Connecting the dots: VRIN Resources, Versatile Resources and Resources at hand at the BOP

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ABSTRACT

At the end of an abductive case study approach, we shed some light on how companies can coordinate resources into a bundle to render services for the Base of the Pyramid beneficiaries. A multi-level analysis of a community-based enterprise in rural Cambodia aligned with a recent iteration of the BOP literature reveals that the versatility logic of resources meshed with the resources at hand seem relevant for analyzing the creation of value in this environment.

More specifically, our research also sheds some light on how VRIN resources (valuable when rare, inimitable, and non-substitutable), versatile resources, and resources at hand can be combined.

Key words: Inimitability, Versatility, Bricolage, Community, Bundle

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INTRODUCTION

Our research examines how companies can contribute to achieving the Sustainable Development Goals (SDGs) set by the United Nations for 2030.

The 17 Sustainable Development Goals aim to shape a world that is more socially just and respectful of the planet's natural ecosystems. This new roadmap lays the foundations for a more inclusive development in which entrepreneurship now occupies a central place (George et al., 2016; Günzel-Jensen et al., 2020).

A major part of the United Nations roadmap is devoted to reducing poverty (SDG 1), inequalities within and between countries (SDG 10), inequalities in access to food (SDG 2), health (SDG 3), education (SDG 4) or access to drinking water (SDG 6). These issues are particularly significant in developing countries.

Over the past 20 years, an article by Prahalad originally published in 2002 and evoking "the fortune at the bottom of the pyramid" (BOP) has generated the most production in the field of management sciences in the context of developing countries.

The prerequisite for performance in this particular environment is that the products or services marketed are accessible to as many beneficiaries as possible including the 4 billion people who live on less than 2 dollars per day.

We relied on the case study of the community-based enterprise (CBE) 1001fontaines in Cambodia, the objective of which is to "enable small, isolated communities to meet, by themselves and without infrastructure or specific skills, their drinking water requirements".

We followed an « abductive approach to case research » with «systematic combining» (Dubois & Gadde, 2002) aiming to find the best fit between our empirical work and the theory.

Then, we selected the theoretical framework that questions the better how resources can be coordinated into a "viable bundle" (Penrose, 1959; Spender, 1994) and orchestrated (Sirmon et al., 2007, 2011) to respond to the challenges of a constrained environment.

The resource-based view (RBV), the chosen theoretical lens, analyses the endowments of valuable resources that lead to superior firm performance (Penrose, 1959; Wernerfelt, 1984; Barney, 1986, 1991). Companies are analyzed through the prism of resources not homogenously distributed between companies (Barney, 1991; Rugman & Verbeke, 2002), and their competitive advantage depends on possessing and exploiting idiosyncratic resources.

More specifically, our research question is positioned at the organizational level:

How a company can coordinate resources into a viable bundle to render services for the BOP beneficiaries?

To shed some light on this question, we carried out a literature review mainly focused on the recent reconceptualization of RBV (Nason & Wiklund, 2018) which also allowed us to integrate the literature on entrepreneurial bricolage (Baker & Nelson, 2005).

We also sought to identify in the literature how the different types of resources - VRIN, versatile and resources at hand - are applied at the BOP.

We then present our methodological framework, which is part of a qualitative approach enriched by a few statistical tests.

We present our results through a conceptual framework that is intended to "connect the dots", to connect the different types of resources useful for the creation of value in a BOP environment.

Finally, we discuss our results and present our contribution.

Our paper reveals that the versatility logic of resources meshed with resources at hand seems relevant for analyzing the creation of value and sustainability of a firm in a BOP environment. It also sheds some light on how VRIN Resources, versatile resources, and resources at hand can coexist and be coordinated in a constrained environment.

1. THEORETICAL FRAMEWORK

1.1. A recent reconceptualization of RBV

Nason & Wiklund (2018) consider that both Penrose and Barney « view firms as a collection of idiosyncratic resources and see resources endowments as useful for developing products, services and strategies » (2018, p. 34).

Nevertheless, they have shown that Barney discusses specifically the inimitability of resources while Penrose discussed the versatility of resources (Nason & Wiklund, 2018, p. 32).

For Penrose, *« it is never resources themselves that are the 'inputs' in the production process, but only the services that the resources can render* » (Penrose, 1959). The challenge is therefore to convert resources into services (Spender, 1994) where the role of managers is key in their orchestration (Sirmon et al., 2007, 2011).

Barney (1991) considers that resources are valuable to the firm when they are rare, difficult to imitate, and therefore non-substitutable (VRIN resources).

While some recent work does exist (Casselman & Sama, 2013; Ausrød, 2018; Tate & Bals, 2018), no study has looked specifically at how the new reconceptualization of RBV (Nason & Wiklund, 2018) can inform on how resources create value at the BOP.

The starting point of these analyses is often the identification of rare and inimitable resources that can give the organization that possesses them a competitive advantage.

1.2. VRIN resources

The resources are inimitable if they are « *protected by the isolating mechanisms of unique historical conditions, causal ambiguity or social complexity*» (Barney, 1991; Nason & Wiklund, 2018, p. 38). The criterion of inimitability alone guarantees the criteria of rarity and non-substitutability (Barney, 1991; Nason & Wiklund, 2018). Inimitability allows the firm to prevent against imitation strategies from competitors and therefore to maintain a competitive advantage.

VRIN resources are likely to enable firms to seize « unique opportunities » (Barney, 1991) that will nevertheless not necessarily be associated with growth (Nason & Wiklund, 2018).

A criticism of the VRIN model is its inability to take ordinary resources into consideration (Weppe et al., 2013 ; Fréry et al., 2015). This lack of « systematic and comparative » analysis of resources limits its scope of applicability.

1.3. Versatile resources

Edith Penrose's book « the Theory of the Growth of the Firm » is considered as a "canonical reference" for the field of RBV (Rugman & Verbeke, 2002; Acedo et al., 2006), knowledge and dynamic capabilities and research on growth organizations (Peng et al., 2018).

For Penrose (1959) « resource versatility stems from the range of potential services that a resource provides and, thus, incorporates not only strategic generic and tradeable resources that

can be exchanged between firms but also idiosyncratic assets that can be redeployed by a specific firm into new arenas » (Nason & Wiklund, 2018, p. 53).

Penrose considered that the "equilibrium position" in the traditional economy is prevented by several reasons. One stems from the indivisibility of resources, which in the sense of the "least common multiple" implies a high level of production to make a collection of resources profitable. As a result, there are idle resources or unused resources.

Therefore, she believed that the company has every interest in engaging in larger operations to eliminate these idle resources. Finally, resource endowments allow new combinations of productive resources and therefore to deliver new services.

Nason & Wiklund (2018) distinguish the external fungibility from the internal fungibility to delve into the versatility concept more precisely than Penrose did. External fungibility is associated with resources with little specificity as well as those easily tradable and transferable between firms (cash flows, non-specialized human resources, nonspecific basic products). Internal fungibility is characterized by resources that can be reused and redeployed within the firm for other purposes, but which have unique characteristics (brands, technologies, experiential learning).

According to the VRIN framework, the competitive advantage is not possible with resources fungible outside the firm (Dierickx & Cool, 1989; Barney, 1991; Nason & Wiklund, 2018).

Nason & Wiklund (2018) found that Penrose did not integrate the criterion of inimitability; therefore, for them the dissociation between internal and external fungibility is not essential in her approach. Moreover, Penrose did not seek to create mechanisms of rents from competition (Rugman & Verbeke, 2002) and focused on growth (Nason & Wiklund, 2018).

The new knowledge acquired and redeployable by the firm are « *incentives and means for expansion in a way that is reminiscent of Schumpeter's (1934) understanding of the driver of growth at the level of the economic system* » (Nason & Wiklund, 2018, p. 36). This can lead the firm to remove resources from their current use and redeploy them in view to get a better combination (Moran & Ghoshal, 1999; Nason & Wiklund, 2018).

Accordingly, Nason & Wiklund suggest that firms should develop their resource-based strategies according to their « *desired performance outcome (profitability or growth)* » and therefore to choose between « *protecting from imitation vs. building for versatility* ».

Furthermore, this new reconceptualization of RBV opens new possibilities such as meshing versatility with the entrepreneurial bricolage literature in constrained environments.

1.4. Bricolage and "resources at hand"

We accordingly mobilize the concept of "entrepreneurial bricolage" (Baker & Nelson, 2005) that integrates the logic of idiosyncratic resource combinations and is particularly based on the RBV logic of Penrose (1959). This analyzes how entrepreneurs can "create something from nothing" by "making do with whatever is at hand": a need, a product, or a service by adopting an approach with accessibility to the most underprivileged in a subsistence marketplace (Viswanathan & Rosa, 2010).

Baker and Nelson (2005) define the « entrepreneurial bricolage » as *« the pursuit of opportunity through close regard to the resources at hand »*. Resources at hand are *« resources that are available very cheaply or for free, often because others judge them to be useless or substandard*». Their model of growth is both based on the Penrosean resource-based logic and the Schumpeterian logic of expansion (Schumpeter, 1934).

They analyzed the process by which firms refused to enact limitations to "create something from nothing" by « *refusing to treat (and therefore) to see the resources at hand as nothing »*. "Selective bricolage"(Baker & Nelson, 2005) allows businesses to maintain their ability to « leverage the unique services created through bricolage to generate growth» (Baker & Nelson, 2005, p. 354). "Parallel bricolage" (Baker & Nelson, 2005; Busch & Barkema, 2020) is characterized by a bricolage identity and a community of practices that can have the permissive effect of keeping the organization in a form of a stagnant growth.

2. THE RBV THEORY AND ITS APPLICATION IN THE BOP ENVIRONMENT

2.1. The BOP market: a new field of application for RBV

The BOP literature « *is still in a pre-paradigmatic state of development as an academic field »* (Ansari et al., 2012). Three generations of work are identified within the BOP literature (Hart, 2017; Dembek et al., 2019; Chmielewski et al., 2020).

Hart (2017) described BOP 1.0 as a « *search for fortune at the base of the pyramid*» and BOP 2.0 (Simanis et al., 2008; London et al., 2010) as the «*creation of fortune with the base of the pyramid*». BOP 3.0 is part of a more sustainable development approach to reducing poverty (Hart, 2017; Dembek et al., 2019; Chmielewski et al., 2020) in the spirit of the 17 sustainable development goals set by the United Nations for 2030.

The BOP environment was first presented by Prahalad and Hart (2002) as a field of opportunities to make profits for corporations. Companies that have responded to this proposal have mostly failed or obtained modest results at great cost (Hart, 2017).

This environment can also be analyzed as a constrained environment. It is characterized by institutional voids (Mair et al., 2012); suffers from productivity constraints (Bloom et al., 2010); and has transactional constraints in terms to access to market, market power, and market security (London et al., 2010). It also presents a deficit in health services (Agarwal et al., 2018), poor infrastructures, and/or a lack of human resources (Sutter et al., 2014).

In the BOP environment, particularly in rural areas (Goyal et al., 2016; Díaz-Pichardo et al., 2017), the dimensions to be taken into consideration by organizations to achieve a competitive advantage are different from those of a market that we will qualify as "classic" in opposition to our field of study. Anderson and Markedis (2007) and Prahalad (2010) have highlighted four dimensions to take into account in terms of strategic innovation in developing countries.

These are the 4As: affordability of the products or the services marketed for the poorest, acceptability by them of the benefit of paying to obtain them, availability for the beneficiaries despite the lack of existing infrastructures and awareness of the social interest in consuming a product or in taking advantage of a service.

In these conditions, the way a company coordinates its bundled resources is fundamental to respond to these challenges.

2.2. VRIN, versatile and resources at hand logics at the BOP

In BOP 2.0 - 3.0, the community enterprise (Peredo & Chrisman, 2006) is an example of a cooperative ecosystem in which its members come together to share the value created.

The community can be analyzed as endogenous to the community-based enterprise (CBE) (Peredo & Chrisman, 2006). In this perspective, for historical and social complexity reasons, community can be analyzed as a VRIN resource. Therefore, organizations shall be socially embedded (Ausrød, 2018), develop organizational ambidexterity (Battilana et al., 2015), integrate an anthropological point of view (Payaud, 2014) and acquire local (Bittencourt Marconatto et al., 2016) and social (Tate & Bals, 2018) capacities to get access to markets and resources (Lashitew et al., 2020).

The versatility concept has not yet been extensively covered by the BOP literature. However, it has similarities with dynamic capabilities (Nason & Wiklund, 2018) that can uncover the potential of people in impoverished environments (Tashman & Marano, 2009). The versatility

logic materializes through the knowledge transfer that can occur as a result of social embeddedness (Ausrød, 2018; Lashitew et al., 2020), particularly from the community.

Ansari & Al (2012) defined three dimensions of social capital essential to facilitate capacity transfers, exchanges, and recombinations particularly from the knowledge perspective: a structural dimension, a cognitive dimension, and a relational dimension.

Knowledge transfer can also be analyzed as VRIN because this process is associated with « *interrelated routines and practices* » (Sutter et al., 2014, p. 304), but versatility can be eased by templates. A template is a « procedural map for simplifying and ordering complex and causally ambiguous series of actions » (Sutter et al., 2014, p. 305).

To overcome resource constraints (Hota et al., 2019), innovative capacities that can be compared to bricolage (Sutter et al., 2014; Desa & Koch, 2014; Busch & Barkema, 2020) are used to recombine resources at hand in new ways.

Entrepreneurial bricolage (Baker & Nelson, 2005) is likely to contribute to the growth of a company in an environment characterized by « serious institutional voids » (Yu et al., 2020) and allow it to scale as soon as it develops "bricolage heuristics" that can be transferred internally or externally. These heuristics are defined as « the structuring of simple low-cost rules based on questioning preconceived resource limitations » (Busch & Barkema, 2020).

Therefore, the knowledge of resources at hand is likely to improve the ability to identify new opportunities for companies. When companies practice bricolage, they may have to mobilize "slack resources" or unused resources (Getnet et al., 2019) which may have been "accumulated ex-ante" upon entering the BOP market (Gadepalli & Ray, 2017). These resources can be considered versatile and offer productive opportunities (Penrose, 1959).

The heterogeneity of resources and the challenges associated with the ex-ante conditions to achieve performance and sustainability (4As) in a BOP environment reinforce the importance of the question addressed in this research.

How a company can coordinate resources into a viable bundle to render services for the BOP beneficiaries?

3. METHODOLOGICAL FRAMEWORK

3.1. A qualitative research

Our research revolves around a longitudinal case study with an embedded design (Yin, 2012) of a CBE composed of 235 water entrepreneurs who are social franchisees (Lawson-Lartego &

Mathiassen, 2020) in rural Cambodia. Our collection system revolves around several axes: the study of internal documents of the organization, a one-week mission within the NGO Teuk Saat, local partner of 1001fontaines, the visit of two water kiosks in Cambodia, 19 semi-structured interviews and 21 unstructured interviews with 1001fontaines' members over the period from July 2016 to June 2020.

Quantitative information related to the performance of the water kiosks was collected through the 1001fontaines information system and supplemented by more qualitative information obtained on the field with the assistance of the 1001fontaines team (age, seniority, education, etc.).

Our desire to contextualize our research led us to carry out statistical analyzes to characterize the environment in which 1001fontaines operates at different level of analysis (micro: villages, meso: districts and provinces). Throughout this research, we also have mobilized several units of analysis (figure 1).

Figure 1 – Units of analysis of the case study, justification of the units of analysis, longitudinality and scales of analysis

Unit of analysis	Justification of the unit of analysis	Type of analysis	Longitudinal (O/N)	Period	Analysis scale
CAMBODIAN ENVIRONMENT					
Natural disasters	Constraint analysis	Statistical	O	2012-2018	Meso
Territorial potential	Potentiality analysis	Statistical	N	November 2018 - October 2019	Meso
Drinking water resources	Dynamics of access to drinking water	Statistical	N	2013	Meso
GROWTH ANALYSIS	Overall growth of the organization	Statistical	O	2004-2020	Meso
	Number of sites	Statistical	O	2014-2018	Meso
	Number of beneficiaries	Statistical	O	2014-2018	Meso
	Sales volume (in thousands of liters and in dollars)	Statistical	O	2014-2018	Meso
	Penetration rate in the villages	Statistical	O	2014-2018	Meso
RESOURCE ANALYSIS					
Social identity of founders	Social complexity	Interview coding Cognitive map	N	NA	Micro
VRIN resources	Analyze resource characteristics	Coding	N	2019	Meso
Versatile resources	Analyze resource characteristics	Coding	N	2019	Meso
Resources at hand	Analyze resource characteristics	Coding	N	November 2018 - October 2019	Micro
	Analyze resource characteristics	Statistical	N	November 2018 - October 2019	
4G Project	Remarkable event	Statistical	O	2014-2016	Micro / Meso

3.2. Presentation of 1001FONTAINES

In a country[1] where only 16% of population in rural areas have access to safely managed and clean water supply services[2], the *ex-ante* conditions for an organization to achieve competitive advantage is to make the water affordable and available to the most unprivileged people while being resilient to natural disasters resulting from climate change.

The CBE aims to "enable small, isolated communities to satisfy, by themselves and without infrastructure or specific skills, their need for drinking water" - 1.5 liters per day and per person served at the point of consumption in 20-liter containers.

1001fontaines revolves around three actors: the NGO 1001fontaines responsible for raising funds in order to finance the installation of new kiosks in the villages, the local NGO Teuk Saat embedded locally acting as a subcontractor on the field and a person from the community likely, at the end of a training process, to become a water entrepreneur. It is possible to think of 1001fontaines and Teuk Saat as a couple (1001fontaines - Teuk Saat). 1001fontaines drives the strategy and Teuk Saat acts as an engineering company by facilitating the creation of new water kiosks and their support over time.

From an organizational point of view, 1001fontaines - Teuk Saat is based on a social franchise model. The water entrepreneur is microfranchised and pays a fee to 1001fontaines - Teuk Saat.

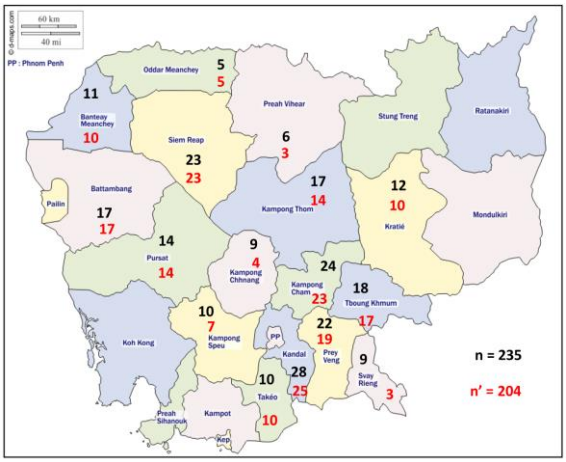
3.3. The portfolio of water kiosks under study

At the end of October 2019, 1001fontaines presented a portfolio of 235 water kiosks (figure 2). We selected kiosks with at least nine months of activity (25 new kiosks excluded on this single criterion). In addition, we were unable to integrate 8 kiosks for which we did not have sufficient information to carry out analysis. In total, we excluded 33 kiosks from the analysis (a production of 6,527.47 m^3 of water; 4.75% of the total annual production of 1001fontaines).

The kiosks were listed considering the average sales over 12 rolling months thresholds related to SDG for 2030: Tier 1 ≥ 1,700 Liters of water per day[3]; 1,200 ≤ Tier 2 <1,700 Liters of water per day; Tier 3 <1,200 Liters of water per day[4].

[1] A population of 15,848 million people with 3,801 living in urban areas and 12,047 in rural areas (Cambodia Economic Survey 2017 – National Institute of Statistics, Ministry of Planning, November 2018).
[2] Cambodia's voluntary national review 2019 of the implementation of 2030 SDG agenda.
[3] 1,700 L per day = enough income to set aside and invest in growth (new vehicle ...)
[4] 1,200 L per day = kiosk breakeven with a contractor being able to earn around $ 150 per month.

Figure 2 - Map of water kiosks



4. CONCEPTUAL FRAMEWORK AND RESULTS

4.1. Overview of the framework

We relied on the meta-analyses of Crook et al (2008) as well as Nason and Wiklund (2018) research to code the resources of 1001fontaines.

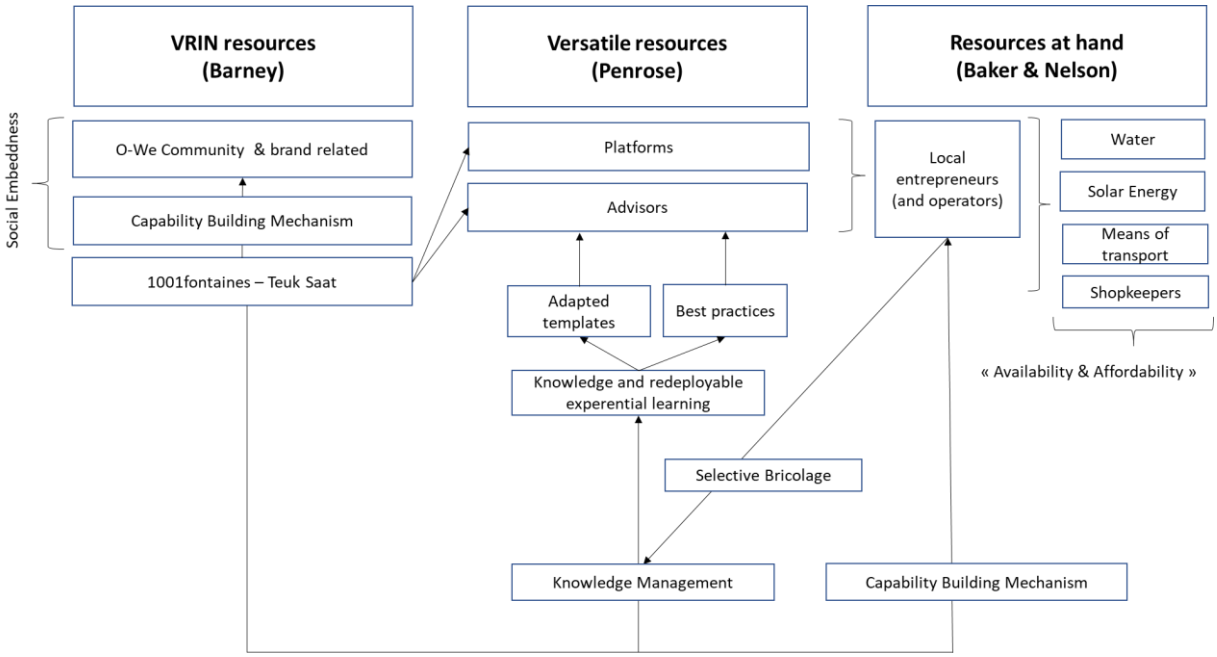
The organizational architecture of 1001fontaines relies on three types of resources (Figure 3): VRIN resources, versatile resources, and resources at hand.

VRIN resources are the O-We community, the brand related and the couple 1001fontaines - Teuk Saat.

Versatile resources are platforms and advisors on the field aiming to support local entrepreneurs who deliver services with resources at hand. The platforms have an operational assistance function vis-à-vis the water entrepreneurs and are responsible for ensuring the logistics of the deployment of the project. The advisors manage the relationship with the water entrepreneurs by meeting with them at least once a month to support them in the operational management of the kiosk.

Resources at hand are local human resources, natural resources (water and solar), means of transport, and shopkeepers (small businesses that kiosks rely on for the distribution of water).

Figure 3 - Three types of resources: "VRIN", "versatile", "at hand."



Authors

4.2. VRIN resources

1001fontaines – Teuk Saat partly redefines market architectures (Mair et al., 2012) with the redefinition of local arrangements through the constitution of an O-We community sharing of the water as a common good and the extension of resource systems with links to the Cambodian Ministry of Rural Development that is in charge of the general coordination of water provision projects.

1001fontaines – Teuk Saat's capacity to "create something from nothing" (Baker & Nelson, 2005) is VRIN since it is causally ambiguous, path-dependent, and socially complex.

By relying on three forms of capital (Ansari et al., 2012), 1001fontaines gets value from its social embeddedness and benefits from the knowledge of the community.

These three forms are structural capital, relational social capital and cognitive social capital.

The structural capital is particularly characterized by the nodes between 1001fontaines, Teuk Saat, the community and the local water entrepreneurs.

The relational capital results in an agreement between the local community and the local water entrepreneurs where Teuk Saat witnesses the agreement.

The cognitive social capital takes the form of the O-We community brand. The "O" represents water and the Asian Lucky Circle, and the "We" reflects the 1001fontaines' commitment to community development.

1001fontaines – Teuk Saat also focused on demand side drivers and allocates funds in market-based resources (Srivastava et al., 2001). Particularly, relational market-based assets are derived from the O-We community and their related customers.

The perceived value by beneficiaries of water marketed under the O-We brand has required significant social marketing efforts (Getnet et al., 2019) which confirms the need to strengthen the community brand to make the villagers accept the idea of consuming a product that was not available before ("acceptability" and "awareness" dimensions). It was necessary to make the population aware that drinking clean water considerably reduces diseases, but also to make them accept the benefit of consuming a paid water because of the cost of the service provided. This market orientation (Agarwal et al., 2018) translates into a better penetration in the villages year after year making the O-We brand a valuable resource for 1001fontaines - Teuk Saat.

1001fontaines - Teuk Saat stands out in its ability to establish "relatively impregnable 'bases" (Penrose, 1959) to leverage the coordination of resources at hand on the field. This capacity is rare and difficult to imitate.

To achieve and maintain this performance, 1001fontaines - Teuk Saat relies on two strategic functions: a capability-building mechanism (Makadok, 2001) and an ongoing knowledge management of resources.

The capability building mechanism is etymologically close to the notion of "capacity building", heir to development aid policies, which is particularly present in the BOP environment under study. This can notably take the form of strengthening the skills of local human resources (Desa & Koch, 2014) or of the capacities of the local partner (Hahn & Gold, 2014). This mechanism can be illustrated by 1001fontaines' ability to train entrepreneurs and make them more efficient. This capacity should be emphasized because the organization relies on a human capital with a low level of education and manages to transform it into a specific human capital with an entrepreneurial function.

The investment in the laboratory, which led to its certification according to the international standards, allow platforms to test the water of other competitors. More recently, the digitization of monthly reports paves the way for a better monitoring of water kiosks.

Moreover, the « knowledge of the resources at hand » (Baker & Nelson, 2005, p. 359) allows the organization to create value from new combinations by capitalizing on the practices of its best entrepreneurs.

4.3. Resources at hand

Bricolage is integral part of the model. «*Within this framework, while having rules, bricolage is every day* ».

In addition to the fixed assets that constitute the water kiosk, entrepreneurs manage the stations with the resources at hand.

The resources at hand are natural resources (water and solar energy), means of transport and small distributors (shopkeepers). They are "intricately embedded" (Ausrød, 2018) and are likely to be mobilized locally to serve the "last mile populations".

Three sources of water are available: "water system"[5] (64), wells (65), and surface water (75).

All kiosks have access to solar energy, but some kiosks may connect to the village's grid: 35 water kiosks rely only on solar system and 169 on both solar and electric systems.

To deliver water, local means of transport are used: "kuyuns" and motorbikes (between 1 and 3 means of transport per kiosk).

In addition to entrepreneurs who deliver water at homes and at schools, 1001fontaines started in 2014 to rely on "shopkeepers" who act as local sales agents in return for a retrocession on the price of marketed water.

We collected information about the profile of local water entrepreneurs (n = 204). These local human resources have a median age of 37 years old (min: 18, max: 63, standard deviation: 8.1); have a basic level of education (a measure of reading, writing, calculating, low: 34, medium: 122, good: 48); little experience in entrepreneurship (previous work: farmers 64.7%, others 35.3%); and are mostly men (78.4%) and have another job (75.5%).

The local human capital is first valuable to the firm since it is socially embedded and extends from the community. Then, they learned the profession of "water entrepreneur" thanks to the training provided by a "social entrepreneur academy" launched jointly with Accenture but also thanks to regular on-kiosk support by advisors deployed on the field by 1001fontaines - Teuk Saat. A Chi-squared analysis reveals a dependence between the seniority of the entrepreneur (group 1: 2017-2020 = 107; group 2: 2008-2016 = 97) and the performance of water kiosks (p value = 0.0014, the Cramer value is 0.260). The capacity to train and empower local villagers generates long term human capital rents (Chadwick, 2017) for the organization. Water kiosks classified as Tier 1 have increased from 20% to 43%, and water kiosks classified as Tier 3 have decreased from 44% to 15% between 2014 and 2018.

[5] A "water system" qualifies the "connection" of the kiosks to existing water supply networks by small blue pipes.

We performed a statistical analysis of the "shopkeepers" variable after which we identified four subgroups[6]. A Chi-square analysis reveals that water kiosks that rely heavily on shopkeepers (groups 3 and 4) are more competitive than those that do not (groups 1 and 2) (p value = 0.0002, the Cramer value is 0.258).

4.4. Versatile resources

4.4.1. Slack resources and productive opportunities

A reason for "indivisibility of resources" is that the platforms and their laboratories were not fully exploited by 1001fontaines - Teuk Saat.

These organizational slack resources (Bourgeois, 1981; Gadepalli & Ray, 2017) allow 1001fontaines to respond to several productive opportunities (Penrose, 1959) such as testing the quality of other water suppliers at the request of the government or distributing hygiene products during Covid-19 in partnership with UNICEF along the catchment area.

To support local water entrepreneurs on the field, a team of 20 advisors is deployed in every platform (Battambang: 6; Kampong Cham: 7 and Phnom Penh: 7).

The advisors are more educated (bachelor: 16, master: 4); younger (min: 25 years old, max: 45 years old, standard deviation = 5.78 and median = 32); and experienced than the water entrepreneurs (min: 2 years old, max: 16 years old, standard deviation = 4.03 and median = 9 years old; previous experience: NGO = 8, private enterprise = 10 and public company = 2). There is a homogenous seniority (min: 0.24, max: 7.5, standard deviation: 2.3 and a median of 2.35) and advisors are all men. They are considered as "service providers" for the entrepreneurs on all functions of a kiosk (data collection, finance, water quality, sales, marketing, and community management) and in charge of mentoring water entrepreneurs. They could undoubtedly be redeployed and deliver new services for 1001fontaines as part of a diversification strategy (Penrose, 1959, p. 67).

4.4.2. Selective bricolage and redeployable experiential learning

1001fontaines – Teuk Saat has opted for a form of "selective bricolage" (Baker & Nelson, 2005) as part of a longitudinal capacity building project called "4G" (2014-2016). The CBE considered the routines and best practices developed by its "bricoleur agents" responsible for

[6] 1st subgroup: $x \leq 10$; 2nd subgroup: $10 < x < 20$; 3rd subgroup: $20 \leq x < 30$; 4th subgroup: $x \geq 30$ (where x is the number of shopkeepers per station).

managing the water kiosks with resources at hand (25 practices classified into 3 levels: compulsory, recommended, suggested).

Some of these good practices can be analyzed as "bricolage heuristics" (Busch & Barkema, 2020). These heuristics were then transferred to four kiosks where 1001fontaines tested this new operating mode, then to the entire portfolio of water kiosks.

1001fontaines has also adapted its "models" (Jensen et al., 2003; Sutter et al., 2014) to ease the transfer of good practices within the portfolio of water kiosk entrepreneurs. The role of advisors facilitates this dissemination process through regular social interaction with entrepreneurs (Sutter et al., 2014).

Particularly, during the "4G project", the transfer of best practices learned from the "champion kiosks" to the other entrepreneurs and the extension of the network of distribution by integrating shopkeepers revealed a significant increase in the performance of the water kiosk portfolio.

The penetration rate in the villages significantly increased from 14.9% in 2014 to 17.8% in 2015 to 19.3% in 2016. The number of non-performing kiosks, i.e., with a performance of less than 1,200-L per day has been reduced across the entire portfolio from 44% in 2014 to 24% in 2016. The number of breakeven kiosks (performance greater than 1,200 L per day) increased across the entire portfolio from 46% in 2014 to 73% in 2016.

More specifically, over this period, the supported 4G kiosks become more successful than the "champion kiosks".

DISCUSSION & CONCLUSION

This paper shed some light on how a company can coordinate resources into a viable bundler to render services (Penrose, 1959; Spender, 1994) for the BOP beneficiaries. This question at an organizational level is essential to respond to the challenges in the BOP environment.

From a theoretical perspective, our work is also part of the recent reconceptualization of RBV. This allows to discuss the contingency of RBV to the rural BOP (Díaz-Pichardo et al., 2017).

We believe that there is an initial bias which consists in viewing the BOP market as an environment of opportunities (Prahalad & Hart, 2002 ; Prahalad, 2010).

Indeed, this perspective leads to discarding ordinary, negative resources (Weppe et al., 2013 ; Fréry et al., 2015 ; Ausrød, 2018) and resources "at hand" (Baker & Nelson, 2005). More broadly, that misconception leads to the lack of « systematic and comparative» (Weppe et al., 2013) analysis of the resources mobilized in the BOP environment.

Yet, "Making do with whatever is at hand" is not an option in a rural BOP environment.

Therefore, our work calls for a return to the Penrosean approach to resources, enriched by the literature on "entrepreneurial bricolage" (Baker & Nelson, 2005; Busch & Barkema, 2020).
The link between RBV theory and entrepreneurial bricolage has been established by Baker and Nelson (2005) who integrated the Penrosean Resource-Based logic into their model of growth in a penurious environment.
The new reconceptualization of RBV theory makes it possible to better demonstrate this link.
The case study reveals that the CBE can be analyzed as a collection of productive resources (Penrose, 1959) where resources at hand (Baker & Nelson, 2005) play a fundamental role.

In our framework, the community is considered as an endogenous resource. Accordingly, in a context where *« people depend on social relations – social capital – to address their substantive everyday needs* » (Peredo & Chrisman, 2006, p. 318), a community brand and its related social mission (Tate & Bals, 2018) derived from a natural need is hardly imitable.
1001fontaines – Teuk Saat's "capacity to create something from nothing" (Baker & Nelson, 2005) is VRIN since it is causally ambiguous, path-dependent, and socially complex.

It is the result of an experiential learning that leads to a better coordination of resources.
We introduce the versatility concept in a BOP environment. The versatility takes the form of organizational slack resources and technical experts (advisors).
They not only support entrepreneurs in the field, but they can also be redeployed to take advantage of productive opportunities for expansion (Penrose, 1959).

This paper thereby sheds some light on how VRIN Resources, versatile resources, and resources at hand can coexist and be articulated together.
The conceptual framework that we propose makes it possible to identify how resources with different characteristics are likely to be coordinated to create value and sustain the company.
We also identify two strategic functions in which organizations have an interest in investing in order to grow in a BOP environment: a capability-building mechanism and an ongoing knowledge management of resources.
This case study reveals the idiosyncratic ability of 1001fontaines to leverage resources at hand, particularly human resources (Chadwick, 2017) through a capability building mechanism (Makadok, 2001). It allows the organization to generate rents by transforming a generic human

capital into specific human capital with an entrepreneurial function. In this perspective, this local human resources' "development process" (Lehmberg et al., 2009) is VRIN.

However, the capability building mechanism at work is dynamic (not static) and absent from the VRIN framework (Kraaijenbrink et al., 2010; Priem & Butler, 2001).

On the contrary, it can meet the criterion of versatility of the Penrosean resource-based and be analyzed as "a Schumpeterian dynamic-capability view" (Makadok, 2001, p. 388).

In a knowledge-based view, the absorptive capacity (Cohen & Levinthal, 1990) of the CBE was eased by its social embeddedness mainly through local entrepreneurs acting as agents of their community and advisors in charge of redeployable experiential learning. In this perspective, the increase in knowledge «contributes to the 'uniqueness' of the opportunity of each individual firm» (Penrose, 1959, p. 48).

The "knowledge of the resources at hand" can result in a form of "selective bricolage" (Baker & Nelson, 2005 : 359) when the organization relies on the best practices of its agents, some of them being "bricolage heuristics". Selective bricolage has been essential for achieving self-sufficiency confirming that bricolage can be scaled (Busch & Barkema, 2020). Besides, it shows that bricolage can be organized strategically.

Our paper opens new avenues for research into meshing bricolage with versatility when discussing growth of organizations in constrained environments.

We believe that this conceptual model can encourage donors to finance the capacity building of the companies addressing the problem of access to drinking water with a community-based approach, particularly in a rural BOP environment.

From an empirical point of view, we have presented a model likely to respond to a major challenge (Eisenhardt et al., 2016) – delivering drinking water to the last mile markets - based on an entrepreneurial approach that is socially embedded, that engages local populations (Tashman & Marano, 2009) and respects communities (Peredo & Chrisman, 2006 ; Ansari et al., 2012).

We haven't yet presented the role of managers in the orchestration of the resources (Sirmon et al., 2007, 2011). This managerial level will be covered in a future paper.

The nature of the "extreme cases" particularly when "addressing grand challenges" (Eisenhardt et al., 2016) can partially justify the uniqueness of our case study. The current replication of 1001fontaines in other countries will also be an opportunity to test the generalization of our results in another BOP environment.

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