Scaling impact of Stakeholder Interdependencies within Inclusive Businesses

Author: Christoph-H. Helmke
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands

ABSTRACT,

The purpose of this research paper is the identification of stakeholder interdependency factors that contribute to scaling effects on the Bottom of the Pyramid (BoP) population. The mainly executed qualitative research involves inclusive businesses (IB) producing food and creating energy provision for the domestic markets in several African countries and Indonesia. This paper is part of an extensive research project named "Action Repertoire for Distributed Business Models in Inclusive Business Value Chains." It involves several institutions and organizations based in the Netherlands.

Findings of stakeholder interdependencies indicate that significant factors can be found in the educational mediation and the financial resources provided by governmental, private, and non-governmental organizations. These factors refer to the interdependency types of "Actor interaction" and the "Resource interfaces". Additionally, the paper considers that transitions among the three interdependency types are fluent. Moreover, the report indicates that the initially stated stakeholder interdependency factors are also applicable to inclusive businesses, while current research was based on regular profit companies. The gained knowledge can be used to analyze and support inclusive businesses more appropriately and allow managers of the IB to raise awareness about what is going on in their stakeholder environment. Future research can be based on the connection between stakeholder interdependencies and scaling while trying to leave supporting factors out of consideration. Future implications can lead inclusive businesses to create a self-sustained structure without being directly reliant on governmental and non-governmental support.

Graduation Committee members:

1st supervisor: Dr. Tamara Oukes
2nd supervisor: Dr. Ir. Massimo Preziuso

Keywords

Stakeholder, Interdependency, Scaling, BoP, Inclusive Business, For-profit,

1. INTRODUCTION

1.1 Situation

A still present challenge of the world's society is the tremendous poverty in developing countries. The United Nations initialized the implementation of 17 "Sustainable Development Goals" that deal, amongst other things, also with the mitigation of poverty through specific economic approaches (United Nations, 2019). Mitigation of poverty aims mainly for the Bottom of the pyramid (BoP) population.

The Bottom of the pyramid signifies the socio-economic segment of the world population unused for economic development (Danse et al., 2016). According to Danse et al., 795 million people are still considered to have an insufficient amount of food per day. A significant population is in the primary sector of the economy (Danse et al., 2020). Around 4 billion people are grouped into the Bottom of the pyramid population (Goyal et al., 2016). Additionally, 10.43 percent of the world's population is still living without access to electricity (World Bank 2021). The World Bank data identifies correlations between lacking access to energy and a low GDP (World Bank, 2021). Inclusive businesses deal with the business involvement of these BoP groups (Danse et al., 2020). Researchers have the consent that inclusive businesses (IB) are required when scaling business productivity of the Bottom of the Pyramid population and their environment in the world (Danse et al., 2020). The intention is the mitigation of poverty and economic growth of businesses within the named segment.

1.2 Research Context

BoP businesses have difficulties because of their abilities and the circumstances in scaling their economic outputs. As a result, economic growth is not possible, and therefore, poverty does not change its tremendous extent. The mentioned issues result in the necessity for collaborations within the scope of BoP populations, also known as inclusive business models (IBM). Since the focus is on inclusive business, the involvement of the BoP population within value chains can be identified as a sustainable approach (Matos, 2013). Researchers argue that a new re-alignment of business ideas might be required, and therefore new perspectives on the business environment and the value chains occur (Lüdeke-Freund & Dembek, 2017). Lüdeke-Freund also argues that stakeholders' environments play a decisive role in company developments (Lüdeke-Freund 2013). Collaboration among stakeholders within the BoP population is required to enhance the companies' capabilities by external support and influences (Lüdeke-Freund, 2013). The collaborative business models can support interdependencies between stakeholders of the businesses that are in the center of interest (Freeman et al., 2020). Besides the stakeholder complication, it is crucial to investigate the appearance and attitude of inclusive businesses since these companies are required to get a positive impact. Freytag contributes that there is a necessity for interdependencies in the environment of organizations to enable scaling these organizations (Freytag et al., 2017). Collaborations enhance empathy towards the intentions of each other (Freeman, 2020). These are required to support economic developments within the BoP population. Especially for the BoP population, there are scarce resources to develop and scaling the economy independently. Therefore, a stronger focus needs to be on how stakeholder collaborations might help these poorly situated businesses.

1.3 Complication

Since previous studies of Freytag et al. focused on general companies, the complication of the research project is that among the current research, it is not visible what the impact of stakeholder interdependencies has on scaling within inclusive businesses. It is known how inclusive business can be scaled but not which stakeholder interdependencies are required for these actions (Bocken et al., 2016). Schoneveld remarks that the entity-focused analyzes of IB leave out the cruciality of stakeholders in the form of relations towards the IB (Schoneveld 2020). It is unknown whether interdependencies among stakeholders in the BoP field act as in developed, wealthier countries. This uncertainty underlines the decisive characteristics of the research problem. However, Schoneveld admitted that there is still a lack of "how" values are created based on IB, so that real-life examples might be helpful (Schoneveld 2020, p.10). Empirical evidence seems still missing on these examples (Schoneveld 2020, p.10). Figure 1 introduces the current knowledge about stakeholder relations in the IB environment (Figure 1). The lack of relations between single stakeholders shows the knowledge gap that needs to be investigated (no connections between stakeholders yet).

Figure 1: Existing Research on IB Stakeholder management

1.4 Purpose:

To summarize, the purpose of this study is therefore to identify the crucial stakeholder interdependency elements that impact scaling. With that knowledge, outputs of current and future inclusive businesses can be improved to mitigate the BoP level and, therefore, an increase of economic power can be achieved.

2. CENTRAL RESEARCH QUESTION

As a knowledge gap, the connection between the interdependencies of stakeholders and what leads to the scaling of inclusive businesses is unknown. It is, therefore, crucial to find out which interdependencies behave supportive towards scaling. The main goal is to make the connection by doing qualitative data evaluation and desk research. For investigating the previously mentioned problem, the following research question is proposed:

What factors of stakeholder interdependencies enable the scaling of inclusive business?

To investigate the research question, it is required to focus on certain key concepts that build upon elements of the research question (Figure 2,3). Figure 2 represents the research concept (Figure 2). In opposite to figure 1, figure 3 is representing the relations (interdependencies) among stakeholders as well (Figure 3).

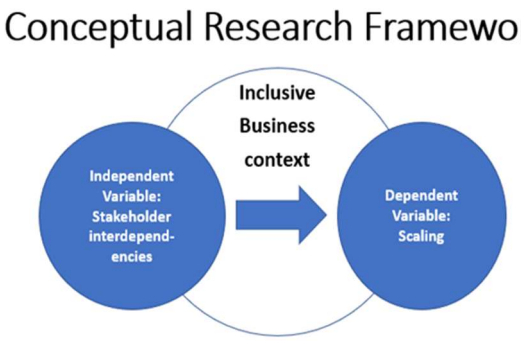

Figure 2: Conceptual Research Framework

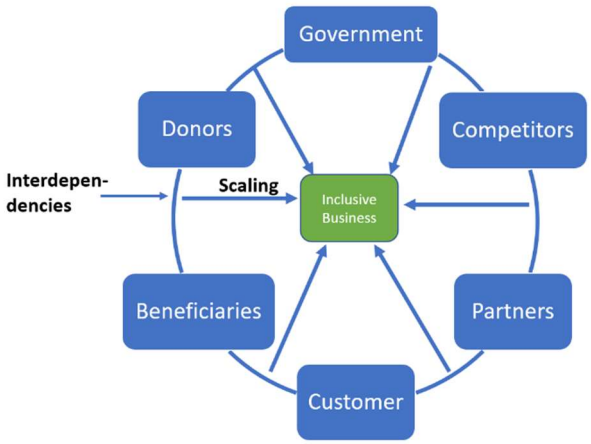

Figure 3: Intended Research on IB stakeholder impact Framework

The following table introduces the general definitions of the literature parts.

Table 1: Literature elements

Literature element	Definition
Inclusive Business	In general, inclusive businesses integrate BoP societies into the value chain process of products and services (United Nations, 2010).
Scaling	Scaling is the goal of organizations that work on supporting the BoP population in terms of business development. For inclusive business, scaling can be seen as the contribution that satisfies the gap between the current and the desired state of the process (Murray et al., 2010).
Stakeholder	A stakeholder is "any group or individual who can affect or is affected by the achievement of an organization's purpose." (Freeman, 1984 p. 67).
Interdependency	Stakeholder interdependency is the value contribution from or to one stakeholder that directly affects outcomes for other stakeholders (Freeman et al., 2020).

3. THEORETICAL FRAMEWORK

The following paragraphs investigate the single components of the research question. Theories of single components build up together a more specific picture. The literature review evaluates the applicability of current approaches and how they fit inclusive business types. These inclusive business types are described with the help of Schoneveld's approach (Schoneveld, 2020). In the next step, Stakeholder activities get defined based on Siebold's approach to identifying which stakeholder activities are crucial for inclusive business (Siebold, 2021). The dependent variable of scaling is introduced with the theories of Bocken et al. (2016), Uvin & Miller (1996), and Han &Shah. The approaches of Oskam et al.(2018), Freeman et al.(2020), and Freytag et al. (2017) present the stakeholder interdependencies.

3.1 Characteristics of inclusive business

Since the focus lies on the impact of Stakeholder interdependencies on inclusive businesses, the characteristics of inclusive businesses are getting introduced.

In general, inclusive businesses consist of integrating BoP societies into the value chain process of products and services (United Nations, 2010). The inclusiveness can have various positions within the concept. So that inclusive business participants from the BoP population could act in different roles within the process (United Nations, 2010). Inclusive businesses are not necessarily new entrepreneurial companies (United Nations, 2010). They can differ in size and organizational structures of existing and evolving companies (United Nations, 2010). The models intend to solve problems that BoP businesses have with the absence of support from the outside world (United Nations, 2010). Advantages for poor populations can be that they gather money from sales regularly, improvement of efficiency, strengthening of capabilities, and "satisfying basic needs" (United Nations, 2010) that implies physiological and safety needs (United Nations, 2010). For organizations that collaborate with the mentioned BoP populations, they can profit from "building new markets, "strengthening supply chains," "Improving reputation," "driving innovations," and "retaining employees" (United Nations, 2010). The post-2015 development agenda involves businesses as entities with similar sustainability responsibilities as governments and societal organizations have (Hughes & Scheyvens 2016). Capabilities of resource exploitation and goal pursuing are named as reasons why companies have certain responsibilities on inequality in society (Porter and Kramer, 2011). This underlines the legitimacy of inclusive businesses.

On the theoretical view, Schoneveld proposed one of the most recent theories on inclusive business frameworks. Schoneveld

states that previous definitions of inclusive business models are often wrongly interpreted because of their lack of real-life applicability and clarity (Schoneveld, 2020). As common inclusive business (IB) definitions, he introduced governmental, non-governmental, and scientific approaches. Therefore, Schoneveld proposed, based on his literature evaluation, a new definition of inclusive business models (IBM) and inclusive businesses (IB) (Schoneveld, 2020). His IBM approach is "A type of sustainable business model that seeks to productively engage income-constrained groups in the value chain by providing solutions to neglected problems" (Schoneveld, 2020 p.8). He distinguishes between the scope of "value proposition," "value creation and delivery system," and "value capture system" (Schoneveld 2020, p.8). The value proposition focuses on the specification of value creation and to whom this value concerns (Schoneveld, 2020). Secondly, the value creation and delivery system concentrate on how value evolves by businesses. It considers the environment of companies that contains actors and factors with particular interests in the business. In connection with change theory, the model describes how the value flow result in a specific pattern (Schoneveld, 2020). The third step that he presents is the value capture system that takes the value creation of stakeholders into account and how the value creation of these stakeholders leads to the increasing value creation of the business itself (Schoneveld, 2020).

For IB Schoneveld came after a concluding review on current literature to an own proposed definition as well. IB is, therefore: "Any type of self-sustaining business entity with an IBM that creates net value for income-constrained groups" (Schoneveld, 2020 p.10). Certain requirements need to be fulfilled by complying with this definition. Companies need to cope with IBM within their operations and their relationships. Furthermore, the value creation of the income-constrained group is not comparable to the values used or exploited through the achievement of value creation (Schoneveld, 2020). That means that the value creation of the BoP groups stands overvalues that were used to reach these incomes (Schoneveld, 2020). Sustaining value creation of inclusive business with the absence of non-governmental support to secure independence in a long term is also an aspect (Schoneveld, 2020). In case that income exceeds the costs of inclusive businesses, a company should reinvest most of that money to extend and improve economic abilities (Schoneveld 2020). Yunus followed a similar approach regarding the profit flow of social business (Yunus et al., 2010). He proposed that all cash beyond the costs were reinvested to enhance sustainability in financial management.

It is essential to distinguish inclusive businesses from completely profit-oriented or non-governmental organizations to answer the research question since this research focuses on inclusive businesses with hybrid appearances.

3.2 Scaling

Defining 'Scaling,' the following definition is used: Scaling is the goal of organizations that work on supporting the BoP population in terms of business development. For inclusive business, scaling can be seen as the contribution that satisfies the gap between the current and the desired state of the process (Murray et al., 2010).

Jun Han and Sonal Shah focused on the different scaling aspects that need to be considered in social environments. The aspects of the invented 'ecosystem of scaling social impact' contains 'Financing,' 'Government Policy,' 'Institutional Infrastructure' in the company environment and 'Organizations,' 'Strategies,' 'Technology and data' internally, that all contribute to a particular social impact (Han & Shah 2019). Under investigation of these aspects, the scalability of social impacts can be identified. With the help of several prior works of literature, the authors came up with the following framework that describes the ecosystem of scaling social impact (Figure 4).

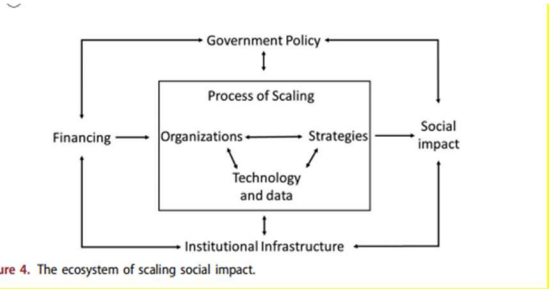

Figure 4. The ecosystem of scaling social impact.

Figure 4: The ecosystem of scaling social impact (Han &Shah 2020, p.224)

According to Uvin and Miller, scaling distinguishes four diverse types for organizations with social backgrounds (e.g., NGO) (1996). They propose that 'Quantitative scaling-up,' 'Functional scaling-up,' 'Political scaling-up,' and 'Organizational scaling-up' are the four distinct types of scaling characteristics. (Uvin & Miller, 1996). They all are referring to different actions to describe scaling in organizations, including **customer management** (increasing customer group through quantitative scaling-up), **supply chain, operations** (improving amount of products through operation process and supply chain by functional scaling-up), (structural re-alignments through political scaling-up), or **cash flow activities** (exploring diverse sources for refinancing besides subventions is seen as organizational scaling-up); (Uvin & Miller, 1996). But all four types of scaling have in common that they describe a particular increase/ extension of existing organizational activities. The mentioned scaling types can be found in the 'aims to achieve scaling' of Bocken's model (Bocken et al., 2016).

Bocken et al. applied the idea of scaling on inclusive businesses to clarify the correlations of both research components. The authors propose a framework that aims to achieve the scaling of businesses with social backgrounds (Bocken et al., 2016).

As scaling methods that help to achieve the set goals were 'Market penetration,' 'Market development,' 'Product development,' and 'Diversification' (Ansoff, 1988). Market penetration entails the increasing number of sales to customers by improved competition with peers (Ansoff, 1988). Market development means the extension of sales scope within society. A wider scope might be necessary to increase the number of sales (Ansoff, 1988). Product development is defined according to Ansoff as the start of a new product type that gets introduced into the market. Last, diversification is understood as having another approach than existing competitors as it entails different product characteristics for the same customer segment (Ansoff, 1988). As an outcome of the four methods, Bocken et al. propose **"Increasing the number of customers/users of a service," "Expanding the service/offer with a social impact"** (Bocken et al., 2016 p. 306). The **"increase of generated income"** will be ensured by "Increasing revenue per stream" and "Diversifying of revenue streams." (Bocken et al., 2016 p. 306) This model can be used in the research to identify how Stakeholders might affect the named scaling methods in a specific way to conclude how the stakeholders' interdependencies lever the companies that occur in the qualitative research

Bocken's model includes the initial ideas of Uvin and Miller (1996) as seen in the "aims to achieve scaling" (Bocken et al., 2016, p.306) and the scaling proposals of Ansoff (1988). Bocken combined both and came up with the connections of these

characteristics. Market penetration and market development, which instead focus on adjustments on the target market, led to increasing the number of customers/users of a service or a product while expanding services/offer results from product developments and diversification of the product segment (Bocken et al., 2016). Since the model shows the apparent scaling effects, it is functional for the framework and will be applied in the analysis. The model of Han & Shah was not chosen since it already predefines the explanatory variables. The results are in an already specific scheme without connecting to the actual explanatory interdependency factors like Bocken`s Model. This paper proceeds with the model of Bocken et al. (2016).

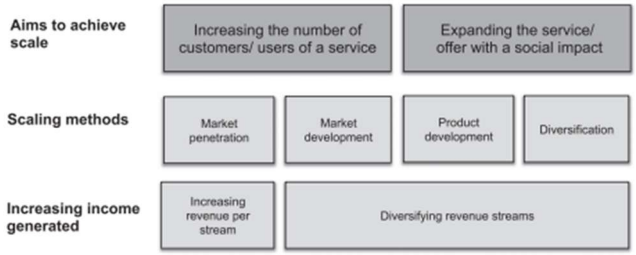

Figure 5: (Bocken et al. 2016 p. 306)

3.3 Stakeholder theory

According to Freeman, the collaborative interactions between stakeholders can contribute to economic growth. (Freeman 1984). Freeman´s stakeholder theory supports the investigation of the environment of entities. To analyze how stakeholders can contribute to scaling, it requires a clear understanding of the dominant stakeholder types in BoP areas and how they interact with each other. According to Freeman, who is considered as the founding father of the Stakeholder theory, a stakeholder is "any group or individual who can affect or is affected by the achievement of an organization's purpose." (Freeman, 1984 p. 67). Customers, owners, governments, employees, suppliers are a few crucial examples for stakeholders that act in the environment of a company. Involvement of all groups with a certain interest is crucial because a disregard could lead to goal achievement prevention (Freeman, 1984). In Freeman's stakeholder map, the organization is in the center and is surrounded by the stakeholders. He distinguishes between primary and secondary stakeholders, which differ by their importance (Freeman 1984). Primary stakeholders can be seen as more crucial for the company (Freeman, 1984).

Freeman is used because his theories are widely seen as the basis for stakeholder characteristics and therefore very present in business studies (Figure 6)

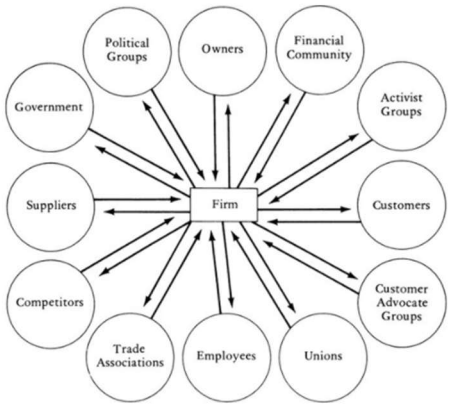

Figure 6: Value Creation for Stakeholders (Freeman 1984, p. 68-69)

Nicole Siebold named 'Beneficiaries,' 'Donors,' 'Customers,' 'Employees,' 'Partners,' 'Competitors,' and the 'Government' Siebold, 2021) as crucial Stakeholders of social purpose organizations within the Business model innovation. In her research, the focus was organization centered which means that the dependencies between stakeholders and organization within the Business innovation model were described (Siebold, 2021). However, the description of the relations provides the opportunity to investigate in this research project how these influences of each stakeholder are influenced by the presence of other stakeholders. As an example, governments have certain interests that beneficiaries will get a positive affection from the organization's output.

3.4 Stakeholder interdependency

Stakeholder interdependency is the value contribution from or to one stakeholder that directly affects outcomes for other stakeholders (Freeman et al., 2020). Therefore, it can be a huge pitfall to focus on stakeholders isolated from the aspects surrounded them (Freeman et al. 2020). With this, the focus should rather lay on the overall relations of stakeholders than on specific transactions (Freeman et al., 2020). In Freeman's view, he considers that collaborative behavior among stakeholders can create certain synergies (Freeman et al., 2020). Additionally, he mentioned that collaborations enhance empathy towards the intentions of each other (Freeman, 2020). All these things are required to support economic developments within the BoP population. Especially for the BoP population, there are scarce resources to develop and scaling the economy independently. A stronger focus needs to be on how stakeholder collaborations might help these poorly situated businesses.

Besides the focus on stakeholders, the second key component of the research question is the interdependencies of the mentioned stakeholders. While stakeholders are the objects of the analyzes, the interdependencies describe their behavior towards each other that might result in certain synergies or other approaches that help to scale inclusive businesses. According to Freytag et al., interdependencies are a crucial feature in the business environment (Freytag et al., 2017). He describes the decisive contribution that interdependencies have on the product value chain and strategic alignment of business decisions (Freytag et al., 2017). Interdependencies occur when collaborations between entities led to the achievement of goals but can also lead to difficulties when interests are not aligned completely aligned (Freytag et al., 2017). However, his study was made on general businesses that also includes all business models. Currently, there is not enough evidence that the interdependency model

applies to inclusive businesses. That explains the knowledge gap between stakeholder interdependencies and inclusive businesses.

Freytag distinguishes between three types of interdependency layers (Freytag et al., 2017). These are the 'Activity integration,' the 'Resource interfaces,' and 'Actor Interaction' (Freytag et al., 2017). Through these interdependency types, opportunities and problems of relations among business environment actors can be identified (Freytag et al., 2017).

The activity integration deals with the interconnectedness of two different activities within the value chain process of the business (Freytag et al., 2017). The author argues that dependable connections were also explained as the mentioned activities were needed to be efficient within the process (Freytag et al., 2017). The integration of activities needs to be seen in spatial and timely manners (Freytag et al., 2017). The spatial manner considers the place where activities are merged (Freytag et al., 2017) within or outside the organization and refers to the corresponding resources (March and Simon, 1958). The time focuses on the certain moment when interdependencies influence the value chains (Freytag et al., 2017) with similar procedures from a technical perspective (Freytag et al., 2017, March and Simon, 1958). Both characteristics show that the span of interdependencies determines the needed scope of required integration (Freytag, 2017). Other attitudes of interdependencies are parallel and complementary activities (Richardson, 1972). A complementary activity relies on a previous activity to be able to get executed (Richardson, 1972), while subsequent activities have in common that they use the same components to proceed (Richardson, 1972).

The second interdependency in Freytag's model is the resource interfaces (Freytag et al., 2017 p.). As a result of this, the connection between different resources is identified as a type of interdependency (Freytag et al., 2017). The author proposes a model named the '4R model'(Baraldiet.al, 2012). The four resources are divided into 'products and facilities (technical resources), organizational units and business relationships (social resources)' (Freytag et al., 2017). Beginning from the so-called 'focal resource' (Freytag et al., 2017), the application of the cited resource classifications is made (Freytag et al., 2017). The next step of the model considers the relations and the crucial interfaces between the resources, either from the same or different resource types. (Freytag et al., 2017). It also includes the strength of the interfaces, which explains interdependent relations on the resource-based view (Freytag et al., 2017).

The third model component is the actor interaction (Freytag, 2017). Actor interactions lead to interdependencies among themselves (Freytag et al., 2017). The interdependencies can be seen as positive or negative, whether connections are enhancing certain results or preventing occurrences (Freytag, 2017). For that, the time frame plays a crucial role since it includes the learning effect and knowledge that organizations receive over time while having certain interdependencies (Freytag et al., 2017).

The three mentioned layers are interconnected. The efficiency of activities and utilization of resources are determined by the connection between activity integration and resource interfaces (Freytag et al., 2017). For example, the product flow through the supply chain clarifies the impact on utilization and efficiency (Freytag et al., 2017). Another connection can be found between activity and actor layers. Complementary tasks require clear work distinctions among partners (Freytag et al., 2017). The third interconnection is between the resource interface and the actor interactions and describes how crucial certain relations can be for the resource flow within the value chain (e.g., Power of Suppliers) (Freytag et al., 2017).

Another perspective of stakeholder relations introduces the model of Oskam et.al. They concentrated on the importance of business networks for the development of sustainable business models. This model describes how interdependencies can be interpreted differently and to get a more academic, critical, and reflected consideration of existing models that can be used (Oskam et al., 2018).

Oskam et al. found out that networks as stakeholders from the environment contribute to the value shaping of companies. He describes "value shaping as an operative mechanism describing the relationship between networking and business modeling" (Oskam et al., 2018 p.17). These relations can be decisive by developing sustainable business models in consideration of the "financial, social and environmental value that a sustainable technology can deliver" (Oskam et al., 2018 p.20). Sustainability can be seen as the consideration and involvement of low-income sectors. Therefore, Oskam's model has certain relevance for the investigation of inclusive business scaling among stakeholders. For value shaping, he proposed five approaches of value shaping in the innovation process that shows how networking through stakeholders affects the process positively (Oskam et Al., 2018). The value shaping approaches that were investigated in this case were "Exploring value, developing value, reframing value, redirecting value and extending value" (Oskam et al., 2018 p. 16). These value shaping stages explain how business modeling can get used to network advantages. (Oskam et al., 2018). Stages that were considered in the business modeling process were "Ideation, Conception, Business-start-up, Early growth, and continued growth." (Oskam et al., 2018 p. 9).

In comparison to the approach of Freytag, Oskam's approach provides the basis for an analysis of value characteristics that contribute to scaling. However, Freytag's model is more feasible and has, through the specification of specific scaling goals, a more real-life and comprehensive application on the provided qualitative data from the interviews. Freytag's model provides a more distinct overview of the attitudes of interdependencies. In contrast, Oskam's model focused instead on the outcomes of networks without having a more in-depth view of the occurrence of these relations and interdependencies. Initial stakeholder models of Freeman and Siebold leave out the relationships and connections between the single stakeholders on direct connections, which lead to relationships that were concentrated only on the organization. Therefore, the model of Freytag et al. is chosen for further elaborations on stakeholder interdependencies. Freytag et al. made clear how stakeholders affect businesses among three dimensions.

3.5 Summarized contribution of literature applied on the research question

In combination with stakeholder interdependency, it means that there is a need for collaborations among different stakeholders. The research focuses on the causal relationship of how these interdependencies affect the components of social scalability. In this way, the research question can be answered. Scaling characteristics that are identified by the interview content with the model of Bocken et al. (2016) are the outcome variables that will be investigated with the help of the dependent variable (Figure 7). This dependent variable can be subdivided into the mentioned three dimensions, which are 'Increasing the number of customers,' 'Expanding the service/offer,' and the 'Increase of generated income.' The dependent variable appears by the application of Freytag's model when interdependencies through the ARA model are identified (2017). The interdependencies of the layers are 'Activity integration,' 'Resource interfaces,' and

'Actor interaction' (Freytag et Al., 2017, p. 242). The relation among the variable dimensions will be investigated to find out how the layers of the interdependency types enhance or constrain the named scaling effects. Both variables will be taken under investigation within the context of inclusive businesses. The chosen case studies are taken from the field of BoP populations and their inclusive organizational activities. Schoneveld's characteristics of 'value proposition,' 'value creation and delivery system,' and 'value capture system' (2020) were considered to filter only the businesses that are applicable towards this approach.

Since the characteristics of stakeholders are that certain interests towards the organizational success exist, it can be assumed that inputs from stakeholder perspective are eligible to contribute to scaling. Woodhill contributes to the assumption that private and public interests and their work can have sustainable and scalable impacts on inclusive work in agricultural sectors (2013). This underlines the eligibility of the chosen conceptual model that is introduced in the following paragraphs.

4. CONCEPTUAL MODEL

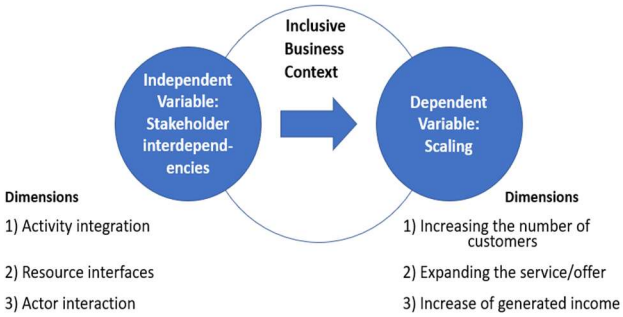

Figure 7: Conceptual Framework and the dimensions are taken from Freytag et al., 2017; Bocken et al., 2016.

According to the problem statement and the conceptual framework, the research focuses on a direct effect between the variables within inclusive businesses (X on Y) (Figure 7). The framework represents the dimensions of Freytag et. al.(2017) and Bocken et al.(2016). The variables are nominal but not mutually exclusive in the core concept, as explained in the literature section. For example, the increase of customers can also come along with the expansion of services. The research question aims to investigate the causal effect of the variable dimensions.

4.1 Methodology

To investigate the connection between the stakeholder interdependencies and the scaling effect, case studies are chosen. A multiple case study is chosen because of the data that fit with the exploratory questions with regard to the direct effect between the chosen variables (Yin, 1994). In the field of social science, various types of data collection approaches can be applied. For qualitative data, there are, for example, focus groups, observation, naturally occurring data, and interviews as functions for data collection (Figgou & Pavlopoulos, 2015). Using interviews to collect qualitative data is regularly applied in academic research (Young et al., 2017). According to Bryman, qualitative data collection is advisable when the research aims for the understanding of behaviors and interests (2016). Therefore, qualitative data collection via interviews is chosen. Since this paper is a case study, there are also other data integrated besides the interview data. Workshop outcomes and archival data that focus on stakeholder roles and scaling provide an extensive view of the research purpose.

4.2 Units of analysis

This chapter introduces the interviewed companies and describes their characteristics. In total, five companies were chosen as the units of analysis (Table 2). Stratified sampling to filter five organizational units. Units needed to have inclusive business characteristics (BoP involvements). They needed to be active in industries seen as problematic within their countries regarding the mentioned issues in 1.1 (countries without enough food for their population and energy provision). That makes the units prestigious for the research context. All of them are social businesses or inclusive businesses with profit orientation. The chosen companies have either Dutch shareholders or other stakeholders in their environment with their origins in the Netherlands. The interest explains why these organizations are part of the Dutch research project of 'inclusivecollaboration.nl' that provided the collected data. Similar is also the location of the inclusive businesses. Three of the five organizations are based in Africa, while the other two companies have their location in Indonesia. The African organization are based in Nigeria, Rwanda, Uganda, and Kenya (one organization is based in Uganda and Kenya) and operate in the food industry. The Indonesian organizations are working in the energy sector. Another significant similarity among the cases is the way of BoP involvement. The BoP population acts for all companies as consumers. All organizational types that were part of this study already implied by the characteristics of Joint venture, consortium, and social enterprises that interdependencies exist within the units to fit the independent variable of stakeholder interdependencies. The scaling intentions differ from organization to organization. However, they all have in common that the profit orientation aims for sustainable cash flow.

The introduced research framework was based upon the potential connection between stakeholder interdependences and the possible scaling effects in the BoP context of inclusive businesses. The following paragraphs justify the chosen cases as units of analysis for the study. In the Dairy-Case, the Dutch parent company acts as the largest shareholder within a Nigerian-based inclusive business project. Next to the BoP involvement as consumers, the population works as producers of dairy products as well. The products that are produced were dairy products. Local farmers provide the fresh milk that is required. Furthermore, the Porridge-Case is also a Joint venture between a Dutch company and a social business based in Rwanda. The BoP interactions educate the suppliers and employees to increase productivity and quality of maize and soybean production. The Cricket-Case is about an organization built up as a consortium and has, therefore, no own employees. Instead, the interactions of the partner workforces contribute to value creation and are thus qualified for the research framework. The consortium is working in Kenya and Uganda with the purpose of producing cricket flour for the local markets while involving BoP also as producers. Next, the fourth organization is Indonesia-based (Water-Case) and involves the BoP additionally as employees, local operators. The social enterprise focuses on clean water and energy provision and interacts with the local communities with the help of other partners. Case five is called the Energy-Case and deals with an enterprise that also works in the energy sector and has the same BoP involvements as the previous enterprise. The small-sized company is providing electricity to the local communities.

As seen in the introduction, food and energy/water provision are some of the key issues of the BoP population and thus need to be mitigated through collaboration with external partners. This strengthens the choice of these units for the study.

Table 2: Units of Analysis

Cases / Name	Country	Business type	Industry	Profit orientation	BoP involvement
1 Dairy-Case	Nigeria	Joint Venture	Food	For-profit	Producer, consumer, employees
2 Porridge-Case	Rwanda	Joint Venture	Food	For-profit	Producers, consumers, employees
3 Cricket-Case	Kenya//Uganda	Consortium	Food	For-profit	Producers, consumers
4 Water-Case	Indonesia	Social enterprise (supported by its environment)	Clean water and energy provision	For-profit	Consumer, as employees, local operators
5 Energy-Case	Indonesia	Social enterprise (supported by its environment)	Energy provision	For-profit	Consumers, employees, and local operators

Table 3: Overview of the analyzed data

Case	Data sources	Interviews	Case description
1 Dairy-Case	- 2 Interviews - List of archival data	Offline in Dutch / Online in English with protocol and transcript	Yes
2 Porridge-Case	- 2 Interviews - 1 Report - List of archival data	Online in Dutch with protocol and transcript (only notes)	Yes
3 Cricket-Case	- 2 interviews - List of archival data - 1 Workshop	Interviews offline in Dutch with transcript (only notes); Offline and online workshop report with results	Yes
4 Water-Case	- 1 interview - List of archival data	Online interviews in English;	Yes
5 Energy-Case	- 1 interview - List of archival data - 1 Workshop	Online interviews in English; interview data; Online workshop report with results	Yes

4.3 Data collection

The eight interviews were held on a virtual basis via WhatsApp, Skype, Teams, or Zoom. Notes and recordings were taken during the meetings. Some interview data was noted in Dutch, while others were in English (Table 3). Since the data was already collected in advance by 'inclusivecollaboration.nl,' the following paragraph describes the provided data. The data of the interviews, workshop data, archival data, and the case descriptions were retrieved by the online cloud of the project work. All interviews were semi-structured. A semi-structured interview means that an overall framework of questions exists while it is still possible to ask new evolving questions or adjust their way of questioning the interviewee that was not planned before the meeting (Bryman, 2016). Discussed topics in the interviews were about the business model, involved actors and their interests, influence, resources, activities, impact measurement and monitoring, opportunities and threats in the local context, scaling ambition, strategies, and challenges. This also applies to the additional data of the case studies like the workshop notes and the case summaries. Therefore, it covers all variables and allows to consider the interfaces of the research variables. Additionally to the interview notes, the responses were summarized in a case description to give the reader a compromised overview of the responses.

4.4 Data analysis

To ensure thorough data analysis, all variable dimensions are required to be considered during the outcome checks. A conscious data interpretation is decisive for the analysis. The main finding that supports the interdependency dimensions with their function to enhance the scaling dimensions are displayed in the appendix. To filter interviews and the additional data more efficiently, the answered were coded with the help of "atlas.ti". The outcomes are then displayed with the help of the matrix and the conceptual framework to identify certain connections easier. Henderson and Segal suggested several ways of displaying qualitative data (2013). Since the framework leads to a presentation of six different variables, a matrix is a suitable option to picture the outcomes of the connection among the dimensions. A matrix is initially used. It focuses on the "enabling" factors. The factors are considering the stakeholder interdependency effect on scaling. Adding the level of

importance of the various connections adds weights towards the dimensions and allows to point out significances (Henderson & Segal, 2013). Significance is measured by the frequency of occurrences through the interview data collection quantitatively and qualitatively through personal evaluation. Within the matrix, the most significant potential "enablers" will be weighted and displayed, while the matrix explanation goes more in-depth by describing which specific characteristics have influenced the dimensions (Appendix: Table 6 & 7).To figure out the qualitative value requires reading the coded text passages thoroughly, which might show connections among interdependencies and scaling factors. Through keyword search, it is, therefore, a mixed method.

4.5 Keyword search

The Keywords evolved by the given definitions of the literature review that were based on the contributions of Freytag et al. (2017). The keywords help to filter the provided data (Table 4;5). It needs to be mentioned that these words were only the first step to investigate the interdependency characteristics and the scaling effects. The next step is to read the filtered paragraphs thoroughly to find out whether it fits the intended characteristics and are applicable to build connections between identified interdependencies and scaling. It can occur that some paragraphs deal with keywords of a certain character but describes another interdependency or scaling type. That is why for qualitative research, the human check is still crucial.

About the keyword search of the interdependency types, the coded words for Activity integration were found 47 times in the observed data. The keywords for resource interfaces appeared 32 times. The keywords for actor interactions appeared the most with 64 times. Partially, the filtered paragraphs were still not applicable on the intended interdependency types or were useful for a not intended interdependency type. The keyword search for scaling effects has resulted in 43 results. **However, these are only the quantitative representations, while the qualitative tasks were required to identify the findings of the upcoming findings.** To back the collected data up, secondary data that mainly consisted of video material, company homepages, and news articles from the five chosen companies were analyzed.

Table 4: Independent variables

Interdependency dimensions	***Keyword search***	***Results***
Activity integration	*Value chain, supply chain*	***47***
Resource interfaces	*Resources*	***32***
Actor interaction	*Knowledge, education, learning*	***64***

Table 5: Dependent variables

Scaling dimensions	***Keyword search***	***Synonyms***	***Results***
Increasing the number of Customers	*customer*	*purchaser, buyer, client*	14
Expanding offers/services	*expanding*	*extending*	12
Increase generated income	*income*	*gain, profit*	*17*

5. RESULTS

In this section, the key results of the case studies are presented. The chosen inclusive businesses are all for-profit-oriented and, therefore, a good fit with the long-term, self-sustaining aspect as intended by Schoneveld (2020). The first paragraphs deal with the findings of the primary data sources

5.1 Research setting/Involved Stakeholders

The cases have shown that similar stakeholders were involved among all five cases. The following paragraphs refer to the results table in the appendix (Appendix 1: Table 6). This table displays the qualitative results of the interdependencies and scaling factors.

In the environment of the Dairy-Case, animal scientists, local farmers from Nigeria, Dutch farmers, and the government of the country. The so-called "farmer to farmer" program enables domestic farmers from Nigeria to learn from Dutch farmers. The Dutch farmers work as consultants and work in the name of NGOs and the private company that also owns the inclusive business that should get affected by the gained knowledge that Nigerian farmers receive. For Porridge-Case, the government of Rwanda, several NGOs, private companies, and local farmers in the role of the harvest suppliers were mainly involved. The Cricket-Case deals with the importance of farmers, academic institutions, NGOs, and domestic governments of Kenya and Uganda. The following case is the first of two cases that take place in Indonesia. The Water-Case is considered to have its most crucial stakeholder roles with regard to interdependencies with the local Indonesian government, the health workers, and local communities, including fishermen. The last case (Energy-Case) also considers the local and countrywide Indonesian government in a decisive role regarding the stakeholder interdependencies that might affect the IB. Besides that, NGOs and local companies that behave as consumers for the IB can be seen as necessary.

5.2 Scaling

The above-mentioned cases have shown all three scaling characteristics of Bocken's and Ansoff's models that were introduced in the review section. There are characteristics that relate to the scaling approaches of 'Expanding the service/offer.' Its appearance differs from case to case. The expansion of workforces through a rise of capacities. Another aspect is the improvement of productivity and quality of the produced output. This is reached by better cultivation, harvesting, and breeding methods for all cases that involved food production and water. Also, the business expansion in the Northern part of Nigeria is mentioned as one scaling outcome (Dairy-Case). For the Water-Case, which also involved fish preservation, the improvement of the water quality is the most crucial scaling characteristic that is related to 'Expanding services/offer' since improved water quality is the basis where is required to build on for further economic, corporate strategies. The Energy-Case mentioned,

"Offer new product combinations, such as solar + tv/cooler for COVID-19 vaccine/ water pump / improved cookstoves" as opportunities of the mentioned scaling dimension.

The dimension of 'Increasing generated income' is frequently mentioned as the fundamental aspect of a long-term sustainable business. The rise of productivity through, for instance, the purchase of tractors with financial means leads to enough food for farmers to take care of themselves and that they are able to sell their surplus, which was not there before or was smaller. Through this surplus, farmers and collaborative businesses can increase their sales and have, therefore, more income. Decisive factors of the Water-Case are the purchase of "specialized equipment and machinery for their energy and water solutions." Making profit by its deployment is intended. The Energy-Case considers potential sponsoring and funding through the attraction of the network as one option to increase the income for several parties of the supply chain. Additionally, the scaling approach also enables other payment types besides currencies to generate a higher income.

The third dimension implied the 'increase in the number of customers.' As in the previous dimension, the promotion activities play in the Energy-Case a crucial role to gain customers. In the Water-Case, the improvement of water quality is the attraction for new customers. In the cricket case, the mentioned increase of food surplus cannot only be seen as an income increase rather also as an increase of customers since more food is on the sales market. In the Dairy-Case, the geographical market expansion automatically also offers the IB the opportunity to acquire new customers. Corporate Social Responsibility, as a result of educational efforts, is the instrument that is used via social media to promote products and attract more customers in Energy-Case.

5.3 Interdependencies

Significant importance by two of the three stakeholder interdependencies is observed. Characteristics of actor interactions and resource interfaces were often clearly identifiable and frequently mentioned. For both interdependency types, there is per each dimension one outstanding attribute. For actor interaction, educating locals (suppliers/farmers or customers) is one task that is often executed with the help of NGOs and private companies. This was explicitly in all cases stated. The resource interfaces deal mostly with the provision of financial means and funding as the most crucial resource that IB stakeholders require from other stakeholders. The financial support often comes from foreign organizations like NGOs or private companies that are involved in the collaborative business activities of the IB. Another important resource is provided by the local governments in the form of infrastructural facilities in the geographical scope of the IBs. That played especially for Dairy-Case a crucial role since the Nigerian IB wanted to expand in the North of the country. In the Water-Case, the provision of special equipment is very important for the stakeholders. The last interdependency dimension was also mentioned but often not explicitly explained how the stakeholder can profit from it and how it should look like in specific cases. The value chain that merely consists of the activities is seen as a crucial construct that can determine the pace of production. Therefore, it can also be a bottleneck, as the interviewees explain in the Porridge-Case. This applies to the product shelf life and the sourcing location. Activities, especially in the food industry, require quick and smooth procedures to ensure stable and long-lasting products.

5.4 Conceptual model

The Results underline the significance of educational interaction and financial resources that enable scaling dimensions. The following paragraph points out how findings are connected to the conceptual model.

Without funds, the businesses cannot move forward and are therefore not able to expand in many ways. The purpose of NGOs and governments is, in the present cases, the welfare of the BoP. Therefore, the financial interdependency from a resource interface perspective is feasible. The improvement of productivity and quality requires knowledge urgently from third parties across the whole value chain but especially in connection with the suppliers (farmers in the food business cases). The food and energy sector is reliant on implications that take place between the stakeholders. Since the NGOs are for social reasons dependent on helping the BoP population, the BoP population requires knowledge from outside. That makes the actor interaction interdependent. The strongest influences are seen between the "Actor interaction" and "Expanding the service/offer" (Figure 8). Interviewees, workshop material, and secondary data point out that interactions like the education/knowledge transfer can significantly contribute to expanding IB values. As mentioned in the previous sections, the stakeholders are often suppliers and NGOs that can profit economically and socially from each other's contributions. Resources like money were often mentioned in the context of the service/offer expansion as well. But it was also often used in the cases to describe directly how these resources can influence income development. Regarding the activity integration, there is barely any explanation of how it impacts the scaling. However, a few comments were made on the value chain and how an improvement and closer work on the task activities might enable an expansion of services/offers in the pattern of better quality or products.

The underlying reasons for the mentioned relationships above are the lack of knowledge regarding existing procedures. By transferring this knowledge, stakeholders can build upon this knowledge and are able to improve their input on the value chain, which can indirectly contribute to an optimized outcome. Financial means have similar explanations for their influence on stakeholders. Capabilities arise when stakeholder are less income-constrained, which lead them to extensive options and resources (e.g., buying types of machinery, equipment, hiring employees).

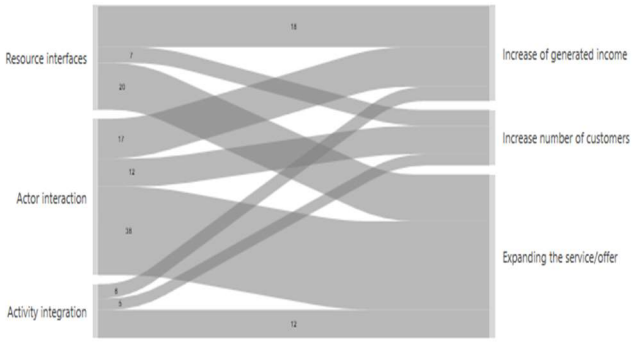

Figure 8: Relations among interdependency and scaling dimensions

Figure 8 shows how strong connections among interdependencies and scaling dimensions could have been identified. All three dimensions of interdependencies show certain relations towards the three scaling factors. This results in a total amount of nine relations with different strengths weighted by their occurrences in the texts. Therefore it is an additional

quantitative representation. The strongest connections are between 'Resource Interfaces' / 'Increase of generated income' and 'Actor interaction' / 'Expanding the service/offer.' Connections of "Activity integration" towards the scaling attributes appear to be underrepresented.

6. DISCUSSION

6.1 Theoretical Contribution

6.1.1 Research question

The goals of this paper were to identify factors of interdependencies that enable scaling. According to the result sections, the educational interaction and the financial resource are the outstanding factors that enable scaling inclusive businesses by quality and size (expanding services/offer, increasing generated income). The cases present that inclusive businesses are stakeholder-driven, especially when they are still unable to self-sustain with their means yet. To answer the research question, educating as a stakeholder interaction and money as resources are still the most crucial interdependencies among stakeholders that drive scaling by "Expanding services/offer" (stakeholder interaction) and increase generated income (through resource interfaces). Therefore, the research gap that was initially stated is answered with the applicability of the research.

6.1.2 Stakeholders

Participants of the interdependent relations in all cases have shown that governments, local communities/farmers, and NGOs are the organizations that have a leading role in the area of inclusive businesses. As mentioned above, the implications that both stakeholders have on the environment/stakeholders of the IB, the institutions, and organizations are primary stakeholders since there is high reliability on their work regarding the future existence of the IB (Clarkson, 1995). For regular for-profit companies, these critical stakeholders are normally shareholders, customers, suppliers, and the public sector. The cases state that this does not apply to inclusive businesses. Of course, the customers, suppliers, and shareholders can provide factors that make the company sustainable. However, the social contribution and sustainable scaling in favor of the local community result mainly from interdependencies that are not usually considered as driving forces in business environments. As a theoretical contribution, it can be validated that the Model of Freytag et Al. (2017) is not only beneficial for companies with traditional purposes. It can also be used to analyze stakeholder interdependencies in the environment of inclusive businesses. Therefore, the research gap that was initially stated can be filled with the applicability of the research.

6.1.3 Scaling

The overall theoretical contribution is that especially the strong educational interaction and financial resource provision that was mentioned consistently stand in solid connection to scaling in terms of 'expanding services/offers' since the cases of inclusive businesses explicitly support that. However, many scaling implications can be interpreted and used in multiple dimensions. Implications like expanding new regions enable entrepreneurs to generate new income, acquire new customers, and expand offerings/services (see Table 6 in Appendix). Therefore, all scaling types were involved. Scaling outcomes stand in causal connection with the problem statement of BoP populations. Since it is explained that the increase of offers leads to lower malnutrition, it shows clearly a positive outcome for the local communities. Quality increase and production expansion are mainly responsible for that. The positive impact of the scaling dimension 'increasing generated income' is the mitigation of poverty since local communities gain money by the improving performances of the inclusive businesses (e.g., employees, local community). In further development, this can lead to improvements, as seen with the help of scaling through "expanding services/offers" since money enables companies to acquire specific knowledge through third parties. Therefore, it clearly shows an interconnection among these scaling factors.

6.1.4 Interdependency

The cases made clear how essential interdependencies can be to achieve the scaling outcomes above. Actor interactions can be found in all observed industries, and also, the resource interfaces are decisive independently from the chosen industry type. Activity integration was solely a significant interdependency in the food industry.

A challenging issue is that Interdependency dimensions can be interpreted differently. Transitions among dimensions are fluent. As an example, "knowledge" can be seen as a resource. Academic distinguish between tacit and explicit knowledge when describing knowledge as a resource that can contribute to competitive advantage (Burciu & Kicsi, 2015). However, the spread of that resource is in the cases decisive, which makes 'knowledge transfer' to be considered as an interaction among stakeholders (Miśkiewicz, 2018). This validates the connections among the 'ARA model,' as mentioned by Freytag et al. (2017). Regarding the 'Activity integration,' it appears in the food cases (dairy, porridge, crickets) that it has a decisive role as well. But, the elaboration and detailed explanation of how these Activity integrations can scale certain companies are only partly explained. Only within the food industry, the integration of stakeholder activities into the own value chain is seen as an enabler of scaling, mainly the expansion of 'services/offers.' However, there remains the request for a further explanation why this is the case. The data does not provide a clear explanation for this causal relationship.

6.1.5 Conceptual Model

The newly created conceptual model that combines Bocken's scaling approach (2016) and the interdependency types of Freytag et al. (2017) shows applicability. Environments and internal procedures of inclusive businesses imply interdependency dimensions of Freytag et Al. (2017). As identified in the results, the most critical relationships exist among stakeholder interaction and expanding services/offers. An educational transfer is here the critical factor. The second most important finding was the relationship between resource interfaces as providing financial means and the increase of generated income. As a result, both connections show typical inclusive business characteristics. BoP populations that are found in the scope of inclusive business locations are seen as income constraint groups, as explained by Schoneveld (2020). Therefore, it is a typical pattern that these groups and businesses mostly require financial means as scaling accelerators for their businesses. That also applies to educational transfer that presents clear impacts on economic growth (Gyimah-Brempong, 2011). The main findings are therefore justifiable since both effects are reliant on third parties that support these impacts.

However, in some points, Bocken's and Freytag's models appear to be too detailed by distinguishing characteristics in some instances. All interdependencies seem to have too many features in common, which makes it difficult to distinguish between them. The cases and additional secondary data have shown that scaling as the responding variable stands connected with the interdependency types. However, according to the coded paragraphs and similar interdependency characteristics, it appears controversial to distinguish among actor interaction, resource interfaces, and activity integration. Transitions are

fluent and can lead to different interpretations among research findings. As an example, the cases showed that 'knowledge' could be interpreted as a resource, but the transfer of knowledge is an interaction between stakeholders. In general, activity integration involves the interaction of stakeholders about resources in a particular manner. Nonetheless, the strengths of the interdependency types can differ from case to case.

The same applies to the responding variables. Bocken's model proposes the scaling variable of 'Increasing number of customers,' 'Expanding services/offer,' and 'increasing generated income.' Interviews, workshop data, and secondary data proved that inclusive businesses are suitable to observe scaling effects. All three scaling characteristics were found in the analyzed data while standing as an outcome in connection to interdependencies. Nevertheless, as the independent variables, the dependent variables also have shown a close connection to each other, which means that they were frequently mentioned in the same context or can be interpreted differently while trying to distinguish among them during the analysis.

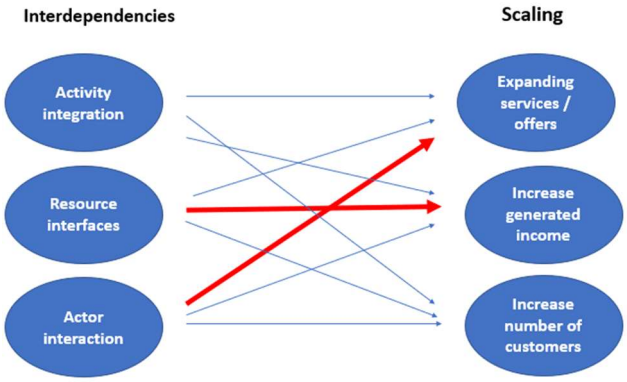

Figure 9 Interdependency/Scaling relations

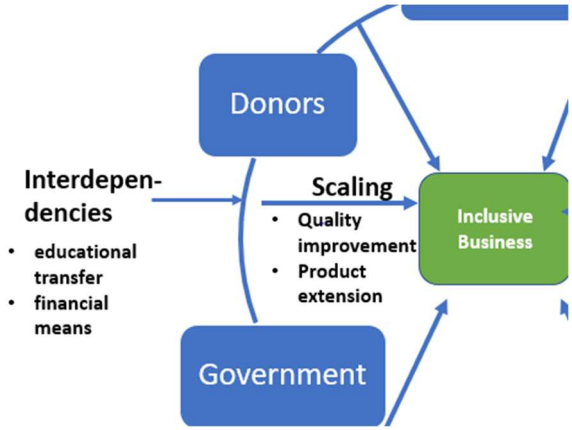

Figure 10 Stakeholder impact on scaling within IB context

Reconsidering the proposed stakeholder schemes, the interdependencies among stakeholders are suggested to be added to the initial framework. Referring to the initial stakeholder framework for this research (Figure 3), the exterior circle shows now the connections among the stakeholders that generates the interdependencies and leads therefore, to the inner circle that implies the three scaling dimensions.

6.2 Practical contribution

Practically, it means that inclusive businesses should not underestimate the importance of relations among stakeholders and need to reconsider the position of the IB in the scope of all participating stakeholders. The IB is not in a centralized position since relationships among several stakeholders exist. The result means that organizations need to consider the whole value chain by helping inclusive businesses instead of providing the means only to the concerned IB. This was shown by the cooperation among farmers and advising/teaching organizations/individuals. Financial means and educational impact from stakeholders are the most important effects through stakeholder interdependencies on scaling. IBs can build on these outcomes so that they can get more independent from their stakeholders in the future. In the long run, these businesses can ideally get more self-sustained since inclusive businesses have at a certain point the gained know-how and through the increased income enough money to be independent of external donors or other supporting institutions. They are getting successively in the direction that they can compete on the free market.

As presented in figures 9 and 10, stakeholders' relationships will indirectly influence inclusive businesses (Figures 9;10). IB managers need to consider these possible synergies by evaluating and analyzing stakeholders. This paper emphasizes the consideration of the bigger picture when choosing decisive partners for inclusive businesses. It is not sufficient anymore to solely consider partners one by one.

7. CONCLUSION

Throughout the entire paper, the relation between stakeholder interdependencies and scaling effects was described and analyzed. With regard to the BoP (Bottom of Pyramid) population, the positive effects that can enhance economic welfare are identified. This research clearly illustrates the effect of stakeholder interdependencies on the scaling of inclusive businesses. With educational transfer and financial resources, the most crucial interdependencies among stakeholders and their effect on the three scaling characteristics were indicated. The three interdependency types have shown interconnectedness with all three scaling effects and are therefore multidimensional. Existing theoretical frameworks can be proven by their applicability to inclusive businesses. However, transitions and consecutive occurrences among interdependencies and scaling characteristics are identified. The existing models of Bocken et al./Ansoff and Freytag et Al. need to be considered in a bundled format to simplify the theory. With the awareness of different interdependency interpretations, Freytag's model gained through this research practical insight. Regarding the variable relations in general, the research confirms the impact on scaling by stakeholder interdependencies. Scaling inclusive businesses shows positive impacts of the introduced problems of BoP populations like the mitigation of malnutrition and the provision of energy/water. Therefore, it is crucial to understand the behavior and procedures of scaling dimensions and how it can be positively influenced.

8. LIMITATIONS

The last chapter outlines the limitations and gives recommendations for future research.

During the research, only three different industries (food, energy, water) were investigated with a total amount of five cases. Therefore, it can be possible that findings do not apply to other industries or business areas. Also, geographically, the choice of six countries where the companies are located leaves out the possibility that IBs of other BoP countries might face different

environments with different behavior of stakeholders. Therefore it is recommended to broaden the scope in future studies.

As mentioned in the previous paragraph, cases were chosen from two different industries. In the first three cases that focus on food production and its value chains, scaling impacts affect mainly inclusive business and enable them to scale through an increase of sales markets in consideration of the three scaling dimensions. The social aspect is mainly the reduction of malnutrition within the local population while subsequently earning money for self-sustainability. Different patterns are identified in the Indonesian cases. Clean water provision by ice cubes for fishing contributes to a higher and qualitative more valuable output. The second Indonesian IB contributes energy to the local communities that, similarly to the previous case, provides the opportunity for the locals to open up new own business fields. Summarizing the difference between the Water-/Energy-Cases and the food cases, it can be said that in specific industries, the scaling effects can contribute to further scaling of other businesses.

In contrast, other industries like the food industry have other social contributions. Besides that, characteristics of 'Activity integration' were only partly mentioned in the analyzed cases. Neither frequently nor clearly. It requires detailed, in-depth questions to gain more knowledge for this interdependency type. Value chains and supply chains needed to be placed in the center of interest to identify which activities among stakeholders might be integrated. Researchers should instead focus on interdependencies as a whole construct. Additionally, there is still the need to elaborate on how stakeholder interdependencies might also constrain scaling within inclusive businesses. Since IB managers need to cope with possible boundaries, it is crucial to know how these boundaries could get avoided. Generally, IB managers need to raise their awareness of their strategic thinking while considering the business environment. This encourages, for example, instruments like the lean canvas model for stakeholders and people in charge of the IBs, as presented by Zerwes (2019). The models will help IB managers to consider what desired products/services should be reached. By knowing what the outcome should be, the required means and actors that can provide these means/interactions can be found easily. Besides that, the practical use of the presented table (Appendix: Table 6) can be used as a template for BoP entrepreneurs.

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10. REFERENCES

Action Repertoire for Distributed Business Models in Inclusive Business Value Chains. (2021, February 11).

The influence of native capability on the impact of inclusive business models in the BoP context | Inclusive Collaboration. Inclusive Collaboration. https://inclusivecollaboration.nl/2021/02/11/the-influence-of-native-capability-on-the-impact-of-inclusive-business-models-in-the-bop-context-2/

Ansoff, H. I., & McDonnell, E. J. (1988). *The new corporate strategy*: New York: J. Wiley.

Baraldi, E., Gressetvold, E., & Harrison, D. (2012). Resource interaction in inter-organizational networks: Foundations, comparison, and a research agenda. *Journal of Business Research, 65*(2), 266-276. doi:https://doi.org/10.1016/j.jbusres.2011.05.030

Bocken, N. M. P., Fil, A., & Prabhu, J. (2016). Scaling up social businesses in developing markets. *Journal of Cleaner Production, 139*, 295-308. doi:https://doi.org/10.1016/j.jclepro.2016.08.045

Burciu, A.; Kicsi, R. Knowledge as a Distinctive Resource of Competitive Advantage. *Ecoforum J.* **2015**, *4*

Clarkson, M. E. (1995). A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance. *20*(1), 92-117. doi:10.5465/amr.1995.9503271994

Danse, M., Klerkx, L., Reintjes, J., Rabbinge, R., & Leeuwis, C. (2020). Unravelling inclusive business models for achieving food and nutrition security in BOP markets. *Global Food Security, 24*, 100354. doi:https://doi.org/10.1016/j.gfs.2020.100354

Figgou, L., & Pavlopoulos, V. (2015). Social Psychology: Research Methods. In J. D. Wright (Ed.), *International Encyclopedia of the Social & Behavioral Sciences (Second Edition)* (pp. 544-552). Oxford: Elsevier.

Freytag, P. V., Gadde, L.-E., & Harrison, D. (2017). Interdependencies – Blessings and Curses. In H. Håkansson & I. Snehota (Eds.), *No Business is an Island* (pp. 235-252). Emerald Publishing Limited. https://doi.org/10.1108/978-1-78714-549-820171013

Goyal, S., Sergi, B. S., & Jaiswal, M. P. (2016). Understanding the challenges and strategic actions of social entrepreneurship at base of the pyramid. *Management Decision, 54*(2), 418-440. doi:10.1108/MD-11-2014-0662

Gyimah-Brempong, K. (2011). Education and Economic Development in Africa*. *African Development Review, 23*, 219-236. doi:10.1111/j.1467-8268.2011.00282.x

Han, J., & Shah, S. (2020). The Ecosystem of Scaling Social Impact: A New Theoretical Framework and Two Case Studies. *Journal of Social Entrepreneurship*. doi:10.1080/19420676.2019.1624273

Henderson, S., & Segal, E. H. J. N. D. f. E. (2013). Visualizing qualitative data in evaluation research. *2013*(139), 53-71.

Hughes, E., & Scheyvens, R. (2016). Corporate social responsibility in tourism post-2015: a Development First approach. *Tourism Geographies, 18*, 1-14. doi:10.1080/14616688.2016.1208678

Lüdeke-Freund, F. (2013). *Business Models for Sustainability Innovation – Conceptual Foundations and the Case of Solar Energy*

Lüdeke-Freund, F., & Dembek, K. (2017). Sustainable business model research and practice: Emerging field or passing fancy? *Journal of Cleaner Production, 168*, 1668-1678. doi:https://doi.org/10.1016/j.jclepro.2017.08.093

March, J. G., & Simon, H. A. (1958). *Organizations*. Wiley.

Matos, S., & Silvestre, B. S. (2013). Managing stakeholder relations when developing sustainable business models: the case of the Brazilian energy sector. *Journal of Cleaner Production, 45*, 61-73. doi:https://doi.org/10.1016/j.jclepro.2012.04.023

McKilligan, S. (2017). *Speed dating with design thinking: An empirical study of managers solving business problems with design*.

Miśkiewicz, R. J. P. E. (2018). The importance of knowledge transfer on the energy market. *21*.

Murray, R., Caulier-Grice, J., & Mulgan, G. (2010). *The open book of social innovation* (Vol. 24): Nesta London.

Oskam, I., Bossink, B., & de Man, A.-P. (2018). The interaction between network ties and business modeling: Case studies of sustainability-oriented innovations. *Journal of Cleaner Production, 177*, 555-566. doi:https://doi.org/10.1016/j.jclepro.2017.12.202

Porter, M., & Kramer, M. (2011). The Big Idea: Creating Shared Value. How to Reinvent Capitalism—and Unleash a Wave of Innovation and Growth. *Harvard Business Review, 89*, 62-77.

Richardson, G. B. (1972). The Organisation of Industry. *The Economic Journal, 82*(327), 883-896. doi:10.2307/2230256 %J The Economic Journal

Schoneveld, G. C. (2020). Sustainable business models for inclusive growth: Towards a conceptual foundation of inclusive business. *Journal of Cleaner Production, 277*, 124062. doi:https://doi.org/10.1016/j.jclepro.2020.124062

Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production, 16*(15), 1699-1710. doi:https://doi.org/10.1016/j.jclepro.2008.04.020

Siebold, N. (2021). Reference points for business model innovation in social purpose organizations: A stakeholder perspective. *Journal of Business Research, 125*, 710-719. doi:https://doi.org/10.1016/j.jbusres.2020.01.032

United Nations. (2020, March 14). THE 17 GOALS | Sustainable Development. https://sdgs.un.org/goals

Woodhill, A. J. (2013). *Multi-stakeholder collaboration and the scaling of inclusive agri-food markets*.

World Bank. (2021, April 3). Access to electricity (% of population) | Data. https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS

World Bank. (2021b, April 3). GDP (current US$) | Data. https://data.worldbank.org/indicator/NY.GDP.MKTP.CD

Yin, R. K. J. M. s. (1994). Case study research: Design and methods, applied social research. 5.

Zerwes, M. (2019). The Lean startup approach in for-profit organizations and for-profit inclusive businesses. In.

11. APPENDIX

A.1 Table 6: Results

	Dairy-Case	***Porridge-Case***	***Cricket-Case***	***Water-Case***	***Energy-Case***
Mainly involved Stakeholders	*animal scientists, farmers local farmers from, Nigeria, and Dutch farmers as consultants, Government*	*Government, NGO's, local Farmers (as Suppliers), private Companies*	*farmers, academic institutions, NGO's, Governments (Kenya & Uganda)*	*local health workers, local Indonesian government, local community*	*NGO's, Consumer, Companies that are dependable on energy provision, Government*
Interdependency					
Actor interaction	•knowledge transfer, •helping actors among the whole value chain	•education of farmers • local sourcing with around 25.000 farmers	• knowledge transfer	• knowledge of health workers supports the health aspect of the installations	•educating consumers for correct use, , •Governments needed to get convinced since thy will finance the products for the consumers •government have interest in infrastructure improved
Resource interface	• building and providing appropriate Infrastructure • findings rom several parties	• all materials from E. African region	• financial support	• financial means enables purchase of special equipment	• allocated budget
Activity integration	• developing Dairy activites. Integrating Stakeholder activities	• multi stakeholder appproach -> shortening supply duration	• deep focus on stages and its procedures	n.a.	n.a.

Scaling					
Expanding services/offer	• product quality improvement • expanding into the Northern region	•job creations (internally annd externally) • quality improvement through aflatoxin reduction • reducinng of malnutrition	• *increase of product quality* •	• creates more local employment • increasing and improving stakeholder`s output • improving health and sanitations of inhabitants • poverty alleviation	• increase the promotion company's impact using social media, • merchandise and influencers •offer new product combinations • eco-tourism
Increasing generated income	• expanding the market provides the opportunity to gain more money	• net value improvements among the whole value chain	• selling product surplus after caring for themselves regarding the surplus	• "The key incentive for the technology providers is making a profit while contributing to the sustainable development goals."	• Attract High Network Individuals and churches to sponsor IB's work. • Provide alternative ways of payment by working with financial institutes (allow for payment with commodities) • Work as a supplier or vendor to benefit from the villages funds by working closely with NGO's
Increase number of customers	• expanding into a new region can provide new customers	n.a	• selling product surplus to neighbors or processors	• clean and healthy water enables more use of it	Partner with bigger EPCs, cooperatives to promote services to customers, and CSR to change perceptions via educational efforts

A.2 Table 7: Relations among interdependency and scaling dimensions (2)

		Expanding the service/offer Gr=50	Increase number of customers Gr=16	Increase of generated income Gr=29
Activity Gr=17	integration	12	5	6
Actor Gr=49	interaction	38	12	17
Resource Gr=34	interfaces	20	7	18

Table 7 is representing how dominant interdependency/scaling relations were present in the literature and data.