

# Opportunity Identification at the Base of the Pyramid

Yrittäjyys ja pienyritysten johtaminen

Maisterin tutkinnon tutkielma

Tommi Rimpiläinen

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# 1 INTRODUCTION

## 1.1 Background

The Base of Pyramid (BOP) business has been under increased attention ever since the concept was introduced by C.K Prahalad and Stuart L. Hart (1998). The BOP refers to those 4 billion people who live on less than €5 per day in purchasing power parity (PPP) and are in many ways excluded from the global market economy. Although the purchasing power of a person in the BOP is small, the combined value of the BOP market is substantial and is argued to offer great business opportunities for companies seeking for new markets.

BOP approach goes further than seeing the world poor solely as an untapped market, but the aim is to achieve a win-win situation. As well as on the profit generation, the emphasis of the BOP approach is on poverty alleviation. The approach assumes that the life quality of the poor can be improved and poverty related problems eradicated by co-creating together with the BOP users new profitable products and services directed to the BOP market. The co-creation concept recognizes the BOP users as essential collaborators in the problem solving and as significant sources of innovation, instead of seeing them only as potential consumers.

In comparison to the traditional markets, the BOP market conditions are significantly different and thus standard existing products and services can seldom be directly used. Typically radical adjustments to the conventional business models are required for the BOP markets (Prahalad, 2009). From a company perspective, to succeed in the BOP market requires new skills and capabilities, innovative technologies and business models, to engage into new types of partnerships, changes in mindsets and even new concepts to measure the mutual value creation (London & Hart, 2010).

Opportunities emerging from the BOP market are also of an untypical nature and highly context related. The BOP literature describes opportunity and new market creation as something contrary to the practice of opportunity seeking. The concept underlines the

importance of the opportunity development process, as the markets and opportunities do not exist at the present, but they need to be crafted (London, 2010).

This research is part of the second phase of “Affordable diagnostics for Indian base of pyramid markets” -pilot program, which in turn is a part of “Sustainable and user driven innovation in BOP markets” -project. The purpose of the project is to increase the knowledge of Finnish companies over the user driven innovation in underprivileged markets of emerging economies and to increase the economic activity of Finnish companies in the new developing markets.

The pilot project aims to link the knowledge and capabilities of Finnish diagnostics sector with the practical needs of Indian poor in a way, which also pays attention to the special needs of the underprivileged markets by integrating BOP users into innovation processes. The project partners include a steering committee in which Aalto University, TEKES the Finnish funding agency for technology, research and innovation, VTT the Technical Research Centre of Finland are represented, as well as a consortium of Finnish diagnostic companies, and World Vision development aid organization.

## 1.2 Research objectives and questions

This study is based on two streams of literature that are being combined in the research. There are number of suggestions in the BOP literature over the different important local factors affecting businesses operating in the BOP market. While the entrepreneurship scholars have extensively researched the opportunity identification, development and creation processes in the developed markets, yet attempts to evaluate their accuracy in the unusual environments of BOP markets have been very limited and little is known about the entrepreneurial process in the BOP markets. The aim of this study is to contribute into the discussion by examining **how opportunities can be identified in the BOP markets?** The research intends to shed light into the opportunity process in the BOP market by actively engaging into the opportunity identification process.

The existing literature of the BOP business, markets and the venture creation are applied with the aim of understanding the special circumstances of the underprivileged people and their surroundings. While the theories of the entrepreneurial process and opportunity identification are utilized in order to support the actual business opportunity recognition and development processes. The empirical research was carried out on a four week field study in India, where the following research questions were addressed:

- What kind of opportunity spaces can be identified by examining the diagnostic service needs and diagnostic practices at the BOP communities?
- How unique characteristics of the BOP market environment affect the opportunity process?

The aim of the first question is to recognize opportunity spaces that could be used as sources of business opportunities, while the second question addresses how the local circumstances are affecting the venture creation process and what opportunity spaces can be identified by studying the contextual and cultural features of the area. The practical aim of the study is to provide Finnish diagnostic sector a better understanding of the opportunity development process in the Indian BOP markets and to come up with some elements of opportunities that can be further developed into concrete business opportunities and new business models.

### 1.3 Structure of the thesis

The thesis is divided into seven chapters. This introductory chapter 1 has given background information over the research subject and described the context in which the research is being conducted. The chapter also introduced the research problem and addressed the specific research questions that are being answered in this paper.

Chapter 2 examines relevant literature for this research. It starts with an introduction to the entrepreneurship research as a field of study, before moving into entrepreneurial opportunity processes, followed by the theory of entrepreneurial opportunity identification and development. The second part of the chapter begins with a review of

general BOP literature to provide basic understanding of the BOP approach and markets. It then looks into venture creation and to more specific concepts of BOP market development literature.

The third chapter explains the methodological framework used in the thesis and the rationale behind the selection of particular methods and certain research decisions. It gives a necessary introduction into ethnography and to particular data collection and analysis methods that were selected for this study, as well as comments on their applicability for studying BOP. To conclude the chapter, the validity of the research is being discussed.

Chapters 4 and 5 provide the empirical findings of the study. The Community Base chapter examines physical environment, society and the cultural features of the BOP market affecting the opportunity creation in the Kolli Hill region of Tamil Nadu state in India, which is the setting of the study. The following Health Care chapter then investigates the available health care services and practices in the area, as well as looks into the attitudes towards health care.

Chapter 6 finally highlights the opportunity spaces by connecting the findings presented in the earlier chapters. Chapter 7 explains the opportunity identification process in the BOP markets based on my empirical research. The chapter builds a theoretical model of the process. The final conclusion chapter 8 summarizes the research and reflects the findings with the original research aims. The chapter then moves on to discuss the implications of the study on both theoretical and practical perspective. The paper closes by giving suggestions for future research.

## 2 THEORETICAL FRAMEWORK

### 2.1 The opportunity -An entrepreneurial approach

#### 2.1.1 What is entrepreneurship?

*“Entrepreneurship is a field of study that seeks to understand how opportunities to create new products or services, new markets, production processes, ways of organizing existing technologies, or raw materials arise and are discovered by specific individuals, who then use various means to develop them” (Baron & Shane, 2008).*

There is no universally agreed clear cut definition for entrepreneurship as a field of business or an activity. However it is widely accepted that entrepreneurship aims to understand how opportunities to create something new occur, either through discovery or creation and how certain individuals, aka entrepreneurs, develop the opportunities into profitable business ventures and finally successfully manage them. Typically entrepreneurship as a subject of study is divided into two distinct parts (E.g. Shane & Venkataraman, 2000). The first is focused on the sources of opportunities and the processes of opportunity identification, evaluation and exploitation, while the other branch concentrates on the entrepreneurs and their skills and personalities, who carry out those processes.

Not all small businesses are necessarily classified as entrepreneurial ventures though. Wickham (2001) makes the distinction of an entrepreneurial venture from other businesses through innovation, growth potential and strategic objectives, which in a combination can make significant changes in the world and thus are a key characteristic to an entrepreneurial venture. Therefore he emphasizes the change, over the money making capability in his definition. He also argues that the money is only a vehicle for entrepreneurs to achieve their higher goals and the final product is an improved world through advancement.

### 2.1.2 The entrepreneurial process

Today it is widely agreed in the field of entrepreneurship research, that the nature of entrepreneurship is rather a process like, than a single event. Kuratko & Hornsby (2009) describes entrepreneurship as a dynamic process of vision, change and creation towards new creative solutions. While by the nature, the process is an ever evolving result of contingencies of the entrepreneur, the opportunity, the organization and available resources, and is shaped by learning coming from success and failure (Wickham, 2001).

The essential phases of the process are commonly agreed by the scholars to include:

- Recognition of the opportunity
- Decision to proceed with the opportunity and the gathering of required resources
- New venture launch
- Managing growth
- Exit of the entrepreneur

There are two distinguished elements within the process, which are both bearing their own significance. On a macro level, there are the context related matters such as economical and societal circumstances, in which the process is taking place, while on a micro level, the entrepreneur's personality, skills, motives etc., are the focal point of the process (e.g. Baron & Shane, 2008). The process of entrepreneurship is always influenced by various conditions. Baron & Shane (2008) identify four crucial elements. First there need to be a platform of economic, social or technological conditions from where the opportunity can emerge. Secondly, there has to be a need for an active party (entrepreneur). Third, the business techniques that are being applied, and finally there are the economic and social outcomes.

Traditionally the goal of the entrepreneurial process is the establishment of the new economic value for the entrepreneur and the society (e.g. Paloniemi, 2010), but the emergence of sustainability thinking has brought other ideas into the frame, most notably the so called triple bottom line, which elevates ecological and social values to the level with the economic value. Lately cultural sustainability has also been

emphasized and the concept is now often referred as a quadruple bottom line. Nevertheless, the importance of sustainability thinking is particularly believed to influence the success of BOP ventures (e.g. Prahalad, 2009).

### 2.1.3 The role of an entrepreneur

Defining an entrepreneur, as a person, who simply establishes a new company or a venture is not sufficient, as the description would excessively simplify the role. The entrepreneur is not primarily a business manager either, although he may act as one. The scope ought to be wider, and in the entrepreneurship research, an entrepreneur is frequently described through the business opportunity. Entrepreneur can be described as the agent, who pursues the opportunity and drives change to create new and is therefore at the heart of the entrepreneurial process (e.g. Wickham 2001).

Entrepreneur can be either an individual or an organization and Ardichvili et al. (2003), emphasizes that the key task of an entrepreneur is to identify business opportunities in order to create and deliver value for stakeholders through prospective ventures. Therefore a fundamentally important aspect of entrepreneurship is the ability to recognize opportunities in the surrounding circumstances. Baron (2006) continues that entrepreneurs are doing it by recognizing patterns in seemingly unrelated subjects, which can be anything from technological advancements to lifestyle trends and making then new connections between them. However, the recognition of an opportunity is not sufficient on its own, but it has to be developed further before it can be converted into value adding offerings into the marketplace. The entrepreneurial creativity, which supports both the opportunity recognition and the development, is a vitally important catalyst of the new entrepreneurial venture formation (Kuratko & Hornsby, 2009).

Even though the personality of the entrepreneur appears to be a significant success factor, there seems to be no particular set of an entrepreneurial personality (Wickham, 2001). Very diverse people can become successful entrepreneurs and it is widely agreed among the entrepreneurship scholars, that the cognitive properties of an entrepreneur are

key to the successful entrepreneurial process (e.g. Shane & Venkataraman, 2000) and it is a major field of study within the entrepreneurship research. However, the question why certain people are better at recognizing opportunities than others is well beyond the scope of the current study, which is rather focusing on the external factors influencing the entrepreneur, particularly in the Base of the Pyramid context.

#### 2.1.4 What is an opportunity?

An opportunity is a market gap left by those who currently operate in the market and represents business potential through serving customers differently and better than before. Consequently opportunities are the raw material that is being used to create an entire new world (Wickham, 2001).

Entrepreneurial opportunities are not limited to new products and services, but can also take the form of new ways of production or organizing the business, new raw materials, and even creation of entirely new markets (e.g. Baron & Shane, 2008). Opportunities can also be based on new ways of distribution, communication to the customers, as well as internal and external relationship management or through any other means that are providing the company a competitive edge (Wickham, 2001). Therefore it appears that the opportunities are not being necessarily defined by what is being done, but rather how things are being done with the profound emphasis on improving current models and practices.

New ideas are not automatically opportunities for business ventures. Typically first new ideas are rather sources than ready-to-be-used opportunities and they are needed to be developed by the entrepreneur before they can become genuine business opportunities (e.g. Paloniemi, 2010). Timmons and Spinelli (2009) set a four point criterion for an opportunity to be distinguished from mere ideas. According to them an opportunity must:

- Add significant value to the customer
- Meet a notable market need

- Has to be potentially highly profitable
- Be a good fit with the competences of the acting party, i.e. the entrepreneur

Yet these four points are widely agreed upon, but they are not exclusive and other attributes are also frequently attached to opportunities. For instance Baron and Shane (2008) add that the opportunities also have to be perceived desirable among the society, in which they occur and they are required to meet the set legal standards. The compliance with the legislation ought to be apparent and is commonly agreed on, but the desirability is more of a challenge to measure and takes the debate to a whole new level of morality and ethics of the business, which would be particularly relevant topics in the BOP context, but will not be discussed further in this paper.

Not all the opportunities are equal, as they differ in their potential value and risk levels. Different opportunities are always competing against each other and only the fittest are to be pursued (Wickham, 2001). High-potential opportunities characteristically solve significant problems, wants or needs that someone is willing to pay for (Timmons & Spinelli, 2009) and it is in the role of an entrepreneur in the center of the entrepreneurial process to evaluate available opportunities, before the exploitation can take place.

### 2.1.5 Opportunity identification

*“Specifically, entrepreneurs should focus their efforts on identifying changes in technology, demographics, markets, and other pertinent factors that play an important role in the success of almost any business. Second, while engaging in such searches, they should also focus on actively seeking to identify ways in which these trends and changes are linked or connected; in other words, they should search for emergent patterns. Recognizing such patterns is often a key initial step in the process of identifying new business opportunities” (Baron, 2006).*

The opportunity recognition process often starts by active and deliberate search for potential ideas by the entrepreneur. The search stage of the ideas in the venture creation

process can be divided into two elements that together combine as a basis of the opportunity. These are the entrepreneur's capacity, i.e. what product or service can be delivered, and the market need, which dictates the purchasing capacity (Morse & Mitchell 2006).

New ideas do not just appear from nowhere. According to Baron & Shane (2008), typically novel ideas are new combinations of already existing components, applied together in a new way. Therefore the key task is the recognition of links and connections between the elements that have gone previously unnoticed. While elements of the business opportunities can be recognized, opportunities are not accidentally found, but they are made (Ardichvili et al. 2003). Timmons & Spinelli (2009) further explain that opportunities are created by using ideas interacting with the real world and entrepreneurial creativity. The best ideas are inspired by genuine unsatisfied needs in the marketplace rather than being invented in exclusion (Wickham, 2001), but at the same time they tend to emerge from people's personal experiences in prior jobs, hobbies or interests and personally identified problems (Kuratko & Hornsby, 2009).

New opportunities are often consequences of the changes in the world that allow existing solutions to be improved. Therefore even the optimal arrangements are not permanent, as the circumstances are due to change over time, and thus leaving room for new improvements and new opportunities. They repeatedly emerge from changes in economic, technological and social factors, which allow new ways of doing things and it is the role of an entrepreneur, to see new patterns and "connect the dots" (Baron & Shane, 2008), thus the entrepreneur is playing a crucial role in the process.

The recognition of opportunities can be said to be a subjective process, while the opportunities themselves are objective phenomena not obvious to all (Shane & Venkataraman, 2000). It is the information that the entrepreneurs have and which they have gathered through their experience that helps them to recognize new business opportunities in the external world (Baron & Shane, 2008) and it is the asymmetry of information that people possess, which allows opportunities to exist in first place. Wickham (2001) argues that in order to identify opportunities successfully

entrepreneurs must have gained industry specific knowledge and experience. The information can be gained by exposure to the industry with an active learning attitude.

More than one idea is required in order to avoid pursuing unworthy ventures and to ensure higher potential. Morse & Mitchell (2006) explain that multiple proposals create an idea pool, which can be then used to determine the viable ones with most potential. Also the less lucrative ideas are worth investigating as they can be sources of learning and other ideas. Baron (2006) argues that the high number of ideas including the ones of lesser quality can be beneficial to broaden the perspective and reveal otherwise hidden opportunities. Therefore it can be argued that the more ideas gathered, the better and that at the search stage the entrepreneur ought not to be overly critical towards seemingly useless ideas, but rather be open minded to any available information and ideas.

#### 2.1.6 The opportunity process

*“Creation of a successful business results from a successful opportunity development process, which includes recognition of an opportunity, its evaluation, and development per se” (Ardichvili et al. 2003).*

According to Ardichvili et al. (2003) opportunities are evaluated throughout the process, both in real time as well as in different stages. The evaluation can lead to recognition of additional opportunities and adjustments. Individuals pursuing investigations of presumed market needs or resources evaluate whether they warrant further consideration, prior to more formal feasibility analysis are carried out to evaluate business concepts. Finally business plan is subject to a thorough evaluation through due diligence, before the venture formation.

It is widely agreed that there is not a standard opportunity process path and steps fitting all venture creation processes. There are different approaches to the opportunity process in the entrepreneurship literature. Typically the difference is defined by whether the opportunity is an outcome of a discovery or a creation process and whether the

opportunity exists independent from the entrepreneur or not (Alvarez & Barney, 2007). The discovery approach assumes that the opportunities exist all the time, but they do not necessarily present themselves and they need to be actively sought by scanning the market place for gaps (Wickham, 2001). Kyrö et al (2012) developed three approaches to the opportunity process – search, discovery and action, which are presented in table 1.

<b>Criteria</b>	<b>Search approach</b>	<b>Discovery approach</b>	<b>Action approach</b>
Roots	Cantillon ‘judgment maker’	Kirzner ‘arbitrageur’	Mises ‘speculator’
Nature of human involvement	Rationally, purposefully, and systematically seeking solutions to identified problems or needs by evaluating alternatives and making choices between them	The use of cognitive abilities by alert individuals to connect different ideas	Interpreting the consequences as a result of action-based experience
Opportunity	Opportunity is a solution to the problem or need identified by an entrepreneur  Opportunities exist, but are dependent on an entrepreneur’s thinking	Opportunity is a response by an individual to changes in the environment  Opportunities exist, independent of entrepreneurial actions	Opportunity is a result of the iterative actions of individual behavior  Opportunities do not exist until entrepreneurs engage in the opportunity process
Opportunity process	The opportunity process is linear, rational, purposeful and systematic; aimed at achieving given ends	The opportunity process takes place through cognitive patterns; it is non-linear and internal	The opportunity process is cyclical, serendipitous, or opportunistic bricolage
Process moderators	Past knowledge and experience	Past cognitive patterns	Past behavior patterns
Opportunity Identification	Identification of a need or problem	Identification of a new situation or a possible new interplay	Identification of the consequences of an individual’s actions and their experiences
Opportunity Evaluation	Followed by the identification phase;  Using resources to solve the problem or fulfill the need	“Connecting the dots”  Correcting errors and creating new ways to achieve an end	Creating new means and new ends by responding to previous actions
Opportunity Exploitation	Opportunity evaluation is followed by opportunity exploitation	Opportunity identification and evaluation are intertwined and followed by an exploitation phase	Opportunity identification, evaluation and exploitation are intertwined

Table 1. Three different approaches to the opportunity processes (Kyrö et al. 2012)

Kyrö et al. (2012) argue that the processes are diverse due to a wide range of variables and critical incidents shaping them, that vary from venture to venture. One of the differentiating factors is naturally the context, where the opportunity process is being pursued and with this set of thinking a BOP environment, due to their special characteristics can be argued to require different activities, which cannot be described as a mere discovery, but the opportunities have to be created (Webb et al. 2009).

*“Creation of a business concept that matches market needs with resources must logically follow perception of both the needs and the resources. But business concept creation is more than perception and discovery. Concept creation involves redirecting or recombining resources in order to create and deliver value superior to that currently available. Concept creation may go well beyond adjustment of current matches of resources and needs and may even lead to dramatic restructuring of an existing business or radical innovation” (Ardichvili et al. 2003).*

The current study acknowledges the problematic use and inconsistencies between different authors’ usage of the terminology opportunity creation and discovery particularly between the entrepreneurship and BOP scholars. A central claim in the BOP literature is that the market opportunities in the BOP have to be created (e.g. London, 2009), while in entrepreneurial terms other modes are possible and the present research clearly follows the path of discovery in the Kyrö et al. (2012) model.

### 2.1.7 The theory of entrepreneurial opportunity identification and development

The recognition of certain needs or suboptimal resource allocation in the marketplace is not sufficient to become a viable business opportunity of its own, but the emphasis needs to be on the opportunity development process leading eventually to the creation of a successful business venture.

Major factors that influence the process include:

- Entrepreneurial alertness to recognize opportunities
- Information asymmetry and prior knowledge of the market, particular customer problems and how the market can be served.
- Social networks to support identification and development of opportunities.
- Entrepreneur’s personality traits, with particular importance given to optimism, self-efficacy, and creativity.
- The type of opportunity itself in terms of whether the problem has been identified and the solution defined.

		VALUE SOUGHT	
		Unidentified	Identified
VALUE CREATION CAPABILITY	Undefined	“Dreams” <b>I</b>	Problem solving <b>II</b>
	Defined	Technology Transfer <b>III</b>	Business Formation <b>IV</b>

Figure 2. Types of opportunities (Ardichvili et al. 2003).

Dreams are opportunities, where both the problem and the solution are unknown and often require exceptionally high creativity, which can be associated with artists and inventors. Opportunity development in Problem solving-cell is usually carried out to address a solution to an identified particular market need. Technology transfer is a search for application of an existing solution, which as opposed to the cell title does not need to be product or technology related, but can be a transfer of any existing business solution. Finally, the opportunity development is recognized as business formation, when known resources and needs are matched in order to create value.

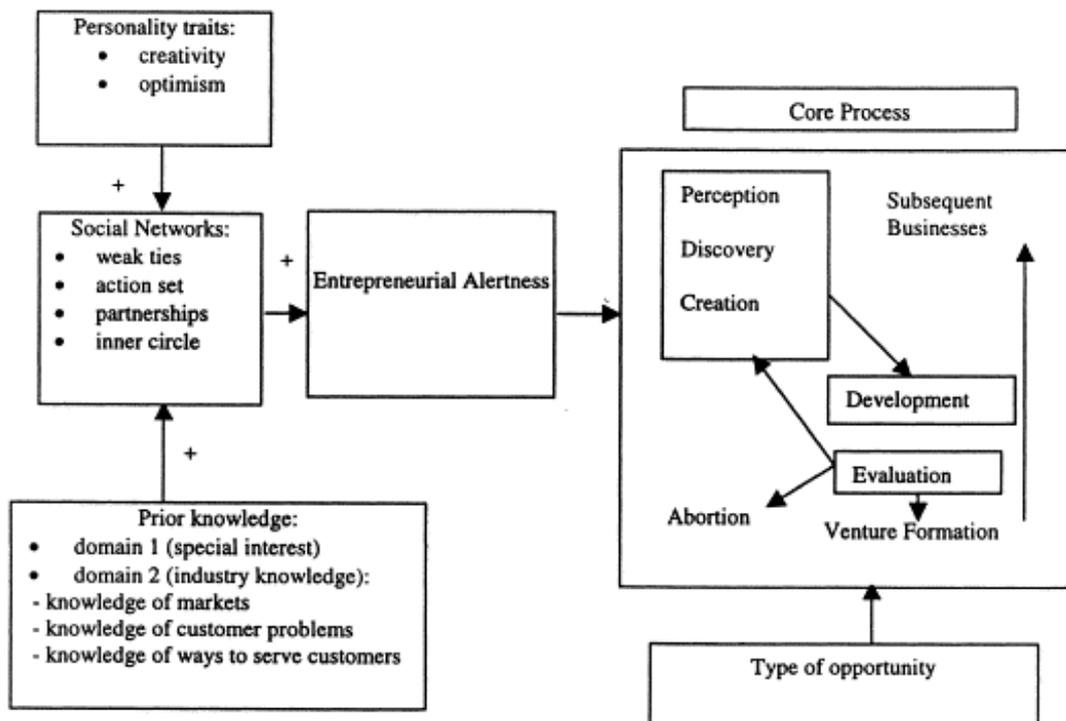


Figure 3. The model and units for the opportunity identification and development theory (Ardichvili et al. 2003).

*“The development process begins when entrepreneurial alertness exceeds a threshold level. Alertness is likely to be heightened when there is a coincidence of several factors: certain personality traits (creativity and optimism); relevant prior knowledge and experience; and social networks. The particular activities within the process are also affected by the degree of specificity of knowledge about market needs and resources”* (Ardichvili et al. 2003).

Based on the model, the authors make several propositions that are important to the success of the opportunity recognition and development process, which can be summarized as follows:

- A high level of entrepreneurial alertness is associated with successful opportunity recognition and development.
- The lack of social networks or prior knowledge over the industry and the market reduces the probability of success.

- High levels of entrepreneurial alertness are related to high levels of entrepreneurial creativity and optimism, as well as entrepreneurs experience in previously successful opportunity identification processes.
- “The theory of entrepreneurial opportunity identification and development” is used in the current study as theoretical reference for the opportunity process. One of the aims of the current study is to test the fitness of the theory in the Base of the Pyramid context.

## 2.2 The Base of the Pyramid Approach

### 2.2.1 The concept

The notion of Base of the Pyramid (BOP) business was introduced by C.K Prahalad and Stuart L. Hart (1998). It refers to those 4 billion people who live on less than \$3000 per year in purchasing power parity (PPP) and are in many ways excluded from the global market economy. Although the purchasing power of a single BOP person is small, the combined value of the BOP market is substantial and is estimated to be \$5 trillion in the global consumer market (Hammond, Kramer, Katz, Tran and Walker. 2007). The BOP market has been argued to offer great business opportunities for companies seeking for new markets and that these four billion people can even be the catalyst for the new growth in the global economy (Prahalad, 2009).



Figure 4. Total BOP market by income segment (Hammond et. al. 2007)

Originally the concept was called Bottom of the Pyramid (BOP) and it was argued that there was a fortune to be found in the BOP. The early promises of an easy fortune seem to have been overstated (e.g. Pitta et al. 2008) and more recently it has been proposed in the academic literature that the BOP market ought to be viewed with fortune creating rather than fortune finding mentality, as it has been claimed that there is no market to be entered and fortune to be found, but both need to be created from the scratch (e.g. Simains, 2010).

The BOP approach does not have a firm theoretical model to lay foundation for the academic studies, but the concept is still rather a notion up for a debate (Halme 2011). Nevertheless it is widely agreed that the approach goes further than seeing the world's poor solely as an untapped market and the aim is to achieve a win-win situation benefiting all parties involved. As well as on the profit generation, the emphasis of the BOP approach is on poverty alleviation (Prahalad & Hart 1998). The approach assumes that the life quality of the poor can be improved and poverty related problems eradicated by co-creating together with the BOP users new profitable products and services directed to the BOP markets.

The co-creation concept recognizes the BOP users as essential collaborators in the problem solving and significant source of innovation, instead of seeing them only as potential consumers (Prahalad 2009, London 2010 etc.). There can be several active roles for BOP people and it can be highly beneficial to recognize opportunities for the poor to participate into the BOP schemes as producers, entrepreneurs as well as innovators (Halme 2011), thus potentially providing them new sources of income as well as empowerment through the active participation. In addition London & Hart (2010) suggest that the strategies also creating income among the BOP consumers and societies, instead of only extracting wealth from them through sales, are the most effective ones to operate in the BOP markets.

As the aim of the approach is not solely to provide BOP consumers new products and services at affordable prices, but more importantly to give them recognition, respect and fair treatment, that are often limited in their lives. Prahalad (2009) even claims that building of self-esteem and entrepreneurial drive at the BOP is possibly the most

significant contribution that the private sector can make to the lives of underprivileged BOP people. However many academics have also expressed caution over the outcome of the BOP approach and many have been critical towards the overly optimistic projections by reminding that BOP communities are facing extremely complex poverty problems with no easy answers available and that particularly universal solutions to these multifaceted issues can even do more harm than good (e.g. Munir et al. 2010). It is a genuine concern, but carefully crafted local solutions through co-creation at least seem to circumvent some of the issues. Also it is certainly true, that the difficulties some BOP communities are facing can be immense and therefore could be unsolvable or even unrelieved in a short or medium term and therefore it can be argued that the BOP projects ought to aim for a sustainable long term outcomes in their social impact. At the same time it appears, that even if the results of many BOP projects might be small scale or minor, they still tend to be positive (Lenz & Pinhanez, 2012) and it would be difficult to argue that the BOP approach as a whole is having more adverse than positive effects on the targeted BOP societies.

### 2.2.2 The BOP market environment

*“The BOP is so radically different that companies will have to ignore what they know as truths that may not apply anymore” (Pitta et al. 2008).*

A considerable part of the BOP people live under circumstances lacking severely in terms of basic services and infrastructure such as electricity, roads, basic healthcare or potable water. Due to the lacking infrastructure, the operation in the BOP market environment involves a number of additional challenges that are typically in such scale that the businesses cannot overcome those by themselves. That may well lead to higher opportunity costs (Halme, 2011) and naturally need to be investigated and carefully considered already in the planning phase of a BOP project.

As well as the physical infrastructure, BOP markets commonly entail managing substantial challenges in technical and economic infrastructure, education, financial

resources, cultural features or basically any other aspect of the business or society, that might significantly differ from the familiar conditions of the home market (Pitta et al. 2008). There might even be further challenges to educate the BOP people into a habit of consuming, as non-consumption of products and services can prevail (Simains, 2010) and therefore the objective is to change this behavior in order to even make space for the market.

It is frequently said that the BOP market is unusual and without a full understanding of the market dynamics, innovation cannot occur, which is often claimed to be mandatory for the success in the BOP. According to Halme (2011), operation in BOP-markets requires completely new set of competencies and the offerings cannot just be simple low-cost versions of the existing products and services, but they have to be created based on the needs and values of the BOP consumers and according to the special circumstances of the particular BOP sphere. Typically decision makers do not know about the needs of the poor, as they are not represented in the forums that yield the power (Prahalad, 2009) and the needs and circumstances of the poor are often assumed instead of people concerned having an opportunity to express themselves with a risk of misassumptions. Therefore the investigation of the specific market needs and conditions become crucial for the product and service development in the BOP and ought to be the cornerstone of any BOP project.

The BOP markets are far from uniform, and they might significantly vary in different locations around the world. As any market, BOP markets are also segmented according to people's income level and other features. A failure to fully understand the niche generally result in difficulties, since the products might be too expensive or too complicated, not available in adequate quantities or sizes, or are simply not what the people want (Pitta et al. 2008). Therefore a fundamental requirement to attend a BOP market successfully is to know deeply the characteristics of the particular market niche and the people.

The consumer behavior and preferences of the BOP do not necessarily follow western presumptions and can be changing rapidly (e.g. Prahalad, 2009). Due to their limited and irregular income, the BOP purchasing patterns have to be taken into consideration.

For instance, BOP consumers tend to shop daily or when they have money (Pitta et al. 2008), unlike in the west, where the consumption is more planned. According to Simains (2010) the BOP is not even a market in a traditional sense, as BOP people are not necessarily familiar with the idea of paying money for certain value propositions that have not been previously available and thus would be considered unthinkable even if there was an obvious need for the product. Therefore, Simains continues, companies need to first create the market and a new lifestyle that embeds the offerings into the people's life routines.

Since the logistical infrastructure is often missing in the BOP markets, the formation of an effective distribution network can become crucial. Also due to a transportation challenges, BOP consumers are unenthusiastic about to go and consume far away from their homes, but prefer to carry out their transactions in close proximity (e.g. Pitta et al. 2008). To overcome the problem, many scholars have proposed that innovative solutions could engage users as micro entrepreneurs and thus taking care of the local distribution (e.g. Halme 2011) and also reducing the emotional distance to the offerings, which could also improve the adaptability to the needs of the people, flexibility and personal relationships with the clientele, that in turn would have a positive impact on BOP consumers' self-esteem and well-being (Pitta et al. 2008) and thus enhances the changes of commercial success.

Another typical feature of the BOP market environment is the often widespread informal economy (e.g. Prahalad, 2009), which need to be taken into account in the business planning. BOP ventures have to be prepared to accept that they cannot necessarily protect their copyrights from counterfeits and product adulterations nor can they enforce contractual terms in a manner employed in the western markets (London 2010). Thus the competitive advantage ought not to be based solely on product characteristics, but to more complex service offerings that are integrating other, easier to protect business aspects such as distribution mechanisms too.

### 2.2.3 BOP market development

As there is no existing market in the BOP to enter, one has to be created. One of the key challenges is the lack of overall information over the market. Since the competing products are absent, they cannot be benchmarked nor customer behavior observed and therefore accurate projections are difficult to produce. What is sometimes called a community base provides a foundation for the market and has to be fully understood in order to understand the dynamics of the future market. Simains (2010), defines the community base to include basically all the aspects of people's life ranging from everyday routines, relations and habits, to physical surroundings and infrastructure, as well as spirituality and the communal norms and values. The first part of the empirical research of the current study is focused on establishing the community base as a foundation for the opportunity creation process.

Once the community base is established, the attention can be shifted to the market needs and capabilities of what actually can be done. Therefore an understanding of the BOP people, both as consumers and as producers is required to understand their needs, perceptions, and behavior, which in turn will help companies to design new business concepts (Pitta et al. 2008).

BOP ventures are facing an additional set of challenges in their quest for market creation. On top of the usual key tasks of designing products, business models and building competitive advantage, host of new issues such as enhancing consumer awareness and demand, reduction of supplier transaction costs and even development of public infrastructure and service networks are typically needed to be addressed (London (2010), leading to a significantly broader range of investment needs than in the traditional markets.

Prahalad (2009) approaches the market creation challenges from a slightly different angle and argues that the primary task is often converting the BOP consumers from unorganized, inefficient local monopolies to an organized and efficient private sector. His four A's, which are *Awareness, Access, Affordability, and Availability*, are being fundamentally important to the successful market development in the BOP, as

they determine the basis of the requirements, which have to be met in order for the BOP people to be able to consume.

First, it has to be certain that the BOP consumers are aware of the new products and services. Next they need to be able to access them through distribution networks penetrating the BOP living environment. The points may sound obvious, but it is important to bear in mind that to spread awareness and ensure the access can be much more of a challenge in the BOP. For instance, how to make an illiterate farmer aware of a new diagnostic service that the person does not understand what it is about and if he did he would not believe in it as it would contradict with his perceived reality, thinking and way of life? In order to overcome these sorts of issues, the A's need lot of attention throughout the market development process, as failing to do so, could ruin all the efforts of serving the BOP.

Affordability dictates that the cost of the product or service has to meet the BOP capacity to consume, without compromising in quality and value. Affordability does not only refer to the price tag in the BOP market, but the flexibility and ability to provide different suitable payment options of how and when BOP consumers pay for products and services are also in need of consideration. They can be both a challenge and/or a source of competitive advantage (Pitta et al. 2008) and can be as important decisions as the price itself. Finally, availability stands for the need of the product to be available, when needed by the consumers. The BOP people cannot defer the purchase (Pralhad, 2009), thus highlighting the importance of the effective distribution network to make sure the offering is available at the right place and at the right time, when the BOP people are willing to consume. The demand is not permanent and the transactions can be missed entirely by failing with the timing, since the BOP consumers would not wait with the purchase and the money would likely to be spent to fulfill other needs.

## 2.2.4 BOP venture creation process

As the business model requirements in the BOP market are extraordinary, so is the venture creation process itself. The BOP venture development is not characteristically sequential, as is typically the case in the conventional markets (Morse & Mitchell 2006), but the process is interactive in its nature and the three key phases of design, pilot and scaling are all linked to each other and due to evolve together.

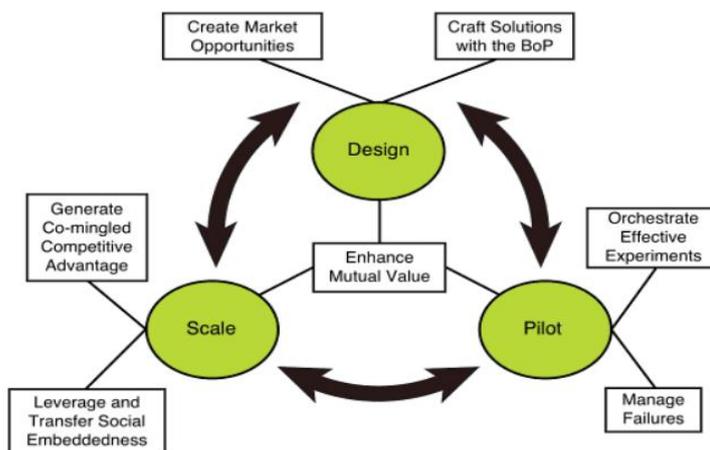


Figure 5. Seven key principles of BOP venture development (London 2010).

## 2.2.5 Opportunity creation in BOP

While opportunities in the traditional established markets are typically evolving from market disruptions and rapid changes in technology, information flows or regulation (Timmons & Spinelli, 2009), the opportunities emerging from the Bop market are somewhat different and highly context related (Prahalad, 2009). The BOP opportunity and new market creation is something contrary to the practice of opportunity seeking and underlines the importance of the opportunity development process, as the markets and opportunities do not exist at present and thus cannot be search and found, but they need to be crafted. Therefore the creation of market opportunities is the first stage of the BOP venture development process (London, 2010) and is the title and sphere of the study of this research paper.

The basic BOP market structures are required to be formed from scratch for the opportunity creation. The essential components of the standard opportunity evaluation criteria of distribution network, potential market capacity, purchasing conditions, pricing and entry barriers (e.g. Timmons & Spinelli, 2009) are commonly all absent in the BOP market and thus has to be established, before the identified opportunities or opportunity spaces can be evaluated and developed further.

### 2.2.6 The Innovation Sandbox

The market creation represents a completely different type of challenge compared to a market entry and thus Prahalad (2009) proposes that the innovation sandbox is utilized in order to facilitate the market development in the BOP. The innovation sandbox is bounded by a set of critical constraints that cannot be compromised in the development process. While within the sandbox are all the relevant elements of the business, which naturally vary from case to case. That is the sphere, where the innovations occur. The model ought to be tailored to meet the specific needs of the targeted user group and the particular objectives and capabilities of the company.

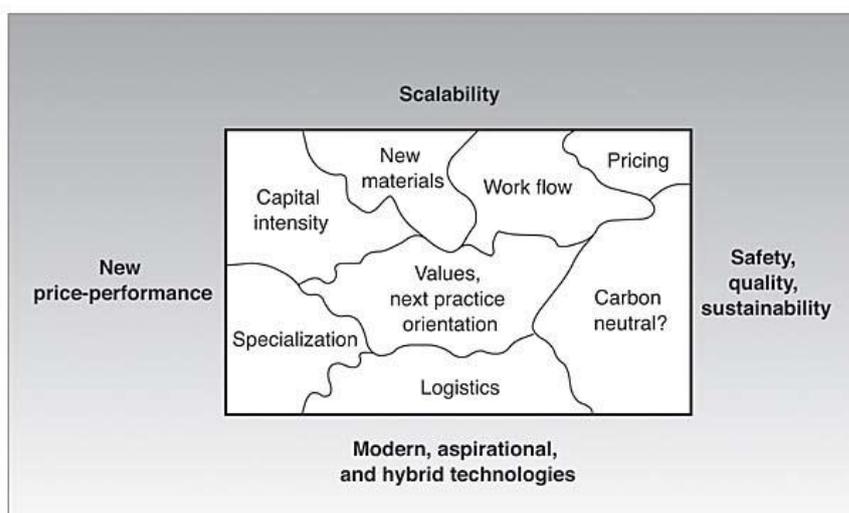


Figure 6. An example of the innovation sandbox (Prahalad 2009).

The four non-negotiable constraints are scalability, a new price-performance, modern technologies and high quality. Prahalad argues that any business venture in the BOP has to be scalable or would not be able to have a desired impact on either business or people perspective. He suggests that the price customers pay has to be prioritized over the production costs and company profits in order to ensure affordability. In other words, one must establish what customers are able to pay and only then mold the costs and profits accordingly. In addition, modern technologies and high standards of quality have to be applied, as the requirements for products and services are often more demanding in the BOP environment than in the developed markets.

All components of the business model have to be scrutinized without flexing the boundary conditions of the sandbox. The idea of the innovation sandbox is to encourage creative thinking and problem solving in the company so the innovations may emerge from any elements within the innovation sandbox. Prahalad argues that innovation is the only way to meet the boundary conditions and thus necessary in order to reach the potential of the BOP market. For the current research the innovation sandbox is significant due to the four boundary conditions, which are influencing the identification of the prospective opportunities. The opportunities can be seen to emerge from the elements within the box and thus are also restraint by the four non-negotiable constraints. The elements within the innovation sandbox are therefore called opportunity spaces, as they are not ready-made opportunities, but rather elements from which the innovation, i.e. new business opportunity may surface (Halme et al. 2011).

### 2.2.7 Social embeddedness

Since the market knowledge of the companies entering into BOP environment is typically non-existent or very low, a special attention is required to gain the sufficient information. London (2010) argues that any venture development project to succeed in BOP, it has to gain an in-depth understanding of the local economic rational and social context. This is what he calls as social embeddedness.

The social embeddedness aims to integrate the venture into the locality. The process starts by establishing connections with the local stakeholders in order to find common ground. London argues that, by developing mutually beneficial relationships, companies can get insights into how things really work in these markets, not only from business perspective, but also social and community intelligence. The focus of the social embeddedness approach is to build a comprehensive picture of the context. It does not limit the focus on the opportunity recognition, based on the needs and what the market is lacking, but rather takes a more holistic view of the society and aims to enhance the existing strengths within the locality to support the opportunity creation process as well as later stages of the venture creation.

#### 2.2.8 Inclusive business models

“The process of co-creation must start with respect for Bottom of the Pyramid consumers as individuals and assume that the consumers are equally important joint problem solvers.” (Prahalad, 2009).

Prahalad (2009) argues that, the BOP users have an important role in the opportunity creation process, since they are the experts of their lives and environment and thus vital in determining not only the product and service characteristics, but also other critical aspects of business model such as distribution and pricing. There has to be a strong emphasis on the active BOP involvement in the market development process, as it is not about the standard business practice of serving existing markets more efficiently, but rather a developmental activity of converting poverty into an opportunity, which requires novel creative approaches. The key notion is that the companies need to harvest from the local knowledge and existing solutions as well as to apply user innovation in order to be able to produce locally functioning solutions that are being agreed by the society and people. By succeeding in that, companies are also able to access innovation, vitality and growth emerging from the BOP micro consumers and micro producers (Prahalad, 2009). These innovations and new business practices can be then taken back to the developed markets and be sources of competitive advantages.

Users' sense of ownership in the venture appears to be crucial for the success of the scheme and London & Hart (2010) even claim that the BOP ventures cannot succeed without high importance given to a co-creation and mutual value creation with the BOP. From a company perspective, collaboration with the users provides new learning experiences and new modes of contact with the customers and the society (Heiskanen & Jalas, 2011), while simultaneously it can enhance BOP ownership of the offering by providing opportunities to influence and participate into the project, which in turn would also generate further demand for the offering (Simains, 2010) and thus can grow sales and value of the venture. The BOP participation ought to be comprehensive, as it has been claimed that more successful results can be achieved by integrating BOP consumers throughout the innovation process (Krämer & Belz, 2008). Therefore it is beneficial, if the target community would have their share of involvement, ownership and responsibilities from the beginning of the project. The notion also applies to the opportunity process, which thus ought to seek ways of integrating the BOP advice and contribution into the opportunity creation.

The creation of buying power should also be one of the key concerns of prospective BOP ventures. The business logic reasons, that when new income is being generated, new segments of the people will have an opportunity to consume and to reach products and services thus increasing the sales potential. Therefore new business models should incorporate unusual aspects such as access to microcredit, the establishment of alliances of collaboration among different types of local institutions (Pitta et al. 2008), as well as to focus on more standard practices of job formation and entrepreneurial opportunities for the people in order to enhance the creation of the new purchasing power in the BOP.

### 2.2.9 Partnerships

As BOP markets are unorganized and underserved, an appropriate ecosystem has to be built (e.g. Prahalad, 2009), before any venture or opportunity development process can take place. It typically requires companies to collaborate with civil society organizations and local governments as well as the BOP people as explained earlier. These

partnerships can typically provide the venture with necessary knowledge and resources as well as to reduce business barriers (e.g. Halme, 2011). In order to understand BOP markets and consumers, companies need grass roots sources of intelligence. Collaborating effectively with agents on the ground, that has a direct contact with the relevant BOP segments, has been found vital (e.g. Pitta et al. 2008). However, the sources of information are needed to be carefully evaluated for their reliability and usefulness, but most importantly the venture managers have to understand and address their own biases towards the poor and their living environment in order to utilize the gained information (London, 2010). In other words, the prejudices over the life and circumstances of the poor are needed to be abandoned completely and the venture decisions ought to be based on the gathered local information.

Unlike many businesses and industries that receive subsidies in the developed world, BOP ventures cannot rely on grants and economic support (London & Hart, 2010). Therefore they need to aim to become economically self-sustainable, which underlines the importance of scalability of the venture to maximize the generated income. London (2010) argues that in order to venture to become scalable, it is necessary to identify, leverage and enhance already existing local platforms. The platforms can be networks such as distribution channels currently utilized for other purposes, community based organizations such as self-aid groups or physical infrastructure and resources used for non-business purposes. He continues that the access to these platforms is typically through partnerships with non-profit orientated organizations, who seek value by means of social development and only as long as this value is being created can the collaboration be expected to continue. Thus highlighting the importance of finding collaborative ways to support the activities of the partnering organization, which would enhance their commitment to the cause. Although, there can be major obstacles to be overcome before such collaboration between different types of organizations can be established. Conflicting political ideologies, untrustworthiness between the different parties and lack of institutional capabilities to take the needed action are typical issues (Lenz & Pinhanez, 2012), and have to be cleared, as they could impose a significant risks to long term collaboration and relationship.

Nevertheless, NGO's have proven to be critical in the development of new business models in several successful cases in the BOP. They are working close to the people at the BOP, and thus are also well equipped to understand and educate them. Many NGOs are familiar with organizations of both developed economy and the particular BOP environment, and therefore can function as intermediaries between the company and the local markets. There are various inputs that NGO's can provide for the entrepreneurship process and as well as the apparent local knowledge and new resources, they can increase legitimacy of the venture (Webb et al. 2009), and thus reduce potentially suspicious attitudes in the eyes of local society and authorities. Logically that would also support the venture's integration into the locality by helping to win the hearts and minds. There is obviously no universal partnership formula to fit every occasion, but the alignment of the business goals of a venture with the development goals of an NGO has been repeatedly found out to be an effective way to establish thriving partnerships (London 2010).

The public sector often plays a key role in developing BOP environment and is therefore also a potential partner for the venture. According to Pitta et al. (2008), the public partnership focus has lately been shifting from traditional governmental assistance, to different new ways of creating a sustainable environment for aiding the BOP development. A typical example would be a government financed entrepreneurial training program, which if executed in collaboration with a prospective BOP business could possibly bear significant benefits for both the BOP people and the venture.

Typically all these relationships are needed to be built from scratch, when a company is planning to enter into a BOP market. According to London (2010), it will inevitably take considerable time and several interactions to establish mutual respect and trust required for a successful partnership with the BOP. He also proposes that the venture creation has to be grounded on mutual value creation with any type of partner and that the value creation as well as possible destruction has to be continuously evaluated to maintain committed partnerships. The idea follows the logic, that there would always also be unintended consequences of the new BOP ventures and some of them could be negative. Therefore in order to nurture the partnership, all the impacts are needed to be

assessed on a regular basis and the corrective action has to be taken promptly over any unintentional and negative outcomes.

#### 2.2.10 Mahatma Gandhi Educational Non-violent Movement (MGENM)

The field study of this research was carried out in partnership with Mahatma Gandhi Educational Non-violent Movement (MGENM), which is a local Indian organization operating in Tamil Nadu. MGENM was registered as an NGO in 1987 focusing on rights of the tribals, bonded labor and untouchables through agitation, as they were repeatedly harassed by the public and the society. The vision of MGENM is: “Enabling the weaker sections of the society to have increased quality of life.” As well as rights based programs MGENM has been active in the field of development. They have run a sustainable agricultural program, total sanitation program and life skill education program. Around 20 % of their activities are on health programs like reproductive health awareness, awareness on HIV, STD, etc. A significant part of the activities today are also related to awareness and counseling for women who are affected by violence. In future MGENM is interested in opening a People Academy, which would combine an Institute providing life skill education for people, meditation center, and modern agricultural farm as well as a hospital where Siddha and Allopathic treatments are provided.

## 3 METHODOLOGY

This is a qualitative research that takes an ethnographic approach in order to understand cultural and physical circumstances of the BOP market. Since markets are not only characterized by the needs of the people, but rather through the interwoven meanings and practices, which will translate into certain attitudes towards the offering (Sunderland & Denny, 2007), it can be argued that a long term anthropological research would provide best tools to get the understanding and knowledge required for the opportunity identification in BOP. Due to time and money constraints of the study, the second best option of short term ethnography was selected as suggested by Halme et al. (2011). The empirical data gathering consist of typical ethnographic methods of interviews and observations in the grass root level of the BOP healthcare ecosystem, which mainly consists of nurses, ashas (voluntary village healthcare workers) and the users of these services. Local healthcare experts such as doctors, administrators and NGO's operating in the area were also interviewed.

### 3.1 Ethnography

There is no clear cut definition of ethnography and the term is frequently applied in various meanings. Berg (2009) proposes that different researches have utilized different connotations to the expression of ethnography depending on their own scientific backgrounds and fields of study for several decades. Therefore over the course of the time and due to various different perspectives, vast numbers of sub-genres and different schools of ethnography have emerged. However, all of them are sharing the central notion of ethnography being a research approach that aims to understand and describe culture by studying the everyday life of communities from their members' perspective. In this research, ethnography is applied, as defined by Van Maanen (2010): "Ethnography is a description of what particular people, in particular locations and at certain points of time are doing and what do these actions represent to them." Therefore

the emphasis is on the activities of the people, the meanings and significances of these actions, deeply rooted into the cultural and physical context.

It has been argued that for studying the BOP, standard ethnographic methods can be complemented with aspects from other fields of study such as anthropology and design ethnography (Halme et al. 2011) in order to get the special aspects of the BOP approach covered. The design field has vast experience in studying user participation and that knowledge can be applied with the attempts to enhance the BOP involvement, while anthropology is used for studying cultural and social milieu, which often tends to get neglected in the consumer ethnography (Sunderland & Denny, 2007), but are fundamentally important to understand for the business opportunity identification purposes of this research.

A realist approach of ethnography aims to provide as objective account of the subjects as possible. Characteristically to the realist approach, the researcher aims to remain neutral and objective, while personal reflections and biases are tried to be minimized and let the voice of the people studied to prevail. Nevertheless, the final analysis and interpretations are the work of the researcher and inevitably reflect the person's background. Hammersley and Atkinson (2007) argue that researchers cannot remain completely removed from the subject and thus are also inevitably part of the social world they study. Therefore researchers need to be able to reflect on their own position and influence to the study. Instead of trying to eliminate the impact of the researcher completely, it is more useful to try to understand the impact of the researcher as an instrument of the study. This is what they call reflexivity, which is being applied in the current study in order to take into account the researcher's influence to the subjects.

### 3.1.1 Ethnographic field study

In the heart of an ethnographic research is the field study, in which a researcher seeks to understand the culture of the research milieu and the impacts it imposes to the lives, behaviors and actions of the subject community members. Fieldwork usually requires

that the researcher lives within the culture and with the people being studied for an extended period of time in order to document and interpret their beliefs and values and the general way of living (Hammersley & Atkinson 2007). It can be argued that the field work is a necessary part of any ethnographic research.

The cultural and physical surroundings of the people are highly complex entities, shaped by innumerable factors unknown to the outsiders. Therefore, it is justified to claim that, one cannot entirely understand cultural features, practices and thinking, without being a part of the community and the culture. Field work though provides a researcher a window to look into the lives of the subject society and an opportunity to temporarily participate into their everyday living and routines, and is therefore an effective method to understand the living sphere of the subjects holistically. It has been argued that the most effective ethnographic studies can be carried out, if the researcher would thoroughly immerse into the culture by becoming a member of it and thus gaining higher perception and access into some of the deeper characteristics of the subject that would not be visible otherwise (e.g. Alasuutari, 2009). However that requires extremely long periods of time dedicated to the fieldwork and thus is neither practical nor possible with the current study.

### 3.1.2 Culture as a subject of the study

To study a culture is obviously highly context related, as the cultures tend to vary significantly even in apparently similar circumstances or in close physical proximity to each other. Cultural generalizations seldom fit into ethnographic study and every subject invariably has its own particular elements and characteristics decisive for the culture (LaPointe, 2011). Therefore the aim of cultural studies is to find local meanings and explanations, instead of universal ones. The so called Birmingham school of cultural studies defines culture as a collective subjectivity of a certain community or a social class. According to Alasuutari (2009), the common nominator is that the group has adopted a certain way of living and shared preferences, as well as has a collective perception of the world, and how the cultural group is manifesting and practicing their

collective behavior. Sunderland & Denny, (2007) further define that socially created and symbolically saturated meanings, artifacts and environments are illustrating human life, i.e. how people operate, behave and think in these contexts. Thus the focus of cultural analysis is primarily on meanings and practices that are being shared by the respondents. Similarly, cultural studies are also related to a certain moment of time, as cultures are open systems drawing influences from the surroundings and thus evolving and changing constantly.

The importance of social meanings is rooted into the notion of the reality, which is believed to be thoroughly socially constructed (e.g. Sunderland & Denny 2007). Therefore, it can be argued that the world is not perceived as it is, but always depending on the individual approach and given meanings towards it. In other words, the world appears different to different people. The differentiating factors can be various, but according to Alasuutari (2009), two important distinct demonstrations of the reality are expressed through functionality and cosmological system. The first focuses on the practical meanings that define the life, such as how people are obtaining their living and other necessities of the life with emphasis on the functionality of the physical objects being perceived. While the latter adds the notion that every culture has a grand explanation of the world, which aims to answer everything there is. In accordance to this line of thinking, this study is giving high importance and attention to the structures defining the grand explanation and the spiritual systems practiced within the target culture, as well as the more practical matters.

### 3.2 Data collection

As the aim of the ethnographic field study is to understand the culture, the methods used are aiming to provide knowledge from various angles of the culture. Hammersley & Atkinson (2007) suggest that ethnographers frequently use a combination of various methods to gather the data, and select the ones that are most suitable for the particular research in question. The most typical methods utilized during the fieldwork are interviews, observations, as well as informal discussions providing firsthand

information from the subject. On top of that, existing documents and artifacts can be collected as a data.

Ethnographers are recommended to apply open ended research approach, with unstructured data collection design (Hammersley & Atkinson, 2007), which was also used in this research. The data collection was not strictly preplanned and was adapting to the research process on the field depending on the circumstances and early findings. Thus the data collection evolved throughout the research and took more shape progressively.

The limited period of an ethnographic field research yields a risk that the researcher is not being able to find the right questions to ask and some important aspects of the subject are either missed entirely or not addressed sufficiently. On the other hand, over exposure to the life of the target community might blind the researcher and hinder the ability to recognize significant cultural features, as they start to seem ordinary (e.g. Berg, 2009). It has been recommended that the researcher ought to take time away from the field or from the data collection to reflect in order to be able to further focus the later collected data on particularly relevant and interesting topics (e.g. Hammersley & Atkinson, 2007).

All the data of this research were collected on a four week field study in Tamil Nadu, India and due to the time constraints no break to reflect the data was possible to take during the fieldwork. Also the lack of company and leisure opportunities meant that the research work was ongoing throughout the time spent on the field, as no other meaningful ways to pass time were present. Interviews, observations and go-alongs were used to collect preliminary data, which was then used to focus the research into more specific narrow fields that were felt important to understand or appeared to possibly provide opportunities for the Finnish diagnostic sector. Also some 300 photographs were taken as they have been found to be an effective way to capture and record accurately the vast number of exceptional characteristics of the BOP environment and particularly visible infrastructural issues (Halme et al. 2011).

### 3.2.1 Interviews

Interviews are a legitimate way of getting into discussions with various actors in the field and provide them an opportunity to interpret matters from their perspectives. The social context, time, place and the interview itself have all their significance on how the meanings are co-created (Tolonen & Palmu, 2007). Therefore, an important feature for an ethnographic interview is the time spent with the interviewee and the quality of the relation. A deeper and mutually respectable relationship can be argued to lead into a better interaction. A genuine interest into the life of the subject, can reverse the standard interview situation and the interviewee can take the lead and start teaching the researcher over his understanding and actions without questions being asked (Tolonen, 2001), thus possibly leading to new topics unimaginable for the researcher. In order to effectively collect data, the interaction between the researcher and interviewee is even more important in the BOP context, as typically the BOP people are very keen on also learning about the researcher and thus two-way communication is recommended (Halme et al. 2011).

In the current research, the interviews were semi-structured and roughly preplanned, leaving room for any unexpected turn the interview might take. As proposed by Halme et al. (2011) interviews were particularly applied to understand more abstract matters such as the needs and values of the BOP people. The emphasis was also to let the interviewees do the talking openly and the discussions were only directed, if they were clearly taking a wrong direction such as turning attention into the researcher's personality and home country or when it was otherwise felt necessary for the information gathering purposes. The approach was flexible and open ended as suggested (e.g. Hammersley & Atkinson, 2007), with topic and theme generation ongoing from interview to another. Emerging new perceptions and thoughts were tried to deepen with the following interviews by constantly refocusing and modifying the questions and discussion topics.

The interviewees varied from ordinary BOP people to the local medical experts and public servants involved in the health care ecosystem in order to provide multi-angled

and comprehensive picture of the subject matters. As different informants have different roles within their societies, they were not considered as equal sources of information and thus dissimilar questions were being asked from different informants, depending on their position and level of knowledge. However the open interview structure allowed the discussion to reach unplanned heights, if the respondent was demonstrating special interest and knowledge on certain topics. Only few of the expert interviews were prearranged, but most took place on an adhoc basis. Majority of the interviews were carried out in local language with the assistance of a translator and only the two doctors, two NGO employees and the HIV program manager were able to sufficiently express themselves in English, which was used in their interviews. Therefore the accuracy of the words and expressions used cannot be verified. The translator himself who also transcribed the interviews had a very good and versatile command of English, so the inaccuracies due to interpretation ought not to be extensive in the research.

<b>Subject</b>	<b>Activity</b>	<b>Number</b>	<b>Location</b>
BOP people (farmers)	BOP interview	6	Kolli Hills
Traditional healer	BOP interview	1	Kolli Hills
Herbal gardener	BOP interview	1	Kolli Hills
Milk society employee	BOP interview	1	Kolli Hills
Village health nurse	BOP interview	1	Kolli Hills
Witch doctor	BOP interview	1	Namakkal district
Village health club	BOP group interview	1	Namakkal district
Head of Medical College	Expert interview	1	Chennai
Child Development Project Officer	Expert interview	1	Kolli Hills
Hospital doctor	Expert interview	2	Kolli Hills
Ambulance driver	Expert interview	1	Kolli Hills
VHN inspector	Expert interview	1	Kolli Hills
NGO employee	Expert interview	2	Rasipuram
NGO manager	Expert interview	1	Rasipuram
HIV program manager	Expert interview	1	Namakkal

*Table 2. Field interviews*

The potential power inequality between the researcher and interviewees (Tolonen & Palmu, 2007) was identified and addressed by increasing the involvement of the local

research assistant in the interview situations and by trying to establish an informal atmosphere before the actual interview started. Also humor and small talk were applied in order to build rapport and to decrease possible tensions, as well as to encourage interaction and responsiveness.

### 3.2.2 Observations

As explained earlier, a typical aspect for any ethnographic study is the physical participation of the researcher into the life of the subject community. In this study, it was done by examining the community and the environment with all senses and taking notes of the observations. A distinction is being made between passive and active observation. This research aimed to utilize the passive approach, in which the researcher tries to stay neutral and hidden from the subjects and to observe the field without influencing it. Although it has been argued that the presence of the researcher is always having an impact into the subjects (e.g. Lappalainen, 2007), which was certainly the case in this research, as a white man was standing out from the crowd where ever I went and I did attract a lot of attention. However, it appeared that soon I was again less distracting, as the people quickly lost interest in me when they realized that I was not particularly doing anything interesting, but only taking my notes. Therefore it appeared that I managed to minimize my effects on the observed scenes. The active observation, which is also called participant observation, means that the researcher takes an active role in the activities of the community and carries out the observations through personal involvement. These opportunities were very limited in this study and possible only during the extended home visits and in the temple ceremonies, when I actually got actively integrated into the events that I was also witnessing.

Observations are written into field notes, which are a core part of the ethnographic study. The field notes are a subjective collection of data, as the researcher is always making the decisions on what to report and what to leave out. Also, how the observations are being perceived and interpreted depends on the person. Therefore, the outcome is only a one possible version of the reality, which is not exclusive to alternative interpretations.

In this research, the objective was to create specified and accurate descriptions of the cultural, social and environmental aspects of the community and the individual life practices, which have been said to be crucial to understand to create effective business ventures in the BOP (Halme et al. 2011). Naturally not all the cultural complexities of the subject Tamil community were covered, but certain situations that were felt important for the research subject or otherwise interesting in the eyes of the researcher were focused, as has been suggested in the literature (e.g. Hammersley & Atkinson, 2007). Due to the language barrier, the observations were rather based on watching than listening, with few exceptions when a translator was available to interpret the observed discussions on spot.

<b>Subject</b>	<b>Activity</b>	<b>Number</b>	<b>Location</b>
General street scenes	Observation	2	Chemmadu (Kolli Hills)
Hospital	Observation	1	Chemmadu (Kolli Hills)
Market place	Observation	1	Chemmadu (Kolli Hills)
Coffee stall	Observation	1	Chemmadu (Kolli Hills)
Restaurant	Observation	1	Chemmadu (Kolli Hills)
Liquor store	Observation	1	Chemmadu (Kolli Hills)
Village scenes	Observation	1	Kolli Hills
Temple	Observation	1	Kolli Hills
Country side / rice fields	Observation	1	Kolli Hills
School yard	Observation	1	Kolli Hills
Pre-school	Observation	1	Kolli Hills
Hamlets	Observation	1	Kolli Hills
Street scenes / town life	Observation	3	Rasipuram
Restaurant	Observation	1	Rasipuram
Temple	Observation	3	Rasipuram
Market place	Observation	1	Rasipuram
District Collectors Office	Observation	1	Namakkal
Private home visit	Observation	2	Namakkal

*Table 3. Field observations*

### 3.2.3 Go-alongs

Go alongs refer to a hybrid method of observations and interviews. The researcher observes the subject while they are carrying out their everyday tasks and interferes by asking questions, if seeing something interesting or not understanding what is happening. The method arguably provides better context related understanding and insight than independent interview or observation. In this research go-alongs were meant to be the main source of information from the people working on the grass root level of the BOP healthcare ecosystem. However due to high level of reluctance and many delays from the authors to provide permits required, only two were being able to carry out. The lack of go along opportunities, were replaced by more traditional interviews and observations. The full day go-along with the VHN took a very friendly and personal course over the day and could also described as “interactive shadowing”, as it became very informal and a two way conversation, instead of only asking questions and observing (Halme et al. 2011). While the time spent with the hospital doctor fits well into the description of a go-along.

<b>Subject</b>	<b>Activity</b>	<b>Number</b>	<b>Location</b>
Village health nurse	Interactive shadowing	1	Chemmadu and Kolli Hills
Hospital doctor	Go along	1	Chemmadu PHC

*Table 4. Go alongs on the field*

### 3.3 Data analysis

The analysis and interpretation of the data is a crucial stage in the ethnographic research. There is no particular way of data analysis to fit every ethnographic study and in this research a hybrid of different suitable methods were applied in order to meet the needs and requirements of the research as suggested by Hammersley & Atkinson (2007). The

emphasis of the analysis is not necessarily placed so much on the actual information, but rather on how it is being applied and how it fits into the broader data. According to Tolonen & Palmu (2007), the most important criteria for an ethnographic research is to understand the social, cultural and material context, from where the responses are emerging and to relate them to the surrounding world in the analysis.

As this is a qualitative study, the foundations of the relevant data analysis methods are also being applied. The qualitative data analysis is holistic by the nature and aims to shed light into the structures of the research subject, which is generally considered to be a single system (e.g. Alasuutari, 2009). Even, as the data is formed by different types of samples from diverse sources as previously presented, they are considered to represent the same cultural and social phenomenon. Also individual people and events are not observed in isolation from the social context, but as parts of wider phenomenon (Sunderland & Denny, 2007).

I followed Ardichvili et al. (2003) suggestion that the new ideas should be evaluated throughout the opportunity identification process, as the evaluation can lead to recognition of additional opportunities and adjustments. The process of analysis started directly after the data was collected by discussing the data with the research assistant in order to recognize meanings and to generate ideas, which were then written down as field notes for further processing. The interplay between data and ideas throughout the research process is a central concept of the so called grounded theorizing (Hammersley & Atkinson, 2007), which was applied in the data analysis. Ideas are generated from the data to illuminate the data further and to link with the other ideas. In other words ideas and the data are both used to make sense of each other in order to further focus the research. Lot of my inspiration for the possible ideas were also drawn from the BOP literature and at every opportunity I tried to relate the data and the ideas back to my knowledge and central concepts of the BOP literature in order to test them. In accordance to the notion proposed by Hammersley & Atkinson (2007), the interpretations were tested throughout the analysis with the new data, as it was being generated to detect the limits of the ideas and to assess possible alternatives. Throughout the analysis process, I also tried to constantly question my presuppositions towards the data of what and why I thought of knowing about the matters under investigation as

proposed by Sunderland & Denny (2007), with the aim to reveal new dimensions from the information and to therefore improve my ability to understand and handle the data in order to detect new meanings and links and thus to enhance the analysis.

The notion that ethnographic research is a funnel like and narrows its focus with the progression (e.g. Hammersley & Atkinson, 2007), as more data and thus ideas are being generated, fits well into my research process. At the end of each day, I went through my day's field notes and new ideas compared them to the previous ideas and data with the aim of modifying structures and questions of my up-coming interviews and to specify the locations and aspects of life for further observations in order to generate further data on the identified ideas as well as to verify them. The approach helped me to familiarize myself with the data immediately and enhanced on the field analysis, which was maximized in order to direct the research focus. It also meant that I did not need to withdraw from the scene for preliminary analysis nor I had to take gap days away from the data collection. On the other hand the approach was very demanding as it meant that every moment of the time on the field was practically spent on the research project through either collecting or analyzing the data and eventually it got really tiring. Since there were no other meaningful ways to pass time or leisure activities available, the data analyzing turned out to be ever present and filled all my spare time on the field.

Interviews turned out to be a challenge for an early data analysis, as they were only audio recorded for later transcription and therefore I had to rely on the on-spot translation. I did not go through the recordings, before I got the transcriptions available due to time constraints and the notes and ideas from the interviews were based on my field notes from the discussions with the research assistant and relying on my memory. Therefore it is fair to say that the interviews contributed less than what they could have for the early analysis. Obviously interviews were analyzed thoroughly, when the transcriptions were made available, but at that time I had long since left the field and it was too late to investigate further the new ideas that emerged at that point.

Observations were more straight forward for the preliminary analysis and the analyzing process started already on the selection of what to note down from observations, as it have been argued in the literature (e.g. Hammersley & Atkinson, 2007). During the

observation, I took only brief notes with bullet points and photographs. Texts were written open more elaborately at the earliest opportunity on the field and thus went through another round of analysis, as while recalling the situations I also tried to analyze and interpret the new data against my ideas, other data and background knowledge. The additional data and ideas from the photographs were again evaluated against the data and ideas observed and noted. The notebook where I carried my field notes was a regular point of reference throughout my time on the field and the earlier notes were always compared with the new data and ideas in order to find patterns to categorize the data or to find inconsistencies to be investigated further.

A major challenge with the research was a relatively short period of time spent with the actual target community that was previously completely unknown for the researcher. Due to the fast pace and high number of interviews carried out, no personal relationships were possible to be established with the subjects apart from the staff of the partnering NGO, who were met daily leading eventually to very close relations, which were deepened further in home visits and dinners during the course of the study. The close personal relationship and frequent informal talks were used to confirm and discuss observations and interpretations from the interviews, as part of the analysis. Therefore the staff members of MGENM: the project manager Mr. Williams in particular, and Director Mr. Shaktivel and translator assistant Mr. Sathimurti, were highly influential in the process of preliminary data analysis.

After returning from the field, all the gathered data were first read with note taking for further idea and opportunity generation. The process could be described as sensitizing concepts, i.e. to get broad sense of the data (Hammersley & Atkinson, 2007) to support the later stages of the analysis. The qualitative analysis is often being defined by two markedly clear stages of “abstraction of the data” and “solving the puzzle”, (Alasuutari, 2007). The abstraction of the data was done by coding the raw data under the specific themes in order to manage it better and to be able to combine different data discussing the same matters effectively in broad categories such as “healthcare”. On the next round of the analysis the themes were further split into sub-themes and categories. The process was repeated until the themes were narrowed down to more abstract such as “attitudes towards foreign service providers”. This approach helped to understand structures and

connections between the categories and specific concepts, which were highly useful later when different findings were again combined to form sources of business opportunities. All the data coding and management was done manually, as no software was available to support the task. Due to the massive amount of raw data emerging from interview recordings and transcriptions, written field notes as well as from photographs, the sorting of the data was eventually an overtaking lasting for months and took several hundreds of working hours.

The data within a certain category was evaluated in order to come up with interpretations of descriptions and explanations on particular topics. This is what Alasuutari (2009) calls “solving the puzzle” and it means that the clues emerging from the data are interpreted into logical meanings explaining the phenomenon. The solving of the puzzle process began from the entry to the field and influenced the data gathering process. It continued throughout the data abstraction phase and went on through writing to the final submission of the research, as the complexities of the study subject with the amount of the data, dictated that no “correct” final solution could be achieved, but the seemingly endless combinations of information are providing new interpretations and thus possible solutions in terms of opportunity spaces. The number of alternative solutions to the puzzle is therefore only being limited by the depth and methods of the analysis and the entrepreneurial creativity.

Finally during the writing phase, the data and ideas were synthesized into the final interpretations that can be seen in the empirical chapters of the research paper. The thematic structure was chosen, as to follow the earlier logic in the analysis, and to discuss different aspects of the subject separately. It was also suitable method for organizing related sections close to each other in the text thus forming broader logical entities. The different sections are not of equal importance, but rather the priority is indicated through the weight and space each section is given, as suggested by some researchers (e.g. Hammersley & Atkinson, 2007). The logic behind order of the sections is to begin with the contextual and cultural factors in the “Community Base” chapter before getting into more detailed matters of the healthcare, which also from readers perspective require certain background knowledge to make sense. The same logic can be found within the chapters, which start with orientation or introduction to lay

foundations for the following progressively developing information. The sections and subsections also begin with general information, before moving into more detailed descriptions, with the only exception being direct quotes, which were occasionally placed at the beginning of a section to provide the reader an early glimpse of a certain key notion that was coming up in the particular part of the text. It was chiefly a writing style decision to stimulate the reader by mixing the chronological order of the text. I decided to use direct quotations in the empirical findings to illustrate directly certain aspects of the data in a raw form and exactly how they were received and also to provide voice for the BOP people, as has been suggested in the literature. It also suited well to my chosen descriptive style of writing, since I felt that some of the raw quotes can tell things in a more blunt and powerful way than I could ever have been able to describe myself. However, the direct quote is frequently followed by my commentary and interpretation.

### 3.4 The validity of the study

As a typical feature for the qualitative analysis is the absoluteness towards the data that does not allow exceptions (Alasuutari, 2009), all the data had to support the interpretation to be considered conclusive and to feature in the research findings. In a few occasions there were exceptions in the data, which I tried to explain sufficiently along with the primary explanation as has been suggested in the literature (e.g. Alasuutari, 2009). The contradicting data was fortunately limited due to analyzing efforts taken already on the field, but naturally some data was excluded from the interpretations altogether as for being inconclusive.

Since I have been personally in the crux of the research there are some potential issues related. It is widely agreed, that an ethnographic researcher can never be truly objective observer of the culture due to the certain set of meanings embraced into the mind of the scholar. Therefore it can be said that in ethnography the data is not being gathered, but it is always being produced by the researcher (Sunderland & Denny, 2007). The outcomes of the ethnographic studies are dependent on the agent and thus two different people

carrying out identical studies would most likely come up with different findings. All the interpretations of the meanings in this research are solely relying on my personal analyzing abilities and all the sources of opportunities are depending on my entrepreneurial creativity and thinking. Therefore the study is highly subjective and inevitably heavily influenced by the cultural background and other characteristics of myself.

However, the concern over the objectivity is not essentially a critical one, as with the cultural studies, there are no absolute truths to be found and the subjectivity of the researcher can be said to be an integral part of the study. According to Hammersley & Atkinson (2007), the researcher cannot avoid of having an influence to the social phenomena that is being studied through presumptions and our personal “common sense” knowledge and methods. Nevertheless it does not necessarily hinder the study, unless it can be seen problematic, in which case self-reflection is required. Eventually the responsibility to assess the researcher's influence to the study is left to the reader. Obviously, I have tried to consider how my personality and biases have been shaping the research and the findings. The current study takes therefore the reflexive style and aims to critically address any prejudices and instances where the researcher or other factors are influencing respondents in order to enhance the certainty of the findings.

# 4 THE COMMUNITY BASE

## 4.1 The physical environment

### 4.1.1 Orientation

The tribal area of Kolli Hills is located in the center part of the state of Tamil Nadu. It belongs to Namakkal district, which also has the district administrative capital city of the same name. Kolli hills are 65 kilometers or roughly a two hour car travel away from Namakkal and from a smaller town of Rasipuram.



Figure 7. Map of the Namakkal district

The first hour of the journey is through picturesque agricultural landscape with lush tropical vegetation, palm groves and water buffaloes grazing lazily around. In the second hour, the road starts to coil through total of 70 hairpins up to the hill and finally reaches an altitude of 1000 meters above the sea level. During the ascend, vegetation adjusts to the noticeably cooler hill climate and abundant monkeys are approaching vehicles in a hope of getting food, which in fact many people are throwing out from the

windows to them. According to the driver it is both for amusement and to provide good luck.

The area seems to be adequately connected to the lowlands, as there are several buses coming down from the hills. Chemmadu is the main hub of the hills and also the only small town in the area. All public services and bigger stores are located there. The society has lost its traditional self-sufficiency, which it was carrying on until 1980's, when the full-fledged road was introduced (Nanjan, 2004) and today most of the supplies are needed to be transported from the plains and thus there is a substantial traffic up and down the hill. The goods are significantly more expensive in Kolli Hills due to the transportation costs and limited competition.

Chemmadu is home to the local primary health care center (PHC) and to some government offices. At least one of the offices was unmanned and deserted, apparently because of the lack of interest to work and live in Kolli Hill area among the civil servants. There are also a couple of tourist oriented resort hotels in the area, but they seemed very quiet. I was told that it was not season for them and that the Indian tourists, who they are catering, come here to cool off during the hotter summer months.

#### 4.1.2 Infrastructure

Running water is available to some establishments in Chemmadu town and nearby areas. Small water towers are visible in the scenery, as are tele-towers, which are providing mobile coverage for the area. They come surprisingly in pairs, as competing operators build their own ones instead of sharing them. In an obviously poor area lacking with some basic infrastructure, this seems like a criminal waste of resources. Nevertheless the operators have done solid job with the network coverage and I was never out of reception in the area. However, the road down from the hills had some blind spots. Mobile handsets were frequently evident among the public, also indicating substantial cell phone penetration. Interviews supported the fact that families generally own a handset or at least have an access to mobile through neighbors.

After leaving the town, rubbish piles seem to become a more common sight. Particularly plastic waste appears to be a great problem in the area, a notion supported by signs discouraging the use of plastic bags. I met a family, who were running a modest recycling business, collecting certain types of plastics and then shipping them over to a refinery, which in turn sent back plastic pots made of the recycled material to be sold again. It seems that nothing of value goes in waste here, and creative recycling of goods and materials is prevalent.

Electricity lines became rarer the further away I travelled from Chemmadu, before they disappeared completely. The most remote villages in the area do not have power lines, but need to rely on more expensive electricity from generators, if available at all. The more well off people in the area also have private generators to supplement sporadic electric supply. Even in lowland town of Rasipuram blackouts occurred several times a day, but in the hill area they seemed to be much more frequent.

The road network does not cover the whole area and walk paths are a common sight in the landscape. Inside villages there are no pavements away from the main road and rough paths are connecting buildings and fields. A curious detail is that people are not wearing sandals on the fields for the respect to the land and its yield, yet again indicating to superstitious beliefs. Many villages and hamlets are isolated and far away from the nearest road. Some of them can be more than an hour's walk from the road, which in turn can be tens of kilometers from Chemmadu and basic services. According to villagers public buses are typically running once in three to four hours to their villages. Cars are uncommon in the hills and motorbikes are the vehicle of the choice for people, who can afford them. Particularly in Chemmadu motorbikes are everywhere, as people are coming from villages to run their errands.

Main villages and junctions have tea stalls, small kiosks and even motorbike repair shops. The goods and services are noticeably more expensive away from the main town of Chemmadu, which in turn is more expensive than the lowland towns. Therefore Kolli people are paying more for their goods, i.e. the poverty penalty, than the average Tamils. Due to lack of toilets and sanitation, the level of hygiene seemed to be very low. People were seen bathing themselves and also washing up kitchenware on a little river streams.

Yet the cleanliness of the water remains unknown. There is a wealth of freshwater sources in the area, but it is hard to tell to what extent they have been contaminated. There is no heavy industry in the area, but the household and agricultural waste often ends up into the waterways.

I saw a very remote village on a hillside, which appeared to be reachable only by a small path climbing up and down in the terrain. It has to be extremely difficult to get supplies and materials transported there and it is difficult to imagine young children and elderly people traveling back and forth. During the monsoon, weather makes the slopes muddy and slippery making the place even harder to reach. In the afternoon, many pupils are walking back from the school on the roads. Schools seem to be far and between and located to bigger village clusters. The lack of transportation means long walks for those living away from them.

## 4.2 The society

### 4.2.1 The people

Kolli Malayali are the original people of the area and today there are around 50 000-60 000 of them living in 275 villages. Last census was carried out in 2001 and no-one knows the exact current population. They have been given a status of scheduled tribals, due to their economic and societal backwardness and they are entitled to certain government privileges and developmental favoritism in order to bridge the gap with other Indian communities. However, most of the people in the area are still living in intense poverty.

The population is 98% Hindus and the only few Christians are living in or around Chemmadu. Apparently the people from different faiths are coming well along together and there is no history of religious conflicts in the area. Ethnically the people living in Kolli Hills look exactly like the lowlanders, but there are some differences in their appearance. Kollis are generally skinnier and there are very few obese people around, unlike elsewhere in Tamil Nadu, where good portion of upper and middle class seem to

be overweight. Lot of Kolli people appear to be healthy and fit looking. Seemingly many do heavy physical work and are used to walking a lot in the hills thus getting more than enough of physical exercise. There are more unwashed people with unclean clothes. That is probably consequence of hard laboring and general poverty. They also have rougher faces with more scars indicating of demanding life. Men are also wearing more traditional lungis (sarong) instead of trousers, while many women wear loose night dress type outfits or saris.

While people were generally very friendly and curious towards me, there were certain taboos. For instance pictures cannot be taken of young women, little babies or religious shrines. Even saying hello to a female can be considered highly offensive and trigger a conflict. I did not experience that in first hand, but were told on several occasions by my assistants to be careful in these situations. Even if most people are living in substantial poverty, people appear to be happy and content in their lives. Most of them would not want to live elsewhere even if the opportunity arises, as their identity is strongly associated with their families, communities and to the land of the Kolli Hills.

#### 4.2.2 Social life

*“After a long day work we do not have anything to do except to have our food and sleep if we have TV we may see if for ten minutes” (BOP2).*

Small villages are almost deserted during the day time. Apparently everyone goes to the fields or laboring and only few women with young babies can be seen around. Basically all daylight hours are being spent for working and the little time in the evenings is dedicated for the family and household work. In bigger villages, there are many people present and it looks like, that almost all activities including cooking, washing and bathing are carried out publicly on the streets and in front of the houses. Quite a few people were sleeping outdoors too. Men and women are typically in their own groups and socializing together.

In Chemmadu lot of people are just passing time around the market place. Unemployed men come here every day to wait for casual work. My translator said that they are spending the time by gossiping with nothing else to do. Surprisingly the people are visibly smoking less cigarettes and bidis (Indian rough tobacco) than their counterparts elsewhere. Some are chewing betel nut, but even that seem to be less popular than in the plains. According to my assistant, most of them simply cannot afford to smoke as much as they would like to.

#### 4.2.3 Anti-social behavior

*“Even the youths have this bad habit and when the children grow up they start to drink and if they are told something they get into argument and it leads to problems” (BOP5).*

Mr. Sathimurti highlighted a widespread issue of alcohol abuse among Kolli people. He says that the men do not have any meaningful activities in the evening, which is leading them into binge drinking, which in turn leads to various social problems such as domestic violence and accidents while driving under influence. Young people are also starting to drink from the early age, damaging their already limited opportunities. Alcohol abuse is having an impact on people’s health through increased numbers of kidney, liver and mental problems. He adds that neither government nor state is addressing the issue.

The government run licensed liqueur store is one of the busiest establishments in Chemmadu. Mr. Williams says that while the state of Tamil Nadu is formally prohibiting alcohol completely, the lucrative income related to its sales is too much to resist for the authorities. The alcohol here is more expensive than in other states and thus providing significant profits, while hitting hard the economies of the people buying it. After the purchase around half of the customers went directly into the backroom of the next door restaurant to consume their drinks in a bar environment. These establishments are strictly banned in the state, but the place was operating openly and

everyone in the town must know what was going on there. Even the police had to be aware of the illicit consumption indicating corruption.

#### 4.2.4 Livelihood and money

*“We are happy about the agriculture here and until our death our agriculture is most important thing in our life as it feeds us” (BOP5).*

Most of the people in Kolli Hills consider themselves poor, but majority seem to be content as their economic status have been steadily improving in the past, as a consequence to the favoring policies of the government. There are now more work opportunities for labor and the farmers are being paid more for their produce than in the past and the ones in most need are being given food rations by the government.

Kolli Malayali is no longer a closed tribal system and the society is moving from subsistence agriculture towards commercial agriculture (Nanjan, 2004). Many Kollis have sold their traditional land to lowlanders, and now work for them in the fields, while there are also many small scale agriculturalists, who still own their own land. Cash crops, such as tobacco, tea, coffee, spices etc. have replaced more traditional local produce and the harvest is also being sold to lowlands. Middle men are also taking advantage of limited market places to sell the crop in the hills by taking enormous commissions.

Most of the people in the area are engaged into day to day laboring on agriculture, cotton mills, construction sites, transportation, cleaning or doing ad-hoc work on small family textile or tobacco factories. Mr. Sathimurti says that food as well as money, is commonly used as a payment for the labor, who earn around 3000 rupees per month, which is enough for a family to survive. As for the land owners, there are other factors determining the wealth apart from the land size.

*“I have a family and we are neither too rich nor too poor. We have around four acres of rain fed farm land and three acres of river water fed land for agriculture. We sell the*

*produce to the merchants and brokers and these days we get brokers who collect the coffee seeds on behalf of Industries and we also have a go down where we can sell our products. There is a farmers' association who fix the price and all these things are determined with comparing the cost with other markets and taking into consideration of the cost involved in producing it. If the farm is next to the road it will fetch better profits. It (the economic wellbeing) all depends on the individual's living style and the way how you spend and the size of your family. If your family size is small, it's enough and if it's large it will be too little to meet your needs. If a family has 5 acres they have earnings to meet their needs and if the person is having more than 10 acres they have little surplus earning and people with more than 20 acres of land will be rich and people who have more than 50 to 100 acres of land will be really rich" (BOP3).*

The importance to have an access to the road was also confirmed by other interviewees. Without a road, a farmer has to pay much more for the transportation and is losing out on the predetermined prices, as there is no organized sales network and they are more vulnerable to the buyers will. Also the size of a family obviously affects the family expenses and especially young children and girls are being considered solely as a source of costs for the family.

Banks are providing loans only to landlords and not to ordinary farmers, who are resorted to rely on credit from their family and neighbors or they can get informal loans from whom they call "estate people". They charge much higher interests than the banks as the rates are added to the loan on a monthly, not on a yearly basis. Typical monthly rate is 2 %, which cumulatively can quickly become a massive burden for the borrower.

Men are in charge of household economies and women do not have own money unless they go to work themselves. Therefore they are economically completely depended on their men. An NGO employee explained to me that, "even if a daughter goes to work, she has to give all her money to the mother. Whatever expenses she has such as to get a new sari, a meager amount is taken to her, but the rest goes to the mother". She is expected to earn her deposit for the marriage and she is being compared with the dowry monies of the other girls in the neighborhood and thus needs to save in order to get a good husband.

Each temple has once a year a grand festival and families are spending thousands of rupees for the proceedings of their “home” temple. According to a priest, there are yearly many other festivals and family functions where people have to invite their relatives and they are expected to lavishly spend on the ceremonies. Therefore to practice the faith is a significant economic burden for the people.

#### 4.2.5 Education

There are 63 schools in Kolli Hills including three higher secondary schools, which is the highest level of education locally. However, widespread illiteracy prevails among the people of the Kolli Hills. Few elderly people has even gone to school, while the adult population, particularly farmers cannot read either. There are exceptions though and I did meet in person some agriculturalists in their 30's and 40's, who had managed to go through the primary education, with some college level studies too. One could clearly tell from people, whether they gone to school, just by talking to them. The more educated ones were clearly more aware of the world and their own situation and thus seemed to be more in control of their lives.

According to Mr. Sathimurti, the level of education in Kolli Hills is poor. He says that there are major challenges to get teachers in the area and therefore majority currently working are unqualified. Class sizes are vast and according to him there is only one teacher per 120 pupils, reducing the quality of teaching significantly. Nowadays nearly all parents are putting their children in to schools to get some education, but some of the kids attend schools only occasionally due to distances and because poverty is forcing parents to pull kids out from the school to do something more productive. Indian government is aiming that every child would be educated until the age of 18, but currently Kolli people leave school at the average age of 13. Due to the lack of education, supernatural beliefs and practices are even more prevalent in the area than elsewhere in India. Government education schemes are favorable to a scheduled tribe, and Kollis are being paid allowance for schooling and easier access to higher education

in order to encourage them. Government is also helping women education through grants.

#### 4.2.6 The role of the family

*“Marriages are the strength of the society” (NGO2).*

There are many villages in the area, but perhaps the most typical setting is a small hamlet, formed by around 10 families living fairly close to each other. Families are extended to include many generations under a same roof thus typically gathering over ten people, but much bigger units are not unheard of either. During the day time, there are very few people around houses. Men are either working on the fields or laboring, while women are herding animals or collecting wood and taking care of other household work.

Family is extremely important for Indians and Kolli Malays are no exception to that. The extended families provide the primary social safety network for the people. For many people the family life provides a haven from the harsh realities of the world. People have different and more playful roles in their families and the time spent with the family is highly appreciated. The family is also a source of pride for the people, who enthusiastically show around their modest houses, proudly present their cooking and show off their children's qualities. Women are traditionally responsible for all household work, while children are highly involved with all family activities and start helping their mother from very young age.

The family members support each other when needed and there is a strong sense of collectiveness and togetherness between the family members. Many people said in the interviews that the family was the most important thing in their lives and people are strongly identified not as individuals, but members of a certain family. It seems to be like that people do not live for themselves, but for the others and the interests of the family come before personal ones. The family reputation is also more important than their own wellbeing, as having a bad name would impact their life in the community.

*"People ask from themselves, what their neighbors would think about their family and the first question is, if there is shame on us? It is more important, what others feel and what would would they say about the family. In a village the family might get discriminated, if they do not look after their reputation. People think that, if they are in shame they would have to bow their heads to the others" (NGO1).*

Arranged and underage marriages are a standard practice in Kolli hills, as they are in most of the India. However, Mr. Sathimurti says that Kollis marry even younger than elsewhere. Children and particularly girls are getting married often as young as at the age of 13, often with adult men. The sacred Veda texts state that the husband has to be older than the wife. Marriages are considered as a long term plans and therefore every effort is being made so that the members of both families and relatives are happy with the arrangement. The least thing in consideration is the will of the people getting actually married. The parent's happiness is the most important and they have their own priorities such as whether the families are suitable for each other and whether they are of equal status? Are they from the same community and are they from the same sub-sector of the community? Are they financially sound and what type of benefits they get if their child is to be married? These are the questions are deciding, who people will marry.

My assistant explained, "For example if a boy is from an educational family and running an institution, surely they would be looking for a girl who has educational background. So the institutions would also be combined and some of the businesses would be shared and the business would expand. If they are from transportation, they would look other family in that industry. After the marriage, the families will help each other financially and through other means". Therefore marriages are not only a way to expand the family, but they are also important business partnerships.

#### 4.2.7 The role of the Tamil women

*“This is a male dominant society. First, a girl has to be depended on her father to get through the childhood and when she gets married she will be dependent on her husband and later she will be depended on her children to look after her. All her life she is in the mercy of others and does not have any freedom to think or act. So if anyone speaks, the girl has to shut her mouth”. (NGO1).*

Husband is the undisputed head of the Tamil family and woman’s role traditionally is to serve the man. Even though female are more allowed today than in the past, widespread abuse rooted into the culture prevails and equality between sexes remains as distant as ever. My assistant says that like in many other places in India. ”Kolli girls and women only live for other people. Before they get married, father is the king and in the marriage it is the husband”. The message is clear, without a man a woman is nothing in these communities. A woman is not expected to talk or argue against anyone, but to obey their husbands. It appears that a purpose for a woman is to take care of her husband, in-laws and even other relatives. If a family is not wealthy enough to have servants, the wife takes care of all household work.

A male NGO employee described women position through fairly stereotyped example, but still well illustrating the inequality of the husband and wife: “They expect women to get up early and men can roam around and when they come back they expect women to serve them food and do the dishes and put them back into right places and then go back to bed. Before the man gets up, she has to take care of all the household work, sweep the floor, take care of the back yard and everything, milk the cattle, prepare the coffee and then to wake up the gentleman, who is sleeping. And to take care of the children and this man is living like a king in his family. He may be beggar, but in the house he is living a royal life, because he has a wife to take care of him. And if she is sick, she will be driven away to her mother’s family and the mother has to take care of her. Husband’s responsibilities over the wife are non-existent”.

The abundance of spare time of some male in Kolli Hills is in a huge contrast to the women situation, who basically do not have any free time. It seems that the roles of the

sexes are so deeply rooted, that one just simply cannot participate into others duties no matter what the circumstances are. According to Mr. Sathimurti, a woman's reputation is extremely important in order to get married. Tamil women always move to live with the husbands family after the marriage, but can be thrown out from their new families for a minor reason such as not being able to give a male child or if not getting along with the mother in-law.

Abortions are frequent consequence of the sexual behavior among Kollis. Very young girls are not ready to become mothers and also babies being born outside marriages are generally unwanted. There are no proper facilities for abortions leading to the use of age old traditional methods. These include homemade natural medicine, drastic cure and even witchcraft and magic. The marriages are arranged by the families and dowry money is being paid on behalf of the woman as to compensate the husband for marrying her. Dowries can be enormous and place families into economic hardship for years. Frequently girls from poor families are being married to much older or men with appalling reputation, as they would settle for fewer dowries. Government is supporting poor women to get married through grants and is therefore somewhat addressing these issues. Once a girl is born, the government places a deposit on her name, which is given to her at the age of 18 to support her family. According to an NGO employee "the government is even giving few grams of gold to families who live below poverty, so that they can get their daughter married".

These days' divorces are happening for women standing up and protecting their rights. There are groups to support them and assist in the legal proceedings, but divorcees are still being branded in the eyes of their community and family. And after a divorce, the situation might not get any better in the next marriage that would be arranged for them, as with a status of divorcee, it would be more challenging to find a new partner. My assistant explained his views of the situation: "Things are changing and it's difficult, because India is not ready for divorces. So it's not easy, if woman says she is not taking it anymore, they call her relatives and complain how they raised her and then they would tell her to act accordingly. Children will get lot of trouble too, as divorced man and woman cannot live peacefully. It is a society where everybody is eager to know

about others. So it's difficult for women to divorce and if they do, they are forced to get married and remarried again”

Widows in India do not have rights over their husband's property and are not tolerated in their husband's families and therefore they either need to return to their old families or to move into designated safe houses for widows. They must wear white on all occasions, so people would recognize them. Widows are generally thought to bring misfortune and are not even wanted to be seen. The old tradition, the lack of education and strong belief of superstitions are behind these attitudes, which are thus more common in rural and underdeveloped areas. My assistant, who has been working extensively in the field of women rights says that, “If they (widows) have family members around they are little more stabilized, but otherwise they might need to give away (their bodies) and they might get infected”. Other interviewees confirmed that, lot of widows end up being prostitutes, as they do not have a family to support them anymore and they are denied opportunities to generate income by the society, highlighting the important role the family is playing in ensuring social and economic security of the people.

The boys are always given the priority in the families, because having a girl child in a home is a great financial burden for the parents primarily due to the dowry system. The level of education provided to the girls is also related to the dowry system. Male children are kept in school as a family investment for the future, while female children will be given to other family anyway they are not considered worth spending. Girls go to worse schools and are often pulled out entirely around the sixth grade. Even the most talented girls are regularly denied change to educate themselves. When girls reach their puberty they stay more in their houses and cannot meet boys anymore. That is to protect them from abuse, but in a way the isolation can be even more of an abuse in limiting their future life prospects. As girl children are generally unwanted, people can take measures to avoid having them.

*“Female infanticides are still happening in some places. It can happen in all levels of society. Once a woman gets pregnant, they are taken to a scan center and they are being asked to check the gender of the baby and sometimes if it happens to be a girl, an*

*unofficial abortion takes place. They even do it in some hospitals! As the hospitals are interested to get money from the patients, the midwife might be asking what is the previous gravid and if they say I have a male boy and a new boy comes, they can change the baby with other mother and get money. And in some places if the family gets a female child, in a day or two, they might roll the baby in a bed cloth and place it upside down, so the baby gets pocketed and die” (MGENM employee).*

Some stories of newborn babies being abandoned were also seen on the newspapers during the field research and thus confirmed the practice to take place in the region. However, taking into consideration the challenges that Kolli people are facing in order to even get to a minor clinic, it is difficult to see vast numbers of people seeking into scan centers to predetermine the gender of the unborn, as such facilities are not available in the region. Presumably scan centers are for more affluent members of society, while the BOP people are not aware of the gender of the fetus. The quotation also suggests that there is the element of corruption present even in the lower levels of the health care system and among the nurses and midwives.

#### 4.2.8 Communities

*“United we are, we all can live well” (BOP3).*

Communities are the defining characteristic of Indian societies and they are strongly related to the caste system and generally prevalent class consciousness. Communities are typically formed by people living in a certain area or village and they can be formed by people of particular profession such as sandal makers or rickshaw pullers. Communities have particular characteristics that distinct the members from the others. These can be things such as how people talk, behave or are dressed.

A community may enclose only a handful of people or they could be nationwide with hundreds of thousands of members. Some influential communities have established political parties to pursue their objectives. Communities are normally ruled by the wealthiest individuals, as they can influence the others through their economical social

means. Therefore there is set a hierarchy within the communities too. Communities are strongly united and defend their members aggressively. I witnessed a taxi driver having an argument with his client, and at once several others gathered around him to support his cause. My assistant said that, one should never start quarrelling with them, as they would always crowd you.

Kollis belong to inferior communities compared to the lowlanders, and they can be subject to abuse. Traditionally people from lower social classes are used to obey their superiors and cannot challenge them. There are servant communities, who can be kept in slavery like working conditions.

*“Suppose they aren’t monetarily sound and their sub-caste is low, the higher class people dominate them. They are at the mercy of the landlords or other people who could give them a job. So they have to bend down and whatever the society tells them they will comply. They are stuck in a same place, because going to a new place for job is difficult, as people would not know them” (NGO3).*

Kolli Malayas have a strong affinity towards their own community and their social gatherings and leaders are much respected. People do not trust other than their own community members and never talk personal matters to the outsiders, even if they are otherwise in a friendly relation. According to an NGO employee, “Kolli people are very aware of their neighbors, and what happens to their people and in their society. For example, people are monitoring who is coming and going out, because they don’t want to be cheated. Kolli communities are very strong compared to the plains”. The uniting factor in Kolli communities is the economic hardship and as they have to defend themselves from outsiders, who they perceive hostile. Thus they have to look after and be dependent on each other, as a way to survive and enhance their lives.

Outsiders cannot join a community either. So, when a people move to a new location, they are also taken away from the support of their community and have to manage independently in a society, where others are united in their communities. I heard a story of how an alien was driven out from a village for not belonging to the same race (community) and thus not being considered reliable. It is obvious that the wariness towards others is also a consequence of the lack of trust in law enforcement in

protecting people. A farmer illustrated their typical attitudes: “People who know us will respect us and others will not respect us. We believe that if a person does a mistake either knowingly or unknowingly they are to get a punishment. We take care of all our guests and provide them food even if we do not have it for ourselves but if a person is indulging in any anti-social activities here people will take action”.

#### 4.2.9 Community based organizations

*“Government is supporting us by providing loan to us through self-help groups”  
(BOPI.)*

Community based organizations (CBO) are a typical feature of Indian communities. The common nominator with these groups is that they are formed by the people themselves, who are also responsible for the success of the CBO. They can be for recreational purposes such as sports or fan clubs and actually fan clubs for a singer or a sports star are very popular among the BOP people in Tamil Nadu and they can be found in almost every village. Furthermore CBO’s are often educational or religious associations

There are also increasing numbers of self-aid groups. Typically they are formed by around 10-20 members saving for example 100 rupees each per month for half a year, before getting a group loan. There is a strong group support and pressure, if a fellow member is having problems with savings, as it also affects others loan opportunities. Loans are meant to be used to start small businesses for instance kiosks and micro hotels or to buy livestock, but in many cases the money is used on pressing personal needs such as food, housing and health.

#### 4.2.10 Migration

Due to high unemployment and other social challenges some Kolli people are migrating to cities. Even if they lose the protection from their community, the anonymous life in a

big city can be an attractive prospect particularly to those ones who have experienced discrimination or other hardship. Cities have more job opportunities and salaries are better. Also the modernization of Indian societies is occurring faster in cities, thus reducing the burden of some traditions over the people. However, there can be resistance from other family members to let people, especially women, to move into cities and thus slowing down the phenomenon.

*“Hereditary people are against the migration. They say you should not go outside (to cities or towns). Who would take care of the house and the land? They want some people to serve them. To do that, they use this tool. We should not leave the tradition, this and that and all kind of speech will come up and that will force the people to stay. Whoever escapes these things is outside of everything. But they are capacitated to ride a bike and even drive a car. These kinds of habits are not changing. It will probably take another century, before all women will be educated” (NGO1).*

#### 4.2.11 Religion

*“People fear that if they do not follow the teachings bad things would happen. It is a genuine fear that is keeping the people in faith” (Brahmin).*

The religion is a major influence in Tamil Nadu, which is one of the most devout and religious states in India and in the world. Alcohol is banned in the state, while vegetarian restaurants dominate the cities and the religious teachings are present in people’s everyday activities. There are estimates that 60-70% of the people are following religion strictly, while the rest do it more nominally, but are still participating actively into religious practices. Atheism hardly exists in this part of the world and is generally considered oddity. I was frequently asked questions about my faith and the non-active practice was repeatedly found out to be a challenging concept to comprehend for Tamils. It was also obvious that people are very open about their faith and are not afraid to talk and practice it in public unlike in Finland where many consider religion to be a highly private subject.

Almost all Kolli Malayas are Hindus and there are very few Christians living in and around Chennadu. The hill people are clearly carrying less religious markings in their foreheads compared to the lowland Tamils, even though many of them are devout Hindus. My guide said that they do not have time for religion and ceremonies, which is in line with their work centered lifestyle. Another reason is that the distance to travel to the temple is a genuine obstacle for many and there are no or very few members of Brahmin (priest) or other high castes around, who are expected to visit temples more frequently.

Temples are run by local families or by the village community and they are publicly funded and receive substantial private donations. Members of lower castes, in which majority of the tribals belong, do not visit temples as often, as they take a more lax approach towards formal religious procedures. Although, it does not mean that they are less devout. Everyone, I met in the Kolli Hills were sincerely religious.

The religion is ever present in the Tamil societies. Businesses, people and even vehicles are named after gods and goddesses. People, houses and vehicles are also decorated with religious symbols and other markings bringing them good fortune. Sometime they carry a practical meaning too: “You have also seen these rangolis (symbols on ground) made of flour and their purpose is to feed the ants and insects. Ants are needed and everything is needed to live ecologically balanced life. There is also the practical reason of feeding them outside so they won’t come in to disturb us.” (BOP7)

Hindus are driven by spiritual fear. The fear factor plays an important role in people’s lives, as the belief in karma (law of cause and effect) dictates that wrong doings and ignorance to the teachings will have terrible consequences in their lives. Therefore the fear of bad karma is guiding people in their everyday lives, but it is also hindering the changes in the society, as the modernization can be seen going against the old religious teachings. For example, gender roles are defined in the ancient Veda texts and therefore any empowerment of women rights can be claimed to be an offense to the teachings and thus a source of bad karma. As the religious teachings are extremely influential to the people, the religious organizations and leaders are wielding tremendous power over the Tamil societies. They are interpreting the teachings and have the power to approve or

disapprove with anything happening in the society and can mobilize the people on their will.

## 4.3 Accessing information

### 4.3.1 Formal sources

*“Although things may be well documented they are not necessarily true” (NGO1).*

In India protocols are followed strictly through the chain of command in public offices. In order to speak with an official, it is mandatory to go and get the permission from his superiors. The process can take days or even weeks and the people involved might be in different towns, as layers of organization are being covered. Permissions to access grass root level personnel are being granted by the top official, but even after the authorization it is not feasible to access the desired subject directly, but every layer of the organization from top to bottom has to be covered in the process. Although, the middle officials are unlikely to interfere once their superiors have given an approval. The permissions are arranged through personal contacts, which seem to be extremely important, as without right contacts it can be difficult even to have an opportunity to present the request. Persuasion skills are crucial in order to convince the official. The fact underlines the importance of having a capable local partner, who can make the arrangements over the language and cultural barriers.

My research assistant was highly competent in dealing with public administrators. He explained that it is crucial to have a good knowledge of the protocol and in this case over the health care systems and organizations in order to be effective. Personally he was always polite, direct and diplomatic in his communication, which seemed to work well. He also cracks jokes and invites officials for lunch or tea in order to create a more personal contact. He pleads for noble causes such as aid for children and never asks anything for himself. He is highly determined and confident to accomplish his

objectives, which he draws from the trust that god is on his side. All this makes him highly effective in dealing with the government officials.

A meeting with an official is a strictly formal occasion. Guests are expected to dress appropriately and can only sit after being invited to do so. The official leads the discussion and you are expected to answer the questions. Yet, agreements are rather done unofficially, as following the rules can be a complex undertaking full of red tape. Obviously that gives an advantage to the official, who is always in a position to request to see certain permits or paperwork that you do not possess. Therefore bureaucrats yield immense power, as they can deny information and permits or even stop projects completely.

On the other hand officials in India seem to be very much restricted by their position as a government employee and thus representing official views over matters instead of their personal ones. Like everyone else in Tamil Nadu, the officials seem to be highly culturally sensitive. They would never talk against any Indian or local cultural features. Before we met a high ranked bureaucrat, my guide told me couple of times to be very respectful for the culture and the institution in order not to upset him, as that could have cut short the discussion and have negative consequences on the project. The officials always expect lavish shows of gratitude and appreciation for their work, time and effort, which is customarily given to them at the end of the discussion in order to retain the relationship. Many interviewed people working on the field, suggested that the official data is frequently inaccurate as it can be politically motivated depending on what the government or officials want to achieve with it. Therefore all official information gathered ought to be verified from other sources.

#### 4.3.2 Unofficial sources

Sometimes the chain of command can be broken and I had a chance to talk unofficially with a high ranked health care officer, who was willing to provide intelligence without the required permits. The situation is precarious for the person as his reputation and

possible career can be at stake. The motivation, why he was willing to take a risk and have an unrecorded discussion was, because he felt that the research I was carrying out was important and could have an impact for his people. The personal motivation of the official in question seems to be crucial. The fact that he fully agrees with your project and objectives is a fundamental pre-requirement for any unpaid co-operation.

The talk itself was carried out in his private quarters, which were located in the hospital courtyard. My assistant arranged the meeting and we had to go in separated. He seemed to be very afraid of someone seeing us coming and also hearing us talking. He was more open than expected, but was speaking in a very low voice, almost as whispering all the time. He also seemed to be very scared of any noises coming from the outside. It is important to try to be brief and to act discreet in these sorts of discussions in order to ease the person and the situation, as otherwise the discussion might stop at any time. With the unofficial talks, it is more likely that the administrator is truly giving you his genuine opinions, instead of the official ones, as there would be no point to risk oneself for telling fabricated facts or half-truths. Therefore unofficial talks can be a great source of accurate inside knowledge.

### 4.3.3 Corruption

*“An official develops a program based on the portion of the money he can get from the program” (NGOI).*

Even if it appears that the officials are wielding enormous power, it is important to realize that they are only parts of huge machines that are the public organizations of India and their actions are always under scrutiny. Every official has got a superior who, according to my assistant, is giving hard time to him and sometimes also asking for bribes. Thus officials are trying to maintain low profile particularly with their dubious dealings and do not let pictures or recordings to be taken.

There are two levels of discussion. Organizations are talking but on a personal level, where the relationship of the individuals is important. Favors are also being asked, on

the institutional level. For instance, during a negotiation, a government office might ask an NGO to provide them computer training in order to get a certain document completed and signed.

Public servants are being paid depending on position between 10000-30000 rupees per month, which is slightly less than what the private sector pays, but much more than an average Indian salary. Due to the opportunity and widespread custom, they are frequently supplementing their income with bribes, as basically every piece of official paper and certificate has its price. Generally size of the favors that are being expected, depends on the size and the value of the venture, which could be reduced if the scheme can be seen serving public good. It is also possible to speed up processes with enticements.

# 5 HEALTH CARE IN KOLLI HILLS

## 5.1 Health care services

The head director of a medical college in Chennai explains that the government is providing public health care services equally to all members of the society. In the cities everyone is being covered, however he admits that the hospitals can be seriously overcrowded. One of the chief reasons being, the strong migration to the urban areas, that are able to provide more employment opportunities for the people. At the bottom level of the health care system are Primary Health Centers (PHC) and diagnostic clinics, which have trained doctors providing basic care for the people of the area. They also might have sub centers, run by nurses, in the most isolated areas. These units refer patients requiring surgical operations or more sophisticated check-ups to district hospitals, which are located in the provincial capitals. The medical college hospitals are at top of the system and offer widest range of services in the main cities. The director admits that some of the more remote villages are currently not being covered by the public health care adequately.

### 5.1.1 Primary Health Clinic

*“We have the Government Hospital here to take care of our health care and if the health problem is not to be managed here then people will be referred to Namakkal or to Salem. People die as they are not shifted to hospital for treatment. Their services has to be improved as people are much suffering and for instances after my work at my home if I have any emergency condition I have to travel six to seven kilometers to reach Chemmadu hospital to meet the Doctor. If the doctor is not available, then it’s really tough situation” (BOP3).*

The Chemmadu hospital, officially called Primary Health Clinic (PHC) itself is a very little operation by all accounts and consists of two small buildings. There are quarters for staff to live in the hospital area. According to the head doctor, the hospital serves an

area of 40000 people and treats around 100 of them every day. Normally two out of five doctors are on duty and one out of two nurses. He says that the nurses are undermanned, as there ought to be four of them and he refers to difficulties to hire skilled personnel, as they do not want to work and live in the area. The number of personnel and the area's population do not match up and it is evident that the PHC can only take care of a fraction of the people's health care needs in the area.

All doctors are male and nurses female in the PHC. Apparently these days growing number of women educate themselves to become doctors, but male nurses are still rare. Both doctors gave a highly professional and sophisticated impression. They were smartly dressed, spoke fluent well-articulated English and appeared to be thoroughly qualified for the work. On both instances the doctor made a patient to wait, because of the appointment with me. Although, they were not acute and I believe that in a case of emergency their priorities would have been different. Along with the transportation challenges, the long waiting times were found out to be a main reason preventing people from coming to the hospital.

Around the hospital, doors are generally kept open and people can hear and see inside the rooms as doctors are treating patients. I witnessed a patient suffering from cold and cough and whose lungs were examined with stethoscope, heartbeat checked and finally she got a drug prescription, all in public. It was confirmed in interviews that the lack of confidentiality leads people to be afraid to talk doctor openly about more intimate matters due to a fear of being marked by the public.

The main building is a small barrack like structure, where rooms are accessed from outdoors and thus there are no halls or corridors. The waiting area is a roofed patio. All the facilities appear to be neat and clean and there seem to be very few people around. The place does not live up the presumption of a crowded and filthy third world hospital. I visited the hospital at a noon time and it is possible that at other times it does get busier, but at rate witnessed it is hard to imagine that all 100 patients per day are treated, as the doctor suggested.

The other building is slightly bigger with a surgical theater for sterilizations. Doctors and nurses are providing family planning and counseling after the second child. The

objective is to sterilize 50% of those mothers, while currently the level is being estimated to be between 10-20%. Due to the absence of a blood bank, other surgical operations cannot be carried out in the premises. The main function of the hospital is to conduct deliveries, but the more challenging ones such as birth of twins are being referred to Namakkal district hospital. There are a total number of 30 beds for patients in two rooms. Half of them are for mothers and new born with other 15 for patients recovering from surgeries. At the time of visit only few beds were occupied by recent mothers, while the other room was empty, as the surgeries were not being carried out at the time. Mothers can stay in hospital for a week before and after giving the birth.

The equipment in the hospital is very limited to western standards. There is couple of infant warmers, delivery tables and weighting machines for women and babies to support deliveries. The only other equipment available were an x-ray machine, a device that sucks liquid from mouth, intravenous fluids and stethoscopes. Common vaccinations are available and there is a pharmacy on site stocked with basic lifesaving drugs. HIV diagnoses are given through a simple ELISA test.

The hospital has got its own herbal garden, where medical plants are being grown. There is an officer who composes the medicine and administers it to patients. The Siddha medicine room is well stocked with naturally made pills, powders, liquids and oils. Apparently it is very popular among the patients, but the doctors told of being cautious with ordering anything scientifically unproven. All dental operations of the Kolli hills are also being given in the hospital. A qualified dentist has got a room in the premises with modern looking equipment. However he was not present during the visit.

There are additional challenges for female patients. Particularly uneducated and illiterate women are facing significant further difficulties to get treatment, since often they are not able or willing to explain their symptoms to a doctor and the families are not always willing to spend on their health, as described by an NGO employee: “Who can she talk about her health problems? Husband would tell her to take some home remedies and be quiet. Only when things get worse, she will be taken to the hospital. In the hospital she will be asked thousand questions and due to lack of education she cannot explain what she undergoes. Doctors are so busy that they do not even have time

to talk with the nurses, so they just take the stethoscope and examine. There are probably only male doctors around and she does not want to talk with them about personal matters. So to get appropriate treatment for her, the family would have to pay more but they won't do it."

### 5.1.2 Village Health Nurse

The VHN system is in place in the Kolli Hills so that the people could have free basic medical care in their own villages without traveling to the PHC, which people were found unwilling to do unless it is truly necessary. I met a mother, who refused to take her very ill looking young child to the hospital, as it would have taken her all day. Thus for the vast majority of the Kollis the VHN system is the first and the only point of access to the public health care services.

Each nurse is responsible for 20 villages and they are visiting five every week and in a month they can cover them all. Nurses are often originating from the area themselves serving their home and neighboring villages. They do long working days of 10-12 hours a day and they are always on a standby and available in a case of urgent need. Although, due to the lack of drugs and equipment, and because of the transportation issues, their capabilities to take action for serious conditions are limited

*"My area covers 19 villages with 3326 people. Average day, we try to visit 3 villages given they are close to each other. Every village is visited roughly once in 15 days. It's not really possible to meet everyone, as if we go early to a village we may be able to meet few people and others are working at the field. So the left over people will be met during the subsequent visits" (VHN).*

The number of population covered by a single nurse is obviously way too high to be managed in reality and the people said that on average they see VHN's once in a month, but sometimes it can take several months between the visits in more remote areas. VHN's were found out to be seriously undermanned. Only seven VHN's were working

at the time, while the government has allotted 16 VHN's for Kolli hills, so nine VHN position were vacant due to challenges of hiring and relocating people into the area.

*“Whoever is coming here from other part of Tamil Nadu they work her for a year and after that they get themselves transferred to other place or to their home district or town? So only those who are from this hill will be working here long term” (VHN program coordinator).*

The VHN's are studying a three year nurse course in a college to get their qualifications. They have attended various trainings covering subjects such as RTI, STI, IOD (mother care), HIV, and Adolescent. However they do not have a permission to administer injections apart from immunizations or strong drugs.

An ASHA assistant is going along and helping the nurse on her field trips. It is common that the assistants are later promoted to become VHN themselves. ASHA is a government funded scheme to enhance health care of the least fortunate members of the society. There were found out to be serious integrity issues related to the scheme. The ASHA assistant I met was only working seven days a month, not full time as it was being officially charged from the government. Thus the salary of 15 days goes into someone's pocket and the patients are missing her attendance two thirds of the time, reducing significantly her impact to the communities. Also from her salary of 700 rs, someone takes 200 rs. She is afraid to complain as she fears for losing her job, since she is only on a temporary contract and would like to become VHN one day.

The VHN's day starts by collecting medical kit and drugs from the Chemmadu PHC. They normally travel with motorbike to the villages, but the nurse I am accompanying had hurt her arm and had not been able to ride lately. She was very grateful for being able to visit her villages by our car, while I was doing the observations indicating high motivation towards her duties. She identified transportation as a major challenge, since some villages are hard to reach, leading to long walks and to infrequent service to these locations. Therefore the road network and access to the village is virtually determining the level of health care service available.

The VHN's appear to be highly respected by the villagers, who seem to be glad to see her. She walks leisurely around villages chatting with people and asking about their health or if they know someone in need of assistance. Villagers are very hospital towards her, and many are inviting her for a tee, which she always finds time to attend, no matter how much in a hurry she is. The high mutual respect was evident in all her interactions. Although some of the interviewees expressed their distrust to nurses and their abilities. One farmer was blunt in saying that: “We do not believe them or their medication. We believe Doctors as they are the one who treat us and give the remedy.”

All diagnosis are based on the patient's own words and the nurse looks at the tongue and examines forehead by hand. She gives people basic drugs such as pain killers for free and many people are asking for those either for themselves or to their relatives. Everything given is recorded into a notebook by the name of the recipient and thus controlled. Although no other patient records are kept on the field and therefore doctors in hospital do not know the patients history with VHN and vice versa.

The focus of the work is on young children and pregnant mothers, who the nurse refers to Chemmadu PHC for a weekly checkup and to get the nutritious powder and Namakkal district hospital to give birth, as anemic mothers might need blood during the labor, which is not available in Kolli Hills. Few pregnant mothers tried to avoid her, as they wanted to hide their condition in order to avoid counseling. After the second child sterilization is recommended, but for that women need to go to Namakkal hospital.

VHN's are co-operating with Integrated Child Development Scheme (ICDS) program and visit pre-schools to test kids in an age group 3-5 and their mothers on Mondays. Body mass index (BMI) is checked and nutritious powder given. Probably the free powder attracts many people to attend, but there also has to be a significant population not attending the pre-school and thus are excluded from the service and missing out the nutritious powder. The school appears neat and teachers attentive to the kids. ICDS teachers can be promoted to VHN assistants. Every Wednesday is a vaccination day for young babies. Polio, measles, hepatitis B and VCG vaccination for tuberculosis is given. According to the nurse, the program is effective in reaching people and has impacted the health of the children.

### 5.1.3 Integrated Child Development Scheme

Integrated Child Development Scheme (ICDS) is a public funded program that is providing Anti-Natal Care (ANC) with focus on Pre-Natal Care (PNC) for mothers. The scheme enrolls all the pregnant mothers from their third month of the pregnancy and has an impressive network of 77 sub-centers in the area. Mothers' details are registered and once she reaches the fifth month a regular supply of free nutritious powder is being provided.

All ICDS workers are from the Kolli Hills area and trained in educating the mother, and they have also attended the training to avoid the infant mortality. Mothers are educated over the importance of nutritional value in their food, as well as the good hygiene in their houses and encouraged to get Tetanus injection (TT). They work together with VHN's in the field because they are the one who give the TT injections for the mothers and take care of the delivery of the baby.

The project officer claims that all the parts of Kolli hills are receiving the service, as a survey is done every month to confirm that no mother is to be left without the service. There are 77 centers functioning at the village level in the area and the centers are monitored by two supervisors. In the previous year, more than 1,000 mothers and more than 2,000 children from the age group of 6 to 36 months have benefited from the scheme. However ICDS employees do not have any equipment at all to support their children health monitoring activities, but all measurements and diagnosis are based on examinations either by looking or touching. Children and mothers appearing sick are referred to hospital. Another challenge, the officer said was the transportation in the hills, since the public transportation does not cover the whole area and the road networks in general are poor.

#### 5.1.4 Health Camps

Government is running medical camps in the remote areas that are otherwise lacking the public service. The camp is basically a bus, which takes the medical team into villages and can bring back patients needing further care in hospital. The camps usually have a certain focus subject such as HIV or eye care and the team consists of doctors, nurses and other specialists, who as well as treatment and diagnosis are also providing education and counseling to the villagers. It remains unclear how effective, how frequent and how much ground the camps are covering in reality, since the people involved only described camps as being successful without providing any further information. According to a VHN, who had participated in several camps, only very few people come voluntarily themselves to the camps and most to the public has to be brought to the camp by force and repeated invitation.

#### 5.1.5 Ambulance service

*“Now as the Ambulance service is available we are able to manage better. The whole Kolli Hills is having only one vehicle and it’s difficult for them to serve the whole community here and the same vehicle has to take the patient to plains (Namakkal) for higher treatment” (BOP3).*

There is an ambulance operating in Kolli Hills to respond to emergencies and accidents. It can be called toll free to provide basic medical assistance at site or to shift patients to government hospitals. The Emergency Medical Technicians (EMT) are being trained to provide help for conditions such as chest pain, respiratory problems, labor pain, trauma and injuries. The EMT's are trained and equipped to perform blood pressure and sugar level tests on the field. They also have a host of basic drugs on board, while they can contact a doctor through a conference call to get instructions for treatment on site. Wherever the ambulance is not able to get, collapsible stretchers are used to shift the patient. Villagers in that villages carry the patients in a cradle like structure where the

patient will be laid on the sheet and the corners will be attached to two wooden pieces, in order to carry them to the spot where the patient can be loaded into the ambulance.

#### 5.1.6 Private services

There are also private clinics in the area providing better health care services, but at much higher costs. They are therefore unavailable for the majority of the public unless at the last resort in a matter of life and death. One BOP agriculturalist was found out to use their services though. “We can get treatment (from VHN) for head ache, fever and if we have any other complaints which are serious we will not be going to Government hospitals. It’s (the private health care) expensive and it costs from 10,000 minimum per year and it varies according to disease and sickness. Recently we have spent around 3 lakhs (300 000 rs) for my husband. Private hospitals have all the needed facilities and they take all the tests on us”. The expenditure quoted is equivalent to €5000, which is enormous money even to rich Indians. The lady in question was herding a single cow and appeared like all the other folks around and it was later confirmed that they had loaned the money and were now indebted for a foreseeable future.

#### 5.1.7 Other service providers

The medical school director emphasizes that currently volunteers, NGO’s, religious organizations, Lions club and such are taking an important role in rural health care. They might have significantly more resources at their disposal compared to the public sector. According to a doctor of Chemmadu PHC there are up to 300 NGO's operating sporadically on Kolli Hills with independent projects not coordinated by anyone. Only some of them are health care related though and no one knows exactly the complete picture of the schemes taking place.

However, many NGO's are frequently taking people who they suspect of having HIV and have symptoms of tuberculosis, diarrhea or cholera to hospitals for testing, as these diseases can indicate HIV. Hospitals then give the results back to the NGO, who only give them to the patient when the "time is right". The delay could take several months, while the NGO is ensuring that the patient can take the news, without risk of harming him/herself or anyone else. After that counseling and donations of food and money are provided to the HIV positive person and the family.

#### 5.1.8 Community based services -Village Health Club

Village Health Club (VHC) is MGENM ran and funded project, which is operational in 104 villages that are populated between 50 and 600 families each. The villages are selected on the basis of absence of any medical facility, high risk people and places so remote that health care providers are unable to attend there. The criteria would match perfectly villages in Kolli Hills area.

VHC is based on two fundamentals. The aim is to have a disease free and a loan free society in order to provide people a solid platform for living. The primary program is to have a clean village that will not depend on others even the government. All disputes in the village will be resolved by a democratic body and not by any individual. If a person is sick the community takes the responsibility to cure him / her at the nearby hospital and collects the needed funds. In a way the system works as an informal health insurance scheme for the public.

The vision of a loan free society is a consequence of the public's improved health. As medicinal expenses, as well as temple expenditure during the illness is a major consumer of house hold income in each family. The reduction of these items will help people to significantly avoid loan taking. Good health also makes people more productive and thus able to generate more income. The villagers are in fact not completely loan free, but VHC has created an internal fund, which is being used for personal loans with moderate interest to the villagers. Apparently they are also flexible

to change the installments or duration of the agreement, if a person cannot meet repayment schedule.

We were several hours late on my visit to the VHC village and it was already dark when we arrived. The village was at least 10 km away from the main road and the last 20 minutes of the drive were on a dirt road. I was traveling with several MGENM staff members with the founder and director Mr. Shaktivel also on board. We were clearly expected, as immediately on arrival a group of around 20 villagers gathered around us and soon after I found myself in the middle of a traditional welcoming ceremony, in which a young woman was pouring water on my feet with some singing and Tamil words of appreciation.

This was one of the first VHC villages established and Mr. Shaktivel had been personally actively involved in demanding and agitating for basic facilities such as road, light and drinking water for the village, which all were missing at the time. Today the village is connected to a minibus network, has got its own well and the people have built an herbal garden to provide natural medicine. As of yet the public health care does not reach the village, but people are required to travel away to the nearest public clinic, which is hard to reach and still people cannot afford to go there for minor problems, as the village like all VHC's is economically well below the average.

On the onset, staff and volunteers from MGENM and VHC members from other villages are going and cleaning the new VHC member village and conducting a health awareness meeting to invite the villagers into the program. To educate the public on self-hygiene, cleaner surroundings and village cleanliness is the base of the VHC program. Villagers are attracted to involve themselves to the cleaning, as they are surprised to see outsiders doing it for them. The aim of the first year is to motivate the people of the new village and based on MGENM experiences, in the second year villagers' behavior will change. The sense and philosophy of support goes beyond a village and nearby VHC villages are actively collaborating together. Especially during the early years of a new club, people from other clubs come to support them, as they have had experienced similar or other problems themselves. That helps VHC project to

expand, as when the problems are solved, the word spreads through mouth and media attracting again new villages to join the scheme.

By appearance, people in the village looked less well off, than in Rasipuram and they reminded of tribals in Kolli Hills. Everyone seemed to be genuinely curious towards me, even though only one of them was able to speak any English. He was a young engineering student, who had come home for Pongal (Tamil harvest festival) celebrations. By all account he appeared smart and asked few questions about the project and was showing interest in any developmental activities taking place in his village.

There are also health programs initiated by MGENM in VHC's, which are taken over by someone responsible in the village and the ownership is thus shifted to the community. The activities are therefore also continuous. The idea is to form teams in the village to be responsible for certain health or hygiene related issues and enhance the people's ownership of the VHC activities. Every village also has a natural treatment society with twenty members who will have an herbal garden and are given basic knowledge on natural treatment to treat people with symptoms of head ache, fever, cough, cold, and simple STI. The elders of the villages are taught the basic of the Herbal treatment and samplings of the herbs will be provided for practicing the traditional medicine. Later they will be providing the drugs free of cost for their own community. MGENM claim that the VHC have reduced the average health expenditure of a family by 6000 rs a year, as the health and hygiene of the villages has risen up and the increase in use of locally available vegetable and fruits in their regular diet has reduced infections and diseases. The villagers also confirmed that their medical expenses have gone notably down with the introduction of VHC.

The communication with the villagers was very challenging. Most of the time, the community leaders were talking, but every now and then someone jumped into the conversation and it was difficult to understand, who was saying what. My regular translator was not available for the trip and the one with me did not quite clearly even understand the questions I was asking, so I suppose a lot of information were lost in

translation. That was later confirmed, when the regular translator heard the recordings. Although everything reported here are confirmed to be on the records.

Another influence to the discussions was the heavy presence of MGENM staff and particularly Mr. Shaktivel. As he has been heavily involved with the struggles of the village in the past, he was treated as a champion and it was obvious that the villagers did not want to disappoint him in any way. Therefore they were possibly answering questions as they thought he would like to hear them and not necessarily truthfully. On a few occasions, I even detected some MGENM people whispering to the villagers, while they were answering questions, suggesting manipulation of the answers. Therefore the intelligence from the interview was treated with a higher level of suspicion and everything reported here has also been verified from other sources.

After the interview many villagers approached me and asked if I could offer them any jobs. That was clear indication of the heavy unemployment in the village, which was later confirmed to me with other interviews. In a little informal chat I had with some of the people, it became obvious that there was also a lot of entrepreneurial spirit among them and as they had nothing to lose, many expressed interest in becoming micro-entrepreneurs, only if there was an opportunity.

#### 5.1.9 Traditional healing

*“The tribals fate towards allopathic medicine is less compared to people in the plains. They think that modern medicine is not for them, but for foreigners. So they have hesitation to take drugs and their lifestyle makes them very wary to any drugs. They try all traditional things first. You know, I work in the health sector and I’ve seen many times people refusing to take the drugs. But sometimes they can heal themselves traditionally too” (Doc2).*

Health care diagnosis, counseling and treatment are being provided locally by traditional Siddha healers, whose buildings can often be distinguished by painted pictures and symbols on the walls. Every village has at least one established healer,

while many ordinary people claim to have some skills in healing. Therefore the traditional health care appears to be widely available throughout the region and the use of traditional medicine is common among the public. Nevertheless, a doctor says that he is not recommending it to anyone, as the practices have not been scientifically proven and he says there are many risks involved in uncontrolled administration of traditional medicine. He tells a story about a boy, whose arm had to be amputated, after dubious traditional methods that apparently actually were the cause of the problem. However he admits that the herbs can be clearly beneficial to cure minor conditions.

The medicinal value of various plants and herbs are commonly known in the area. Conditions like cold, cough, fever and headache as well as tooth ache, insect bites, minor wounds and dizziness are practically always cured with herbal medicine easily available to all Kollis. In earlier days the herbal medicine was the only remedy available and it had been practiced by certain families and the knowledge was shared to the decedents only. In Siddha practice there are plenty of herbs that can be used to cure sicknesses. Siddha medicine has not got any formal institution and the knowledge has been transferred only from a parent to a child. Practitioners do not reveal their secrets to the common people, which lead to many superstitious beliefs today surrounding the traditional healing.

According to the Siddha tradition, changes and imbalances in the body are the cause sicknesses. Typically pulse is used to diagnose people, but also voice, tongue, face, nails, change in color of eyes, change in teeth color, hair fall, stool and color of urine can be used to determine a disease or an infection.

*“Just by seeing a person I can know, if he/she will be too tired to walk and on inquiry they will tell me about the problems they have such as cough, cold, pain in legs and hands, bed ridden due to severe cough, pain in the stomach region due to this cough, giddiness in short all the problems are related to the cough. Just by touching we will be able to learn the body temperature and heart beat and all other related information”*  
(Siddha doctor).

But according to an herb gardener, comparing Siddha to modern allopathic medicine, the impact can often be very soft and in some cases it takes more time to see the result

and remedy. The patients are often instructed to adhere to a particular type of food or to skip prohibited food while the medication is taken. A patient told me a story of how his Hepatitis B was cured in a traditional way, illustrates typical Siddha practices:

Couple of years back, Mr. S was diagnosed with Hepatitis B. The symptoms started slowly and they were hidden for a while. First, he lost appetite and started to feel mild fever in the evenings. Later he also had pain in the joints and became passive as he lost interest in things he used to enjoy. Finally the fever rose above 40 C and he was diagnosed with Hepatitis B through pulse rate by his father, who is an experienced Siddha practitioner. He was taken into hospital, where blood test confirmed the diagnosis. He laid there for four days, while being treated with medicine.

When he was being released home, he was still very ill and unsure whether the treatment had had any actual impact. Therefore he engaged into a Siddha healing administered by his father. The drastic cure was taken for 45 days, during which he followed a strict diet of rice and lentils that were washed down with overnight diluted rice water. He was also given warm fresh cow's milk to drink and herbal pills which he claims immediately improved his condition. However, the adverse effects of the simple diet soon started to have an impact on him too. Eventually during the healing he lost a third of his body weight, which dropped down from 65 kg to 42 kg. Towards the end of the program his heart beat was reduced, kidney slowed down for 10 days, his body strength was lost completely and even talking was difficult. He says that it took another three months for fully recover, but afterwards he was stronger than ever and the Hepatitis B was gone for good.

These types of stories are very common in the rural areas and it is extremely difficult to draw any conclusions over the effectiveness of the treatment. Although, it appears certain that people genuinely give credit to Siddha for the healing, if they have gone through a treatment, even when the healing would have occurred regardless.

There is a strong belief that allopathic and traditional medicine cannot be combined. Literally everyone I spoke with agreed that people should only take one or the other at the same time as the combinations are seen fatal. It is hard to understand, where this notion is coming from, but it is clear that people believe in it and do not mix modern

and traditional medicine. There is also a strong belief that the Siddha is suiting local people better, while allopathic medicine is for foreigners.

*“Modern medicine is manufactured from the green leaves from their place (abroad) and it will work well for them (foreigners) and for the people of Tamil Nadu the green leaves from our place will cure our sickness. It should be taken either one (modern or traditional medicine) or it will reduce the blood flow in the person’s body or sometime it will kill the person” (Siddha doctor).*

Although many practitioners understand their limits and are happy to refer people to hospitals, when they know they are beyond their healing capabilities:

*“If the patient is more serious due to high bleeding, due to deep cut or an accident he should be shifted to the plains (to hospital). Also if the sickness is not curable here then we refer (to hospital). Similarly if a patient is losing weight for unknown reason we refer to a doctor practicing modern medicine” (Siddha doctor).*

Siddha is often mixed with magic, which really should not be the case according to an experienced practitioner. However many others openly admit using magic and witchcraft as can be seen from my field notes:

After visiting some herbal gardens and traditional healers my driver suggested that he could take us to his village to talk with a “witch doctor”, who is using his spiritual powers for various purposes. The witch, who actually denied of being a witch but rather a holy man, was an overweight man in his 50's, wearing a white robe and a golden necklace with two real tiger teeth that are very prestigious symbols of status in rural Tamil Nadu. Once, we got to his house, it was clear that he was a very wealthy man. His house was much bigger and grander than any other in the village. He must make a good fortune with his services that were advertised on the board outside the building. His business was to craft magic amulets and potions to heal diseases, to solve economic and social issues, as well as to enhance family relationships and love affairs. The witch confirmed that the powers he used are from spiritual origin and have been passed on in his family for generations. He practiced his art in a family temple attached to his house, which was filled with pictures of gods, forefathers and all sorts of religious items. He

claimed that his spells never fail, but my driver said that few months earlier he was nearly beaten to death by a crowd, who had lost their money on following his advices. Nevertheless, there were again several people waiting to see him on the patio.

Most of the local people believe in this type of practices, as the spirituality and religion are very strongly rooted into the culture and peoples everyday lives. Not even the educated people question astrology or magic. My foreign educated Christian assistant told me a story of successfully using witchcraft to solve a problem from his past.

The line between genuine traditional cure and magic is very obscure in Tamil Nadu, as they are considered to be part of the very same spiritual phenomenon, which is not being questioned. It is certain that the responsible Siddha doctors are capable to administer some herbal medicine to gain certain health improvements to patients, as some of the practices are today officially recognized and being taught even in medical schools in Tamil Nadu. However, the people claiming to solve monetary problems with magic potions, at the other end of the spectrum are simply taking advantage of the people in desperate positions and their superstitious beliefs.

## 5.2 Diagnostic services

The medical college director says that the public health care system is providing adequate diagnostic services to the public. He does not acknowledge any problems with the remote locations and says that services are satisfactory. He is 78 years old and has got experience of over 40 years in health care sector. However, his high position has kept him away from the field and BOP for a long time. His views, were found out to be utterly inaccurate for the diagnostic situation in the Kolli Hills, which apart from very limited diagnostic facilities in the Chemmadu PHC, does not have any diagnostic services available. That is a strong indication that people in the higher positions in the health care sector are not aware of the current challenges or they simply do not want to show the system in a bad light.

The doctor and paramedic, who were also present, took a different stance though and suggested that many rural areas are still lacking the basic diagnostic tools. They are both around 30 years old and have probably been more exposed to the realities of the countryside lately. It is evident, that the Indian health care systems have improved significantly lately and particularly in the last decade. Apparently the development is still very much ongoing and many expect the situation to still improve rapidly, as health care is high on government's agenda. Therefore it is likely that more diagnostics related services and projects will be rolled out in rural locations, including Kolli Hills in the future.

### 5.3 Common health problems in Kolli Hills

Nearly every BOP person interviewed in Kolli Hills was complaining about pain at various parts of their body. The obvious reason being, that they are engaged in excessive physical laboring, which is causing the pain in joints, hip and back. Due to the lack of basic health care, poor nutrition and hygiene as well as hard physical work in harsh conditions that most of the Kolli people are exposed, there is a range of widespread health problems present in the area.

#### 5.3.1 Sexually Transmitted Diseases and HIV

*“In Tamil Nadu HIV is increasing and in Namakkal hospital only, every day 10-15 people are testing positive. Even now after 20 years of prevention work” (Manager of Tamil Nadu State AIDS Control Society).*

According to an NGO worker, sexually transmitted diseases (STD) very are common among the tribals, as Kollis take a careless view over casual sex. Due to the limited local opportunities, numerous men are seeking work away from the area and many end up driving trucks and lorries. In terms of STD's they are high risk individuals due to spending long periods of time away from their families and since many of them are

apparently frequenting prostitutes. Obviously when they return to their families they can infect their partners. Kolli women also resort into casual sex, while their husbands are away.

According to an HIV expert, the main reason for increase in STD's is multi-partner sexual behavior, which is common in many parts of the state, even if it goes against the Hindu guidelines. Western culture is being blamed for having an influence and causing new incidents with young generations. He continues that, Kolli Hills are having even higher than average number of incidents, due to their poor economic situation and limited job opportunities are few. As a domestic tourist destination, local girls are being lured to affairs with wealthy visitors due and are thus exposed to risk of infection.

STD's can only be tested in government hospitals. The PHC is inaccessible to many and people are not always willing to take tests, as there is a strong cultural shame associated with the STD's. People typically hide their condition, even from the close family and thus place them under direct risk as well. The local society discriminates infected individuals, who in to my assistants words are no longer considered human beings. Infected people often become outcasts, who are in practice excluded from the society. It is not unheard of to drive out a family member with STD, especially a female. None of my interviewees were ever aware of anyone having an infection, even if they are certainly present in the area, indicating the taboo status of the topic. People were also clearly reluctant to talk about anything related to sex including infections.

The STD educational campaigns are currently not reaching remote areas, as Indian people do not talk about sex due to customs and culture. But when they have multiple partners, they forget their customs. Because people are not comfortable to talk about sex in public, agencies are not being able to get their message to the grass root level.

*“Namakkal district is the epidemic center for HIV in India. The worst hit district in India, with highest rates. We have close 100,000 high risk people (sex workers, truck drivers and other frequent clients.) in Tamil Nadu and they are required to go to sexually transmitted infection (STI) checkups once in three months, although only 20% are going. NGO's are trying to get them to follow the plan, but most are not. When I try to talk with the sex workers, they don't talk to me, because they feel very shy. Women*

*don't want male doctors to check their bodies and the visits to hospital take too long”*  
(*Manager of Tamil Nadu State AIDS Control Society*).

As described above, the test schemes are ineffective, as they are only carried out in hospitals, where people need to spend time to travel. The system is not controlled by anyone either, and high risk people are clearly lacking the motivation to test them. In a case of positive result, the straight forward consequence would be a public stigma that would ruin the person's life and thus people are not attending the tests voluntarily. The confidentiality appears to extremely important, so that no one else knows about the test nor results.

### 5.3.2 Anemia and malnutrition

Anemia is extremely common among the people in Kolli Hills. The health care workers estimated that 30-50% of the population is suffering from it. Anemia is more common among the women, which ICDS estimates that over half of the women in Kolli Hills are anemic and majority of them are also suffering from iodine deficiency. The anemic people might feel weak and tired, but they generally do not know what they are suffering from and therefore are not seeking for assistance. They are basically not aware of the linkage with their diet and condition. The family economics are dictating what people are eating and therefore the awareness is not the only solution, as people might not be able to increase sources of iron and vitamins in their nutrition even if they wanted to. Rice is still widely grown and plays crucial role in people's diet. An NGO employee points out that the area is plagued by malnutrition due to the simple diet lacking of essential vitamins and minerals. Thus anemia and lack of calcium are very typical in the area.

There is an educational campaign ongoing in the area, with pictured signs spread out around the hills providing information over the nutritional and health benefits of certain fruits and vegetables. ICDS is also educating mothers for the importance of nutrition and providing supplementing nutritious powder for all mothers and children until the

age of three in the Kolli Hills area. They are currently planning a project called “SABALA”, in which the adolescent girls will also be beneficiaries through receiving the nutritious powder to build their health. At the time of research, the scheme was not available in Kolli hills and it was expected to begin earliest in April 2012.

### 5.3.3 Heart Diseases, Blood Pressure and Blood Count

*“People in my village are dying mostly to heart attacks” (BOP3).*

Chest pain appears to be frequent problem in Kolli Hills and the ambulance EMT said it was by far the most common condition that they are facing in their work. Majority of the chest pain cases are symptoms of heart problems. The view was shared by many other BOP people and also professionals working on the health care. Blood pressure is currently not been tested on the field.

*“From my field experience, I would say that the most useful conditions to diagnose here would include: blood pressure, as its slowly developing into heart diseases and blood sugar level” (VHN project coordinator).*

High blood pressure is obviously a major cause for heart diseases, but diabetes is also causing many heart problems in the area. There are glucometers in the hospital, which are currently not used on routine testing, but only when people are expected to have issues with blood sugar. A piece of equipment that could be used to test larger numbers of people would be highly appreciated in Kolli Hills.

### 5.3.4 Tuberculosis

Tuberculosis (TB) is no longer severely damaging condition for the public health in Kolli Hills. The hospital doctor is satisfied with the ongoing TB programs and said that the numbers of incidents have reduced drastically compared to the past. BOP people were found to be surprisingly unaware of TB, which could also indicate relative rarity

of the condition. It appears that there is TB medication available, since people with symptoms are primarily tested for their immunization levels in the fear of HIV. No data was found to indicate a significant need for TB related diagnosis.

### 5.3.5 Other widespread health problems in Kolli Hills

Nervous problems are also somewhat common in Kolli Hills and some of them can also be claimed to originate from working conditions. Kidney and liver problems due to heavy alcohol use are fairly frequent among men. Water contamination and food adulteration, were frequently mentioned as a source of health issues. NGO's and VHN's are both purifying water sources in Kolli Hills without proper instruments to measure the cleanliness. The purity of the food substances can also be an issue, as normally nothing goes to waste and even visibly old or contaminated food will be eaten. Therefore field workers recommended devices that could detect impurities in food substances.

## 5.4 Attitudes towards health care

*“If the circumstances do not permit the patient to be shifted then the patient has to pass away and it's the fate and no one can help them. I have never used any of the services (health care) and I have an aversion towards injection, even in worst cases I don't take a pill and God hasn't given me any disease or infection” (BOP2).*

Even if the above description does not apply the population in broad sense in its extreme view of not accepting any medical care, majority of the Kolli Hills people believe that health is primarily a spiritual not a physical matter. So it is again the fear factor, as the logic goes that if they do not go to the temple and follow the teachings, they can get sick. Also sicknesses are widely being attempted to cure with praying and religious ceremonies, which delays patients seeking for a doctor.

*“My husband was feeling giddiness and then we were informed that only the Gods / Spirits / witchcrafts (verbal translation means all these meanings) were troubling him for which all people from our hamlet blessed him and it was enough for a month. After that he had the same symptom back, and again he was blessed by the God and people from the hamlet as it didn't work he was taken to hospital. We believe in gods and its spirit and we seek their approval. Then we see the Doctor, because we believe that if we have any problem in our faith it may lead us to these kinds of troubles (health issues)” (BOP1).*

In addition, there is lot of health guidance in the religious teachings. For example yoga is a traditional way to take care of health through physical and spiritual exercise and meditation. Also many religious rites claim to carry out health benefits. By burning oils for instance, people believe to avoid cold, as nostrils are cleansed while inhaling. Rituals to drive evil spirits away in order to stay healthy are common and everyone believes in them, including the educated people with university degrees. A statement from a highly ranked health care officer shows a typical belief of how health is intertwined to spirituality and to other seemingly unconnected aspects of life: “We live the medicine and tradition of Vedas and every action has a meaning and the life is guided through that. Nothing is done by a change.”

People are generally thinking, that before modern medicine became available people lived longer than today without them. But primarily the attitude seems to be that at the end of the day the health is in the hands of gods. Particularly older people do not believe in western medicine and would only go to a doctor when they are forced to by their families. However, most of the Kolli people have given blood or urine samples, at some point of their life. Huge majority have no issues in that regard, but there are also some, again mainly the elderly people who refuse to give samples due to mistrust towards “foreign” practices. Few would also refuse to give blood and other samples to any unknown person or organization due to confidentiality issues.

## 5.5 Health Awareness

*"The real problem is that the people do not know they have a (health) problem" (Doc1).*

The Kolli people are not aware, what is causing sicknesses. A common belief is that, health problems are the will of gods and a punishment from their actions against religious teachings or a personal test of faith. Therefore, the healing process is widely seen as being out of control of the patient. However, the direct impact modern medicine is having on the patients' health is changing this attitude, but there is still opposition towards the foreign medical practices, which are also considered not suitable for locals, by some members of the public.

*"Lack of health care seeking behavior is a major issue in Kolli Hills. People are not attending treatment for minor illnesses. Unless we say they are not aware of their illness or sickness" (VHN).*

The health awareness among the people in Kolli Hills is minimal and people only seek medical assistance too late. First they do not recognize the symptoms and once they do, they seek assistance from traditional healers. Doctor is typically met only as a last resort and at that point the condition might have worsened significantly. Therefore, it appears that there is a high need for early or pre-symptom diagnosis to direct people to get medical assistance.

## 5.6 Health care costs

*"All my earnings are spent by my family members for their health particularly to my wife who used to suffer from head ache, fever, cough and secondly to this she suffers much from the tooth ache and eye infection. My family spends 15,000 Indian rupees annually on health expenses and this is apart from major illness like chest pain, heart attack, etc. which will take two to three lakhs and if people are not able to afford, people take them home and wait for them to die or recover at their home. The costs are very high" (BOP2).*

Even as the public health care is free of charges, people are accumulating huge health care bills due to the inefficiencies in the public system forcing them to use private services. Interviewed people quoted their annual family health care spending to be in the range of 10,000-15,000 rs (€170-250), which everyone understandably expressed to be way too high, as it represents a substantial portion of the family income. In comparison a laborer can expect to earn 15,000-30,000 annually. Serious or life threatening conditions can easily tenfold the costs, leading to a loan taking or loss of a family property and thus to a long term adverse economic consequences.

There appears to be high need for preventative health care and diagnosis to take down the massive health care expenditure of the BOP people. In the interviews people indicated willingness to pay for diagnostic services in order not only to improve their health, but to also have monetary savings in the future, which actually appeared to be the chief motivation to pay for such services and ought to be a key marketing message to the public. The affordable price for a single was quoted to be in the range of 50-100 rs.

# 6 CONNECTING THE DOTS: OPPORTUNITY SPACES FOR DIAGNOSTIC SECTOR

In this chapter, my aim is first to highlight the identified practical elements of opportunity that can be used for further opportunity development for a future diagnostic projects that could be carried out in the region and scaled up to cover wider Indian markets to provide a meaningful impact (Prahalad, 2009). As novel business ideas are new combinations of already existing components, applied together in a new way (Baron & Shane 2008), my objective is to provide “the dots” i.e. the unrelated opportunity spaces as a raw material for entrepreneurial minds to connect in order to reveal new patterns and genuine business opportunities, as suggested by Baron (2006). I will present my own ideas and suggestions over the matters, but as per the theories of opportunity recognition, these findings are highly subjective, non-exclusive and representing my personal perceptions as an outcome of my entrepreneurial creativity (Timmons & Spinelli, 2009). Therefore depending on the background and personality traits, other people might identify very different potential for opportunities from the empirical data presented in the previous two chapters.

## 6.1 Partnerships

In accordance to BOP literature (e.g. London, 2010), during my investigations in India, partnerships were found out to play a critical role in the opportunity identification process in BOP environment. The notion that to create functioning solutions, companies have to access the local knowledge and innovations (Prahalad, 2009) appears to be a complicated undertaking for imported entrepreneurs. Particularly foreign agents will find Tamil Nadu an extremely challenging environment to gather information by themselves, as locals are virtually not speaking any English and also since they are

characteristically very suspicious towards outsiders. Therefore it can be difficult to even identify relevant sources of information and to access the informants. Thus some level of collaboration becomes mandatory to be able to establish required contact to local stakeholders and to manage through the bureaucratic practices in order to access the necessary market information and resources, as per the BOP literature (e.g. Halme, 2011). Through partnership agreements the existing local platforms for distribution as well as for other business functions could also be accessed and potentially benefit the venture enormously.

### 6.1.1 Non-Governmental Organizations

NGO partners can facilitate operations and make the arrangements over the language and cultural barriers as well as to reduce the effects of corruption. In addition, all the practical arrangements would have been nearly impossible to make without my principal NGO partner MGENM. They were also able provide in-depth local understanding, which has frequently been claimed critically important in the BOP literature (e.g. Pitta et al. 2008). They also made their contact networks available, which provided invaluable cultural, social and market intelligence for this research. Local NGO's like MGENM are familiar with local circumstances and can also be used as trusted partner to verify information gathered from other sources, as was done during my data collection. Possibly though the biggest contribution MGENM gave to my investigations was their good local reputation that legitimized my presence in the field in the eyes of the local society and authorities, which both are generally very suspicious towards foreigners. For that purpose, Webb et al. (2009) have proposed a close alliance with a local NGO for any venture operating in the BOP market. My empirical research fully supports the notion, that for a company to successfully integrate with the locality i.e. the social embeddedness (London, 2009), an effective partnership with a local NGO is highly recommended.

However, a key to achieve a fruitful partnership is mutual value creation and therefore the project must also meet the NGO objectives (London, 2009). MGENM was ever so

eager to support my research, as it was in line with their activities. Had the research been carried out for other than healthcare or similar socially valuable theme, their level of motivation and commitment could have been different. Naturally monetary compensation for the NGO's time and effort is a significant incentive, but since they are not for profit organizations, the added value must draw from the project purposes themselves and it is difficult to see an NGO committing their resources without a shared interest of the projected outcome.

During the field research, a strong relationship was established with MGENM. They have indicated strong interest in future collaboration in health care and diagnostic related projects in the area and even suggested that their volunteers could be trained to use any apparatus for doing diagnosis in the field. Since they have proved to be an efficient and trustworthy partner, their involvement is recommendable for any future diagnostic schemes in the area.

### 6.1.2 Governmental Organizations

The public sector has a key role in providing health care services to the people in Kolli Hills and therefore public schemes can also be good prospects for partnerships due to their experience in working in the field and established distribution networks. Collaboration with the public health care could also be a financially sound alternative, as per the favoring policy guidelines, the state and national government are effectively investing into the development of the health care sector in Kolli Hills and could significantly invest into a project aiming to make diagnostic services available to the scheduled tribals of the area. Therefore the partnership agreements seem to provide great opportunities for a venture to overcome the higher opportunity costs (Halme, 2011), related to profound infrastructural and other challenges in Kolli Hills area.

However, collaboration with the rigid bureaucratic system would almost certainly bring additional challenges to the scheme. In order to manage effectively through the red tape, a local assistance in the negotiations would seem to be invaluable as per my experiences

of dealing with the Indian officials. Nonetheless, any project carried out in India, would anyway need to be prepared to deal extensively with public institutions in order to get the required permits and paper work done, which are needed not only for business operations in the area, but also to gather information. The government projects were generally found ineffective among the health care workers, because the projects are pressed from top to bottom, focusing on the objectives of the administrators and not the needs of the people at the grass root level. As is often claimed in the BOP literature (e.g. Prahalad, 2009), there is also widespread corruption present in all levels of health care systems and particularly characteristic to the administrators. The issue is needed to be addressed accordingly in order to have an effective project in the area. Again, the recommended course of action is to have an experienced and competent local partner to facilitate the proceedings and the notion of mutual value creation to commit partners as proposed by London (2009) seem to fit well into the mindset of the Indian public organizations and their employees.

Government run projects are free of charge for the public and thus the earning logic in any close collaboration scheme with public health care could not on default be based on payments from the people directly, but rather on selling goods and services to the public health care system. Obviously, there can be ways to circle these principals. Public sector has highly skilled and well educated employees in India and partnership with them could be a great opportunity to get broad range of skills and knowledge acquired into the project. Although particularly in Kolli Hills, but presumably also in other remote locations, the public institutions and health care sector is experiencing significant difficulties in order to hire qualified staffing, as these locations are not deemed attractive to educated people. It could be a major issue hindering the close collaboration with public organizations in the BOP markets of Tamil Nadu, as obviously systemically undermanned operations could not achieve their targets.

The potential for public collaboration appears to be extensive, due to the government's vast resource pools, extensive access to information and possibilities even to influence rules and regulations in favor of the project. However, close partnerships with public organizations can be very difficult to achieve as there are number of potential issues related. Public organizations might be simply uninterested in taking active role with for-

profit ventures and the co-implementation can be difficult due to lack of clear focus and challenges to achieve the appropriate levels of commitment (Munir et al. 2010). Furthermore in the BOP literature the often mentioned corruption and ineffective and bureaucratic practices of the public organizations in the BOP markets are a genuine threat in Tamil Nadu.

## 6.2 The Market Knowledge

The market information is a key component of the venture development process in the BOP according to London's venture creation model (2009) and has to be established on the course to identify and evaluate business opportunities. As well as the customer needs, Prahalad's (2009) four A's of *Awareness, Access, Affordability, and Availability* are needed to be considered throughout the opportunity identification, as failing with any of the A's would place the venture in jeopardy. As per Prahalad's innovation sandbox model (2009), scalability, a new price-performance, modern technologies and high quality are influencing the identification of the prospective opportunities and he claims that they cannot be compromised. The market information presented here seeks to cover the four A's and has been evaluated with the aim to meet the above mentioned non-negotiable requirements for a BOP business venture. Also since opportunities are of different value, the aim is to provide multiple sources of opportunities i.e. the opportunity pool (Morse & Mitchell, 2006), which can be utilized for evaluation to determine the most potential ones for further development (Wickham, 2001).

### 6.2.1 Diagnostic needs

A cornerstone of the business opportunity is to identify a notable market need for the offering (Timmons & Spinelli, 2009) and there is a high need for diagnostic services in Kolli Hills, as they are currently virtually not available in the area. People are paying vast amounts of money for health care, but only when they are severely affected by the

condition. Therefore, they would benefit highly for an early diagnosis preventing future conditions and thus reducing the overall health care expenditure. The public was found out to be positive towards paying for the tests, as long as they can understand their importance and contribution for their health. The two most prospective fields for diagnostic opportunity development were identified to be STD's and blood count, which would impact vast numbers of people with prospect for significant health benefits. Nevertheless, as listed in the previous chapter the multitude of health issues prevailing in the area ensures that there are numerous other diagnostic opportunities available and the final decision over which condition is to be tackled depends on other project factors and the capacities of the company involved.

#### *6.2.1.1 Sexually transmitted diseases and HIV*

*“Tamil Nadu has couple of mobile HIV test facilities, but for STD's we do not have mobile thing. People would not come to a mobile testing van due to a fear of being branded. The confidentiality is the key “(Manager of Tamil Nadu State AIDS Control Society).*

There is an excessive need for diagnostic services, as the area is one of the STD hotspots in all India. Currently, the tests are carried out in hospitals, but people are not voluntarily testing themselves. Therefore, the tests are needed to be taken where the people are. A mobile test facility would reduce barriers for testing, as it would require less time for traveling. A visible testing vehicle would not be suitable though and the test would have to be carried out in secrecy from the curious public. Education, counseling and support are needed to be given with any project related to the STD's. A quick attitude change seems unrealistic, but to be able to create more openness through education and to crack even a little the taboo status of STD's, could only help families and communities to start tolerating infected people more, which would be fundamentally important in the fight for reduction of the STD's in the area.

#### 6.2.1.2 Full blood count

*“Complete blood picture would be very useful. Definitely it will be successful device for the VHN’s” (VHN Coordinator).*

Full blood counts are not examined in Kolli Hills and health care professionals frequently recommended complete blood counts to be carried out in Kolli Hills in order to detect various conditions, anemia, alcohol related liver problems and blood sugar levels among the others. VHN’s in particular were found out to be keen on such measurements and stated that a scheme addressing blood related diagnosis would be highly successful in improving the health of the people.

#### 6.2.2 Affordability

According to Prahalad (2009), a prospective BOP venture has to establish what customers are willing to pay for the offering and on that basis can plan the costs and profits. Therefore this research was highly focused on the matter of affordability. The people’s estimates of what they would consider as a fair price for a diagnostic test taken in their location were generally in the range of 50-100 rs, which represents a daily income or more to many people in the area. The payment is justified though, as medical expenses are taking a huge part in peoples incomes and the message ought to be that by paying up for the diagnostic service, health issues can be detected earlier, which would have a positive impact on their economies later. However, it is imperative that the people understand the importance of the diagnosis and therefore adequate education has to be provided as well. Otherwise, there is a risk that people would feel that they are not getting value for the money when the results are negative and could reduce the popularity of the program. Since the income streams of many Kolli Malays are irregular, their ability to purchase has to be met accordingly, with flexibility and different payment options available as suggested by Pitta et al. (2008). Communal loan schemes through CBO's or payment in installments could support the BOP ability to consume and thus enhance the venture prospects.

### 6.2.3 Product requirements

*“Modern technologies and high standards of quality have to be applied, as the requirements for products and services are often more demanding in the BOP environment than in the developed markets” (Prahalad, 2009).*

The above statement seems to apply accurately to the challenging circumstances of Kolli Hills, which set several requirements for the development of a diagnostic equipment to be used in the area. It is important to take into account the limited purchasing power of the BOP, while at the same time the products cannot be low-cost versions of the existing products and are needed to be tailor made according to the special requirements of the local BOP market (Halme, 2011). Here are listed some of the characteristics a diagnostic tool has to meet in order to be functional in Kolli Hills.

#### 6.2.3.1 Mobility

*“A handheld device would definitely work out. That is our need, I would say. In every district we have thousands and thousands of people and now my primary task is actually to take people to testing” (HIV project worker).*

Due to significant transportation issues and the general unwillingness to travel to centralized facilities, the diagnostics are needed to be taken to the people in order to have an effective scheme and to be able to reach the majority of the population at all. Therefore it is imperative that the device is mobile and preferably light weight, so that it would be easy to carry around in a challenging environment, where people are walking extensively. Since motorbikes are a frequent mode of transport in the area, the device ought to be built bearing in mind that it should be practical to take along with a motorbike on a dirt road. Also, since the diagnostic tool would be taken to distant locations, the distribution network for spare parts and replace devices need to effectively available.

### 6.2.3.2 Ease of use

*“If something comes handy and is user friendly then I think things will work out and we will see good increase for people being checked” (Doc2).*

Field tests need to be easy and fast to take as the test conditions vary. People are generally busy with their day to day activities and complicated test process would certainly demotivate them from participating. Also from an operators point of view, an unnecessarily technical application would restrict the use. Uneducated members of the public are not technologically savvy by preset and would require more training to use complicated piece of equipment.

*“When people go to a doctor, they are the only ones who do not understand the results” (NGO2).*

Many BOP people have only received limited education and are not familiar with medical terminology or English language and thus the results ought to be in local language so that the operator and the patient would understand results. It would also be possibly useful to have printouts from the machine as that could shorten the emotional distance to the people (Simains, 2008). There are popular weight scales on the bus stops, where people pay one rupee and get their weight measured, with some flashing lights and music and at the end ticket comes out with some health tips in Tamil language. A paper slip interpreting the results, with some tips would probably be a popular incentive in a diagnostic tool too and would help educate the people.

*“People might have some prejudices towards a diagnostic tool here, as they might have had some bad experiences (with technology) in the past” (Brahmin).*

Electronic instruments are being used in the area to a certain extent, but people appear to be to some extent suspicious towards them, as many people expressed their concern over their reliability. Everyone seemed to have experienced technological malfunctions, which had led to a confidence loss with the equipment. Therefore the accuracy cannot be compromised and the diagnostic tool cannot give erratic results, either due

technological or user issues, as that would quickly lead to a bad reputation and would stop people using it.

#### *6.2.3.3 Robustness to cope in hostile environment*

In order to cope in the hostile environment of the Kolli Hills, the diagnostic device has to be able to survive with the ever present dust and dirt. It is also likely that due to lot of traveling, there would be inevitable knocks from falling to ground and collisions to other objects. If the equipment is of a high value and would be expensive to purchase, the BOP people could not afford to get it broken. There is a risk that the scheme could even be abandoned in a case of equipment breakdown, because of the high investment cost related could not be repeated. Therefore any technological tool, ought to have solid casing to ensure robustness and reliability. The monsoon weather means periodical torrential rains in the area. The rains last typically for weeks and soak up everything. It is critical for a mobile diagnostic tool to have a water proof casing, as it would seem unavoidable for the product to get wet.

As the electricity supply is sporadic at the best, any device used in the area has to be battery powered and to be able function without constant recharging. The most farfetched locations are completely out of electricity and to be able to operate there, a long battery life is highly recommended. Possibility to switch to a spare battery on go, would also be a useful feature.

#### *6.2.3.4 Communication and recordings*

*“A function to keep records or send them to hospital would be extremely good” (Doc1).*

Good mobile coverage allows the device to be connected online to keep recordings and access information, with even more sophisticated diagnostic mHealth projects feasible. Since people do have access to mobile handsets, the test results with follow up

communication could be sent via mobile phone. However, the confidentiality of such messages remains an issue, as many people and families are sharing phones.

Due to a rapid increase in mobile phone subscriptions, it is predictable that in a few years' time most of the adult population or at least majority of the families will have an own handset. It is also likely that the capacities of the mobile phones will continue to improve rapidly, as they have for the past 20 years and that the technology currently found in the so-called smart phones will be available in the budget models in a few years' time. Therefore the diagnostic scheme could be planned accordingly ahead with a view of a scenario, in which mobile penetration has reached much higher levels and the usage of the more advanced phone technology is widespread thus providing a host of opportunities not only for communication, but also for payment and distribution.

#### 6.2.3.5 *Multi measurements*

As the health issues profound, it would be useful if a single instrument could be programmed to take different measurements. Several respondents suggested for an opportunity to diagnose certain groups of conditions such as STD's or full blood count etc. with a single test. Naturally the health impact of the project would increase, if the same equipment could be utilized to various purposes. Also, since the investment capacity of the BOP communities and people is severely limited, multipurpose tool to combat range of health issues would provide added value for the investment in terms of price-performance (Prahalad, 2009).

#### 6.2.4 Distribution

*“The health care has to be taken by the whole society. Because health care providers are too few. The 50 000 people of Kolli Hills cannot be served by 10 or 15 people. Everyone has to play his role and be vigilant to keep surroundings clean and healthy” (NGO2).*

Since one of the main challenges of the health care providers in the area is to reach the people, it has to be a carefully considered element for opportunity development in the area. Currently Chemmadu PHC is the only official facility providing public service and limited diagnostic examinations, but it is too far and time consuming for most people to visit. Therefore diagnostic services should be taken to where the people are, as suggested frequently in the BOP literature (e.g. Pitta et al. 2008), instead of expecting people to travel to a centralized facility, as it would be extremely difficult to motivate them to do so.

The poor road network and limited transportation options to reach widely scattered people means, that to set up a new distribution network covering the area would be a major challenge requiring substantial resources. Also, the distrustful attitude of the communities towards outsiders would require significant efforts in order to build trustworthy relationships with the public. Thus the distribution through existing platforms would seem to be the preferred mode of operation. London (2010) argues that the use of existing local platforms can be a foundation for a venture to overcome infrastructural and other local challenges, as well as to promote the scalability of the project, which all appears to fit well into the context of Kolli Hills.

#### *6.2.4.1 Community Based Organizations*

*“If a diagnostic tool is only going to be handled by a health worker that will affect the peoples reach. People would be suspicious” (BOP2).*

Possibly the best way to access people directly are Community Based Organizations. The CBO's can be also well connected to outside world through their purpose and possible partners. They are highly respected and they are genuinely people's organization and operating through the community would reduce the emotional distance to the offerings (Pitta et al. 2008) and increase people's involvement, as repeatedly recommended in the BOP literature (e.g. London, 2010) The collective ownership and group pressure make inhabitants to participate into communal schemes and thus can be

a powerful tool to change the prevalent non-consumption behavior towards health care services found in Kolli Hills as described in the literature (Simains, 2010).

As per custom people associate themselves strongly with their community and they have a long history of working together. Community level collaboration would also facilitate the use of so called inclusive models, in which BOP people are integrated in the project from the beginning and have an opportunity to take part and influence the development and thus increase their ownership of the scheme, which in turn would be likely to increase the chances of success, as suggested by many in the BOP literature (e.g. Prahalad, 2009).

The local communities are exceptionally inward and guarded, which means that they could be wary from any projects coming from outside. A close co-operation with CBO's would help to gain trust among the public, which could be otherwise very difficult as many are suspicious towards outsiders. As people are also generally unwilling to move to remote areas such as Kolli Hills for work, it would be convenient to engage the local population. Many BOP scholars (e.g. Pitta et al. 2008) have recommended microcredit schemes, which many CBO's are already providing. The monetary support and loans with fair rates to the members of CBO would enable more people to participate into a health care scheme and significantly facilitates business operations in the area.

#### *6.2.4.2 Village Health Club*

Village Health Club (VHC) is MGENM initiated and coordinated project that appears to provide an excellent platform for a diagnostic venture in the area. The distribution network already exists in over a 100 villages in the area and the program is also due to expand to cover more areas in the future. The program would thus provide a setting to run pilots, with certain level of scalability. Similar community based schemes exist countrywide in India and thus the further expansion seems to be feasible.

VHC is not currently operational in Kolli Hills, but the villages involved are reminiscent of the circumstances in the hills, as the focus is on remote locations and underdeveloped

communities lacking access to basic health care. The staff from MGENM also suggested that there is no reason why the Kolli Hills area could not be included into VHC in the future. London & Hart (2010) argue that, BOP ventures cannot succeed without the mutual value creation and the VHC project objectives of having a disease free and loan free society makes them tempting collaborators with a diagnostic scheme that would pursue their goals of having a positive health impact and also reducing the health care expenses of the people. Co-operation with the VHC would provide an opportunity to sell diagnostic tools and/or services collectively to CBO and not directly to individuals. For instance CBO could collect the funds from villagers in order to test them all. The collective decision making and high group pressure would ensure high participation rates among the BOP people.

The VHC are well organized, have strong communal unity and look after each other, as the community takes the responsibility of its members health and the ownership of the communal programs. They also have a strong support from the MGENM staff and the people have gone through health program trainings before and thus presumably they could also be trained to use simple diagnostic equipment themselves and take care of the local distribution. Many villagers expressed their eagerness for work opportunities indicating of the possibilities for incorporating grass root people in to the scheme as employees or micro entrepreneurs and thus providing them new income sources, which has been found a particularly effective BOP strategy (e.g. Halme, 2010). The micro entrepreneurship could be supported by the existing lending scheme through the internal fund to overcome possible initial investments.

Certainly further research will be needed to develop opportunities to establish a new business venture and the VHC's would provide an ideal environment to study the needs of the particular market niche and the people in more detail that has been possible during this research, as the scope of the project has been broad and somewhat general. Therefore VHC and MGENM appear as a highly potential environment for the further opportunity development.

#### 6.2.4.3 Village Health Nurse

*“A handy device through VHN’s will surely attract the Kolli hill people to learn about the health” (Doc2).*

Currently the only functioning health care distribution network in Kolli Hills is through VHN's. Although the program is seriously understaffed they still manage to cover considerable ground due to well-motivated local staff, who live in the villages they are serving. VHN's are generally highly respected by the public and they have an established and trustworthy reputation with the people, which would be highly beneficial for a diagnostic venture. VHN's are also well educated health care experts, who have the basic knowledge and have capacity to learn more about specific diagnostic schemes and certain conditions. Due to their background education VHN's are technologically savvy and they probably could be trained to use even a more complex diagnostic tool.

As VHN's are focusing on mothers and young children and working in a close collaboration with ICDS program, they ought to be particularly effective in working with a diagnostic project aiming to address these groups. However, it is important to bear in mind that VHN's are not able to serve the whole population and the ones in most need are missing out their service. Therefore there is a risk to widen further the gap between different BOP groups. VHN is also a government run program, which requires close collaboration with public institutes and entails some additional opportunities and challenges as explained earlier.

### 6.3 Cultural understanding

In London's (2010) social embeddedness thinking the traditional market knowledge is not enough for the opportunity process to succeed, as he argues that the cultural and social aspects of the context has to be fully understood and therefore has to be investigated too. Furthermore the BOP literature emphasizes the need to integrate the offerings into the peoples life routines (Simains, 2009), which are dictated by the

cultural environment. In this section, I will highlight some most potential opportunities for a venture to embed into the local society, with some other important cultural factors that need to be taken into consideration for businesses planning to operate in the area. Obviously, the aspects highlighted are only touching the surface of the complexities of the Tamil and Kolli cultural realms.

### 6.3.1 Religion

*“It is possible to involve religious groups, but now it may be difficult as they themselves do not know about it (health care). Probably they should be motivated and educated to take up this and this will be a best tool to reach the people. Temple priest should be brought together and oriented and suitable material should be there to educate them on how they should act, refer, etc. Follow-up training is also needed. They should be brought to a system and a mechanism to make money through their knowledge that will attract them to serve the people well” (NGO3).*

The religion is a major influence in Tamil Nadu and needs to be taken into consideration on any business activities that are being carried out in the area. It is crucially important not to practice anything that can be seen conflicting with the religious teachings, as that would certainly drive people away from the scheme. Majority of the population are devout Hindus in Tamil Nadu and it is important to create the scheme with their preferences in mind, but it is also important to be in compliance with the other faiths too. As keeping the scalability in mind, there are other areas with heavy presence of Muslims, Sikhs and Christians in India, who can be as fiercely devoted to their faith as the Tamil Hindus are and in order to do business with them the scheme has to be appropriate and in line with their spiritual beliefs.

On the other hand, to socially embed the venture through integration of religious aspects or even to be seen favorably by the religious leaders could provide significant opportunities for a business venture, as they are extremely influential for these societies. Few interviewees even argued that the temples and priests are having more authority

over the people than the government and can also control and influence the actions of the public. Therefore collaboration or even to gain the backing of the religious leaders could significantly enhance the project prospects.

The religious organizations are already occasionally participating in certain health programs, but mainly only for pragmatic reasons and to get economic benefits. Health is not currently among their chief concerns and according to a Brahmin they are only halfheartedly involved. He says that the projects are not their own and because the temples are actually gaining economically for peoples ill health, as the sick people and their families go to temples for praying and give large donations in order to get healed, there is no genuine incentive to get involved. It appears that money is a major motivating factor for temples. Therefore it seems that engage them, they would need to get financial value from the venture.

The general health awareness is currently hindered by spiritual beliefs. As per Karma, it is widely believed that the health issues are a consequence of one's own acts and thus warranted. There is a strong sense of powerlessness among the people to influence their own wellbeing and curing, and thus people are commonly resorting to traditional healers, witchcraft and to temple priests before seeking to modern healthcare. These attitudes have their basis in the present spiritual realm, which is being ruled by the religious organizations and leaders, who thus could take action to change the behavior.

*"Somehow this behavior (health negligence) is not intervened spiritually. It would not be (morally) wrong even if the spiritual leaders applied little fear factor and said if you do not do this and that your son or daughter might get infected. Many people would follow it" (Brahmin).*

The use of spiritual fear to correct behavior and to make people attend health services might be somewhat morally questionable practice, but to reduce the barriers and misbeliefs related to allopathic treatments it would enhance any diagnostic scheme in the area. That is very much in the power of religious leaders, who could also highly influence the social embeddedness of the project through high integration to the people's lives. They could also raise the awareness over particular health issues as well as general knowledge of the project, in accordance with the propositions of Prahalad

(2009). Particularly any project related to STD's, the assistance of religious groups would be highly beneficial in order to tackle the issue with attitudes towards sexuality and the denial and negativity related to it. The prevailing line of thinking is based on the ancient Veda texts and is thus deep in the culture. To change the mentality of not talking about sex and the fear of STD patients being branded is obviously a long and hard road, but even to get the discourse started could only have positive impact on STD projects.

In practice, many grass root level priests and spiritual practitioners are guided by the very same attitudes and beliefs that are found in the other BOP people. Moreover they are lacking the knowledge and also need to be educated in order to be able to facilitate the change. Temples and shrines are enormously highly appreciated sites and any information given there would be treated with utmost respect by the public and thus would be ideal for educational campaigns. Printed material could be spread at the temples and the use of religious names and symbolism would be recommendable, as they are hugely popular in the area and ever present feature of the culture. Symbols and signs of gods are the language that every Hindu understands no matter of the level of education or literacy. There is a vast number of names and images representing health, fortune and prosperity, which can be used for promotion, while appalling signs could be used to enhance the message of a health risk or an infection, for instance while delivering results of a diagnosis.

### 6.3.2 Women

Tamil women would not be willing to let male practitioners to examine their bodies and depending on type of testing, it can extend to diagnosis as well. For example testing of STD's can be highly intimate affair and something that cannot be done to opposite sex. Also the husbands' protectiveness towards the women of their family might lead to a refusal to let them deal with unknown men. Therefore women involvement in a scheme seems to be recommended and can even be obligatory in order to achieve required relationship and to ensure privacy. The female involvement would also provide earning opportunities for women and thus help them to be less depended on men and thus also

empower them, as has been widely recommended in the BOP literature (e.g. Prahalad 2009) to advance BOP projects.

### 6.3.3 Family

Families are economic and social focal points of people's lives in Kolli Hills. Family businesses are typical units of trade and the family members are extremely committed to them, as the success of the family is being esteemed highly and presents an opportunity to elevate their status in the eyes of the community. Therefore operating through family units, for instance a family running a micro entrepreneurial diagnostic service would ensure thoroughly motivated sales force, with large families providing more flexible workforce than relying only an individual and at the same time creating new buying power to the family and taking care of the local distribution as also suggested in the literature for being effective BOP strategies (e.g. Halme 2011).

Having both males and females to do the examination, testing and counseling appears to be necessary for a health care project in the area. As large extended families have many members of both sexes, they would allow natural female participation in the scheme in a facilitated manner. The characteristic opposition for female employment by the male members of the family is reduced in a family business, where woman involvement is traditionally seen more favorably. In Tamil Nadu, the healing through Siddha and other traditional practices has always been going in families and locals are used to having their health care providers being rather members of certain families instead of individuals or other agents. Therefore, a family business providing a diagnostic service would in a way be a continuum of the tradition and seen as a natural way of operation by the locals and thus provide a great opportunity to integrate the venture into the local way of living recommended by London (2010) in the concept of social embeddedness.

# 7 OPPORTUNITY IDENTIFICATION AT THE BASE OF THE PYRAMID

In relation to the three different approaches to opportunity process developed by Kyrö et al. (2012), the discovery path, in which the opportunity identification and evaluation are intertwined and followed by the exploitation phase, seems to be most fitting for the opportunity process in BOP. The search and action approaches are not forbid, but they appear not to be equally suitable for the BOP environment, due to the nature of the process, which in BOP is a complex undertaking starting from a thorough scanning of the market environment i.e. establishing the community base (Simains, 2010), where the opportunity process is to occur. My empirical findings are supporting the BOP literature claim that the BOP opportunities are not mere needs or problems to be solved (e.g. London, 2010), but interactions of various elements emerging from the BOP sphere, that together form the space for the opportunity. Therefore a comprehensive understanding of the market dynamics i.e. the social embeddedness (London, 2010), including cultural and societal aspects is required in order to build the necessary knowledge base that is needed to reveal those elements of opportunity and thus is necessary for the opportunity process. Thus the search approach of Kyrö et al. (2012) model does not adequately describe the opportunity identification at BOP, as clearly more is expected from the entrepreneur than merely identify needs or problems. They also have to be evaluated throughout the process by trying to reveal new links and patterns in accordance to the discovery path.

The action based approach assumes that the opportunity identification takes place through consequences of the entrepreneur's deliberate actions, while the identification, evaluation and exploitation are intertwined. The notion is in line with London's (2009) claim that the venture creation in BOP markets is cyclical, but the action based opportunity exploitation is contradicting to my studies with the opportunity process in BOP, which suggests that the opportunity process takes place through the cognitive patterns of the entrepreneur rather than being behavioral as per the Kyrö et al. (2012)

discovery approach. In the course of the study, I have personally developed the opportunity spaces presented in this research by collecting the data to generate ideas and connected the different ideas with my past knowledge and experience of the opportunity process in order to identify new situations and possible interplays between the ideas and constantly evaluating the possible opportunity spaces to develop them further. The developmental cycle of opportunity identification and evaluation ought to precede the exploitation, as my findings confirm that the BOP opportunities seem to be based on extensive scanning of the market environment (London, 2010) and evaluation of the ideas emerging from the market based on prior knowledge and entrepreneurial creativity (Ardichvili et al., 2003). All this follows the Kyrö et al. (2012) discovery approach. However in their model the opportunity in discovery approach is being described as a response to changes in the environment, which is not necessarily the case in the BOP, where the environment is typically free from business operators and therefore the opportunities are not emerging from the changes in the market, but from learning to understand the market dynamics better.

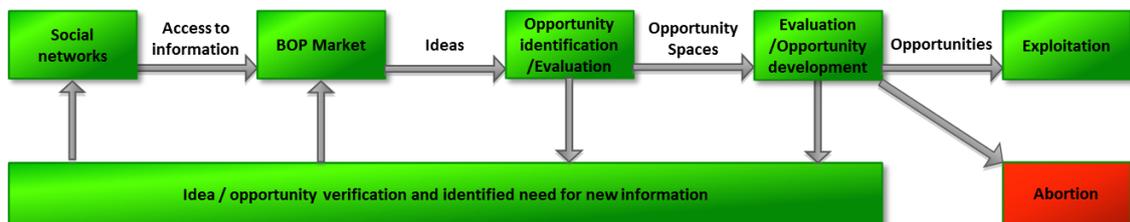


Figure 8. Entrepreneurial opportunity process in the BOP markets

## 7.1 The theory of entrepreneurial opportunity identification and development modified for BOP markets

Ardichvili et al. (2003) “The theory of entrepreneurial opportunity identification and development” model has been created for the traditional western markets and it does not address adequately the unusual circumstances of the BOP market environment. A central assumption of the model is that the information asymmetry and prior knowledge of the market, particular customer problems and how the market can be served is a

fundamental requirement that allows opportunities to exist and that an entrepreneur can only identify opportunities related to his prior knowledge. In the BOP environment the challenge for the entrepreneurs though is not that they have different information than the competitors, but the lack of information altogether (Prahalad, 2009). Therefore the entrepreneurs engaged into the opportunity identification process in the BOP has to first gain the market knowledge before the entrepreneurial alertness can trigger the opportunity identification as per Ardichvili et al. (2003) model. Thus obtaining the market knowledge is in the crux of the opportunity identification process in the BOP markets.

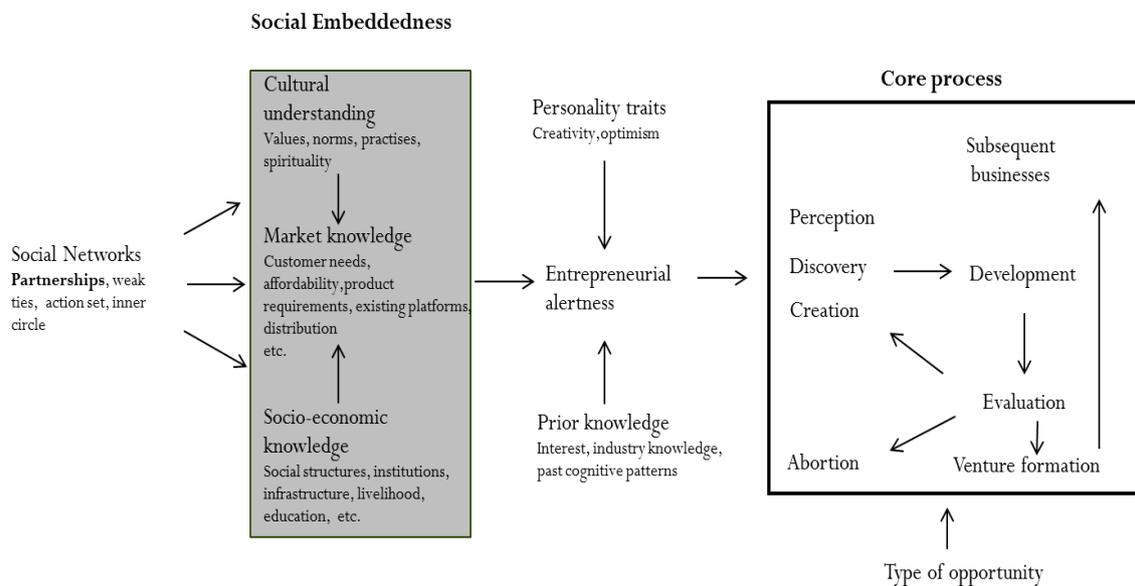


Figure 9. Entrepreneurial opportunity identification and development in the BOP markets

## 7.2 Social Embeddedness and the opportunity identification

The importance of understanding the particular BOP market has been well covered in the BOP literature (e.g. Simains, 2010), which unanimously declares that the investigation of the specific market needs and conditions is crucial for the venture development in the BOP. In the concept of social embeddedness, London (2010) argues that companies need to build a complete picture of the context and therefore the traditional market knowledge is not sufficient, as cultural and social aspects are also

highly important for BOP ventures to learn in order to be able to integrate the venture into the locality and to take advantage of the existing strengths in the local societies. My engagement into the opportunity identification process in the BOP suggests that the social embeddedness is a necessary component of the process to generate ideas needed as sources of opportunities. The ideas are emerging from the knowledge of the BOP market and therefore it can be argued that the higher market knowledge will generate more ideas for the opportunities and thus enhance the changes of successful opportunity identification in the BOP. Furthermore, higher number of ideas is recommended in order to create an idea pool (Morse & Mitchell, 2006), to determine the most potential ideas and also for further learning purposes.

My research supports the Simains (2010) claim that, an attempt to try to understand a BOP market has to have foundations in deep understanding of the community base including the cultural and social realms. The cultural features of the societies studied in this research are differing greatly from the home markets and since they are hugely influential and intertwined in people's lives, the cultural systems, values and practices have to be sufficiently understood in order to establish the comprehensive market knowledge. The same can be said about, how the society has been constructed not only in terms of physical environment, but also the local institutions and people relations as well as their level of education and livelihoods. The local culture and societal features are not only for a company to adjust, but they can also facilitate new ways to operate the business (London, 2010) and thus can be a great source of opportunity. The cultural and socio-economic understanding is absent in Ardichvili et al. (2003) model, but cannot be excluded from the opportunity identification process in BOP environment, where they were found out to be the foundation of the market intelligence.

### 7.3 Social networks and partnerships

Throughout the opportunity identification and venture creation processes there is an extensive need for information over the market conditions, while the economic, social and cultural environment is also fundamentally important in order to achieve the

required in-depth understanding of the circumstances affecting the venture, as explained earlier. In a BOP environment, the entrepreneur unless a local, cannot have the intimate market knowledge beforehand (London & Hart, 2010), and thus gaining it, is actually a key component of the opportunity recognition process.

The task of collecting enough information to sufficiently understand the market is an enormous overtaking for a foreign entrepreneur. The cultural and language barriers mean that access to informants is very limited and therefore, the social networks and partnerships become fundamentally important to carry out the investigations (Halme, 2011). This seems to apply particularly well into the context of Tamil Nadu. Ardichvili et al. (2003) give an equal importance to different types of social networks, which are said to be positively contributing to the opportunity identification. In the BOP markets though, the role of weak ties and inner circle for instance is very limited due to the foreign environment and likely absence of such networks. However the importance of partnerships cannot be overly emphasized. In the light of my study, the MGENM's vast impact to facilitate the opportunity identification process was the single most important factor determining the success of the process, as without them, I could not have been able to gather the information from the BOP, presented in this research. Therefore establishing functioning partnership is the starting point of the opportunity identification process in the BOP market and ought to be arranged before the actual investigation begins, as the lack of an accomplished partner places the whole endeavor into jeopardy.

#### 7.4 Entrepreneurial alertness

The opportunities in the BOP seem to fit to the “Dream” -type in the Ardichvili et al. (2003) model. The process starts at the point where both value creation capability and value sought are unidentified. Naturally the entrepreneur has certain knowledge of what can be delivered, but entering the BOP market is not about technology transfer as frequently emphasized in the BOP literature (e.g. Halme, 2011), but rather unique solutions are needed to be created to match the particular needs of the certain BOP market, which therefore in order to fulfill the “dream” requires an exceptional

entrepreneurial creativity (Ardichvili et al. 2003). Thus due to the type of BOP opportunities it is fair to argue that the entrepreneurial creativity is playing a central role in the success of the BOP opportunity process by influencing the evaluation of the opportunities in order to trigger the entrepreneurial alertness.

In the Ardichvili et al. (2003) model the entrepreneurial alertness is likely to be heightened when certain personality traits (creativity and optimism); relevant prior knowledge and experience; and social networks meet. In the BOP context the role of social networks is through their contribution to achieve the social embeddedness, as discussed earlier. The significance of relevant prior knowledge also appears to be of importance. It has not been emphasized in the BOP literature, which seem to take it for given and is highly focused on co-creation concepts. My engagement was related to an industry, which I had a minimum earlier experience and knowledge, and it was clearly limiting my ability to come up with possible opportunities. The technical understanding of health issues and the capacity of what diagnostic instruments can be produced was unclear and thus hindered my ability to pre-evaluate the opportunities and therefore can be proposed as a success factor for opportunity process in BOP.

However, the lack of restricting prior knowledge might also have broaden my perspective and allowed me to be more open minded for possible solutions, as suggested in the entrepreneurship literature (Morse & Mitchell, 2006). The lack of industry knowledge was partly compensated with my passionate personal interest and experience over the foreign cultures, development problems of the developing countries and contemporary sustainable business models. Finally Kyrö et al. (2012) suggestion of the significance of the past cognitive patterns to the discovery of the opportunities has to be included as a factor influencing the opportunity identification process. However, I am not in a position to comment my past cognitive patterns nor to analyze their significance for the process.

# 8 CONCLUSION

The aim of the research was to study the opportunity process in the BOP market through personal involvement and to address the research problem of **how opportunities can be identified in the BOP markets?**

The following research questions were answered in the study:

- What kind of opportunity spaces can be identified by examining the diagnostic service needs and diagnostic practices at the BOP communities?
- How unique characteristics of the BOP market environment affect the opportunity process?

This final chapter summarizes the key findings of the research and their contribution to the entrepreneurship and BOP literature, provides the managerial implications of the findings in general and for the Finnish diagnostic sector in particular. The research closes with recommendations for future research topics.

## 8.1 Key findings and theoretical contribution

This research is an exceptional attempt to apply the theories of the entrepreneurship literature and opportunity process with the concepts of the BOP literature. It is evident that the special characteristics of BOP markets are highly influencing the opportunity process and changing the dynamics of the standard opportunity identification practices. This research confirmed that high emphasis is needed to be given to information gathering in order to comprehensively understand the market (Simains, 2010), before the opportunities can be identified. The main reason being the type of opportunities that can be found in BOP, which typically at the beginning of the opportunity process can be described as “dreams”, since both the problem to be addressed and the solution are unknown. Therefore the process requires high levels of entrepreneurial creativity (Ardichvili et al. 2003.) and thorough scanning of the market in order to gain the

sufficient market knowledge required to trigger the entrepreneurial alertness and lead to opportunity identification.

There is surprisingly little reference in the entrepreneurship research to cultural and other contextual factors affecting the opportunity process, as the focus is on the market needs and innovation, which is often thought to be a consequence of a change in the technology or societal circumstances. However, the innovation in BOP appears to be highly context related (Halme, 2010), the fact supported by the opportunity spaces identified in this research, which were all emerging from the current practices of the BOP society and cultural features. Therefore the nature of the opportunity in BOP appears to be unusual and is frequently based on the existing strengths and platforms of the community utilized to some other purposes as suggested by London (2010). To adequately describe the opportunity process in the BOP, cultural factors and local social circumstances have to be addressed as a part of the market knowledge, which I have done in my model of opportunity identification in the BOP market.

The notion of “connecting the dots” from the entrepreneurship literature (Baron, 2006) appears to be fitting well into BOP market context. The logic behind the concept might be somewhat different though. The opportunity identification is described as making previously unnoticed connections between elements of opportunities (Baron & Shane, 2008) and is frequently driven by competition in the developed markets. However, in the BOP market it appears that the challenging business environment itself is necessitating creative linkages between wide variety of elements in order to identify opportunities with the primary purpose not to overcome competing offerings, but to be able to serve the customers in the first place.

The role of the entrepreneur seem to be somewhat neglected in the BOP literature discussing the venture creation in the BOP markets. It is obvious that the entrepreneur engaged into the venture creation process is a key component creating business opportunities through personal qualities to identify ideas and to craft them into opportunities (Shane & Venkataraman, 2000). In this research the role of the BOP people in the opportunity identification was mainly as a source of information and to verify ideas and prospective opportunities. The innovation capacity of the BOP,

frequently proposed in the literature (e.g. London, 2009) could not be triggered during the research and the concepts of co-creation of opportunities remain unclear. The BOP people were effective in validating given ideas, but since their creativity could not be yielded, higher importance was placed on the actions and creativity of the entrepreneur, thus emphasizing the decisive role of the entrepreneur in the opportunity identification process also in the BOP market.

The prior industry knowledge would enhance the opportunity process in the BOP, but does not seem to be a mandatory requirement for the early identification of the opportunity spaces, as opposite to Wickham's (2001) claims. Many BOP opportunities appear to be unusual by their nature and are emerging from the contextual understanding of the particular BOP market and thus the early opportunity identification can be done to certain degree without intimate industry knowledge.

Finally, the social networks and partnerships in particular seem to be a certain requirement for any opportunity identification process in a BOP market. The cultural and language differences create an insurmountable obstacle for a foreigner attempting to carry out the process and therefore local support is needed to get the required information, and to socially embed the venture into the locality already during the opportunity identification phase. Furthermore partners are not only to facilitate the proceedings, but can themselves form elements of opportunities as have been the case in this research with MGENM and Village Health Club. Therefore the BOP literature emphasis over the importance of close partnerships for venture creation in the BOP (Webb et al. 2009) seems to be also founded for opportunity identification purposes.

## 8.2 Managerial implications

The practical aim of this study was to provide Finnish diagnostic sector a better understanding of the opportunity development process in the Indian BOP markets and to come up with some elements of business opportunities for further development purposes. In general the diagnostic services are virtually absent in the studied area and there appears to be a high need for them. As currently the health care bill of the BOP

people is very high, they were found to be both willing and able to pay for the pre-symptom and preventative diagnosis in order to reduce the future costs and improve their health. Particularly conditions highly affecting the ability to generate income or those expensive to treat appear to be most prominent, as the economic incentive is a significant factor for BOP people to participate into a diagnostic scheme.

The best opportunities to serve the BOP market seem to be via community based organizations. They provide direct access to the people through established organizations thus overcoming the severe distribution challenges, which is the most significant obstacle for business operations targeted to the ordinary BOP people in the area. The identified Village Health Club network provides an excellent platform for not only to carry out business operations in the future, but also for inclusive business concept development together with the BOP users. MGENM has proven to be a reliable and effective local partner keen on future collaboration. They provide an excellent opportunity for partnership, as they have highly competent staff and have demonstrated their ability to facilitate operations. An effective and functioning partnership is essential for any business or research activities in the area.

The extremely low health awareness of the BOP is preventing people from seeking assistance and represents a major challenge for a venture to overcome. Similarly the attitudes towards health are resigning and people are not taking action to improve their health, as it is believed to be out of their direct influence. Therefore the educational aspects become crucial for a diagnostic venture. Religious organizations, public campaigns and communal training through CBO's and NGO's seem to provide best opportunities to alter the behavior.

During the course of the study some opportunity spaces were identified, while none of the challenges and obstacles encountered appeared to be insurmountable. Therefore there seem to be genuine business opportunities available for a diagnostic venture and further investigation and development is highly recommended.

The innovation and venture creation process in a BOP market is a long undertaking and this research represents only the first steps of the journey. My field study in India was only explorative by the nature with the aim of broadly mapping the BOP market needs,

challenges and possible opportunities. The information presented here is only to lay foundations for the next stages of the process. Companies interested to explore the BOP market ought to evaluate their skills and competences against the market conditions described in this study in order to determine whether they have capacity to meet the challenging circumstances and requirements of the BOP market in order to continue the opportunity development process.

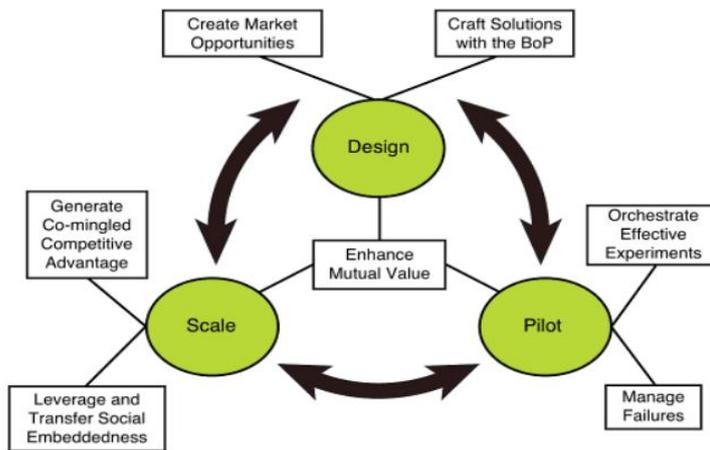


Figure 9. Seven key principles of BOP venture development (London 2010).

For the next part of the journey, the diagnostic companies ought to have narrowed down the number of health conditions to more distinct fields that can be addressed through a venture. Broad ideas of possible offering proposals have to be identified for a more focused opportunity development. Another field study in the BOP market is required to establish an insight of the potential areas specified by the diagnostic companies with the emphasis on interaction and co-creation with the BOP stakeholders in order to develop opportunities further into specific business concepts that can be piloted on the field and later scaled up.

### 8.3 Suggestions for future research

The opportunity process in the BOP markets is almost an unknown domain in the entrepreneurship research and further research is required to understand better the applicability of the standard theories in the BOP environment. This study proposed a

new model based on Ardichvili et al. (2003) “The theory of entrepreneurial opportunity identification and development” modified to be better suited for BOP markets than the original. However, the created model is based on a single empirical research and existing literature and thus can be biased towards the experienced opportunity identification process in this particular BOP environment. The logic behind the model ought to be tested in other BOP markets. As the BOP markets differ greatly in different locations (Pitta et al. 2008), it is highly likely that the elements in the model and their importance can vary. They should be studied individually to get better understanding of their roles. Particularly interesting would be to evaluate the significance of the entrepreneur’s personality and background in order to determine what characteristics are affecting the process, which were not being addressed in this study.

In this research, the access to information and cultural understanding played major roles due to the special characteristics of the studied BOP market. Elsewhere the importance of the elements could be different and it would provide interesting research questions to study the relations of the model in different locations to determine to which degree aspects of the BOP opportunity process are universal and to what extent local. Further studies to address the significance of the culture as a source of business opportunity and how it affects the entrepreneurial process would also be highly interesting and relevant topics to understand for prospective BOP ventures engaging into opportunity and innovation processes in the BOP markets. The concept of co-creation features frequently in the BOP literature (e.g. Prahalad, 2009), yet how it should be executed has not been clarified and moreover how to co-create opportunities and engage BOP involvement in the innovation process need further research. Finally, the current study was focused on the opportunity identification part of the entrepreneurial opportunity process. The opportunity development, evaluation and exploitation phases in BOP markets remain uncharted and ought to be studied to shed light on the whole opportunity process in BOP markets.

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