect that dissimilar environmental conditions in Frontier markets compared to the U.S. has on well-known company development patterns.

1.2 Purpose of the Thesis and Research Questions

The purpose of this thesis is to examine the interplay between environmental conditions and company development theories. The intent is to map MEFs that can be used for further research when examining company development theories in Frontier markets. Based on this rationale this thesis strives to examine the following questions:

- (1) To what extent will company development theories be able to predict tech company development in Frontier markets?*
- (2) What impact do macro environmental factors (MEFs) have on tech company development in Frontier markets?*

1.3 Intended Theoretical Contribution

Company development does not occur in a sociopolitical vacuum. Hence, the thesis is based on a standpoint that company development predictions must be problematized to a further extent than accepting a linear and static view of company development (Levie & Hay, 1998; Phelps, 2007). The thesis strives to enhance understanding of how company development in Frontier markets differ from theory and what impact MEFs have on company development. By identifying the role MEFs play in the development of tech companies in Frontier markets this thesis strives to support the construction of a general model that takes MEFs into consideration when predicting tech company development. Bearing mind that MEFs are of different intensity in Frontier markets, MEFs proposed to impact company development should be dynamically applied in each Frontier markets country. This will contribute with a value as an informative tool for investors seeking to invest in Frontier markets (Churchill & Lewis, 1983).

2. Literature Review

The literature review is structured into three main areas which will provide the background for the thesis topic. The first section provides an overview of company development theories in general and presents their practical use and relevance for investment decision-making. The second section focuses on why investors seek part in Frontier markets. Subsequently, the second section deals with challenges and opportunities in Frontier markets. The chapter concludes by elaborating the research gap of this thesis.

2.1 Company Development Theories

2.1.1 The Evolution of Company Development Theories

The theories leading up to where research on organizational development patterns is today will be of central importance for this thesis because of its reliability on company development predictions. The life cycle paradigm is well established in the literature as it has been widely researched and used as an analytical tool to map company development during the last 50 years. *Evolution and revolution as organizations grow* (Greiner, 1972) is one of the earlier and most cited articles within research of company development. Based on Greiner's work Churchill & Lewis (1983) and Scott & Bruce (1983) explored the topic of organizational development by focusing on smaller firms. Taking off from Greiner (1972) and Scott & Bruce (1983) the current concept of organizational development was challenged by Miller & Friesen (1984). In their article the idea of linearity in organizational development along growth phases is problematized. Hanks et al (1994) accepted the idea of non-linear growth and focused on technology-intensive firms.

During the twenty-first century Sarason & Tegarden (2000) empirically tested and statistically analyzed common patterns in earlier accepted company development theories. In their article common growth patterns are studied within five dimensions: Performance, Strategy, Structure, Incentives and Leadership. Worth noting is that the empirical tests conducted to validate or reject theories of company development, have almost exclusively been performed in the U.S. (Churchill & Lewis, 1983; Miller & Friesen, 1984; Scott & Bruce 1987; Hanks et al, 1993; Sarason & Tegarden, 2000)

2.1.2 Company Development Theories in Practice

There has been a widespread discussion regarding the validity of theories trying to generalize and predict company development. Predictions should be problematized to a further extent than accepting a linear and static view of company development without taking environmental circumstances into consideration (Levie & Hay, 1998; Phelps, 2007). Meanwhile, company development can be generalized and predicted to some extent as suggested by Miller & Friesen (1984) and by Drazin and Kazanjian (1990). This section aims to emphasize the usefulness and positive impact theories on company development have in different contexts.

The access to investments is considered to be vital for entrepreneurial companies in their primary stages (Van Geldereen et al, 2005). Understanding theories on how companies tends to develop plays a significant role in decreasing the knowledge gap among investors and potential investment prospects (Churchill & Lewis, 83; Dodge & Robbins, 92). This view is further strengthened by Fried & Hisrich (1994) who emphasizes the importance for venture capital investors to base their investment decision on a platform of both historic knowledge and future projections. Company development theories has the potential to project company development and increase understanding of key issues (Dodge & Robbins, 1992; Kazanjian & Drazin, 1990; Greiner, 1972; Scott & Bruce, 1987; Mount et al, 1993). Furthermore, the understanding and use of company development theories becomes highly relevant when investors set up benchmarks and milestones to achieve a more optimal growth (Sarason & Tegarden, 2000; Hanks et al, 1993).

2.2 Frontier Markets

In recent years Frontier markets have gained increased attention, since it offers opportunities of a high rate of return relative to mature markets along with an opportunity to diversify portfolios (Berger et al, 2011). More specifically, the tech industry has been in focus within this market (World Financial Review, 2013; HBR, 2016; Graham & Mann, 2013). However, Frontier markets are characterized by investment barriers, partly due to lack of market insights (Forbes, 2015).

2.2.1 Evolution of Frontier markets

In 1981 the International Financial Corporation of the World bank coined the term Emerging markets (Verbeke & Merchant, 2012). In 1992 many Emerging markets had grown significantly as compared to when the term was coined. Therefore, the IFC adopted the term Frontier markets (See Appendix 1 for list of countries) to address markets smaller and less liquid than Emerging markets but more developed than the least developed markets (Nellor, 2008). However, what constitutes a Frontier market is subjective to the observer (Wall Street Journal, 2015), as MSCI includes 24 countries in their Frontier Index and S&P Dow Jones Indices includes 36 countries (MSCI, 2015; S&P INDICES, 2015).

2.2.2 Opportunities in Frontier Markets

Roughly 20 years ago Emerging markets were undergoing similar developments as Frontier markets are undergoing today (Lazard, 2015). However, today Frontier markets are less researched and less invested in compared to Emerging markets (Nellor, 2008). According to MSCI (2014) Frontier markets have outgrown Emerging markets since 2007 and they are forecasted to experience a healthy growth through 2040 (United Nations, 2016). This growth is dependent on increased foreign interest and investments (Nellor, 2008).

The technological industry in Frontier markets is described as being in a nascent state with opportunities of profitable investments (World Financial Review, 2013). The technological industry worldwide has throughout times offered great investment opportunities, and Silicon Valley is an example that has thrived

on the tech industry by leap frogging the industrialized state (Kenney, 2000). In Frontier markets this is exemplified by the growing technological industry center in Kenya. The so-called Silicon Savannah offers attractive investment opportunities for foreign investors (Graham & Mann, 2013; Marshall, 2006). One driving force behind the increased interest is market inefficiencies, which at same time implies challenges for investors (Lazard, 2015).

2.2.3 Challenges in Frontier Markets

Described by Inderst and Stewart (2014) the investment barrier is high for foreign investment, which is partly caused by a lack of knowledge in how businesses are run in Frontier markets. The high investment barrier is further explained by Lazard Asset management (2015) and EY (2015) that pinpoints flow of information, governance risk, insufficient educational system and local culture as relevant factors to take into consideration when investing. These MEFs are among others well known to give rise to business climates which are dissimilar to the U.S. (Speidel, 2009). Consequently, differences in MEFs have contributed in creating a knowledge-gap between companies in Frontier markets and investors.

2.3 Research Gap

Company development theories highlight the importance of recognizing environmental conditions to increase their validity and usefulness in new markets, however environmental conditions' affect have not been studied. The environmental conditions, as well as opportunities and challenges, in Frontier markets can be considered to be well documented and understood. Despite understanding the environmental conditions themselves, existing literature pose some uncertainty. Firstly, the understanding of the MEFs impact on individual companies is limited (Inderst & Stewart, 2014). Secondly, there is a lack of knowledge in the applicability of company development theories in markets where environmental conditions differ from where they have been developed (Stubbart & Smalley, 1999). The identified research gap is therefore the absence of knowledge regarding MEFs impact on tech company development patterns in Frontier markets. This thesis will contribute to reducing the knowledge gap discussed as a major challenge for investors seeking opportunities in Frontier markets. Hence, the research gap is in line with the purpose of this thesis.

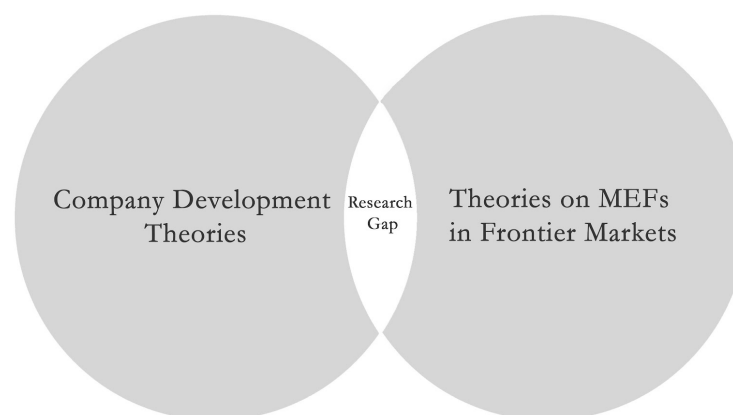


Figure 2.1: Identified Research Gap

3. Theoretical Framework

This section presents the theoretical platform which the analysis builds upon. In the first part core theories and the aggregated tech company development model will be presented. The second part will discuss MEFs that are proposed to affect company development in Frontier markets. Finally, the integrated framework used to analyse proposed deviations and MEFs with explanatory power, is presented.

3.1 The Aggregated Model and its Constituencies

The following section will present the aggregated company development model and the constituting theories. Acting as a solid theoretical benchmark and analysis tool for mapping company development, the aggregated model will be a key component in answering the research question.

3.1.1 Constituting Theories

Five company development theories have been chosen for the construction of the aggregated company development model. The models of choice were examined in accordance to following parameters, (I) scientific acceptance, (II) empirical validity, (III) cross-theoretical coherence, (IV) compatibility to tech and young organisations. Hence, the aggregated model will be relevant to the thesis scope and the validity will be increased, which improves reliability of the study.

Churchill & Lewis (1983) has been chosen for its widespread impact on research of SME (Small Medium Enterprises) company development. Building on Greiner's (1972) model of company life cycles Churchill & Lewis (1983) focuses on small business growth. Furthermore, their article offers a distinct taxonomy of company development dimensions, which have been adopted to this thesis (such as strategy, ownership and formalization).

Additionally, this thesis' theoretical framework builds upon two theories that are industry unspecified, Miller & Friesen (1984) and Scott & Bruce (1983). Both models provide a deep and clear taxonomic description of company development as they build on Greiner (1972), Quinn & Cameron (1983) and more. Miller & Friesen's (1984) research provide a strong backbone for this thesis as the validity is high due its extensive empirical study. The validity has been further strengthened in a reanalysis conducted by Drazin & Kazanjian (1990). Miller & Friesen (1984) reject the proposed linear development suggested by Greiner (1972). Instead the idea of quantum change is proposed, which imply that all dimensions of company development move interdependently. The dimensions can move nonlinear but they stay the same relative to each other. In short, selected theories will provide a solid and reliable framework when analyzing possible discrepancies between theory and empirical findings. The discrepancies identified will be the starting point for the MEFs analysis.

Lastly, to address the delimitations of this study Hanks et al (1993) and Sarason & Tegarden (2000), both building on empirical data from high-technological firms, were chosen. Additionally, the theories provide extensive data on companies' earliest stages. Lastly, their used methods provide a template for how to cluster and quantify company development data. This will be of relevance for this study in order to accurately analyze data and find predictable patterns.

3.1.2 The Aggregated Model

The aggregated model will be used to understand if and how empirical findings differ from current company development theories, thus acting as a theoretical benchmark. The model depicts the primary four stages of tech company development, thus strengthening the focus on early stages. The stages represent a predictable pattern, where each stage is characterized by dimensions of organizational growth (e.g. size, structural form and formalization). Appendix 5.1 illustrates which of the aggregated model's stages is suggested by what articles.

Stages of the Aggregated Model	
1. Embryonic stage:	All but Hanks et al (1993) and Miller & Friesen (1984) attribute certain characteristics to a stage before the start-up stage, the embryonic stage. This is the idea stage; they are very young, small and lack structure. Centralization and innovation is high.
2. Start-up stage:	This phase is characterized by their youth, owner domination and simple structure accompanied by low formalization. High innovation and low differentiation also characterize this stage.
3. Growth stage:	The emphasis in this stage is rapid sales and organizational growth. The companies are older than in the previous stage. Some functionally-based structures are established with less centralization to leader due to creation of departments. The level of innovation decrease but differentiation increases.
4. Maturity stage:	The level of innovation falls and a more bureaucratic structure with high formalization is established along with high product differentiation. The company is in its largest size and oldest phase.

Table 3.1: *Stages of the Aggregated Model*

Sources: (Churchill & Lewis, 1983; Miller & Friesen, 1984; Scott & Bruce 1987; Hanks et al, 1993; Sarason & Tegarden, 2000)

In order to empirically test and map company development patterns, the aggregated model is built around three dimensions of company development. Within each dimension a total set of ten sub-dimensions describe the attribute of that dimension in respective stage, giving a detailed view of the specific characteristics of a company in each stage. The conceptual typology in the aggregated model (see table 3.2) will therefore be used as a theoretical benchmark, when comparing company development in Frontier markets to theory. The first research question, to what extent can existing company development theories predict tech company development in Frontier markets, can thus be examined with the aggregated framework. Specification of what attributes each sub-dimensions, is explained in Appendix 2.

	Embryonic	Start-up	Growth	Maturity
Structure 1.Age 2.Size 3.Structural form 4.Formalization 5.Ownership	1. Very young, Idea stage, <1 years 2. Very small, founder(s) 3.Unstructured & simple 4.Nonexistent control systems & formal planning systems 5.Founder is owner	1. Young, <4 years 2. Small 3.Undifferentiated & simple structure 4.Minimal formalization, few policies and job titles, low degree of formal systems 5.Founder is owner	1.Relatively young but old for being an entrepreneurial company. Approximately 7 years 2.Medium sized, approximately 20 3.Departmentalized, functional form, moderate differentiation. More established processes 4.Formalization emerge, planning & budgeting systems exists 5.Multiple shareholders	1.Middle aged but old for being an entrepreneurial company 2.Large, <63 3.More departmentalized & bureaucratic structure, complex 4.Formal bureaucratic, formal controls by management 5.Multiple shareholders, owner separated financially
Leadership 1.Centralization 2.Decision making process 3.Management style	1.Very centralized, only owner/s 2.The owner is the company 3.Entrepreneurial, direct supervision	1.High centralization 2.Crude information and decision making processes, defined orders from owner 3.Entrepreneurial with supervised supervision	1.Centralized, limited delegation, owner and company separated 2.Initial development of information processing and decision making methods 3.Administration, delegation and coordination is in focus, still entrepreneurial	1.Low centralization 2.Same decision making as in growth, but more short term 3.Watchdog style with focus on coordination
Strategy 1.Innovation 2.Differentiation	1.High Innovation 2.Low differentiation, narrow product line and limited market	1.High innovation 2.Low differentiation, niche strategy	1.Incremental innovation, less innovation 2.Considerable differentiation,	1.Risk of ossification, low innovation 2.High product differentiation, with multiple markets

Table 3.2: The Aggregated Company Development Model

Sources: (Churchill & Lewis, 1983; Miller & Friesen, 1984; Scott & Bruce 1987; Hanks et al, 1993; Sarason & Tegarden, 2000)

3.2 Macro Environmental Factors in Frontier Markets

In order to gain a more holistic understanding of the complexities in Frontier markets, a combination of core theories is used and strengthened by business reports. Firstly, Abor & Quartey's (2010) report on issues in SME development gives, based on quantitative data, a detailed view on constraints in SME development in Frontier markets. Secondly, the highly acknowledged Ghemawat's (2001) CAGE model is a useful tool to analyze national conditions. Even though specific factors at play in Frontier markets are not illustrated in the framework, the model is a useful tool to detect which factors could affect company development. Thirdly, Mutalemwa (2015) explains in her research the effect globalization has on SME development. Lastly, Nellor (2008) who discuss macroeconomic policy in Frontier markets is used. These theories are strengthened by EY (2015) and Lazard Asset Management (2015) who explain overall challenges for companies and for those investing in tech companies in Frontier markets.

By first mapping the MEFs affecting the business climate, these studies will together with the aggregated model, create a framework that in the context of this study help uncover the interplay between MEFs and company development. The characteristics identified in the selected studies are presented below. These MEFs are proposed to impact company development since they are documented to affect the business climate.

3.2.1 Education

Abor & Quartey (2010) mentions lack of education as a common issue for SME development. The inadequate education slows down market development due to lack of knowledge capital (Abor & Quartey, 2010). Ghemawat (2001) also highlight human resources and knowledge capital as important factors that affect the economic circumstance. The education system is therefore proposed to affect tech company development patterns.

3.2.2 Culture

Ghemawat (2001) addresses culture as one main factor when looking at integrating in new markets. His model examines cultural distance between countries of focus and uses the differences to analyse the impact that culture will have on foreign investment. Culture being a MEF is further strengthen by additional sources, both Schein (2006) and Amadiume (1997) highlights culture as factor that shapes the business climate. Hence, culture is proposed to affect company development patterns.

3.2.3 Investment Infrastructure

Abor Quartey (2010) pinpoints limited access to financial funds as a major factor that constrain the prosperity of the business climate. Lazard (2015) strengthens the claim by emphasizing poor communication infrastructure between investor and enterprise as the cause. Lastly Ghemawat (2001) mention that financial

resources present in a country deeply affects the business circumstances. Together these factors make up the investment infrastructure which is proposed to have an impact on tech company development.

3.2.4 Governance

All four theories presented in the beginning of the section highlight the institutional support and governance as an important factor for how the business climate functions in a Frontier market. High startup costs, inadequate support of property rights and high transactions cost are consequences from inadequate governance and weak institutional support in Frontier markets (Nellor, 2008; Abor Quartey 2010; Mutalemwa et al, 2015). Suggested effects on the entrepreneurship is potential constraints to the development and increased barriers to entry, strengthen by Black & Straharan (2002) and Gilbert (2006). Hence, the governance is proposed to have an effect on company development.

3.4 The Integrated Framework

In order to address the purpose of this thesis, which is to examine the interplay between MEFs and company development patterns, an integrated framework is proposed (see figure 3.1). The framework addresses both research questions, by including proposed MEFs in the context of company development theories, enabling assessment of MEFs impact on company development. The aggregated model of company development theories will together with studies on the regional circumstances in Frontier markets make up the integrated framework.

This will be done by testing the proposed empirical deviations between Frontier markets and the theoretical benchmark. Consequently, the MEFs explanatory power for discrepancies will be examined. Consequently, the integrated framework attempts to construct a tool that can be used to adapt tech company development theories to countries in Frontier markets. While bearing in mind that MEFs are of different intensity in different Frontier markets, the integrated framework is not meant to be statically applied but rather to be modified depending on market conditions.

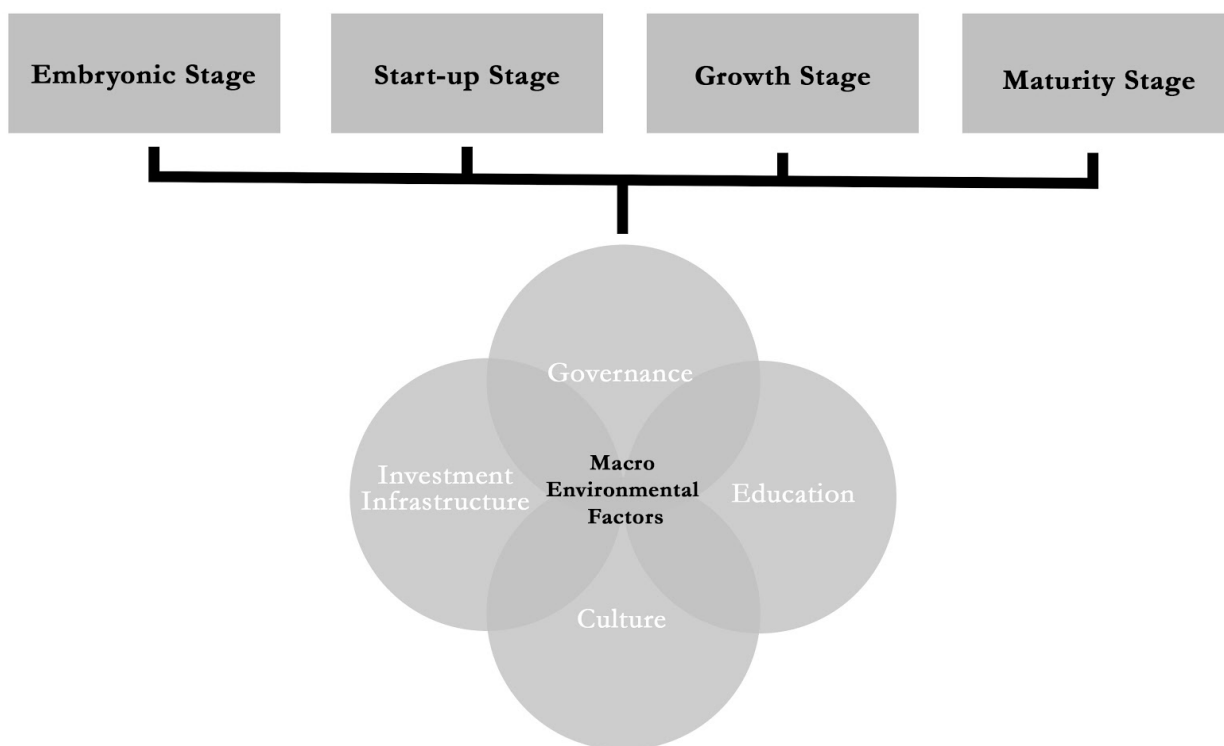


Figure 3.1: The integrated Framework

4. Method

This section describes the methodology used for collecting and analyzing data. Firstly, the scientific approach is discussed followed by a presentation of the research design. The sample selection and gathering of data is presented subsequently, concluding with a discussion of limitations connected to methodology.

4.1 Scientific Approach

As portrayed by the theoretical framework, fundamental scientific areas are built on existing theories. Therefore, the research questions aim to test how well existing theories can explain tech company development in frontier markets and the impact MEFs have on company development. From this aim the scientific approach can be determined. Primary sources are used for the theoretical framework, when contrasting theory against empirical findings. Primary sources are also in the MEFs analysis of possible discrepancies, however this analysis take place in conjunction with empirical observations. This requires an abductive reasoning. Consequently, the risk of non-nuanced understanding will be reduced, allowing a seamless combination of theory and observation (Andersen, 1998).

The abductive reasoning is approached with a qualitative method. The choice builds on the research questions, which demands a need for the ability comprehend complex socio- political issues in order to identify proposed MEFS which can be achieved in a qualitative study (Holme & Solvang, 1997; Bryman & Bell, 2011). Furthermore, Hanks et al (1993) strengthen the choice by suggesting that a qualitative study can give a more nuanced and deep understanding of organizational development compared to quantitative study. Even though a quantitative study would increase the generalizability, above mentioned benefits would have been lost.

4.2 Research Design

This thesis has adopted a multiple case study method in accordance with Eisenhardt (1989) in order to decrease bias (Voss et al, 2002). The sample selection was chosen to give a truthful depiction of tech companies in Frontier markets. The integrated framework has been central in the selection of research design. Using a framework with an aggregated model decreases the risk of falling victim of subjectivity from one researcher by combining findings from different researchers, a technique also adopted by Miller & Friesen (1984), Hanks et al (1993) and Sarason & Tegarden (2000). Secondly, by adopting coherent patterns from theories spread from 1983 to 2000 the study aims to mitigate the effects that changes in management fashion can have on results (Abrahamson, 1996). The results will be derived by quantifying qualitative data, as suggested by Chi (1997).

4.2.1 Pre-study

Three initial interviews were made as a pilot study in order to validate and improve the interview questionnaire that would be used later in the process (Creswell et al. 2003). The pre-study was conducted in a semi-structured way (Casell & Symon, 2004) and carried out face to face or through skype. Interviewed companies were Bearing Consultancy, a consulting company active in east Africa, Donedeal, an active startup in Kampala and Qasa, a tech startup in Stockholm. The pre-study gave insight into the choice of method in qualitative gathering of data. All interviews were conducted in English to better help the main study.

4.2.2 Sample Selection

The countries selected for empirical research (Kenya, Tanzania and Uganda) were selected because they together represent a broad range of the economic conditions in Frontier markets well, see Appendix 1.3 (United Nations, 2014). The three categories of interviewees constituting the empirical platform were, (I) Companies (II) Incubators (III) Academic institutions. Interviewed companies were chosen to provide diversification both geographically and based on size in order to give results that represents tech companies in Frontier markets. Find description of interviewees in Appendix 4. Incubators and academic institutions were interviewed to give a more nuanced picture of company development and business environment in Frontier markets. In each case company the employee with the longest employment within the organization was interviewed. In all cases but two this person was the CEO.

4.2.3 Qualitative Gathering of Data

The data was gathered from 17 interviews with two different types of questionnaires depending on category of interviewee. One questionnaire addressed the companies and had more focus on descriptive values, and the other addressed Incubators and Universities and had more focus on examining the MEFs (see Appendix 4 for interview questionnaire). The interviews were between 50-90 minutes in length and all interviews were conducted face to face with one exception where Skype was used. For convenience and for the interviewees comfort the interviews were conducted at their respective office. Both authors were present during all interviews and the interviews were recorded for later transcription and analysis. All interviews were conducted in English.

The interviews were conducted in a semi-structured way with room for openness in the questionnaire (see Appendix 4) in accordance with Casell & Symon (2004). This allowed the questionnaire to be in line with the integrated framework by capturing descriptive dimensions of the aggregated model while allowing for more nuanced and in-depth depiction of environmental conditions (Chi, 1997).

In order to avoid biases in responses, the purpose of the interviews and thesis was explained to a limited level. To ensure that all relevant metrics from the aggregated model was captured, the questionnaire had

questions addressing each sub-dimensions. All questions were based on the explanation and measure of each sub-dimension found in Appendix 5.2. In accordance to Silverman's (2013) recommendations, open questions regarding MEFs were asked towards the end of each interview. Since the questions varied in openness, follow-up question were posed when there was a need for clarification.

4.2.4 Construction of the Aggregated Model

Theories to constitute the aggregated model (presented in section 3.1) were selected based on relevance for the study, cross-theoretical coherence, scientific acceptance and empirical validity. Firstly, the five core models to constitute the aggregated model were selected (presented in section 3.1.1). Each stage for each theory was aggregated into one consolidated model (Appendix 5.3), creating an overview of stages. Including a primary embryonic stage resulted in a model reaching the maturity phase in the fourth stage, giving a more detailed mapping on first stages of company development. Secondly, common dimensions and sub dimensions of development were identified (Appendix 5.2). Two factors were regarded when choosing dimensions to adopt. Frequency, i.e. how many models used a certain dimension, and theoretical relevance for small tech companies. Finally, the characteristics of sub-dimensions in every stage were identified and described in order to reflect all five theories used.

4.2.5 Data Analysis

The empirical results were processed in accordance to an abductive reasoning where the theoretical framework acted as a base for data analysis. Similar methods of cluster analysis as adopted by Hanks et al (1993) and Sarason & Tegarden (2000) were adopted for the data analysis. To analyze the qualitative empirical data, interviews were codified. The codification and analysis of data has been structured bearing in mind suggestions from Chi (1997) and techniques described by King & Horrocks (2010). The processed followed the following pattern:

- (1) *Transcription*: The interviews were recorded, transcribed and then categorized according to the sub-dimension it reflected.
- (2) *Codification*: Each quote transcribed into the table of dimension was codified with a letter and a number. The letter (A-C) indicated if the quotation referred to a company phase in the beginning, in-between or today. The number (1-4) indicated what stage in the aggregated model the quotation best would suit within. Number one would equal a sub-dimension in stage one in the aggregated model. The codified result (1-4) was then organized into the respective phase (A-C), creating up to three phases for every case company.
- (4) *Consolidation*: To enable analysis of trends the different phases were clustered using squared Euclidean distance with the Between-groups linkage method, which fit the sample selection well (Kaufman & Leonard, 2009). The cluster analysis was based on the mean value of each phase, because all sub-dimensions were

equally weighted in a company development model (Miller & Friesen, 1984). The number of clusters used was decided upon to create similar distinction between development phases as within the aggregated model.

(5) *Comparison*: Two variables were used in order to identify deviations between the aggregated model and empirical findings. The first variable is the sub-dimension's development in correlation to the development of the mean value of all sub-dimensions between the different clusters. The correlation suggests which sub-dimension's development differs the most from how the aggregated model predicts development. The aggregated model has a linear development compared to the average and will therefore have a correlation of one. The correlation strength is further explained by following table, bearing in mind limitations of a small sample (n=17).

Correlations coefficient	Correlations strength
+/- 0.00 - 0.19	Very weak
+/- 0.20 - 0.39	Weak
+/- 0.40 - 0.59	Moderate
+/- 0.60 - 0.79	Strong
+/- 0.80 - 1.00	Very Strong

Table 4.1: Guide to Spearman's rank correlations coefficient

Source: Statstutor (2013)

The second variable is the average difference in mean values between the theoretical sub-dimension and the empirical sub-dimension in respective cluster. The analysis will use this measure because it illustrates the deviation each sub-dimension has compared to the cluster mean of total sub-dimension. The reason to why the analysis chooses to only measure relative values instead of comparing the absolute values to the aggregated model, is explained in the very nature of the models. Stubbart & Smalley (1999) and Miller & Friesen (1984) argues that development theories are not linear in time, but merely a snapshot of dimensions. Therefore, the analysis strives to find deviations by doing a comparison between relative values, with empirical findings and theoretical benchmark as the base.

(6) *Explaining variables*: The final step of the analysis was to find the exogenous factors that could have explanatory power to why tech company development in Frontier markets potentially deviate from tech company development in theory. Empirical findings regarding environmental factors were coded based on categories of MEFs in order to identify the most significant factors. As the integrated framework suggest, the proposed set of MEFs explanatory power of deviations was examined. Empirical observation also opened up for analyzes of new MEFs, not proposed in section 3.2, which required new literature to be introduced.

4.3 Discussion of method

Ensuring reliability and validity is of highest importance when conducting a study (Andersen, 1998). It defines the likelihood of gaining similar results when repeating the study (Yin, 2009). Possible limitations and mitigation methods to increase reliability and validity are presented below.

A possible limitation in the sample selection is the fact that five out of the nine case companies participates or have participated in incubation programs where business guidance is provided. This may increase the risk to skew results toward companies with the need of less internal business skills, resulting in a skewed company development. Furthermore, recommendations, networks and media coverage was used in order to gain contact with case companies. This could enhance the skewness towards finding success stories instead of companies representing the average tech company in Frontier markets. Furthermore, actions were taken in order to mitigate potential flaws in selected theories. The high validity of the theoretical framework and the broad range in the sample selection with three categories of interviewees make up these actions.

Studies relying on qualitative data come with a risk of bias in answers as well as interpretation bias (Saunders, 2011; Andersen 1998). In order to reduce interpretation bias both authors were present during the interviews, which all were recorded. By transcribing all interviews and asking clarification questions after interviews the interpretation bias could be reduced (Voss et.al, 2002). As suggested by Voss et. al. (2002) a similar questionnaire, with minor modification to the three types of interviewees, was used to create uniformity across all interviews. Lastly, interviews with CEOs and founders could make results more biased towards his/her positive view. To mitigate the effect of these errors, opinions from academic institutions and investor networks have been used to give a more nuanced picture.

Another limitation is the risk of subjectivity when analysing the data. Performing interpretations and analysis separately before drawing conclusions increased possibilities of providing objective analyses. (King, 2004). Furthermore, analyses and conclusions drawn were discussed with selected case companies, to decrease subjectivity (King & Horrocks, 2010). Finally, the thesis addresses the ethical aspect by giving the respondent the opportunity to examine the thesis before publication.

5. Empirical Findings & Analysis

This section begins by presenting the empirical findings coded into data. Subsequently, an analysis of dimensions that deviated most significantly from the theoretical benchmark is presented. The preceding analysis discusses the MEFs proposed to have explanatory power for the deviation observed. The final paragraph strives to examine the MEF impact on individual company development stages.

5.1 Company Development Deviations

5.1.1 Results from the qualitative study

The codification of qualitative empirical data resulted in 17 (n=17) phases for the nine studied companies (detailed in Appendix 6). Furthermore, three clusters of data could be identified while still being distinguishable enough in each recorded phase. Below is a section explaining how to interpret table 5.1 in order to correctly understand the codified empirical data. As stated in section four, a codified value of one represent the equivalent sub-dimension in stage one of the aggregated model. The aggregated model's stages therefore have a mean value of one in stage one, two in stage two and so on. Thus the values of each sub-dimension equal the mean value of that dimension. However, the empirical data cannot be categorized according to the absolute typology of the aggregated model, since it has not been validated in markets where MEFs differ from the U.S. (Stubbart & Smalley, 1999). However, dimensions used when mapping Frontier markets are generalized. The values reflect a quantified version of the qualitative data, with a purpose of examining possible discrepancies between empirical findings and theoretical benchmark.

Discrepancies between empirical findings and the theoretical benchmark is represented by low correlation and high average cluster mean deviation. As suggested by Miller & Friesen (1984) the dimensions of company development progress interdependently of each other, meaning that sub-dimensions theoretically should have similar values in each distinct cluster. The empirical data will therefore be used to compare empirical findings with empirical cluster mean values, and not direct towards the theoretical benchmark. Table 5.1 below illustrates the development pattern of the nine researched companies. Both correlation and deviation suggests that there is a discrepancy between the theoretical benchmark and the empirical findings, which will be analyzed further below. See Appendix 6 for data on each case company.

Structure	Cluster 1	Cluster 2	Cluster 3	Correlation to cluster mean value	Average difference to cluster mean value
Age	1.00	1.63	2.33	1.00	0.29
Size	1.00	1.63	2.92	0.99	0.21
Structural form	1.00	2.38	3.22	0.98	0.38
Formalization	1.50	2.44	3.33	1.00	0.48
Ownership	1.17	1.63	2.67	0.99	0.13
Leadership					
Centralization	1.00	1.50	3.10	0.97	0.31
Decision making processes	1.67	1.75	2.75	0.92	0.11
Management style	1.00	1.50	2.75	0.98	0.20
Strategy					
Innovation	1.67	2.25	2.00	0.52	0.52
Differentiation	1.00	2.25	2.42	0.89	0.30
Cluster Mean value	1.20	1.89	2.75	0.92	0.29

Table 5.1: Cluster Analysis of Empirical Findings

In short, table 5.1 describe the company development pattern of the case companies. All sub-dimensions build up a cluster (see Appendix 2 for explanation of sub-dimensions). E.g. cluster 2 have a cluster mean value of 1.89. This can be compared to the aggregated model's value of 2.00 in stage two. However, the three clusters should not be to be directly compared to the stages of the aggregated model. In the theoretical stage 2, all sub-dimensions have a value of 2.00, while the cluster analysis of empirical findings show a different story. Cluster 2 attributes age to 1.63 (described by table 3.2 as between: very young, <1 year, and young <4 years) while at same time attributing level of formalization to 2.44 (described by table 3.2 as between: nonexistent control systems & formal planning systems, and minimal formalization, few policies and job titles, low degree of formal systems). Therefore, companies characterised by stage one descriptions in the aggregated model are different from the case companies characterized by cluster 1 in cluster analysis. Furthermore, no company showed tendencies to have reached stage four (maturity stage) in the aggregated model, instead the clusters depict stages that are comparable to companies within stage one to three.

From the output in table 5.1 the four sub dimensions that indicated on the most significant and consequent difference in mean value deviations and correlation figures, were selected for further examinations. *Structural form*, *formalization*, *centralization* and *innovation* will be analysed with the help of the quantified and categorized

empirical findings in order to determine whether they constitute a discrepancy between company development in Frontier markets and theoretical benchmark. In summary, the quantified qualitative data is used to guide focus of the qualitative analysis and support observations of qualitative anomalies.

5.1.2 Deviation in Formalization

The empirical degree of formalization has shown deviations from theoretical predictions in each of the recorded three clusters. The data indicates that the level of formalization have a tendency to be developed one step ahead of other dimensions, which contradicts Miller & Friesen's (1984) findings. Eight out of nine case companies expressed that they have or have had a degree of formalization that was higher than predicted by the theoretical benchmark. The CEO at Encibuuko, a two-year-old fintech company with five employees, revealed: *"We have become more formalized. We built departments, we created proper work titles and detailed descriptions. We did this quite early actually"*.

Meanwhile, the development of formalization has a relatively strong correlation to the development of the cluster mean. This implies that the degree of formalization develops similar to other dimensions in terms of development trajectory as suggested by former research (Scott & Bruce, 1983).

In summary the mean deviations indicates that formalization characteristics could not be predicted by the theoretical benchmark, while the correlation showed that formalization developed in a pace in accordance with the theoretical benchmark.

5.1.3 Deviation in Centralization

The empirical degree of centralization shows tendencies to deviate from the cluster mean values. This is indicated by a comparatively high difference in mean value comparisons. The data suggests that the level of centralization is higher than predicted in the two primary stages of development. While data also indicate that the degree of centralization is lower than predicted in the third stage (Sarason & Tegarden, 2000). The dependency on the company leader is described by the CEO of the Kenyan graphic design firm Mezosi: *"Ideation usually happens top down. I need to sell the vision to the people under my management in order for them to perform their best"*. The dependency on the CEO is also supported by the manager of the business incubator Global Business Lab in Kampala: *"The majority is top down initiatives. Bottom up initiatives comes, but they are easily crushed. In short, the leadership has conformed to the communist principle. I know what is good for you. I decide for you"*.

On the other hand, four out of the six companies who had grown to the third stage of development indicated that they were less centralized than predicted by the theoretical benchmark. High centralization is a problem for the company's long term survival according to the CEO of Purpink, a web-based retailing company in Nairobi: *"In a hierarchical organization you always need someone to watch people. The boss becomes too much of a key figure so that if the boss leaves then you can't continue. You need an organization that can work when managers disappear and are exchanged"*. The problems with too much centralization is also pointed out by a professor in

Entrepreneurship at KCA University in Nairobi: *"Leaders are really important here. If you have a leadership change before the company reaches high growth rate, the company crashes. The success is dependent on vision and the vision is based on the leader"*.

In summary, the data suggests that there is a higher degree of centralization in the primary two stages and a lower degree of centralization in the third stage compared to theoretical predictions. The low degree of centralization in the third phase could be interpreted as a factor of success since a majority of companies who had grown to the third stage indicated on lower centralization than predicted. The correlation coefficient argues that the pace of centralization development shows a weak tendency to develop in prediction with the aggregated model. However, one must be critical to the results in this case since the empirical data for the third phase is skewed towards companies that have made as far as the third phase.

5.1.4 Deviation in Structural form

The empirical degree of structural form shows tendencies to deviate from cluster mean values, indicating that structural form deviate from corresponding characteristics in other dimensions. In stage two and three the data for all nine case companies show tendencies towards higher values of structural form than the cluster mean. Hence, the case companies have developed a more complex structural form than predicted by the theoretical benchmark (Churchill & Lewis, 1983, Miller & Friesen, 1984). The CEO at Encibuuko, a Fintech company of less than two years with five employees, was asked about the structure within the company: *"We have been moving towards a vertical organizational structure. For example, we set up departments last year"*. A senior manager at Software Technologies, described how the extensive organizational structure became of vital importance for the company to retain their strategic focus: *"We have hierarchies. We have always had hierarchies. Board of directors, Managing Directors, Head of departments and Departments. It has helped us with our strategy. Kept us focused"*.

In summary, the correlation coefficient of the structural form is considerably high while the level of structural form shows a strong tendency to deviate from the cluster mean. This indicates that the dimension follows a development trajectory similar to the aggregated model but enhanced in stage two and three.

5.1.5 Deviation in Innovation

Table 5.1 shows that innovation has the weakest correlation and a high average difference to the mean value of each cluster. In the two primary stages the case companies show a tendency towards low innovation. This is described by manager of Global Business: *"Most companies are copy-cats, one day a company does a taxi app and the other day some other are doing the same thing, that's not innovation that's only copy"*.

Seven of the nine companies experienced lower innovation than the respective mean value of the cluster. The level of innovation stays lower than theoretically predicted in stage one and two. However, in the third stage four out of the six companies who had grown to the third stage of development experienced a high

level of innovation, which contradict patterns suggested by former research and tech company development (Sarason & Tegarden, 2000). This strengthens the suggestion that companies reaching the third stage have done so because of their ability to be more innovative than average companies.

In summary, innovation has the lowest correlation and a high deviation. Which indicate that the level of innovation is lower in cluster one and two than the predicted pattern (Miller & Friesen, 1984). The tendencies towards higher innovation than predicted in the third stage suggests that innovation is to be considered a success factor.

5.1.6 Sub-conclusion

The empirical findings and analysis of the company development deviations show that the four sub-dimensions in focus (formalization, centralization, structural form and innovation) suggest that there is a discrepancy between the theoretical benchmark and empirical findings. The deviations within these four dimensions indicate that the theoretical benchmark fails to predict company development. This legitimises a thorough analysis of MEFs explanatory power and impact on tech company development in Frontier markets.

5.2 Macro Environmental Factors - MEFs

The following section builds upon the observed discrepancies between the empirical findings and theoretical benchmark suggested in section 5.1, and continue the analysis towards explanatory power and impact of the MEFs. The MEFs proposed to have explanatory power, presented in section 3.2, along with empirically identified MEFs' are analysed below.

5.2.1 Education

In the study of entrepreneurial enterprises, the educational aspect is of vital importance to take into consideration (Robinson, 1994; Guo et al, 2015). This is furthermore supported by the fact that the selected case companies is started by students or recent graduates. The educational system will therefore be tested as a MEF with impact on company development. Seven out of nine case companies mentioned the educational system as a factor that affected the company performance negatively. A manager at Finafrica Business Incubator discussed this regarding the educational system: *"The education system is not sufficient for the start-up scene in Kampala. Our education system is focused towards employment rather than business. It makes people into order takers, not initiative takers. Many of the graduates are more inclined to look for a job than start their own job"*.

Further empirical findings indicate on a similar view of the educational system as a system promoting studying patterns suitable for employment and directives rather than venture creation and creative problem solving. CEO at BRCK, a hardware tech company in Nairobi, discusses the challenge with hiring employees from local universities to entrepreneurial companies: *"We normally don't hire directly from universities in the area."*

We're a company without hierarchies in need of independent people who take initiatives. It has proven more effective to find that among people educated elsewhere". Hence, students, and in extension employees, with less independent problem solving skills will to a greater extent be reliable on a decisive leader, a clear responsibility division and well established protocols and processes to follow. Hence, the educational system can be regarded as an MEF increasing centralization, structural form and formalization as noted in empirical findings.

Furthermore, three out of the four interviewed managers at business incubation labs mentioned a weak communication- and relationship infrastructure between technological and business related institutions. A low degree of communication between these two, which both are crucial for the success of tech company development, is likely to result in lower ability to innovate solutions that are creative and long term profitable. An example of this is described by Chesbrough and Rosenbloom (2002) who emphasize the need for clear business management for a successful tech enterprise. This can be regarded as a MEF that has impacted the empirical findings suggesting low ability to innovation.

In summary, the educational factor is suggested to impact company development towards a higher centralization, formalization and more complex structural form while it decreases innovation. This proposition is supported by the empirical data.

5.2.2 Culture

Culture is a MEF that certainly will differ depending on individual countries and sometimes even individual regions. However, it is proposed to have a substantial impact on the business climate as suggested by Ghemawat (2001) and will therefore be examined as a MEF with impact on company development.

Examining the cultural impact on employee commitment their company provide possible explanations for the empirical level of structural form which showed higher values than predicted by the aggregated model. A manager at Software Technologies described the difference between work morale in his company and typical western companies: *"The major difference is; here it's about being in place the hours you sign up for. In the west it is about getting your task done. Here it is about attendance"*.

Accordingly, work performance is in many cases measured in attendance rather than actions. In order to maintain productivity in companies the importance of distinct roles with distinct responsibility areas and responsible managers becomes of greater importance. Harrison & Huntington (2000) supports the this proposition by highlighting the importance culture has had on national economic development in Frontier markets. Hence, the empirical findings suggesting a high structural form can be explained by a work culture in need of hierarchies.

Furthermore, our empirical results indicates that there is an absence of company culture. The CEO at Purpink says: *"We never had a culture. Now we are starting to define our culture. Throughout our first years we have primarily been focused on staying afloat"*. In this case, among many, there are more urgent needs that must be

addressed before the company prioritizes to build a company culture. Organizational culture can be defined as a shared set of assumptions forming social control system suggesting a correct way to perceive problems (Schein, 2006). Hence, the absence of company culture requires substitutional systems that controls and guides the behavior among employees. The empirical findings suggesting high values in structural form and formalization is therefore suggested to be the product of a lacking company culture.

Finally, the cultural aspects can explain the high tendency towards centralization shown in the empirical results. The manager at Finafrica Business Incubator describes the typical family constellation as being centralized around the family father: "The normal form of family - there is a man, he is head of family in every aspect. It is close to kingship." Viewing the father as the central family piece and leader of the family is supported by Amadiume (1997) who refer the role of the family father to historical culture. The CEO of Encibuuko confirms this picture and describes the proposed impact on companies: "The same mentality goes with the person in business. It means absolute power. In your home as well as in your company". Hence, the centralization within families is suggested to have increased centralization in the business context. The high empirical values of centralization is thus proposed to be explained by the cultural factor.

In summary, the cultural factor is suggested to impact company development towards higher formalization, centralization and a more complex structural form. This notion is supported by the empirical data.

5.2.3 Investment Infrastructure

As access to capital is crucial for companies in early stages of development the investment structure was repeatedly mentioned during the gathering of empirical data (Gilbert, 2006). Seven out of nine case companies expressed concerns for the informal investment infrastructure and the difficulties of getting in contact with investors, this statement is further strengthened by Green et al's (2002) study on difficulties in raising capital. Difficulties were expressed regarding finding both local and foreign investors. An accountant at Africar, a Kenyan company providing software for busses expressed: *"Most of the investors coming here are foreign investors, but often they do not understand the african market and sometimes they add a premium. But at the same time local investors doesn't understand this industry"*. Similar reflections were presented by other case companies. There is currently a lack of business climate insights among foreign investors with tech focus. Among local investors who understands the business climate there is a lack of knowledge for the tech industry.

Furthermore, investments infrastructure affect company development because of investment skewness towards organizations with social impact. This issue is mentioned as problem by several case companies. The CEO of Mezosis describes: *"Western investments firms always look for companies with social impact to invest in. It is good marketing for them. It limits the the capital we can apply for"*. Foreign investors are generally more interested in businesses that has a direct positive effect on society. Also known as impact investing, is one of the main reason to why some firms invest in low income markets like Frontier markets. Impact investing draws capital from profit driven companies which result in a slower growth, as suggested by Cooper et al (1994).

Hence, empirical findings propose that poor investment infrastructure together with skewed investments towards impact investments has a negative impact on company growth. However, since the proposed aggregated stage model only reflect company development in terms of mentioned three dimensions, growth rate is not measured. One can argue that the age is a measure of growth rate. Low age compared to a high cluster mean value could be interpreted as a high growth rate. Nevertheless, since the aggregated model bases the mapping of company development on internal relativity rather than absolute comparisons it fails to plot a reliable growth rate (Miller & Friesen, 1984). To conclude, the used aggregated stage model does not capture the effects of an investment infrastructure that differs from the countries where the former models were empirically tested. Therefore, no conclusions can be drawn regarding the impact investment structure has on company development.

5.2.4 Governance

As entrepreneurial companies often have weak financial solvency and easily disrupted budget plans the support function provided by entrepreneurial initiatives in Europe and the U.S. become a great benefit (Black & Straharan, 2002). Being seldom the case in Frontier markets, the governmental aspect and institutional support is important to study. The empirical results indicated on a considerable negative impact from lack of protection regarding intellectual property. As a result from the weak institutional support empirical findings indicated a decrease of investments in R&D, as supported by Gilbert (2006). The CEO of Mezosi reveals: *"One other thing that hinders progress is that people fear to make their ideas public, they fear that someone steals their projects. I want to go out and ask for feedback, but then maybe I'll see my project on a big company"*. The empirical findings are supported by Abor & Quartey's (2010) report which claims that lack of property rights hinders SME's interests in investing in R&D. Hence, the government is proposed to impact company development towards a decreased motivation to invest in innovation. This notion is supported by the empirical data.

Furthermore, the empirical study indicates that the government affects growth rate in company development. The founder of Donedeal, a deal website in Kampala, discusses: *"The government has just realized that ecommerce must be profitable since Hellofood makes so much commercials. Therefore, they are imposing a new e-commerce-tax on companies within e-commerce"*. The marketing director at Totohealth suggests similar obstacles: *"Registration of companies is easy. But governmental corruption become challenge is when you want to make business. There are a lot of kickbacks within the projects. When you start making money, you also have start paying money"*.

Six out of nine case companies describe that governmental corruption and aimed taxation becomes a problem for both young and old incumbents when they increase their revenues. Financial growth can become problematic for this reason and a capital that could have been used to re-investment is lost. Hence, it is believed that these aspects of governmental actions hampers growth. However, as in the case when investment infrastructure is measured, the fact that the aggregated model measures relative values and not

absolute values the model fails to capture data regarding growth (Hanks et al, 1993; Sarason & Tegarden, 2000).

In summary, the governmental factor is suggested to impact company development towards a lower degree of innovation. This notion has support in the empirical data.

5.2.5 Business Environment

When connecting MEFs presented in section 3.2 to empirical deviations from the aggregated model it was found that not all deviations could be explained by the MEFs previously presented. Five out of nine case companies mentioned business environment as a factor that had significantly affected their organizational development. In the following paragraph business environment will be tested as a MEF with explanatory power for empirical deviations, therefore impacting development patterns.

The business environment plays a significant role in how companies develop since it can become more or less of a pressure for incumbents to adapt their development to competition (Gilbert 2006). The empirical results indicated that tech business environment is characterized by low barriers to enter and a non-saturation in the tech market. This has led to a lower degree of competition for entrants in Frontier markets, as described by a manager at Teknohama, a Tanzanian Tech hub, discusses: *"Anyone with tech knowledge can enter this market. In fact, you don't even have to know tech. People take others ideas. The demand is higher than supply anyway"*. The many business opportunities has impacted entrants toward less pressure to innovate and come up with new products, which can be the case in markets of low competition (Gilbert, 2006). Hence, the business environment is proposed to have explanatory power for the tendency among case companies to possess a lower degree of innovativeness in the primary two phases than predicted by the theoretical benchmark (Miller & Friesen, 1984).

In the final phase case companies shows tendencies toward being more innovative than predicted according to theories. A manager at Software Technologies provides a quotation that provide insights in this phenomena: *"Hats off to the CEO. She has kept Software technologies within the region of focus. She could have easily gotten into cheap thrills and accepted offerings outside our core competence, but she remained within in our speciality of product offerings when going got tough"*. Software Technologies is the largest company within the scope of this study, and the managers describes how important it has been for them to remain within their niche industry. Hence, when the business environment gets more hostile, typically towards later stages of company development, innovation become a success factor in order to survive competition.

In summary, the business environment is suggested to impact company development and have explanatory power for the lower degree of innovation in the primary stages of development in Frontier markets. Furthermore, business environment impacts the level of innovation towards becoming a success factor in later stages of company development. This proposition is supported by the empirical data.

5.2.6 Correlation Analysis

By analyzing the correlation of dimension development to company mean the study gains insights in which phases MEFs have the greatest impact. The correlation coefficient is close to 1.00 for all sub-dimensions except for innovation, implying that these sub-dimensions are affected in same same way by MEFs throughout the phases. The correlation coefficient of innovation is by far the lowest, with a value of 0.52, suggesting that the dimension develops inconsistently with the cluster mean. This indicates that the MEFs which has caused the deviations in innovation have affected that specific dimension of development in an inconsistent way throughout the phases of empirical focus. Thus, the MEFs impacting innovation are stronger in some phases and weaker in other phases. The most significant MEFs impacting the development of innovation is education and business environment. Company mean figures and quotations regarding these factors suggests that they have a negative impact on innovation. The figures in the third cluster, indicating a high level of innovation, should not be attributed to education or business environment but rather be regarded as a success factor enabling companies to reach phase three. Hence, the skewed development trajectory of innovation implies that education and business environment has their most significant effect on the primary two stages of company development.

5.2.7 Sub Conclusion

MEFs have been analysed in order to find factors with explanatory power for the deviations between theoretical benchmark and empirical findings. The analysis of the proposed MEFs indicate that three of the four MEFs proposed in section three have an impact on businesses development in Frontier markets. Education, culture and governance, along with the new identified MEF, business environment, show explanatory power for the deviations in the sub-dimensions studied (see figure 5.1). No explanatory power for deviations between empirical finds and theoretical benchmark could be connected to Investment infrastructure.

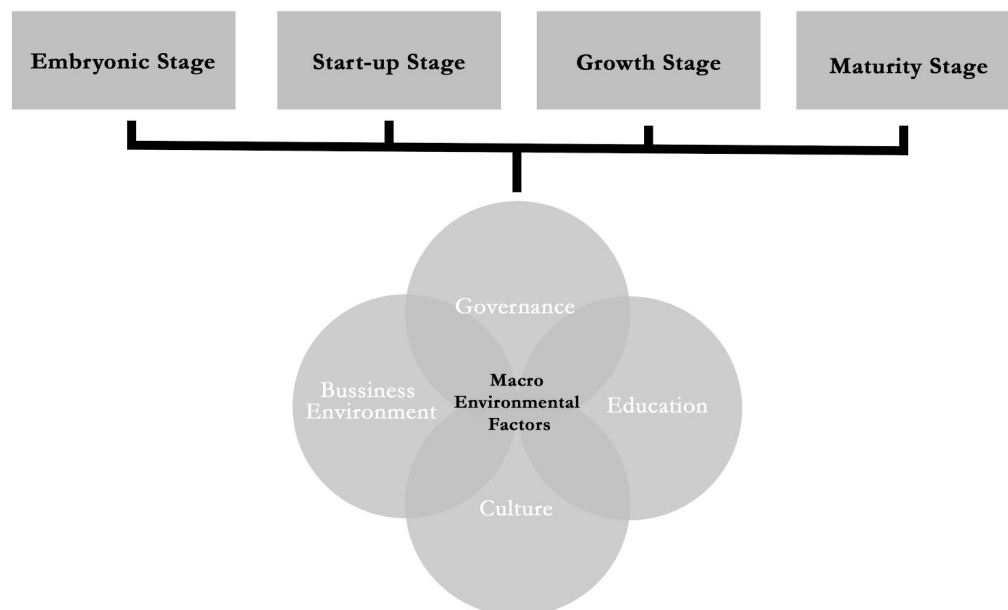


Figure 5.1: Identified MEFs with Explanatory Power

6. Discussion

Building on the observed deviations and proposed MEFs, the following section will discuss possible interpretations of the empirical findings and analysis. Due to a set of sources of error within the deviation analysis as well as within the MEF analysis the explanatory power of the MEFs can be reduced or eliminated. Scenarios of presence and absence for each of these sources of errors will be interpreted and discussed below.

6.1 Alternative Explanations of Empirical Deviations

In section 5.1 deviations between empirical findings and company development theories were proposed. It is imperative to be critical to these suggestions and examine possible alternative reasons to why deviations from the theoretical benchmark occurred, before adopting the results. Deviations based on reasons outside true difference between company development theories and tech company development in practice would mitigate the explanatory power of the proposed MEFs.

6.1.1 Alternative A: Fundamental Theoretical Errors

The discrepancy between empirical findings and theoretical benchmark can be a product of flawed development theories. This is argued by Stubbart & Smalley (1999) who claims that the theoretical and empirical limitations sabotage their usefulness to the point that they are more deceptive than informative. Hence, even in markets where the theories have been empirically tested it is arguable whether their predictions can depict true company development. The inherent theoretical flaws could therefore have explanatory power for the deviations between empirical findings and the theoretical benchmark.

6.1.2 Alternative B: Incorrect Consolidation of Theories

A source of error is potentially that the five theories used in the aggregated model was misinterpreted and incorrect key takeaways were summarized. In this case the aggregated model created would naturally give rise to differences between theory and empirical findings because of its incorrectness as a benchmark.

6.1.3 Alternative C: Inadequate Representation of Empirical Findings

The case companies have been chosen in order to represent all aspects of early tech company development to the point that this thesis aims to generalize. Institutions such as universities and incubators have been interviewed in order to validate the empirical results. Yet one must critically evaluate the possibility of empirical findings not corresponding to actual tech company development. Comparing the aggregated model with empirical findings that does not correspond to reality would inevitably lead to deviations from theory because of the inability among case companies to represent the population of focus.

6.2 Sources of error in the use of MEFs

The following section will address the scenario where alternatives A-C do not have a significant impact on the results. The deviations between empirical findings and theoretical benchmark are regarded as valid and the MEFs proposed in section 5.2 are suggested to have explanatory power for these deviations. In this case, one must address the possible sources of error that could result in incorrect analyzed MEFs.

6.2.1 Alternative I: Incorrect Interpretations of MEFs

The MEFs proposed to have explanatory power for the deviations could have been inaccurately interpreted in their impact on business environment. The theoretical inconsistency in which specific MEFs that were relevant for company development could have resulted in failure to acknowledge MEFs relevant for company development. In extension this could result in suggesting incorrect MEF-impact on company development theories and failure to address relevant MEFs.

6.2.2 Alternative II: Incorrect Representations of Empirical Findings

When analyzing the link between identified deviations and MEFs with explanatory power, empirical findings were used. Hence, one must be critical in the representation of the empirical findings used. Subjectivity and failure to acknowledge key points could result in MEFs proposed inadequately depicts true MEFs.

6.3 MEFs explanatory power

Finally, one must take into consideration the possibility that the deviations analysis as well as the MEF analysis has not been subject to significant impact from sources of error. In this scenario, the deviations observed between the theoretical benchmark and empirical findings corresponds to real deviations. This would support the proposition that existing company development theories gives an incorrect estimation to how tech companies develop in Frontier market. Furthermore this would mean that the MEF analysis has been done without major flaws in method or findings. In this case the MEFs would be suggested to have an impact on tech company development in Frontier markets. As sources of errors A-C as well as I-II are mitigated by adopting methods to strengthen the validity and reliability of the study, described in section 4, this thesis regards the MEFs to have a considerable explanatory power. However, one must bear in mind that the presence of the alternatives above is not binary. The alternatives can have a varying degree of impact on the explanatory power of the MEFs.

7. Conclusion

The following section will discuss the conclusions and the set of probable implications from the performed study. The sections continues by discussing generalizations and critique of study and lastly suggests further research.

7.1 General Conclusions

The main objective of this thesis was to answer following research questions:

- (1) To what extent will company development theories be able to predict tech company development in Frontier markets?***
- (2) What impact do macro environmental factors (MEFs) have on tech company development in Frontier markets?***

By examining these questions the aim of the study was to reduce the identified research gap regarding inadequate knowledge of MEF impact on tech company development patterns in Frontier markets.

By reviewing the literature, it can be established that theories on company development have been developed and empirically tested primarily in the U.S. Furthermore, company development theories are (among other uses) used to predict challenges and opportunities for companies, which is of high relevance for investor decision-making. As of today the applicability of company development theories in Frontier markets is unknown. There is a lack of knowledge regarding if and how MEFs will affect tech company development (Stubbart & Smalley, 1999), as identified by the research gap. An integrated framework, consisting of consolidated theories on company development together with theories and reports on MEFs in Frontier markets, is presented to fill this research gap. The integrated framework is the first step in providing a tool that takes MEFs into consideration when examining tech company development in Frontier market.

Ten dimensions of development across three different clusters were studied. A discrepancy between empirical findings and theoretical benchmark was identified. Four dimensions were found to constitute the foundation of the identified discrepancy: structural form, formalization, centralization and innovation. An analysis of MEFs were conducted in order to find explanatory variables for the observed discrepancies. Four MEFs with explanatory power were identified: education, culture, governance and business environment.

Presented alternatives A-C and I-II make up the core critique of this study. These alternatives are derived from an incorrect usage of development theories and MEFs. They can be interpreted and categorized accordingly, (A) the reliability and accuracy of development models, (B) incorrect consolidation and operationalization of the development models and lastly, (C) empirical findings that are incorrect and deviate from reality. The more impact A-C have had on proposed deviations the more mitigated is the

explanatory power of the proposed MEFs. In the case alternative A-C had little or no impact on the observed deviations the source of errors I-II in the MEF analysis have to be taken into consideration. Both options would reduce the ability to draw conclusions regarding the proposed MEFs. (I) and (II) represents faults in the method of MEF analysis.

In conclusion, the study shows that company development theories fail to depict true tech company development in Frontier markets, thus answering the first research question. Furthermore the analysis show that the identified deviations can be explained by MEFs, thus answering the second research question. However, the findings must be put in context of the proposed sources of errors, which could mitigate the validity of the findings. In any case, this study suggests that Macro Environmental Factors can be examined through the proposed integrated framework. Therefore, this thesis forms an important starting platform for future research on this topic.

7.2 Implications

The proposition that environmental aspects can cause deviations between empirical findings and theoretical benchmark was the intended implication of this study. Though when applying the integrated framework on Frontier markets the implications of this thesis depend on how results are interpreted. The following section will bring up conclusive implications based on the impact of alternative A-C and I-II on the results. One must bear in mind that alternatives A-C and I-II should not be regarded as binary but can occur in a range of degrees, impacting the results depending on the intensity. The more impact they have had on the results, the more mitigated are the implications regarding MEFs.

7.2.1 Presence of Alternative A-C and I & II

If the deviations between empirical findings and theoretical benchmark is caused by (A) (i.e. flaws in the theories themselves), the study would have no findings to support that MEFs have an impact on tech company development in Frontier market. This would mean that current company developments theories are invalid regardless of where they are applied. The practical implication for investors would be to not use company development theories even in the countries where they were developed.

The presence of alternative B and/or C, (i.e. error in consolidation of theories and/or empirical findings) would result in that the MEFs have been analyzed from incorrect deviations due to method errors. Theoretically this could mean that the research gap is yet to be filled due to inability to draw proper conclusions regarding what deviations one can observe. The theoretical implications is that the study should be replicated with a modification in the method. The practical implications would still be that it is difficult to apply developmental theories in Frontier markets since there is an uncertainty regarding the impact of MEFs.

In case only situation I and/or II (i.e. incorrect interpretations of macro factors and/or errors in empirical findings) significantly has impacted the results no conclusions can be drawn regarding MEFs explanatory power. The theoretical implication is that the MEF analysis must be redone with more accurate empirical interpretation and case companies that better represents the environmental conditions. However, the study has successfully indicated on deviations between company development theories and tech company development in Frontier markets

7.2.2 Implications of Accurate MEFs

If alternatives A-C and I-II did not have a significant impact on results, the study has reached its full aim. By successfully identifying deviations and explanatory MEFs this thesis has taken a step in closing the proposed research gap. Hence, the practical implications is that investors should take the four MEFs, Educational system, culture, governance and business environment, into consideration when applying company development theories on frontier markets. The suggested MEFs may be some among many factors, which is why the integrated framework should not be statically applied but rather practiced with a contextual consideration. The theoretical implication in absence of sources of errors is a case study supporting (1) deviations between current theory on company development and actual tech company development in Frontier markets and (2) MEFs impact on company development. Furthermore, this implies that further studies must be done on this subject in order to validate findings.

7.3 Suggested Further Research

Further research should focus on mitigating the known sources of errors. An empirical study with more companies and Frontier markets could be used to validate our empirical data of tech company development and MEFs in Frontier markets. Furthermore, it would be of interest to make a more detailed mapping of the MEFs chronological impact during different stages of tech company development. The scope of this survey could not provide conclusions on the intensity of each separate MEF but rather on the total impact MEFs has on each dimension of development. A suggested research would therefore be to study each individual MEF and its intensity in affecting tech company development.

It would also be of interest to see a comparative study with case companies from both Frontier markets and the U.S. This would mitigate alternative A and focus on MEFs as the explanatory variable for deviations in tech company development. It could not be done within the scope of this study, but it would be the most precise method to examine the effect of MEFs since it nullifies the risk of theoretical errors.

8. References

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9. Appendix

Appendix 1. Frontier Markets Countries

1.1 Map of Frontier Markets



Figure A.1: Map of Frontier Markets

Sources: MSCI (2015) and UN (2015)

1.2 List of Frontier Markets Countries

• Argentina	• Kuwait	• Serbia
• Bahrain	• Lebanon	• Slovenia
• Bangladesh	• Lithuania	• Sri Lanka
• Bulgaria	• Mauritius	• Tanzania
• Croatia	• Morocco	• Trinidad and Tobago
• Estonia	• Nigeria	• Tunisia
• Jordan	• Oman	• Ukraine
• Kazakhstan	• Pakistan	• Uganda
• Kenya	• Romania	• Vietnam

Table A.1.2: MSCI and UN List of Frontier Markets

Sources: MSCI (2015) and UN (2015)

1.3 Top 20 Frontier Markets Countries

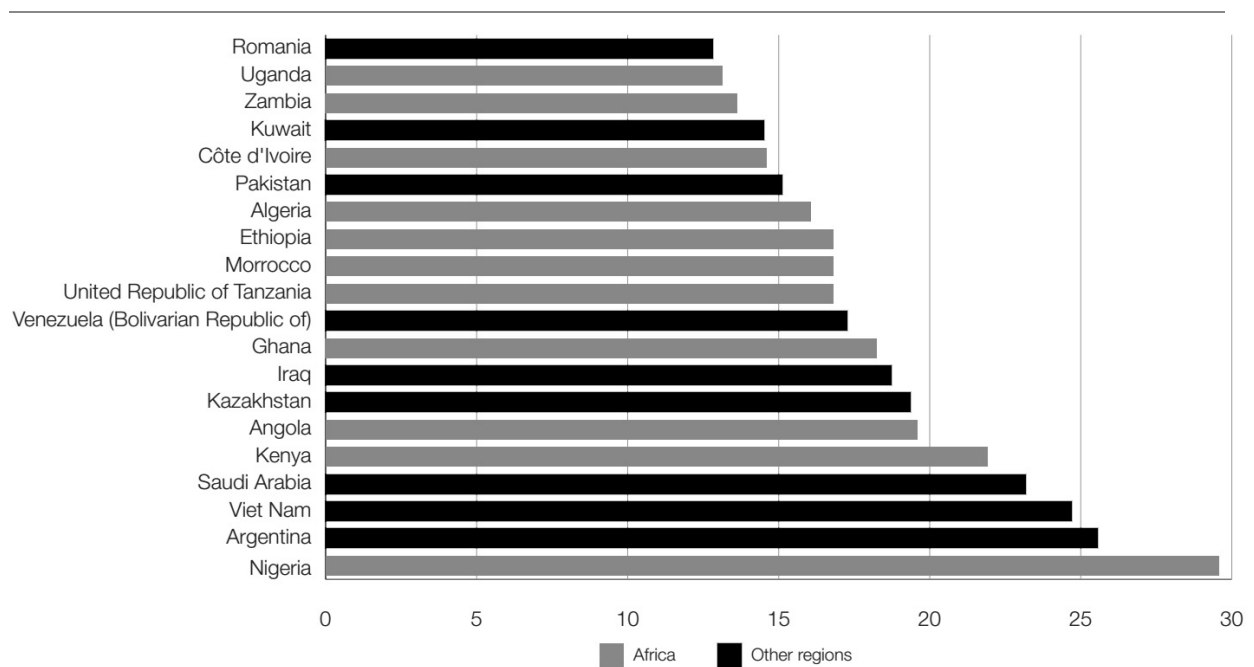


Table A.1.3: Top 20 Frontier Markets Countries

Sources: MSCI (2015) and UN (2015)

Appendix 2. Aggregated Model's Dimensions and Sub-Dimensions

Tech company development is measured using four dimensions with ten in total sub-dimensions. The descriptive content of each sub-dimension in Appendix 1 is derived from the five models the aggregated model is constructed from, the explanations and meaning behind each sub-dimension is explained below and based on following articles because of their relevance to constructed aggregated model, Scott (1984), Miller & Freisen (1984), Churchill (1983) Hanks et al (1993), Sarason (2000):

Structure

Here the model addresses *age*, *size*, *structural form*, *formalization* and *ownership* as sub-dimensions of company development. These therefore reflect the complexity of the firm, for example, when growing in size the administrative task would become more complex and formal (Scott, 1984).

Age

The *age* of the company is in the former models as a descriptive measure, where it depends on their *age* of being active etc. Very young is approximately represented by max 1 year as suggested by Hanks et al (1993), the following descriptions are depending on the context (e.g. how long their current business idea existed etc.) (Hanks et al, 1993; Miller & Friesen, 1984).

Size

This sub-dimension is described in first two stages by an descriptive measure of size, because the existence of part time employees and freelancer. Later the number of freelancer etc. does not have the same impact which then makes it easier to use an absolute measure of size in number of employees according to former theories.

Structural form

The measurement is based mainly on the divisional structure, higher *structural form* equals more divisional heads that are responsible for decision making and their own performance (Miller & Friesen, 1984).

Formalization

The level of *formalization* within policies and procedure determine this sub-dimension, more specific is the presence of these systems that is measured (Churchill & Lewis, 1983).

Ownership

This sub-dimension is determined by the disparity of the *ownership* and is described by a descriptive measure as seen in Appendix 1. The different stages are represented by a described state of disparity of *ownership* (Miller & Friesen, 1984).

Leadership

This dimension looks at *centralization*, *decision making process* and management style. Growing companies experience, besides from a more complex structure, an increased analysis in the *decision making process* (Miller & Friesen, 1984).

Centralization

The level of *centralization* is determined by the level of power the top leader and other leaders have in the company. This could be the level of decisions made på top executives (Churchill & Lewis, 1987).

Decision making process

This process is determined by its analytical level and clear structure. A high analytical level is a process where many specialized managers are involved in the decision and base the results on thorough research (Miller & Friesen, 1984).

Management style

The Management is also according to type of leadership, it grows interdependent along all the other dimensions and sub-dimensions (Miller & Friesen, 1984).

Strategy

Strategy includes level of *innovation* and *differentiation*. This sub-dimension deals with less absolute values and more descriptive ones.

Innovation

The level of innovation indicates the innovation in business idea, work process, the amount of ideas that are discussed and the innovation in product improvements and product creation (Miller, 1984; Hanks et al, 1993).

Differentiation

Differentiation is a variant of *innovation*, it measures broadness in the product line. The more markets and larger target audience reach, the higher *differentiation* the company has.

Appendix 3. Sample selection

Company	Interviewee	Country	Industry
Intership	Founder	Uganda	Tech shipping
Donedeal	Founder	Uganda	Discount webpage
Ensibuuko	Founders	Uganda	FinTech
Totohealth	Founder Accountant	Kenya	Health Tech
Mesozi	Founder	Kenya	ICT
Africar	Accountants	Kenya	Tech devices for transportation
Purpink	Founder	Kenya	Sales platform
Software Technologies	Manager	Kenya	Software Development
ICT Development	Founder	Tanzania	ICT
NMB	Manager	Tanzania	Microfinancing
Bidnetwork	Consultant	Netherlands	Investor networking
Incubator			
Outbox	Manager	Uganda	Tech incubation
Finafrica	Manager	Uganda	Incubation
Global Business Lab	Manager	Uganda	Tech Incubation
Teknohama	Manager	Tanzania	Tech Incubation
Universities			
KCA University	Professor in Entrepreneurship	Kenya	Prof. in entrepreneurship

Appendix 4. Questionnaire

4.1 Questionnaire for Companies

Situation

1. What do you do at company X?
2. When did you start working on the idea/in the company? (Age)
3. How has the number of employees changed from start until now?
 - a. What is your comparable size to competitors? (Size)
4. How has the growth of your company changed from start until today? (Growth)
 - a. Revenue, sales, profit, customers ?
5. How has the ownership changed from start until today? (Ownership)
6. How has the level of competition evolved from start until today? (Environment)
7. How does the government impact startups / big companies? E.g: regulations, taxes, corruption?
8. Is the national education system sufficient for the start-up industry?
9. How does the (national) culture affect the start-up interest?
10. What is the best thing about managing a small company in this region?
11. What is the biggest challenge about driving a small company in this region?
12. What is the best thing about driving a big company in this region?
13. What is the biggest challenges about driving a small company in this region?

Organization & Decision making

1. If you were to draw your organisation on a paper. How would it look? How many levels, technostructure, HR and so on. (Centralization)
2. How have the hierarchies evolved from start until today? (Structure)
 - a. Grown vertically, with more departments, or relatively flat with similar structure)?
3. Formality:
 - a. How has the development of work titles and their descriptions evolved from start until today? (Formality)
 - b. How has the development of corporate protocols and rules evolved from start until today? (Formality)
4. How has the decision making process changed from start until today, has it been delegated to departments? (Centralization, decision making)
 - a. Has it become more analytical, more structured, not as bold/dramatic?
 - b. Does the centralization of power increase or diminish as companies grow?
5. What has characterize the leadership in early stages? In later stages?
6. How has the initiatives/change processes changed? bottom-up or top-down?
7. How has the daily tasks of the CEO changed from start until today?
 - a. Administrative work, gathering information for decision, performance control?
8. How would you describe the culture in the company? How has it developed, start until today?

Strategy & Innovation

1. Has your level of product innovation changed from start until today? How has your focus on product development and differentiation changed over time? (Innovation) Why has this change occurred?
2. Describe your business strategy: innovation, prestige pricing, price cuts, dominance of distribution channels, incremental modifications, geographical expansion, vertical integration, advertising, shotgun approach to new product development, market segmentation, niche strategy, collusion, lobbying.
 - a. What was the business strategy in the first stage?
3. How has your product market strategy evolved from start until today? (Differentiation, quality, image)
4. How has your focus on advertising changed from start until now? (Risk taking vs rapid growth)
5. How has your focus shifted throughout the development of your firm? For example: resource accumulation, task structures, operating systems, R&D, volume production, distribution.
6. Initially, would you claim to be a niched company or a company with a broader scope? How is it today?
7. Is the strategy to consolidate or divisionalize in the future?

4.2 Questionnaire for Incubators and Universities

Situation

1. Describe the companies in your incubator (Age, Industry etc)
2. What does your incubator provide your member companies with?
3. How would you describe the growth rate of companies from their start until maybe 5 years, when do they grow the most?
4. How is the business environment? Has it changed lately? (Competition, heterogeneity etc)
5. Is the national education system sufficient for the tech start-up industry?
6. How does the (national) culture affect the start-up interest?
7. How does the government impact startups / big companies?
8. What is the best thing about managing a small company in this region?
9. What is the biggest challenge about driving a small company in this region?
10. What is the best thing about driving a big company in this region?
11. What are the biggest challenges about driving a small company in this region?

Organization & Decision making

1. What is the normal organisational structure? (Do you see a formalization)
 - a. How has the development of work titles and their descriptions evolved from start until today? (Formality)
 - b. How has the development of corporate protocols and rules evolved from start until today? (Formality)
2. What is the trend, to develop horizontally or vertically?
3. Does the owner do it all, or do some of them have a departmentalised structure? (Centralization)
4. What happens to the companies during the development in the incubator?

5. Please tell us about the leadership in these firms: Who has the most authority and is it delegated? Has it evolved? (Centralization)
 - a. Does the centralization of power increase or diminish as companies grow?
 - b. What has characterized the leadership in early stages? In later stage?
6. How has the initiatives/change processes changed? bottom-up or top-down?
7. How would you describe the culture in the company? How has it developed?

Strategy & Innovation

1. Does the level of innovation change during the time in the hub?
2. What is the common business strategy for market penetration and growth:
3. How has your focus shifted throughout the development of your firm? For example: resource accumulation, task structures, operating systems, R&D, volume production, distribution.
Innovationen minskar då folk taggar motivationen.
4. How has your product market strategy evolved from start until today? (Differentiation, quality)
8. How has you focus on advertising changed from start until now? (Risk taking vs rapid growth)
9. Would you claim that there is often a substantial risk taking during the development of firms here
10. Is the strategy to consolidate or divisionalize in the future?

Appendix 5. Construction of Aggregated Model

5.1 Common Development Stages, 4 Early Stages

Model	Embryonic	Start-up	Growth	Maturity
Hanks et al, (1993)	1.Start-up	1.Start-up	2.Expansion stage	3.Consolidation stage
Miller & Friesen (1984)	1.Birth Phase	1.Birth Phase	2.Growth Phase	3.Maturity Phase
Sarason & Tegarden (2000)	1.Embryonic	2.Startup	3.Growth	4.Mature Multiline
Scott & Bruce (1983)	1.Inception	2.Survival	3.Growth 4.Expansion	5.Maturity
Churchill & Lewis (1983)	1.Existence	2.Survival	3.Success 4.Take-off	5. Resource maturity

Table A.5.1: Common stages of development

5.2 Common Sub-Dimensions of Development

Theory	Structure	Leadership	Strategy
Hanks et al, (1993)	Age, Size, Structural form, formalization	Centralization	Business task
Miller & Friesen (1984)	Age, Size, Structural form, Formalization, Ownership, Business, environment	Centralization, Information process, Decision methods	Innovation, Differentiation, Risk-taking, growth-rate
Sarason & Tegarden (2000)	Formalization	Centralization, Ceo tech background	Innovation, Differentiation, Cost leader, Focus
Scott & Bruce (1983)	Structural form, Formalization , Major source of finance	Centralization(top mgmt role), Mgmt style,	Differentiation(Product-market), Level of market R&D, Growth rate (Cash generation), Business task (Major investments),
Churchill & Lewis (1983)	Age, Size, Structural form, Formalization	Centralization	Business Task, Growth rate

Table A.5.2: List of common sub-dimensions

5.3 Common Characteristic of Sub-Dimensions

(X) equal no information on sub-dimension from theory. Each parenthesis correspond to a sub-dimension, the same order as in 5.1 is followed.

	Embryonic	Startup	Growth	Maturity
Structure				
Hanks et (1993)		(Young, mean 4 years) (Small, 6.46pers) (Undifferentiated & Simple structural form, only R&D specialized) (Very informal, personal, flexible, few policies)	(Older, 7,36 years) (Small, 23,64 pers) (Departmentalized, Functional, accounting evolve) (Functional systems begin to emerge, but enforcement lacks)	(Older, 6,6 years) (Large 62 employees) (Departmentalized, functional, advertising, markets research etc) (Formal bureaucratic. Planning and control systems are enforced)
Miller & Friesen (1983)		(Young) (Small) (Informal structure, undifferentiated) (Informal structure) (Dominated by	(Older) (Medium sized) (Some formalization of structure, departmentalization, functional basis of organisation, moderate	(Still older) (larger) (formal bureaucratic structure, functional basis of organisation, moderate differentiation,

		owner manager) (Homogenous, Placid environment)	differentiation) (Some formalisation of structure) (Multiple shareholder) (More heterogenous and competitive environment)	departmentalized) (Formal, functional) (Dispersed ownership) (competitive and still more heterogenous)
Sarason & Tegarden (2000)	(X) (Low team size) (X) (Low formalization) (X)	(X) (Team size Med) (X) (Medium formalisation, medium) (X) (X)	(X) (Team size High) (Formalization high) (X) (X)	(X) (Team size high) (X) (High formalization) (X) (X)
Scott & Bruce (1993)	(X) (X) ((Unstructured form) (Simple bookkeeping & Eyeball control) (X) (emerging, fragmented)	(X)(X) (Simple structure) (Simple bookkeeping and personal control) (X) (Emerging fragmented)	(x) (X) (Functional centralized, & decentralized) (accounting systems, simple control reports, AND budgeting systems monthly sales and production reports, delegated control) (X) (Growth, some larger competitors, new entries AND Shakeout)	(X) (X) (decentralized, Functional / product) (formal control systems, management by objectives) (X) (Growth / shakeout, or mature / declining)
Churchill & Lewis (1983)	(Very young) (Very small) (Simple) (Systems and formal planning are nonexistent) (Founder = owner)	(Young) (Small) (simple but somewhat departmentalized, some vertical hierarchies) (Formal planning is at best forecasting, system development is minimal, low formalization, minimal formalization) (X) (X)	(Medium) (Medium) Substage III-D (Fully departmentalized) (Corporate goals limits managers) (X) (Can be located in stage D indefinitely) Substage III - G Operational planning same, but strategic planning is more. OWner much more involved. AND (Divisionalized structure) (Formalization - best case - controls on performance, worst case - abdication. Operational AND Strategic planning) (X) (Growing and complex business environment)	(Mature) (Large) (more complex) (More formal, extensive formal) (bigger, probably more owners since business is separated from owner financially) (X)
Leadership				
Hanks et		(Highly centralized in	(Centralized, limited	(Moderately centralized)

(1993)		founder) (X) (X) (X)	delegation) (X) (X) (X)	(X) (X) (X)
Miller & Friesen (1983)		(Power highly centralized) (Crude information processing and decision making methods) (X) (X)	(Somewhat less centralised) (Initial development of formal information processing and decision making methods) (X) (X)	(Moderate centralization) (Information processing and decision making as in growth state, more focus on short term)
Sarason & Tegarden (2000)	(Centralization High) (X) (Yes ceo tech background) (Profit sharing & result appraisal low)	(Centralisation High) (X) (Ceo tech yes) (Profit sharing and result appraisal low)	(Centralisation Med) (X)Ceo tech no) (Profit sharing and appraisal medium)	(Centralisation medium) (X) (ceo tech no) (profit sharing and appraisal High)
Scott & Bruce (1993)	(X) (X) (X) (Entrepreneurial, individualistic, direct supervision)	(X) (X) (X) (Entrepreneurial, administrative, supervised supervision)	(Centralized / Decentralized) (X) (X) (entrepreneurial ,coordinate delegation, coordination. AND Professional, administrative, decentralization)	(Decentralized) (X) (X) (Watchdog, decentralization)
Churchill & Lewis (1983)	(The owner is the company) (X) (X) (The owner does everything + direct supervision)	(Still quite high centralization to owner) (Well-defined orders from owner) (X) (Supervised supervision)	Substage III-D (centralisering minskar, ägare o företag växer isär) (Functional delegation is increased) (Functional management style) Substage III-G (Less centralized but relatively constant) (Leader involved in most activities) (Functional management style) AND (More and more decentralized. Founder often leaves but still controls company through stocks) (Delegated decision making processes) (X) (Competent divisionalised managers)	(Decentralized) (X) (X) (Line and staff)
Strategy				
Hanks et (1993)		(X) (Identify Niche;) (Obtain resources,	(X) (X) (Volume production & distribution, capacity	(X) (X) (Make business profitable, expense control,

		Build prototypes, set up task structure, R&D, early commercialization of their tech product) (Inconsistent growth)	expansion, set up operating systems, active in commercialization of product) (Rapid positive growth)	establish management systems) (Slow growth)
Miller & Friesen (1983)		(Considerable innovation in produce lines) (Niche strategy) (X) (X)	(Incremental innovation in product lines, no need for dramatic moves) (Broadening of product and market scope into closely related areas) (X) (Rapid growth)	(Conservatism in innovation) (X) (Consolidation of product market strategy, focus on efficiently supplying a well-defined market) (Slower growth)
Sarason & Tegarden (2000)	(Innovation High) (Differentiation Low) (Cost leader low, strategy focus Low) (X)	(Innovation high) (differentiation medium) (Low cost leader, Med focus) (X)	(Innovation medium) (Differentiation high) (medium cost and medium focus on strategy) (X)	(Innovation low) (differentiation high) (high cost leader, low focus on strategy) (X)
Scott & Bruce (1993)	(X) (Single product line and limited channels and market) (R&D None) (Cash negative generation)	(X) (Single line and market but increasing scale) (R&D Little) (Cash generation negative/break even)	(X) (Broaden but limited line, single market, market channels, AND Extended range, increased markets and channels) (R&D some new product and development AND new product innovation and market research) (cash generating positive)	(X) (Contained lines multiple markets and channels) (R&D production innovation) (cash generator, higher dividend)
Churchill & Lewis (1983)	(X) (Relatively low differentiation and narrow product offering) (Customer acquisition, cash coverage, product capabilities) (X) Major strategy - existence	(X) (X) (X) (Market penetration) Major strategy - Survival.	(X) Substage III - D Major strategy - maintaining profitable status quo. Basic financial marketing and productions systems are in place. Stagnated growth Substage III -G Major strategy - get resources for growth. Owner takes all money and risk it for financial growth. Higher Growth. AND	(Ossification risk. Sometimes they do not change until they really must, when it's too late) (X) (Must eliminate inefficiencies that growth can produce and professionalize company by using tools as Budgets, strategic planning, management by objectives, and standard cost systems, without destroying entrepreneurial feeling.

			(X) (X) (X) (high growth)	Quite stagnated growth. Major strategy - return on investment.
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Table A.5.3: List of common characteristic of sub-dimensions

Appendix 6. Quantified Qualitative Data on Each Case Company

6.1 Donedeal

	A	B	C
Structure			
Age	1		2
Size	1	2	2
Structural Form	1	1	2
Formalization			2.5
Ownership	1.5		3
Leadership			
Centralization			2.5
Decision making processes	3		2
MGMT Style		1	
Strategy			
Innovation	2		3
Differentiation			3
Mean	1.583333333	1.333333333	2.444444444

Table A.6.1: Donedeal Company Development

6.2 Ensibuuko

	A	B	C
Structure			
Age	1	2	2
Size	1	2	2
Structural Form	1	2	3.333333333
Formalization	1	2	4
Ownership	1	1	3

Leadership			
<i>Centralization</i>	1	1	2
<i>Decision making processes</i>	1	2	3
<i>MGMT Style</i>	1	1	2
Strategy			
<i>Innovation</i>	1	1	1
<i>Differentiation</i>	1	3	3
Mean	1	1.7	2.533333333

Table A.6.2: *Ensibuuko Company Development*

6.3 BRCK

	<i>A</i>	<i>B</i>	<i>C</i>
Structure			
<i>Age</i>	1	#N/A	2
<i>Size</i>	1		3
<i>Structural Form</i>	2	#N/A	3
<i>Formalization</i>	2	#N/A	3
<i>Ownership</i>	1	#N/A	3
Leadership			
<i>Centralization</i>	2	#N/A	4
<i>Decision making processes</i>	2	#N/A	3
Strategy			
<i>Innovation</i>	1	#N/A	1
<i>Differentiation</i>	2	#N/A	3
Mean	1.555555556	#N/A	2.777777778

Table A.6.3: *BRCK Company Development*

6.4 Totohealth

Structure			
<i>Age</i>	#N/A	#N/A	2
<i>Size</i>	#N/A	#N/A	1
<i>Structural Form</i>	#N/A	#N/A	3
<i>Formalization</i>	#N/A	#N/A	3

<i>Ownership</i>	#N/A	#N/A	3
Leadership			
<i>Centralization</i>	#N/A	#N/A	1
<i>Decision making processes</i>	#N/A	#N/A	2
<i>MGMT Style</i>	#N/A	#N/A	2
Strategy			
<i>Innovation</i>	#N/A	#N/A	2
<i>Differentiation</i>	#N/A	#N/A	3
Mean	#N/A	#N/A	2.2

Table A.6.4: Totohealth Company Development

6.5 Mezosi

	A	B	C
Structure			
Age	1	#N/A	2
Size	1	#N/A	2
Structural Form	1	#N/A	3
Formalization	2	#N/A	3
Ownership	1	#N/A	1
Leadership			
Centralization	1	#N/A	2
Decision making processes	1	#N/A	2
MGMT Style	1	#N/A	2
Strategy			
Innovation	2	#N/A	3
Differentiation	1	#N/A	1
Mean	1.2	#N/A	2.1

Table A.6.5: Mezosi Company Development

6.6 Africar

	A	B	C
Structure			
Age	#N/A	#N/A	2

Size	#N/A	#N/A	2
Structural Form	#N/A	#N/A	3
Formalization	#N/A	#N/A	3.5
Ownership	#N/A	#N/A	3
Leadership			
Centralization	#N/A	#N/A	3
Decision making processes	#N/A	#N/A	2.5
MGMT Style	#N/A	#N/A	2
Strategy			
Innovation	#N/A	#N/A	3
Differentiation	#N/A	#N/A	2
Mean			2.6

Table A.6.6: *African Company Development*

6.7 Purpink

Structure			
Age	1	#N/A	2
Size	1	#N/A	3
Structural Form	2	#N/A	3
Formalization	1	#N/A	2.5
Ownership	1	#N/A	1
Leadership			
Centralization		#N/A	3.5
Decision making processes	1	#N/A	3
MGMT Style		#N/A	3.5
Strategy			
Innovation	3	#N/A	2
Differentiation	1	#N/A	2.5
Mean	1.375		2.6

Table A.6.7: *Purpink Company Development*

6.8 Software Technologies

	A	B	C
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Structure			
Age	1	3	3
Size	2	3.5	4
Structural Form	2	3	4
Formalization	3	3	4
Ownership	1	3	3
Leadership			
Centralization	1		3
Decision making processes	1	2	3
MGMT Style	1	2	3
Strategy			
Innovation	3	2	3
Differentiation	2	2	2
Mean	1.7	2.611111111	3.2

Table A.6.8: *Software Technologies Company Development*

6.9 ICT Development

	A	B	C
Structure			
Age	#N/A	#N/A	2
Size	#N/A	#N/A	2
Structural Form	#N/A	#N/A	3
Formalization	#N/A	#N/A	3
Ownership	#N/A	#N/A	2
Leadership			
Centralization	#N/A	#N/A	1
Decision making processes	#N/A	#N/A	2
MGMT Style	#N/A	#N/A	1
Strategy			
Innovation	#N/A	#N/A	2
Differentiation	#N/A	#N/A	3
Mean	#N/A	#N/A	2.090909091

Table A.6.9: *ICT Company Development*