

It takes two to tango:
mobilizing strategic,
ordinary, and weak
resources at the base of the
pyramid

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It Takes Two to Tango: Mobilizing Strategic, Ordinary and Weak Resources at the BoP

Entrepreneurs are often resource-constrained from the beginning. Entrepreneurs at the base of the pyramid (BoP) face an additional challenge: the context in which they operate is also lacking in resources, at least strategic resources that contribute competitive advantage. Nevertheless, firms in a BoP context are urged to become socially embedded and build on the present resources and conditions. This implies a resource mobilization process and joint value creation. Using a single case study of an electricity firm operating in rural India, this research investigates how entrepreneurs can mobilize strategic, ordinary, and weak resources through social embeddedness at the BoP. The research discloses three new actions related to becoming socially embedded—enticing customers, selective attention, and supplier responsiveness. It thus contributes theoretically to the social embeddedness perspective and the BoP literature. Moreover, it contributes theoretically to the resource-based view (RBV) theory and the resource mobilization perspective in suggesting that there is more room to socially embed ordinary and weak resources. As a result, they become more valuable compared to strategic resources, which exhibit less room for becoming socially embedded and therefore become less valuable. Consequently, the findings challenge the RBV and the valuable, rare, inimitable, and non-substitutable (VRIN) labeling of resources.

Key words: strategic, ordinary and weak resources; resource mobilization; social embeddedness; base of the pyramid; entrepreneur; resource-based view

Introduction

The resource-based view (RBV) explains how firms create competitive advantage based on the resources they own and control (Barney, 1991; Rumelt, 1984; Teece, 1984; Wernerfelt, 1984). If the resources are valuable, rare, inimitable, and non-substitutable (VRIN), the chances that they will form the basis of competitive advantage increase (Barney, 1991). While the majority of RBV research focuses on the rather rare, by definition, VRIN resources, little attention has been given to resources that have a more ordinary or weak character (Arend, 2004; West III & DeCastro, 2001). Nevertheless, most resources are junk or ordinary resources (Vanessa, Xavier & Xavier, 2013).

RBV—originally a strategic management perspective—has emphasized the established firm that holds a portfolio of resources more than it has considered firms with limited resources at hand and has consequently taken the optimal management of resources for granted (Ireland, Hitt & Sirmon, 2003). However, the management and mobilization of resources remain central (Hansen, Perry & Reese, 2004; Sirmon, Hitt & Ireland, 2007; Sirmon, Hitt, Ireland & Gilbert, 2011; Villanueva, Van de Ven & Sapienza, 2012), at least for resource-constrained entrepreneurs. Indeed, according to Brush, Greene, Hart and Haller (2001), entrepreneurs are often resource-constrained when they begin their endeavors, and they lack a portfolio of VRIN resources. Therefore, gaining access to resources and subsequently leveraging them into VRIN resources are core activities for entrepreneurs (Ireland, Hitt, Camp & Sexton, 2001).

If the entrepreneurial activities take place in a resource-rich environment—for example, if there are well-developed strategic factor markets in which resources are accessible (Barney, 1986)—there is a fair chance that entrepreneurs can access resources that will be subject to further internal accumulation (Maritan & Peteraf,

2011) and over time develop into VRIN resources. However, in some instances, the entrepreneur is resource-constrained *and* the environment is less munificent in terms of resources, as is the case at the base of the pyramid (BoP) (Webb, Kistruck, Ireland & Ketchen, 2010).

The nearly four billion people who live in relative poverty globally constitute the BoP (Hammond, Kramer, Katz, Tran & Walker, 2007; Prahalad & Hammond, 2002). Prahalad and Hammond (2002) suggest, counterintuitively, that the world's poor represent a profitable and attractive market. Although the individual purchasing power of the poor may be low, the accumulated purchasing power of the BoP is enormous and therefore attractive for both existing firms and entrepreneurs. Moreover, the central objective of the BoP proposition is to create wealth for firms and simultaneously alleviate poverty by including the world's poor in a market economy (Prahalad & Hammond, 2002; Prahalad & Hart, 2002). However, strategic factor markets, where products and services are exchanged between firms (Barney, 1986), are poorly developed at the BoP (Milstein, London & Hart, 2007; Webb et al., 2010). Furthermore, businesses targeting the BoP will face a number of additional issues (Jagtap, Larsson & Kandachar, 2013)—limited capital market and financial services (Richardson & Callegari, 2008; Webb et al., 2010); limited market information (Keating & Schmidt, 2008); an underdeveloped regulatory framework (de Soto, 2000); poorly developed infrastructure (UNDP, 2015); and low literacy and numeracy levels (Madhubalan & José Antonio, 2007)

The BoP context may be lacking in strategic resources, but certain resources are present (Madhubalan & José Antonio, 2007). However, these may have what can be called a more ordinary and weak nature (Vanessa et al., 2013; West III & DeCastro, 2001). In contrast to strategic resources, ordinary resources are not

expected to facilitate a competitive advantage, and weak resources are counterproductive to competitive advantage. Regardless, actors at the BoP need to become socially embedded (London & Hart, 2004) and build native capabilities, which means building on the ordinary and weak conditions and resources found in the local context (Hart & London, 2005). “Native capability enables the corporation to become truly *embedded*—part of the local landscape—rather than an alien force that imposes its will (. . .) native capability emphasizes the crafting of strategies that build on *existing* conditions and resources” (Hart & London, 2005, p. 33). Resource mobilization is a resource management perspective that comprises the perspective of social embeddedness and mutual value creation between two parties (Villanueva et al., 2012). Therefore, it is an appropriate lens to study how to manage resources in resource-deprived areas where ordinary and weak resources are expected to outnumber strategic resources, and actors ought to build on these resources (Simanis & Hart, 2009). This also implies a shift of focus from VRIN resources to the management (Ireland et al., 2003; Sirmon et al., 2007) and mobilization of resources (Villanueva et al., 2012). Therefore, this research contributes to the growing awareness that it is not only the characteristics of resources (VRIN) but also their management and development that will lead to competitive advantage (Hansen et al., 2004; Sirmon & Hitt, 2003; Sirmon et al., 2011). More specifically, the research addresses the call to understand how successful entrepreneurs tackle the resource constraints at the BoP (Linna, 2013) by answering the central research question of *how successful entrepreneurs mobilize strategic, ordinary and weak resources at the BoP*.

The research contributes to the BoP literature and the social embeddedness perspective by identifying three nuanced ways entrepreneurs become socially

embedded: (i) enticing customers; (ii) selective attention; and (iii) supplier responsiveness. Furthermore, it contributes theoretically to the resource mobilization theory in suggesting that strategic resources have the potential to reduce their VRIN attributes, while ordinary and weak resources have the potential to increase theirs, and it suggests that the reason lies in their ability or inability to become socially embedded.

The article proceeds as follows. First, the literature on resource mobilization, relevant resource management perspectives, and social embeddedness are reviewed. Second, the methodology applied in the study is presented. Third, the findings and a discussion, including limitations and suggestions for future research, are presented. Concluding remarks end the article.

Resource mobilization

This section will commence with a comparison of resource dependency theory and resource mobilization in order to explain the origin of resource mobilization and to establish the link between resource mobilization and native capability, which is social embeddedness. A discussion of the RBV and the importance of resource heterogeneity will follow because the successful management of resources implies creating heterogeneous resource portfolios, a central precondition for competitive advantage. Finally, the section will address how and why resources may be mobilized, acquired, accumulated, and divested.

Resource dependency theory versus resource mobilization

Resource mobilization has its origin in resource dependency theory (RDT) (Pfeffer & Salancik, 1978). At the core of RDT is the assumption that desired resources are often—at least for smaller firms and entrepreneurs—accessible through larger players

with more power. Due to the skewed power balance between the two actors, the less powerful actor seeks to minimize dependency on the more powerful actor to reduce the risk of being exploited (Gulati & Sytch, 2007). Resource dependency is therefore an undesirable but nevertheless necessary condition for gaining access to resources, and RDT provides suggestions on how to reduce the dependency on external actors (Hillman, Withers & Collins, 2009). However, the most powerful party does not necessarily exploit its power at the cost of the weaker party (Casciaro & Piskorski, 2005; Gulati & Sytch, 2007). The beliefs that the stronger will exploit the weaker and that all parties will behave purely opportunistically in economic transactions are false assumptions (Granovetter, 1985). Social embeddedness brings a sense of trust and a feeling of responsibility for one another, including in economic transactions (Stuart & Sorenson, 2007). Moving from RDT to a resource mobilizing perspective includes moving from a logic of power, where one party behaves at the cost of the other party, to a logic of social embeddedness, where two parties both have access to a resource and jointly enhance the shared resources (Gulati & Sytch, 2007; Villanueva et al., 2012).

Central to both resource mobilization (Villanueva et al., 2012) and native capability (Hart & London, 2005) is social embeddedness (Hart & London, 2005; London & Hart, 2004; Ray & Ray, 2010). “Social embeddedness is the integration into diverse local networks that leads to the development of long-term and cooperative relationships and which may result in the achievement of common benefits for all the players involved in the network.” (Sánchez, Ricart & Rodríguez, 2006, p. 20). It is with mutual dependency and joint value creation that resources are elevated and improved (Villanueva et al., 2012).

According to Sánchez et al. (2006), firms at the BoP may have greater incentives to become socially embedded when the following three conditions are present: (i) When there is an under-developed market system; for example, if there is a lack of efficient transfer of cash when goods are sold, firms will benefit by knowing how they can most efficiently get paid for their products. (ii) High psychic distance, which occurs when there is little knowledge about local habits, customs, and traditions. Social embeddedness will increase knowledge about these aspects. (iii) When there is a need for a high degree of personal co-creation, as when the product is technologically intensive and highly priced, in which case social embeddedness will ensure that the technology and price are within the range of what is accessible and affordable (Sánchez et al., 2006). However, the complexities involved with being socially embedded at the BoP are often under-communicated (Bland & Hamann, 2015); for example, logistical challenges related to poorly developed infrastructure and actors scattered across large geographical areas severely constrain the ability to become socially embedded (ibid.). Moreover, becoming socially embedded is time consuming, but great rewards may follow because it is difficult for competitors to imitate a firm that is socially embedded (Hart & London, 2005), potentially because the resource portfolio has become heterogeneous. Resource heterogeneity across firms is a key assumption in RBV (Dierickx & Cool, 1989).

RBV and resource heterogeneity

The existence of heterogeneous resources among firms is the underlying assumption behind RBV, which explains why the resources controlled by a firm can be the basis for that firm's competitive advantage (Penrose, 1959). The central objective of resource management in a firm's early existence is therefore to develop simple

resources into more complex resources. In RBV terminology, the objective is to develop homogeneous resources into heterogeneous resources (Dierickx & Cool, 1989). As resource portfolios develop into heterogeneous portfolios as the initial resources are deployed and built upon (Wernerfelt, 2011), initially small differences between firms' resources can grow quite large over time. During this process, the resources and their interaction become complex (Rumelt, 1984) and causally ambiguous (Reed & DeFillippi, 1990), which means it is difficult to identify exactly where in the web of resources VRIN attributes emerge (Denrell, Fang & Winter, 2003). Such resources are difficult for competitors to imitate, and substitutes cannot easily be created. It is desirable to hold such resources. In most cases, however, resources must be managed such that they become VRIN resources. Four resource management activities—mobilizing, acquiring, accumulating, and divesting resources—and their expected relevance for the BoP are presented next.

Mobilizing, acquiring, accumulating, and divesting resources at the BoP

Table 1 displays the various expected and not expected resource management activities at the BoP. This will be explained in more detailed in the following.

Table 1. Expected resource management activities at the BoP

Expected resource management activity at the BoP		Rationale	Representative literature
Acquiring	Not expected	A shortage of strategic factor markets.	(Milstein, London, & Hart, 2007; Webb, Kistruck, Ireland, & Ketchen, 2010)
		Lack of good quality raw material.	(Ramachandran, Pant, & Pani, 2012)
Divesting	Not expected	In uncertain, resource scarce environment, divesting should be exercised with great caution.	(Sirmon, Hitt, & Ireland, 2007)
	Expected	Resource richness may lead to core rigidities associated with too advanced products.	(Ray & Ray, 2010)
Mobilizing	Expected	Build on local resource and conditions. Mutual value creation.	(Hart & London, 2005) (Simanis & Hart, 2009)
Accumulating	Expected	Bricolage - internal accumulation of whatever resources are present.	(Linna, 2013)

Ordinary and weak resources can be acquired—but in a factor market and not in a strategic factor market. Consequently, ordinary and weak resources acquired through a factor market are not expected to contribute to competitive advantage because they do not have the levels of complexity that make them difficult to copy or substitute. For example, a rural electricity mini-utility company operating at the BoP may acquire a standard diesel generator to supply electricity. However, this is an ordinary resource and, despite the costs associated with such equipment, it is relatively easily accessible—even in a BoP context—and is not expected to contribute to a competitive advantage. However, ordinary and weak resources may initially be acquired and then expanded (Maritan & Peteraf, 2011), and through accumulation and subsequent increasing complexity resources can acquire stronger VRIN attributes. Let us look at the example mentioned above. A standard diesel generator is not designed to run on the rather low load levels at the BoP; therefore, to maximize the output/input ratio the machine must be fine-tuned to run at the right load intervals. Further, the generator may not originally be designed for the fuel, which is locally available. For example, gas from biomass will contain higher levels of tar, which means that accrued tar must be frequently removed and the generator cleaned. Therefore, maintenance norms must be established to accommodate local fuel availability. Developing routines and knowledge related to optimum generator efficiency represents the accumulation of resources, and this is where the resource increases in complexity and can develop more VRIN attributes. Accumulation—compared to acquiring—is expected to be more relevant at the BoP because of the lack of strategic factor markets (Milstein et al., 2007; Webb et al., 2010) and because there is a lack of good quality raw material at the BoP (Ramachandran, Pant & Pani, 2012).

In contrast to acquiring and accumulating, divesting resources involves letting go of resources. For example, a firm that has developed a technology may find that the technology is not what the customer prefers after all. However, costs may accrue with keeping the technology; for example, if the technology is patented, retaining the patent accrues costs and the firm may be better off divesting the technology by selling it to another firm. Divesting ought to take place when the cost of maintaining or controlling a resource exceeds the potential it has to contribute to competitive advantage (Sirmon et al., 2007). However, because the future value of resources is unknown, it can be difficult to divest the right resources at the right time (Miller & Arikan, 2004). According to Sirmon et al. (2007), resources should be divested with caution, particularly in environments with high uncertainty and low environmental munificence, which is the case in a BoP context. They observe that (i) if the wrong resources are divested, such environments will not easily provide replacements, and (ii) surprising events may occur or a new perspective on the same resource may arise (Baker & Nelson, 2005), which makes seemingly worthless resources valuable.

Furthermore, there are costs associated with retaining resources. Due to previous investments in a resource, managers may face difficulties in detaching themselves from it, causing them to continue nurturing a resource that should have been divested. In such cases, the resource becomes a core rigidity that hinders competitive advantage (Ireland et al., 2003). Indeed, Ray and Ray (2010) argue that resource richness can become a core rigidity at the BoP because resource-rich firms tend to generate more advanced products for customers who are wealthier than the BoP customer. These firms face difficulties in reorienting their production capacity to match a lower-quality product based on the utilization of fewer and less valuable

resources. Such a perspective challenges the prevailing RBV logic, which favors resource-rich firms.

Acquiring and divesting resources are expected to be less relevant resource management activities at the BoP—acquiring due to resource scarcity and divesting due to the inherent *potential* value of a resource. Therefore, some sort of resource accumulation appears to be vital for entrepreneurs at the BoP. Resource accumulation, in contrast to acquisition, is the internal development of resources from the bottom up (Maritan & Peteraf, 2011; Sirmon et al., 2007). Resource mobilization resembles resource accumulation from a developmental aspect, where resources interact with other resources and conditions and develop over time. However, they differ regarding where it takes place. Resource accumulation refers to *internal* development, which is often juxtaposed with the acquisition of resources from an *external* party (Villanueva et al., 2012). According to Villanueva et al. (2012), resource mobilization takes place both internally *and* externally, and it is the *mutual* dependency of two or more parts that lays the foundation for a resource to improve further. Consequently, resource mobilization is less concerned with the location of resources, meaning which firm controls which resources. Rather, it shifts the attention to the access to resources (Villanueva et al., 2012) and who in the context can provide resources that can potentially become of great value to both parties as they are set in motion, deployed, and refined.

The well-known story of Grameen Bank and the Norwegian telecommunication company Telenor serves as a good example of resource mobilization. Through the Grameen Bank, Telenor was able to benefit from the good reputation of the bank's founder, Dr. Yunus, in Bangladesh. Telenor also had access to a fiber-optic network established by the Norwegian Agency for Development,

(which was never utilized to its fullest) and to specific skills by communicating and working with the rural poor in Bangladesh through the corporation with Grameen Bank (Seelos & Mair, 2007). In combination with Telenor's knowledge in running a telecommunication company, both parties' resources were mobilized. This illustrates that knowing how to access resource holders becomes of paramount importance. The socially embedded entrepreneur will presumably have an advantage in doing so. Both native capabilities, whereby firms build *on* local conditions and resources (Hart & London, 2005), and innovation from the inside out (Simanis & Hart, 2009) are perspectives closely linked to resource mobilization because they acknowledge that two or more players need to be involved in increasing the value of resources. However, little is known about successful BoP entrepreneurs in developing countries and how they tackle not only their own resource constraints but also the resource deficits associated with the context in which they operate (Linna, 2013). The methods applied to study this topic are explained in the following section.

Methods

As the focus is on an underexplored and complex phenomenon (Eisenhardt, 1989; Weick, 1996), a qualitative research design is adopted in this research. As the previous sections reveal, successful resource management of entrepreneurs and associated firms operating in a resource-deprived area has received very little attention in the literature. Consequently, two parameters influence the sampling process: (i) the firm operates in a resource-deprived area, and (ii) the entrepreneur and associated firm can demonstrate some kind of success. The first criterion should be met by focusing on firms in a BoP context, which often means being located in rural areas in developing countries (The World Bank, 2008). However, due to large

differences within developing countries (Pitta, Guesalaga & Marshall, 2008), it should not apply that all the people in developing countries belong to the BoP segment (London & Hart, 2004). Therefore, a more fine-grained assessment of the resource situation within a developing country must be conducted. Success, the second criterion, relates to growth at the BoP. Because customers' purchasing power is low, growth is essential, as it is the accumulated market size that is financially attractive. Success at the BoP is therefore closely linked to growth.

A single case study of the entrepreneurs behind Husk Power Systems (HPS), an Indian firm that specializes in distributed electricity in rural India, has been conducted. Based in the state of Bihar, one of the poorest and least developed states in India, HPS has installed 79 power plants and adjoining transmission lines over a period of five-and-a-half years. HPS produces electricity based on gasification of rice husks, a local biomass residue, and delivers electricity in areas where there is either limited or no access to electricity. The power plants range from 30 to 100 kW in size, and they supply 300 to 1000 households with basic electricity services. An explanation of the data collection and analysis process—from the initial sampling issues to the final coding approaches—follows next.

Sampling

Two criteria were used to sample the firm. First, in order to understand how entrepreneurs manage resources in a resource-scarce environment, the firm had to be located within and target the BoP. Because the BoP lacks strategic factor markets (Milstein et al., 2007; Webb et al., 2010), capital markets are limited (Webb et al., 2010), purchasing power is low (Pitta et al., 2008), literacy and numeracy skills are low (Madhubalan & José Antonio, 2007), and good-quality raw materials are difficult

to access (Ramachandran et al., 2012). Therefore, the BoP context is severely constrained in terms of resources.

BoP conditions were expected to prevail in Bihar, which is located in the northeastern corner of India. Close to 34% of the population in rural Bihar live below the poverty line, as it is defined by each state (Government of India Ministry of Statistics and Programme Implementation, 2015), and international estimates indicate that this number is even higher (UN, 2015). Consequently, key indicators such as child weight, child mortality, literacy, and basic health services are particularly bad in Bihar (Government of India Ministry of Statistics and Programme Implementation, 2015). Furthermore, Bihar is very poorly situated when it comes to basic infrastructure, such as solid roads (UN, 2015). Therefore, operating in Bihar, as HPS does, implies operating in a resource-scarce environment.

Furthermore, the entrepreneur/firm has to have had some success in managing resources despite the resource-constrained environment. HPS has commissioned close to 80 power plants over a six-year period, and they expect to provide a return on investment to their investors within a reasonable amount of time. The International Finance Corporation (IFC), which is the largest global development institution focused exclusively on the private sector, ranks HPS at the top amongst the firms within its sector (mini-utility rural electricity) based on their financial viability (IFC, 2012, p. 39). This indicates that HPS has been successful in managing resources at the BoP.

Data collection

Data were collected during two distinct periods in HPS' natural setting in rural India. The first data collection period included initial interviews with one of the founders

and visits to two power plants in February 2012. The second visit took place 10 months later, in November and December of the same year. Data were collected at HPS' headquarters and in remote villages in Bihar. In-depth knowledge was acquired through semi-structured interviews with the two founders and the vice president of operations (VPO) at their headquarters and four individuals from top management at four sites, as well as two group interviews at two additional sites. Finally, an interview was undertaken with an end user in order to confirm the end user benefits of having access to electricity. Table 2 provides an overview of the respondents.

Table 2. Overview of respondents

Person	Date	Place	Type	Length	Language
CEO, Co-founder	Feb, 2012	HPS Headquarters, Patna	Semi-struct. interv.	1 h 28 min	English
CEO, Co-founder	Nov, 2012	HPS Headquarters, Patna	Semi-struct. interv.	1 h 3 min	English
CEO, Co-founder	Nov, 2012	HPS Headquarters, Patna	Semi-struct. interv.	1 h 10 min	English
COO, Co-founder	Nov, 2012	HPS Headquarters, Patna	Semi-struct. interv.	1 h 15 min	English
COO, Co-founder	Nov, 2012	HPS Headquarters, Patna	Semi-struct. interv.	46 min	English
VPO	Nov, 2012	HPS Headquarters, Patna	Semi-struct. interv.	1 h	English
Team, 6 persons	Nov, 2012	Field office, Tamkuha	Group interv.	1 h 59 min	English/Hindi
Team, 5 persons	Nov, 2012	Field office, Bettiah	Group interv.	1 h 45 min	English/Hindi
Manager	Nov, 2012	Power plant, Suklahi	Semi-struct. interv.	1 h 26 min	English
Manager	Nov, 2012	Power plant, Misir Batraha	Semi-struct. interv.	1 h 3 min	Hindi
Manager	Nov, 2012	Power plant, Pataili	Semi-struct. interv.	1 h 36 min	Hindi
Manager	Nov, 2012	Power plant, Kundilpur P	Semi-struct. interv.	1 h 28 min	English
End-user	Nov, 2012	Private household, Pataili	Unstruct. interv.	15 min	Hindi
Total				16 h 14 min	

The two founders of HPS, who serve as Chief Executive Officer (CEO) and Chief Operating Officer (COO), constitute the starting point of the research and were the key informants (Patton, 2002). They presented a broad overview of HPS' development from the time prior to the firm's inception in 2007 until the end of 2012, when data collection was finalized. Data from the key informants were triangulated with data from various management levels throughout the organization; archival data; observations of the headquarters in Patna, the state capital of Bihar; regional offices

and power plants located in rural Bihar; and secondary data, such as official reports (e.g., IFC, 2012). Broad questions such as “Can you please tell us about HPS’ development from inception and until now?” and “What do you consider to be your core competence?” accompanied by detailed follow-up questions were put to the founders and the VPO. Using the same topics, the interview guide for regional managers, partners, and employees was developed with the objective of (dis)confirming and extending the information disclosed to us by the top management team. Questions such as “From your perspective, how has HPS managed to commission close to 80 power plants in this area over a six-year period?” were asked.

Triangulating data among multiple data sources (Denzin & Lincoln, 2000) and management levels (Maaløe, 2002) within HPS improved the richness of the study (Healy & Perry, 2000). Moreover, dependability points to the consistency in the research process (Lincoln & Guba, 1985) across researchers and time (Miles, Huberman & Saldaña, 2013). Throughout the study, two to three researchers were involved in the data collection and the subsequent data handling and reporting of the main conclusions. Multiple observers contributed to increase the dependability of the study (Boyatzis, 1998). The fact that there were differences between the researchers in some of the analytical steps is considered a quality measure, as it reduces the chances for bias. Moreover, there is congruence between the two main rounds of data collection, as the second round can be considered an extension, both in scope and in depth, of the findings of the first round of data collection. This ensures consistency in focus over time and thus enhances dependability (Miles et al., 2013).

This is a single case study, and as with all single case studies, there are both benefits and limitations. It has not been the intention to generalize over a broad spectrum of BoP initiatives; rather, a deep examination of one case that provides

some preliminary results that ought to be further investigated has been undertaken. A process approach has been taken in this study, meaning that claims about the development of resources over time are presented. This is based on data that are largely retrospective, and therefore retrospective bias can occur. However, by triangulating the data, any influence retrospective bias may have had on the study is reduced.

Analysis of data

The coding process included four steps, where each step aggregated the previous coding step into a higher abstract category. A full overview of the coding steps is given in Table 3. The first two steps were empirically driven with the main objective of organizing and categorizing data. The two latter steps were more theoretically oriented. The analysis can best be described as a cycle between the empirical data and extant theory through several iterations (Alvesson & Kärreman, 2007), that is, an abductive approach (Gioia, Corley & Hamilton, 2013). The coding process was inspired by the Gioia methodology (Gioia et al., 2013). However, it should be stressed that the coding was not purely inductive (Corbin & Strauss, 1990) but rather employed a mix of inductive and deductive methods, cycling iteratively between the two (Langley, 1999).

First-order codes – structural in vivo coding

The purpose of the first cycle of coding was to reduce the data to a manageable entity (Miles et al., 2013) without losing the respondents' voices (Gioia et al., 2013). In the first round of coding, a structural in vivo coding technique was applied (Saldaña, 2013). Structural coding was undertaken when a sentence or a conceptual phrase represented part of the content (Gioia et al., 2013). Here, respondents' own words or

phrases are used if applicable. This is known as in vivo coding (also known as verbatim coding), and it is applicable in combination with other coding techniques (Saldaña, 2013).

Second-order categories

The first cycle resulted in an extensive list of codes that required further aggregation to become a manageable entity, which was the purpose of organizing the first-order codes into second-order categories. At this stage, emerging descriptions of common topics, dimensions, and actions taken by entrepreneurs were organized into categories (Gioia, Thomas, Clark & Chittipeddi, 1994), such as “Do not go uninvited” and “Local employment is beneficial”.

Theoretical sub-categories

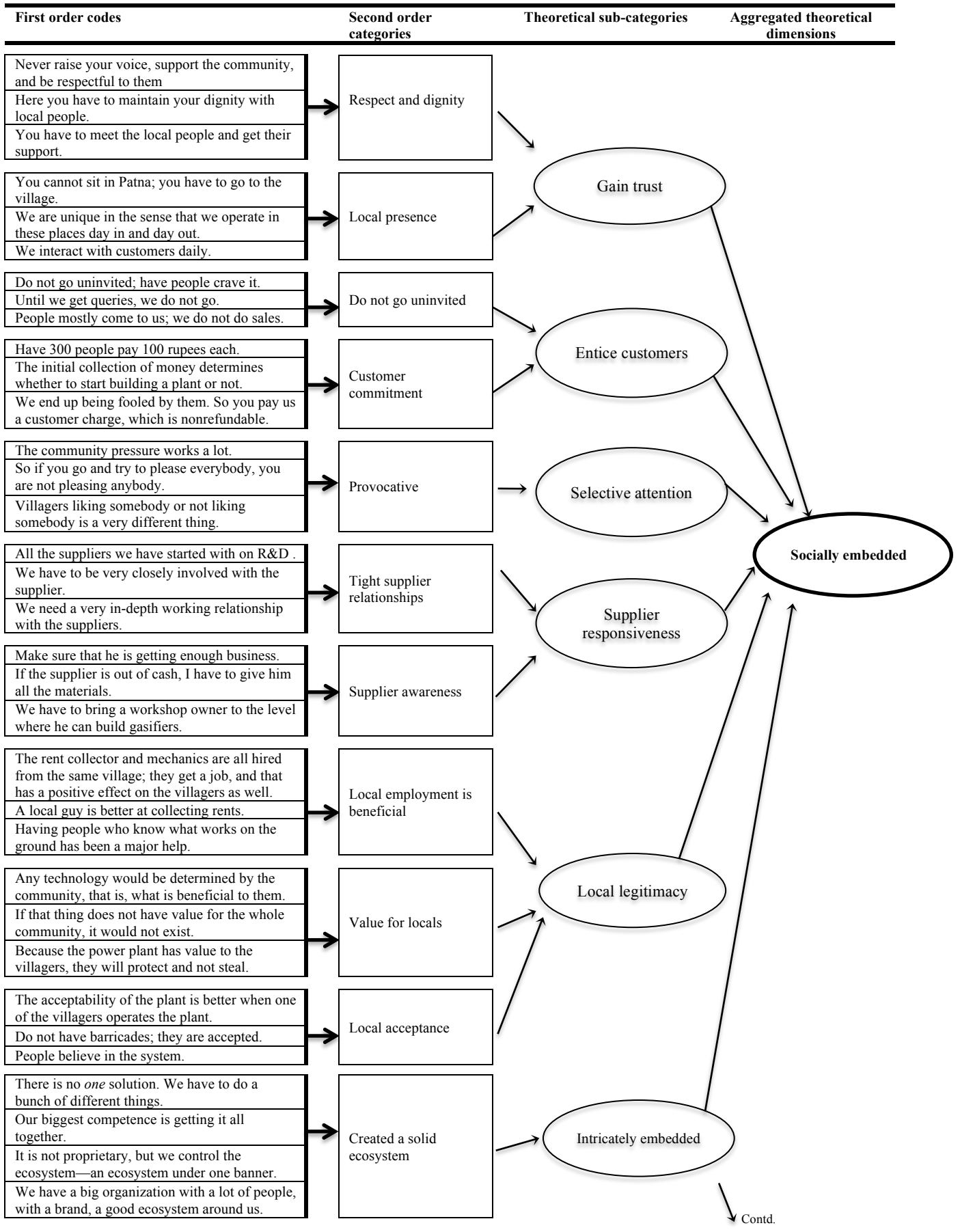
Theoretical sub-categories emerged as second-order categories were reorganized into new categories, a coding process also known as axial coding (Boeije, 2010; Saldaña, 2013; Strauss & Corbin, 1998). At this stage, a constant comparison technique was applied, with the objective of establishing a close link between the data and the emerging theoretical concepts (Glaser & Strauss, 1967; Miles et al., 2013).

Aggregated theoretical dimensions

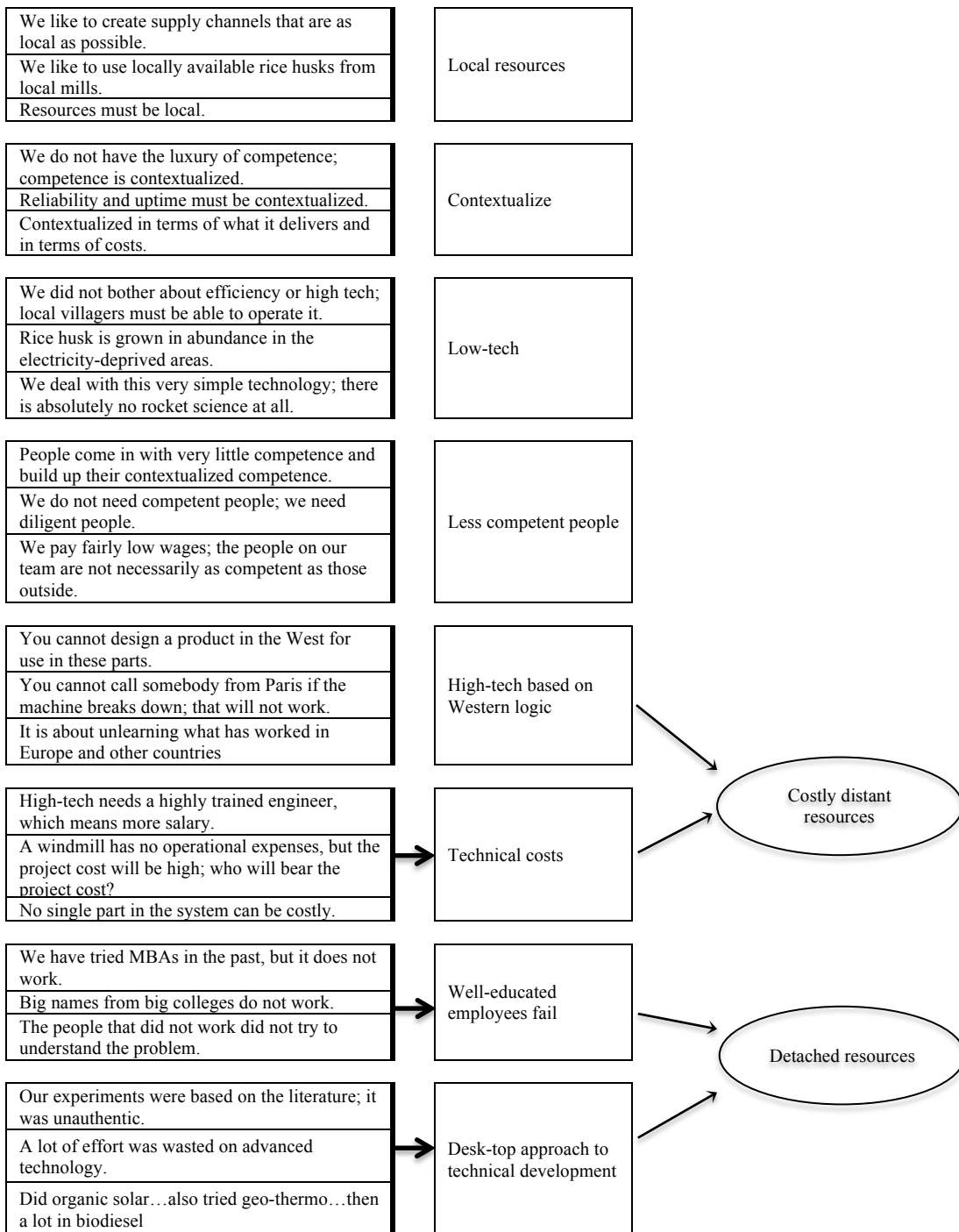
Aggregated theoretical dimensions emerged as the theoretical sub-categories were grouped with extant theoretical constructs in mind (the deductive aspect). Numerous iterations among the second-order categories, the theoretical sub-categories, and the aggregated theoretical dimension occurred before the puzzle pieces fell into place (Saldaña, 2013). It is within the numerous iterations and cycling between theoretical constructs and empirical data that the abductive nature of this research becomes

distinct (Alvesson & Kärreman, 2007).

Table 3. Overview of the coding process



Contd.



Results and findings

The coding scheme's three aggregated theoretical dimensions are "Socially Embedded", "Successful ordinary and weak resources" and "Failed strategic

resources”. The three dimensions and the associated theoretical subcategories will be presented with the objective of explaining why ordinary and weak resources succeed and why strategic resources fail. Activities related to becoming socially embedded at the BoP are also presented. This will serve as the basis for the discussion, which starts by merging resources and social embeddedness using the resource mobilization perspective.

Failed strategic resources

Detached resources

Despite the need to become socially embedded and build *on* local conditions and factors, the two HPS founders tried to acquire human and technical resources from an outside strategic factor market. To recruit talented people, the CEO visited elite universities located in Indian cities. Students were enthusiastic about the opportunity and were willing to contribute their analytical abilities and skill sets. However, they did not turn into a strategic resource, as they were incapable of accepting and adjusting to poor food, poor living standards, and different social norms. In fact, they were quite unsuccessful at operating on the ground in Bihar. The strategic resources failed. The CEO explains:

You may be a very popular guy in an IIT [Indian Institute of Technology] . . .
But if you are able to translate that skill into building a good team on the ground in Bihar, there is no way to judge that. . . . the rules of engagement are totally different. . . . you don't have good food, you don't have a place to stay, good place to party. . . . those are the hard realities of life, and your performance goes just shhhh. CEO

Likewise, advanced technical solutions, presumably a strategic resource, were not applicable to rural village life. The two entrepreneurs looked at the existing literature

and applied advanced technologies to the context in Bihar. Different energy sources and carriers were considered, such as geothermal, micro and pico hydro, and biogas from manure. The two founders were unable to convert textbook recipes into practical solutions on the ground, despite the promising numbers reported in articles they had found on the Internet and in other sources. They were never able to use these reports as the basis for further resource accumulation. The content of the reports was too far removed from the actual situation on the ground in Bihar. Therefore, all attempts, and whatever had been invested in them, were discarded. The two founders turned their attention from the seemingly strategic resources available through a strategic factor market to exploring the resources available locally.

Costly distant resources

One reason for the failed technical approach was the technical complexity that accrued costs. Complex technical solutions can increase efficiency rates and reliability, but they must be contextualized. Considerably lower efficiency rates and poorer reliability are accepted and have major impacts on the costs, which are reduced significantly. Advanced technology, which is often regarded as a valuable resource, turned out to be of little value because of the costs and the detachment from the context that made local people unable to operate it. After failed attempts, the strategic resources were divested, and rightly so because higher costs accompany strategic resources. The CEO explained that they learned to reorient themselves and create less refined but contextualized solutions:

But the thing here is that you don't need that 99.9% [reliability], because it is the last 9.9 % that is adding 60% of the costs. . . . if your plant doesn't work 2 days in a month, people are fine with that. . . . Those things have to be contextualized.
CEO

With this experience in mind, the entrepreneurs reoriented themselves, took a resource mobilization approach, and became socially embedded.

Successful ordinary and weak resources

Affordable, local, and contextualized resources

After divesting seemingly strategic technologies, the entrepreneurs changed their logic. They identified resources actually present on the ground in Bihar and realized there was an almost perfect match between the lack of electricity and rice farming. The two founders saw the potential in the available waste resources, namely, rice husks. The rice husks became the determining factor for subsequent technological development. As a result, this resource changed from being a waste resource to being an ordinary resource. Additionally, technology was built on the logic of local labor, meaning that locals should be able to run the power plant, and on the availability of components in the local supply chain. This is the mobilization of local technical resources and local human resources. One of the employees at one of the field offices explained the benefits of applying local resources, which were presumably ordinary or weak:

Since this company uses rice husks, which are easily available in this area, [they] contribute to its success. This makes it easy to run the plant. (. . .) Secondly, we have local employees, for example, people who were without employment in the villages. Here, they were made operators or rent collectors, and these are the people who work for us. So there is this excitement also among people that we have to go and work for this company. We can find a good job there. Employee - field office.

Employing local people has a positive effect on the village and increases value for more than just the customer. Consequently, the power plant generated legitimacy as

part of village life, and a positive buzz arose. However, local employment was also positive for HPS. The local people had a deeper understanding of rural village life. Collecting money for electricity was a challenge because of the community's low purchasing power and because electricity was viewed as a commodity that ought to be provided for free. Being considerate and maintaining a balanced and understanding perspective when collecting money was important. Locals, often uneducated people, would be the most efficient in collecting fees, and they were also capable of solving problems that arose with villagers.

Despite limited initial knowledge, ordinary people, some with basic education and some unemployed, developed into strategic resources. Similarly, technical resources based on local availability and local supply chains became strategic. It was the mobilization of ordinary and in some instances weak resources that resulted in improved resources, resources that are arguably strategic. These resources are intricately embedded, which will be explained next.

Intricately embedded

“Intricately embedded” is a theoretical sub-category pointing to the two aggregated theoretical dimensions “Socially embedded” and “Successful ordinary and weak resources”. Therefore, it bridges the resource perspective and the socially embedded perspective. The category is key to understanding how ordinary and weak resources can be mobilized and can eventually become strategic resources by being intricately embedded.

The analysis indicates that it is not a single resource that creates a competitive advantage for HPS. Rather, it is the accumulated resource portfolio, in which numerous resources are mobilized in joint value creation with resources and

conditions in the context HPS operates within. Having a central position in this ecosystem of embedded complexity and bringing all the components together is HPS' foremost advantage.

The entrepreneurs claim they are not good at anything specifically and are less concerned with competition. They have created a central position in an interlinked network of resources and actors working together in which none stands out as specifically special or important, and nor is any part especially complex or advanced. Their key competences are the weaving together of internal resources with external resources and conditions; their understanding of local conditions; their unique understanding of local energy production and consumption; and their ability to put these all together to form a contextualized understanding.

[I]t is the ecosystem that we have created, not the experience. Experience, yeah but experience. . . . There are all these things . . . for us what matters is that we have been able to create an ecosystems that combines, that brings all that in one house, under one banner. Something that brings all of it together, in a contextualized sense. CEO

It would be misleading to say that HPS *controls* this ecosystem, implying that they somehow sit at the top and manage the ecosystem. However, they do enjoy the benefits of their central position in this intricate socially embedded ecosystem in which strategic resources failed and ordinary and weak resources succeeded. HPS' approaches to becoming socially embedded will be presented next.

Social embeddedness

There are six theoretical sub-categories that constitute the aggregated theoretical dimension "Socially embedded". "Gain trust" and "Local legitimacy" are the best-known sub-categories of "Socially embedded" (Granovetter, 1985; Stuart &

Sorenson, 2007). They serve the purpose of confirming what is already known, and therefore they will not be focused on here. Nevertheless, they are included in the coding scheme to show that the more common mechanisms of social embeddedness have been discovered. More attention will be given to the three categories that are less known—“Enticing customers”, “Supplier responsiveness”, and “Selective attention”. These will be discussed in more detail in the following paragraphs.

Enticing customers

By being present in the local communities employing local resources and generally showing commitment to rural areas, potential customers are able to approach the power plants, learn about them, and see how access to electricity enables villagers to have healthier indoor lighting. Moreover, they see how locals are employed at the plant and that farmers are paid for a product that was previously considered agricultural waste. They see the positive ripple effects of the power plant. In addition, potential customers desire the services that come with electricity. However, they may still not be convinced to pay for access to electricity. Instead of aggressive sales, the entrepreneurs take an invitational approach. To show that the invitation is accepted, customers must pay a non-refundable fee. The HPS COO states that:

[C]ustomers have to deposit a connection fee, say 100 rupees or 200 rupees, in advance. . . . that is our way to ensure that whatever people are saying, it is genuine. COO

By enticing customers sensitively and ensuring their commitment through a sign-on fee, there is a greater chance of meeting on mutual terms, which is a part of being socially embedded and lays a good foundation for further resource mobilization.

Selective attention

The entrepreneurs also exercise “Selective attention”, which is basically the act of ignoring certain aspects or provoking one or more parties in the present social configuration. At first glance, selective attention is seemingly contradictory to becoming socially embedded because it is an act of consciously ignoring or working against the establishment. One aspect often forgotten in social embeddedness is that the present social structure is not *one* uniform entity that the new entrepreneur tries to invade. Because the community in which the entrepreneur tries to become embedded has conflicts and different aspirations and incentives, the entrepreneur has a plethora of stakeholders to relate to, and it is impossible to satisfy them all. The HPS CEO states that:

[I]f you go and try to please everybody, you are not pleasing anybody . . . You have to make sure that the agent . . . is the right guy, then the business is there. . . . So if he does it right, he will make money; if he doesn't, he will not make any money. CEO

Obviously a major part of social embeddedness is to yield to and respect the local conditions and social structure, but selective attention is important because it is a skill that improves navigation among different stakeholders in the community. I suggest that selective attention is not contrary to becoming socially embedded but the opposite. Knowing which groups to ignore and which to include is a sign of deep social embeddedness.

Supplier responsiveness

The data show that the entrepreneurs go to great lengths to ensure their suppliers are doing alright. This is labeled “Supplier responsiveness”. To create local legitimacy,

keep costs down, and access resources easily, it is important to have as many local supply chains as possible. Because these are non-existent or poorly developed in many cases at the BoP, the entrepreneurs go to great lengths to help their suppliers, and cooperation with the suppliers often starts at the R&D level. The entrepreneurs also feel obliged to ensure suppliers have enough orders coming in. The HPS CEO states that:

That is our challenge, and that is the reason for our success. . . . We have to bring a workshop owner to the level [where] he can build gasifiers. [H]e says I don't have any money, I don't have any capital for the project. All right, I will give you all the materials. So I have to give him all the materials and be very closely involved with him and make sure that he is getting enough business. Otherwise he will stop. CEO

In some cases, the supplier's problem becomes the entrepreneur's problem. By extending themselves to help local suppliers, a strengthened relationship emerges and mutual dependency increases.

Discussion

Mobilizing strategic, ordinary, and weak resources

One central finding of this research is that various resources develop unexpectedly, strategic resources fail, and ordinary and weak resource turn into strategic resources. Two resource trajectories are illustrated in **Error! Reference source not found.** One trajectory indicates how strategic resources with high levels of VRIN attributes are incapable of becoming socially embedded and as a result remain costly, distant, and detached from the context. Consequently, resources that originally have VRIN attributes turn into ordinary and weak resources. The other trajectory indicates how resources with low levels of VRIN attributes are capable of becoming strategic

resources due to their ability to become deeply embedded in the local context. As a result, affordable, local, and contextualized resources develop that are intricately embedded in the local context. For resource mobilization to take place, firms and/or entrepreneurs must be socially embedded in order to increase access to resources *and* to develop mutually trusting and committed relationships with actors in the local context so that *mutual* value-increasing mechanisms emerge.

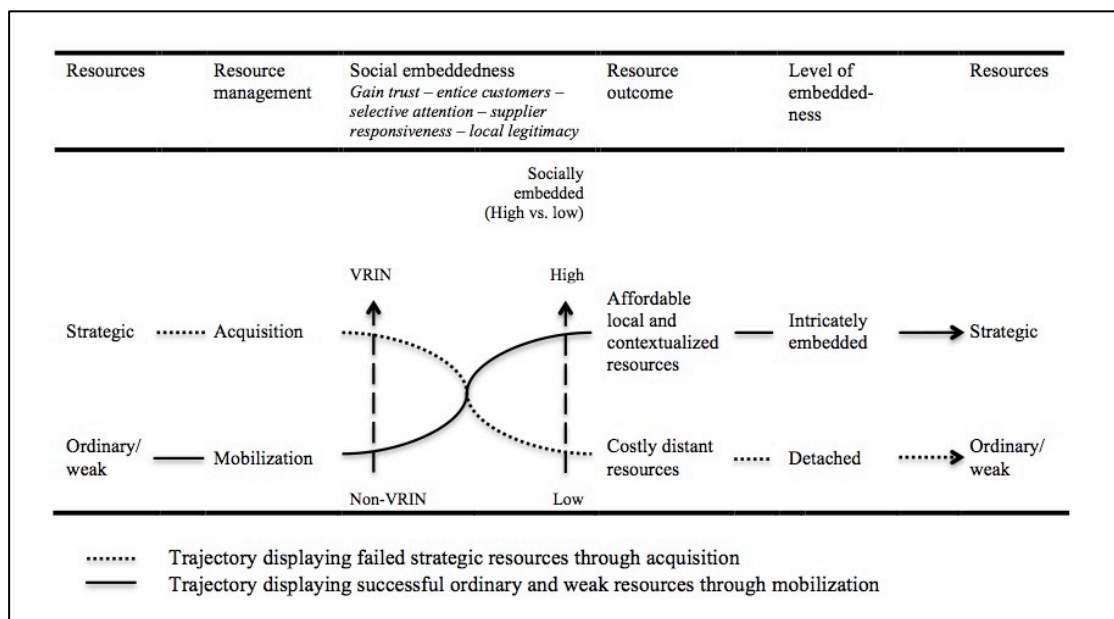


Figure 1. Resource mobilization at the BoP

It is through the linking of firm resources and resources/conditions in the local context that the potential increase in value occurs. In fact, if there is no such link, the resource is poorly embedded, and it is difficult to take advantage of it. Consequently, resources with VRIN attributes do not retain these attributes. Ordinary and weak resources have room to become complexly embedded, meaning that because they are mobilized there is a link between the firm and the context that mutually reinforces the value of the resource. They are linked internally versus externally, but they are also linked to each

other. Take the field offices as an example. Local people, often uneducated, are employed at HPS. Despite poor education and little training, they have competence in terms of handling local villagers and collecting money. This benefits HPS, the employer, and the local village because it reduces unemployment. This scenario concisely exemplifies the internal versus external resource benefit.

However, resources in themselves are also linked, which adds a layer of complexity. HPS' power plants are deliberately designed for local operators. This implies an internal–external link similar to the one just described. In addition, the local operator and the local money collector work closely in the field office. They share meals, drink tea, sit around a bonfire at night and sing songs, and participate in local weddings together. Through such social interaction, the money collectors gain knowledge about the plant operator's job and vice versa. Consequently, the plant operator knows why customers are reluctant to pay and may make adjustments to power production accordingly. This takes place in a field office far from HPS headquarters. This serves to illustrate that it is not just the internal versus external linkages of resources but also the linkages between them that constitute the embedded complexity that HPS benefits from. Such complex resource portfolios may be valuable, rare, inimitable, and non-substitutable, and that brings us to two central constructs of RBV—the complexity of resource heterogeneity (Dierickx & Cool, 1989; Rumelt, 1984) and causal ambiguity (Reed & DeFillippi, 1990).

Socially embedded resources contribute to resource heterogeneity

The underlying assumption is that there exist heterogeneous resources among firms, which explains why the resources controlled by a firm can be the basis for that firm's competitive advantage (Penrose, 1959). Combining several commodity resources

(Brush et al., 2001) may increase the value of the whole beyond the aggregated value of its parts (the individual resources), and the elevated value appears somewhere in the web of interlinked commodity resources (Denrell et al., 2003). Exactly what causes the increased value is difficult to track, as the resource has become causally ambiguous and the origin of the value therefore cannot be precisely identified (Reed & Defillippi, 1990). However, this research indicates that resources that become socially embedded have increased complexity because they are socially embedded. The origin of the value may reside in the interrelationship with the firm and the surrounding context. Thus, social embeddedness is important in creating a competitive advantage, which is supported by Sánchez et al. (2006). Moreover, this research supports Villanueva et al. (2012) when they suggest that joint resource mobilization may be a better framework than resource acquisition in understanding how entrepreneurs and new firms gain access to resources.

Competition is central when discussing resource heterogeneity because heterogeneity points to the variance in resource portfolios across firms, and one of the central tenets in the RBV is that controlling better resources—resources with higher VRIN attributes—than those of competitors generates a competitive advantage. However, resource mobilization involves dealing with shared resources. Two points relating to resource mobilization and competition are worth highlighting. (1) HPS was facing limited competition at the time of data collection. From a resource mobilization perspective, at least within the immature rural electricity industry in which HPS operates, more competition is potentially productive because with more competitors comes more opportunities to access relevant resources. Therefore, there are more opportunities for all parties to access necessary and relevant resources, which will consequently generate momentum, increase the market size, and benefit all actors

involved in the industry. (2) Gaining access to resources externally enforces entrepreneurs to consider how they will grant potential competitors access to the resources they control. An increased sharing of resources will reduce resource heterogeneity across firms and consequently the potential to generate a competitive advantage. However, HPS communicated a greater desire to rapidly scale the industry in cooperation with other actors rather than be protectionists regarding their own resources. For the reasons mentioned in point (1) above, they are probably wise in this decision.

Resource mobilization at the BoP

The BoP literature suggests that entrepreneurs build *on* the conditions and resources found in the BoP context rather than build around it (Hart & London, 2005; Hart & Sharma, 2004; London & Hart, 2004; Milstein et al., 2007). This is referred to as native capability and rests on the ability to become socially embedded (Hart & London, 2005). However, as Bland and Hamann (2015) note, the complexities of becoming socially embedded at the BoP are often under-communicated. By identifying three new actions to become embedded—enticing customers, selective attention, and supplier responsiveness—this research facilitates the understanding of what becoming socially embedded implies. Moreover, it highlights a somewhat forgotten aspect of being socially embedded, which is how to ensure the other party's involvement in joint resource mobilization. Enticing customers and being responsive to suppliers' activities can achieve this. Furthermore, this research reveals a more confrontational part of being socially embedded, selective attention. While native capability and social embeddedness refer to building *on* the resources and conditions found in the local context (Hart & London, 2005; Sánchez et al., 2006), selective

attention refers to the act of *not* building on specific resources and conditions in the local context. Not building on a resource or condition is not the same as not being socially embedded. In fact, the research identifies which constructs and conditions are important and which ones can be ignored and confronted, indicating a high degree of social embeddedness.

Furthermore, because weak and ordinary resources are cheap and have room to become socially embedded and because these resources form an interlinked web of socially embedded resources that in combination create an ecosystem that the firm controls, weak and ordinary resources develop into resources with VRIN attributes. The traditional VRIN labeling of resources is therefore less relevant, at least for the BoP context, because strategic resources do not remain strategic and weak and ordinary resources do not remain weak and ordinary. One can argue that because the strategic resources are in fact not strategic, it is wrong to categorize them as such. However, such an argument will only reinforce the tautological nature of the VRIN terminology, for which the RBV has been criticized.

Sirmon et al. (2007) argue that the divesting of resources in uncertain environments should be done with great caution. The findings support the need to build on local resources and conditions. Therefore, presumably weak resources should not be discarded early on. However, my findings also support Ireland et al. (2003) and Ray and Ray (2010), who highlight the core rigidities associated with resources. If the entrepreneurs had not divested strategic resources early on, they would have developed into core rigidities because of the associated costs. Focusing on the timely divestment of resources—at least presumably strategic resources that accrue costs—is therefore central to resource management at the BoP.

Limitations and future research

Taking advantage of the resources present at the BoP and not depending on resources from an external strategic factor market seems to be a viable and sustainable way of developing resources at the BoP. Therefore, the RBV, and more specifically resource management and resource mobilization, can inform the future BoP debate. Future BoP research will benefit from conducting longitudinal ethnographic analyses and inquiries involving multiple case studies.

It would also be interesting to see how resource-constrained entrepreneurs in the West mobilize resources. After all, in many cases they also start with a limited resource portfolio, and despite their supposed access to strategic factor markets they may not have realistic access because the prices are too high. Therefore, they also may need to employ a resource mobilization approach that includes becoming deeply engaged with the local context and becoming socially embedded.

Conclusion

Entrepreneurial activities in resource-deprived contexts such as the BoP require a shift in the way we view resources. This shift challenges RBV on two matters: (1) the need to control resources and (2) the significance of VRIN resources. First, the founders of HPS claim that their technology is proprietary and therefore that they control their resources in the strictest sense. However, an investigation of this claim revealed that in fact HPS does not have proprietary technology. However, their *perspective* was that it was proprietary because of their *central position* in an intricately interlinked web of resources. This serves to show that gaining access to resources and mobilizing these resources over time can result in proprietary-like resource portfolios, even though they are not proprietary in the strictest sense. Consequently, resource

mobilization has great potential in extending our understanding of how entrepreneurs generate an initial resource portfolio not by controlling resources but by accessing resources. Second, because there are limited resources with VRIN attributes at the BoP it challenges the significance of VRIN resources that have been central to RBV. That is not to say that VRIN resources are not central in generating a competitive advantage. However, more attention should be given to the *generation* of VRIN resources, and not the *control* of VRIN resources, because VRIN resources may not remain VRIN resources and non-VRIN resources may develop into VRIN resources.

This study suggests that being socially embedded is central in generating VRIN resources at the BoP and it reveals three new mechanisms related to becoming socially embedded. “Enticing customers” and “supplier responsiveness” are mechanisms that ensure commitment from the other part. “Selective attention” is the third mechanism revealed and it points to the fact that it is impossible to build on all local resources and conditions; choices must be taken, and that includes to filter out some local resources and conditions. As much of the recent BoP literature emphasize the need to build native capabilities and build on local resources, these three mechanisms bring important nuances to the process of becoming socially embedded and building native capabilities.

Moving from not having access to electricity to having access to electricity is not an incremental improvement of an already known product or service. Gaining access to electricity can radically alter people’s lives. Sánchez et al. (2006) suggest that such new products, due to their potential costs and relatively advanced technology, need a high degree of co-creation to make them accessible and affordable. HPS serves as a successful example of how to co-create affordable, local, and contextualized resources and products through resource mobilization.

Accordingly this case study supports co-creation as a powerful resource generation strategy at the BoP.

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