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The Base of the Pyramid markets in Africa: Opportunities and challenges

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Abstract

The continent of Africa is not homogenous; rather, it varies significantly across the five regions of Africa – North Africa, East Africa, Central Africa, West Africa and Southern Africa. Although the continent is endowed with rich resources, it remains volatile and faces myriad problems including poverty, corruption, and inadequate infrastructure to name a few. Africa faces enormous social challenges where about 33.9% of its population live in extreme poverty, and herein lies a great opportunity for the Base of the Pyramid (BOP) ventures to emerge. While development organisations are looking for solutions to alleviate widespread poverty, the private sector has a role to play in alleviating poverty through market-based solutions, as well as partnering and collaborating with other state and non-state actors to contribute to the sustainable development of local communities in Africa. In this chapter, we survey the literature on BOP in Africa and highlight the current conversations and debates, as well as identifying gaps in the literature where further research is required. To enrich our understanding of the nature of BOP initiatives and marketplaces in Africa, we present three interviews with BOP market experts in Africa who discuss the drivers, barriers, and the future of BOP enterprises in the continent.

Keywords: poverty alleviation; Base of the Pyramid markets; BoP Africa; Inclusive business; Sub-Saharan Africa

Introduction: Defining the 'Base of the Pyramid' Markets

The Base of the Pyramid (BOP) concept was first introduced in the business and management scholarship in 1998 by Prahalad and Lieberthal. The BOP was later popularised by Prahalad and Hammond (2002) in their article published in the Harvard Business Review that identified the "missing market" or "the invisible poor" often ignored by international, multinational and transnational corporations. An earlier reference of the term was by President Roosevelt of the United States of America (USA) who in 1932 spoke about *"the forgotten, the unorganized but indispensable units of economic power … the forgotten man at the bottom of the economic pyramid"* (quoted in Mason et al., 2013, p. 402).

The main thesis of the BOP concept is that poverty can be eradicated through market transactions. The earlier proponents championed BOP as a market-based approach with the potential to unlock societal prosperity. BOP essentially involves an external commercial organisation *"that either sells goods to, or sources products from, those at the base of the pyramid in a way that helps to improve the standard of living of the poor"* (London, 2008, p. 1). Prahalad and Hammond (2002) urged multinational corporations (MNCs) to give market access to the low-income segment of society as consumers, and in return they would reap economic benefits whilst alleviating poverty. They opposed the idea of MNCs relying on philanthropic approaches to lift billions of people out of poverty in communities in which they operated. Since 2007, the concept has been researched widely with an increasing body of literature from diverse disciplinary fields including marketing, strategy, international business, general management, development studies, and information technology, to name but a few (Dembek et al., 2019; see Kolk et al., 2014; Follman, 2012). The concept has been adopted by for-profit enterprises, government bodies, and not-for-profit organisations and proved very popular, especially at a time when *"market stagnation across the developed world was widespread"* (Mason et al., 2013, p. 401).

The BOP concept has, therefore, become indispensable in modern discourse on tackling grand societal challenges through business and management research. There is no prescriptive academic definition of what constitutes a BOP population, but broadly speaking it defines a group of people that are ranked the lowest in the socioeconomic ladder of a country, region, or society. According to Kolk et al. (2014, p.351-352), measurement of poverty varies widely with most published research defining the BOP population as those with per capita income at or below US$1,500 or US$2,000 per annum expressed on an internationally comparable “purchasing power parity”. Euromonitor defines the Africa BOP as those households with an annual disposable income of US$2,500 or less (https://blog.euromonitor.com). Scholars define the term using a mix of incomes, buying power index, living standards, and levels of access to goods and services including education, healthcare, financial services, etc. The use of different poverty thresholds, dimensions and target populations, and an agreed-upon definition of what constitutes BOP venture in BOP[1] literature has fuelled criticisms of BOP research for lacking rigour and for *“creat[ing] confusion and hamper[ing] theory building and generalization”* (Kolk et al., 2014, p. 353).

What we know is that the BOP concept has evolved from its original conceptualisation over the years. Firstly, while it was originally conceptualised with MNCs[2] as the main players, the BOP business model is currently being used by small- and medium-sized enterprises (SMEs), cooperatives, social entrepreneurs, governments, and multi-stakeholder partnerships (Kolk, et al., 2014). Secondly, the way that the “missing poor” are viewed - as consumers, producers, and/or entrepreneurs - has evolved (London, 2016). Prahalad and Hart (2002) introduced the first iteration, BOP 1.0, which conceived the role of the poor as consumers. The 1.0 approach was conceptualised around *“selling to the poor and helping them improve their lives by producing and distributing products and services in culturally sensitive, environmentally sustainable, and economically profitable ways”* (Prahalad & Hart 2002, p. 3). However, there was an ongoing criticism on how BOP 1.0 encouraged consumerist behaviour among the poor and made them spend their limited resources on unnecessary items instead of necessities (Karnani, 2007). As a consequence, BOP 2.0 was introduced to highlight the importance of co-creation in partnership with the poor, or to put it more concretely, “creating with the poor” (Simanis & Hart, 2008) who are resilient entrepreneurs (Dembek et al., 2019). In both BOP 1.0 and BOP 2.0, products are introduced to the BOP markets (BOPM) where consumer education is limited and the marketplace is complex and highly volatile resulting in very high

[1] For a working definition and more on this inconsistency, see London, Ted. *The Base of the Pyramid Promise: Building Businesses with Impact and Scale*, Stanford University Press, 2016.

[2] Often cited BoP studies: Hindustan Lever Ltd. in India (subsidiary of Unilever), Celtel in Africa, Hewlett-Packard in Africa, Avon in South Africa, Cemex in Mexico, and SC Johnson in Kenya. Other players: Amul is a cooperative in India and Grameen Bank is a local bank in Bangladesh.

mortality rates for BOP ventures (Dasgupta & Hart, 2017).

BOP 3.0 is the third iteration and builds on BOP 2.0 while integrating the socio-ecological perspective into BOP initiatives (Caneque & Hart, 2017). BOP 3.0 seeks *"a greater conceptual shift, away from singular solutions of poverty alleviation to understanding how wider innovation ecosystems and engagement through cross-sector partnership networks can be developed"* (Mason et al. 2017, p. 267). BOP 3.0 recognises the importance of creating an entire ecosystem: technology suppliers, financiers, capacity builders, supply chain players, open innovation and drawing on the wisdom of the crowd, distributors to the last mile, cross-sector partnership, and embracing the complexity of the BOPM. In other words, BOP 3.0 focuses not only on creating a wide and deep value proposition to the poor but also on creating an ecosystem to deliver them.

Development challenges in Africa

The Financial Times and The Economist have in recent years defined Africa as "rising", a far cry from the "hopeless continent" headlines we read at the turn of the 21st century. The changing narratives on the continent can be attributed to the projected upward economic growth in sub-Saharan Africa that stood at 3.1 percent in 2018 from 2.6 percent in 2017, and which is estimated to rise towards 3.6 percent in 2019-2020 (World Bank, 2018). The Africa rising narrative is supported by the fact that a number of African countries' economies have grown significantly over the years including Ethiopia, Kenya, Mozambique and Ghana. However, in the recent past, some of Africa's largest economies such as Nigeria and South Africa have suffered slower economic growth reflected by the global uncertainty and domestic macroeconomic instability (World Bank, 2018, pp. 141-148).

Despite the extraordinary progress made in reducing extreme poverty in Africa, the continent still faces a number of challenges, amongst them widespread poverty. In fact, Africa currently has the highest number of people in the world living in extreme poverty, measured as $1.90/day. The World Data Lab[3] in October 2019 reported that there were about 428,205,433 people living in extreme poverty in Africa. This represents 33.9% of Africa's population of 1,262,273,527, and in the global context represents two-thirds of the world's poorest

[3] Data downloaded on October 9, 2019 at 16.00 hrs from the https://worlddata.io/.

population (see also World Bank, 2018). Africa is the second largest and the second most populous continent. It is significantly diverse in many ways including the poverty realities across all its 55 countries. Table 1 presents a summary of African countries' poverty numbers drawn from data from the World Data Lab's real-time poverty estimates as calculated using the methodology of the World Poverty Clock, which monitors the progress against the United Nations' Sustainable Development Goal of Ending Extreme Poverty (UN SDG1) for almost every country in Africa.

To compute the speed of poverty reduction in each country, the poverty estimates have been calculated using publicly available data on income distribution, production, and consumption provided by various international organisations such as the World Bank, International Monitoring Fund, and the United Nations. We observe that while countries such as Ethiopia have made great progress to eradicate poverty, others like Nigeria, DR Congo and South Sudan have the largest number of people living in poverty. Nigeria for example is experiencing a spike in numbers with about 87 million people living in extreme poverty. In 2018, it was overtaken by India as the most populous country of people living in extreme poverty. India's population living in extreme poverty was about 73 million. Nigeria was followed closely by the DR Congo.

<Table 1 somewhere here>

The poverty reality in Africa was also confirmed by the World Resources Institute who in their 2018 report classified 486 million people in 22 African countries as BOP[4]. We know from the World Bank estimates that the number of people living in extreme poverty in Africa is set to grow. For example, 14 out of 18 countries in the world with increasing numbers of extreme poor are in Africa. This is a worrying trend as the increased economic growth in Africa remains insufficient to reduce poverty significantly (World Bank, 2018). Additionally, despite the fact that Africa receives the highest international aid per capita (Bewayo & Portes, 2016), the population continues to suffer from many social ills that need addressing (Kolo et al., 2019). The fear of falling behind the global SDG1 targets (No poverty: End poverty in all its forms everywhere) has contributed to the collective global development voice calling for the

[4]https://www.wri.org/resources/charts-graphs/bop-market-income-segment-africa-429-billion downloaded on October 3, 2019

refocusing of energies on Africa if there is to be any meaningful progress towards ending global poverty (Bill & Melinda Gates Foundation, 2019). In the next section we explore the approaches to poverty alleviation in Africa where we focus on the BOP business model.

Approaches to Poverty Alleviation in Africa

The transformational vision of 2030 Agenda for Sustainable Development and the Africa Vision 2063 calls on all stakeholders to work together to achieve a better world. The nagging question is how we might reverse the dire projections that Africa will account for nine-tenths of the world's extreme poor by 2030. How do we respond to figures that show that by 2030 the top 10 poorest countries in the world will be from Africa? On October 17, 2018, The Brookings Institute in the USA declared *"Africa: The last frontier for eradicating extreme poverty"*[5], so what should we be doing differently to ensure we achieve SDG1?

To answer these questions, one might consider both development aid and market-based solutions. On one hand, despite supply-based solutions such as development aid programs being the primary poverty alleviation approach for the last 50 years, they have not been sustainable and have been criticised for quite not improving the lives of the poor (Dembek et al., 2019; Easterly, 2006; London, 2016; London, 2008). On the other hand, market-based solutions such as the BOP have not been successful either and in some cases they have resulted in more ill than good (Karnani, 2010). While much debate between supply-based and demand-based solutions has been ongoing (Banerjee & Duflo, 2011), we argue that poverty alleviation needs both approaches (Easterly, 2006; Prahalad & Gouillart, 2008; Sachs, 2005). Rwanda, for instance, is an example of the good that aid can do (Sachs, 2005), but it is also an example of self-reliance (Moyo, 2009). In fact, the poor might use the aid to kick-start and improve their lives and be prepared to catch up on existing opportunities that market-based solutions might provide. What is certain, however, is that some markets for the poor are missing and the conditions to create markets that are accessible and affordable to the poor are absent (Banerjee & Duflo, 2011; Hart, 2017). This is an opportunity for the private sector to play a major role as a potential partner in the creation of the missed markets (Caneque & Hart, 2017).

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[5] Downloaded on the October 9, 2010. https://www.brookings.edu/blog/future-development/2018/10/17/africa-the-last-frontier-for-eradicating-extreme-poverty/

Africa’s local marketplace is often resource-poor with acute poverty levels, unstable, and highly influenced by ethnic group identity (Acquaah, 2007; Rivera-Santos et al., 2015). Thus, to ensure sustainability and scalability, the BOP venture must, *firstly*, follow a community-centric and social approach to gain trust and licence to operate amongst the local community, and *secondly*, stay commercially successful (London, 2016; Panum, Hansen, & Davy, 2018). The BOP business model’s premises provide a distinctive approach that predicates on these principles and thus have the promise of servicing the poor at scale. BOP, in essence, brings solutions to eradicate poverty using the markets’ disciplines and private sector’s organisational elements and resources: i.e., organisational capabilities, technological advances, and capacity to produce scalable and cost-effective solutions. BOP underpins the importance of co-creation and calls for convergence between different actors to collectively work on finding solutions to poverty (Prahalad & Gouillart, 2008).

To increase effectiveness of solutions, the BOP business model recognises the importance of keeping efforts locally focused. When designing solutions for the BOP population, they must be understood as they relate to and fit within the context of local communities in order to gain legitimacy and acceptance. In Africa, differences and variations (i.e. societal, political, institutional, historical, spatial, and temporal) between communities are enormous and solutions cannot be designed uniformly. To circumvent these complexities, the BOP business model celebrates the importance of partnership, between and among the public sector, private sector, civil society, and local communities, as an integral part of any solution structure. Defining multiple layers of partners throughout the value chain provides possible solutions for the barriers, as defined by the BOP business model, viz. awareness, affordability, availability/accessibility, and acceptability (Prahalad, 2005). All in all, BOP ventures differ in comparison to other poverty alleviation market-based models. London (2008) identified six principles, namely: external participation, co-creation, connecting local with non-local, patient innovation, self-financed growth, and focusing on what is “right” at the BOP. Table 2 below illustrates the mechanism of each principle.

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The BOP population faces severe constraints, as both consumers and producers, in sectors such as nutrition, education, healthcare, insurance, and credit. These constraints make BOPM the largest untapped market in the world. However, as hundreds of companies which operate in BOPM do not deliver as they hoped for, with the majority exiting the market (London, 2016), developing a sustainable and scalable business model in BOPM continues to be a challenge. In the next section, we explore these challenges, barriers, drivers, and future of BOP in Africa with a group of experts.

Experts Views on the BOPMs in Africa

The BOPM in Africa is diverse and ever expanding. The 2016 Euromonitor International[6] statistics showed that Nigeria, Kenya and South Africa were the three largest BOPMs in Africa in terms of the total expenditure by BOP households accounting for over 16 million households with an annual disposable income of below US$2,500. It is estimated that BOP householders will reach 20.4 million by 2030 with a total spending of US$52.0 billion. To enrich our understanding of the nature of BOP initiatives and marketplaces in Africa, we interviewed in Autumn 2019 three experts – Professor Cees van Beers, Niek van Diik, and Beryl Oyier – who have a wealth of knowledge and experience through their research and practical experience in developing and implementing market-based solutions to poverty alleviation in Africa. Their insights into different topics around BOPM in Africa are very illuminating and widen our understanding of the topic.

Cees van Beers

Cees van Beers is full professor of Innovation Management and Head of the section Economics of Technology and Innovations. He is also one of the co-leaders of the Leiden Delft Erasmus (LDE) Centre for Frugal Innovations in Africa. He holds a Doctorate in Economics (Ph.D) from the Free University Amsterdam. He worked at the University of Leiden as assistant professor, the Institute for Research on Public Expenditure in the Hague as a senior researcher and as associate professor on innovation economics at Delft University of Technology. He has also worked as consultant and expert for several international organisations such as the OECD, FAO and the World Bank.

Niek van Dijk

[6] https://blog.euromonitor.com/three-largest-bop-markets-africa/ downloaded on the October 3, 2019

Fascinated and motivated by the crossroads of agribusiness development and food security, with a particular interest in making this work for consumers in low-income markets, Niek van Dijk has been working for BoP Innovation Center for close to seven years as a senior programme manager on different inclusive agribusiness projects, most notably the 2SCALE programme. Niek has a master's degree in International Relations from the University of Groningen, the Netherlands. Prior to joining BoP Innovation Center, he has gained extensive experience in working on agribusiness and food security in different policy position at the Dutch Ministries of Agriculture and Foreign Affairs, and CSR Netherlands.

Beryl Oyier

Beryl is the Managing Director for the East Africa office at BoP Innovation Center (Kenya). Her work entails guiding programmes and companies, both MNCs and SMEs, in inclusive business models working with inclusive innovation tools, inclusive business empowerment tools and generating marketing and distribution strategies for low-income communities to spur entrepreneurship and empowerment. She has facilitated projects in agri-food, renewable energy and WASH with a focus on gender transformative models. Beryl's experiences have been attained through a career spanning over ten years and gathering relevant experience in different low-income community environments including urban, peri-urban and rural Kenya, and supporting activities in Zambia, Tanzania, Uganda and Ethiopia. Beryl has both a Master of Arts and Bachelor of Arts in Anthropology from the University of Nairobi.

What are the main characteristics of BOPMs in the Africa context, in particular concerning innovation, business model, network, challenges, etc.?

Cees van Beers: The BOP markets in Africa are characterised by severe resource constraints on both the producer and consumer sides of the market. The consumers, who are at the end of the value chain in the BOPM, often cannot afford a lot because they live on $2 or less a day, unless there is some kind of a business model that takes that into account. On the producers' side, they have to perform their technical and economic activities in environments characterised by a lot of voids (i.e. technical, technological, and physical infrastructure) in many countries in Sub-Saharan Africa. If one wants to innovate for markets like this, then one has to take into account these severe resource constraints in the design of products, services, or systems. To do this, the innovation process right from the beginning should define what the constraints in the outside world are, then adapt the design process to take these constraints into account. The business model must be sustainable right from the beginning because if the product is designed in a very frugal way but the business model does not account for this, then the company's innovation will not be successful. Of course, it will remain a nice invention that demonstrates technological success, but it will never be an innovation if it lacks both technological and commercial success!

Niek van Dijk: One thing to bear in mind is that you cannot assess the continent as a whole: there are quite some differences in the maturity of BOPMs between Anglophone and Francophone countries. However, we can see a trend in the increase in support from incubators, accelerators, and initiatives that focus on enabling and encouraging more innovative products and services tailored to BoP markets across Africa, in particular in Kenya and Nigeria, but also in other countries. Africa witnesses a rise of start-ups and companies that provide truly needed products and services in, what I would call, "basic needs sectors", like agriculture, renewable energy, water and sanitation, and health care.

What is also good is that there is a solid base of intermediary organisations that help foster innovations in these sectors. This could be further strengthened by the increased attention universities and vocational institutions give to studying BOPM. On the business model side, the main goal of a BOP business model or inclusive business model is to ultimately have a true and commercially sustainable impact by involving people at the BOP, whether they are producers, consumers, employees, or micro-entrepreneurs. For these business models to succeed, it is extremely important to collect data and insights on BOP consumers and producers so as to make a convincing case towards companies to more actively target BOPM across Africa.

Beryl Oyier: The BOPM is a significant five trillion US dollar market[7] of which US$215 billion is from sub-Saharan Africa. However, globally, 821 million BOP consumers are yet to be reached. This is a great business potential for products and services here in Africa. It is good too from a development perspective. But the big question remains: how might the

[7] For more on this see the Global Consumption Database: http://datatopics.worldbank.org/consumption/. Also see *The Next 4 Billion, The Mystery of Capital and The base of the pyramid promise.*

business interventions or ventures reach the BOPM? How do we work with the micro-entrepreneurs and micro-enterprises to reach the BOPM? The BOPM is highly driven by market approaches which are driven by push rather than pull factors. We need to be innovating and developing new last-mile distribution models to reach the BOP population who naturally live in remote rural areas where the infrastructure is poor. A viable business model is imperative as the BOP population do not go into the mainstream markets to access products but rather buy from the little kiosks or shops that are available within the locales they can easily access.

Who do you consider as the main players in the BOPMs in Africa?

Cees van Beers: On the demand side are the local consumers and communities who are end users of new products and services. On the supply side are companies including local entrepreneurs, transnational and multinational companies from all over the world, including those emerging from the developing countries such as Tata Steel from India. I think MNCs can be very important as they know how to scale up innovations in the BOPMs. They are able to capture value as well as create value locally for the BOP community. The point is to come up with a business model that overcomes the tension between value capturing, which is profit for the MNC, and value creation for the local economy. SMEs are other important players who probably have a bigger advantage over MNCs as they are much more used to working in an environment where resource constraints are severe. Perhaps the challenge SMEs have is that of scaling up innovations. In my opinion, MNCs, SMEs, and the BOP community have to work together. Innovation these days is not born in one company. Whereas innovation is done inside a company, information from outside is needed in order to make the innovation a reality. Obviously, MNCs need local knowledge that can be acquired from local entrepreneurs. MNCs need to involve local stakeholders in the whole innovation process right from the start. SMEs and local entrepreneurs provide the innovative company with relevant information that increases the chances of making the frugal innovation a success. They also distribute the innovation of the new products, services, or systems through their local outlets. For example, it is important to have these local companies and/or players on board to achieve last-mile delivery in remote rural areas.

Niek van Dijk: In publications, a disproportionate amount of attention is paid to what products and services MNCs provide to BOPMs, especially in the Fast-Moving Consumer Goods

(FMCG) sector. Companies like Unilever, Procter & Gamble, Nestlé and many others have dedicated strategies to reach BOPMs. However, the ultimate group of companies to reach BOPMs are, and will continue to be, local SMEs. Intermediary organisations and progressive financiers like Acumen, Root Capital and others can play a big role in the development of this segment. There are also more and more philanthropic organisations that play an increasingly important role like the Gates Foundation and Rockefeller Foundation. There are also a few progressive government donors (primarily the Dutch, British, German, Swiss and Scandinavian) who do a lot in financing activities to help these local SMEs reach the consumer market. The role of (local) governments in the BOPM in Africa is a challenging one. I think one of their roles should be to prepare the grounds and ensure and proactively foster an equal playing field. For instance, we have been working with a dairy multinational with a partnership with local farmers in Nigeria, and the government do play a great role in building the infrastructure that is needed for the collection of this milk in rural areas. If governments play a role in laying the groundwork for companies to do their jobs, that would be great. But we also have to be realistic: how involved should local governments really be in driving the development of the private sector?

Beryl Oyier: I think for us at the BOP innovation centre, the key player is the BOP consumer who is an aspiring consumer despite their very little and/or stagnant income. If you are trying to innovate or come up with products for them, it is essential to develop necessary, not luxurious, products. BOP consumers do not have that extra income to buy unnecessary things that they may not need. It is equally important to bring the BOP consumer to play a role and interact with the different players in the value chain. The other important players are MNCs, SMEs, and governments. By and large, local SMEs play a bigger role than MNCs because (1) they innovate products that usually resonate locally, and (2) they not only create products but also create employment and an entrepreneurship ecosystem for many low-income markets in the community. The main challenge is that these actors sometimes try to push innovations into the BOPMs and they then try to figure out how to bring in a pull mechanism in order for the intervention or the initiative to be sustainable. The main element that would influence the sustainability of the initiative or enterprise is a deep consumer behaviour understanding.

What are the main drivers of BOPMs in Africa?

Cees van Beers: Searching for profit opportunities is a key driver, and this equally applies for MNCs, local SMEs, and entrepreneurs. Whereas capturing value through profit to shareholders is necessary, it is equally important to create social value in the local economic environment otherwise the whole market might turn against the company and the value capture will go down the drain.

Niek van Dijk: I would say, the ultimate driver of any market should be the consumer. At the same time, relatively little attention is paid to understanding BOP consumer markets in Africa. The lack of market intelligence is a major barrier for the further development of the BOPM. We must get a better understanding of BOP consumer preferences, trends in consumption of food products, etc. I also see the companies themselves as an interesting driver. Next to the huge segment of local SMEs, there are more and more multinational companies that consider the African BOPM as the next market for global business development. Unilever, for instance, is now making profits more and more from BOPM as their growth is stagnating in some western market. This will continue to be the case, even though we should not necessarily overestimate the role that multinationals can play. Lastly, what would really drive further development of BOPM is when companies collaborate in public-private partnerships in such a way that they can approach these often remote and scattered BOPMs in an integrated way. For instance, in agriculture, an integrated approach would be when companies that work with actors across the value chain, from the field all the way up to the end consumer, are brought together to see how they can collectively better serve and develop the market, like we do in the 2SCALE program

Beryl Oyier: Companies exist in this market for both social and business objectives. However, the key driver is usually their business goals followed by the social impact. Companies try to join the social and environmental conversations in order to push behaviour change to create awareness around their products or services. Companies are motivated by (1) the need to develop innovative approaches that reach the most remote BOPMs with affordable products/services, (2) the economies of scale, (3) pricing, which is a critical element, and (4) the acceptability of the intervention. Of course, the demand is already there. The governments sometimes support the BOPM when the innovation aligns with its political agenda. In many cases, the projects will be allowed (push) to work with no clear legislation or even consumer demand. Governments may also provide different incentives: for instance, in Kenya, the manufacturers as well as the SMEs are supported to create products that are demanded locally in the market. Manufacturing is one of the government's Big Four agenda. The other three are food security, affordable housing, and affordable healthcare for all.

What are the main barriers of BOPMs in Africa?

Cees van Beers: On the side of the innovators who have the potential to scale up, BOPMs are sometimes considered not a very important market because the price of products and services are extremely low. A company will require a very efficient process of developing and producing innovations to be successful. Nonetheless, the gain from BOPM is the deep market penetration where companies' profits based on the vast amount of sales as opposed to high price or profit margins. For many MNCs, venturing into these BOPMs is a tricky adventure because the markets are very different from those in Europe or the United States of America. BOPMs in Africa are characterised by voids – for example, regulations may be limited or insufficiently enforced. Having said that, the barriers are both objective and subjective. A subjective barrier is that foreign companies are a bit scared of being perceived by the local communities and NGOs as the capitalist enemy. Similarly, western MNCs in particular face a lot of competition in Africa from those from India and China who have more experience in producing for the BOPMs. The objective barrier is that the BOPMs in Africa are not very visible because often the consumers or producers operate in the informal economy. People who are working in the informal sector have no bookkeeping nor bank accounts, and so it is very hard to know with certainty where the potential is.

Niek van Dijk: Some of the enablers that we discussed earlier have their flip sides. For instance, the governments can definitely play a bigger role in organising a conducive market environment for companies to grow the BOPM. However, at the same time, their policies (e.g. about market entrance) often also form barriers. Secondly reaching the BOP can be challenging due to the uniqueness of the market itself. Both the literal as well as relative remoteness of BOP consumers to markets can make it extremely difficult for companies to reach the BOPM segment, to bridge the metaphorical "last mile". In our work in Africa, the four As (i.e. Awareness, Affordability, Availability and Acceptability) as defined by CK Prahalad remain the most appropriate pathways to look at how to overcome the main barriers to reach BOPM. Next to obvious barriers such as purchasing power (affordability), I think lack of awareness is one of the most difficult barriers to overcome in the African BOPM. Finding a way in which companies together with other stakeholders will work on increasing awareness on a topic like nutrition for instance is very important. Lastly, as I mentioned earlier, the lack of really rigorous consumer market research is affecting the market performance and growth.

Beryl Oyier: We need to conduct a credible needs assessment of this market. Sometimes companies assume that their innovations are relevant or needed but they later discover that this is not the case or the innovations are not properly working. BOPM's penetration is always a challenge. Accessibility and affordability of these innovations are tricky to design for. Sometimes the innovation exists but the finances to operationalise it are not available. Capacity building is another barrier: for example, financial inclusion for the population or financial empowerment for local SMEs is very limited.

How have the BOP initiatives contributed to the advancement of sustainability more generally, and to the sustainable development of Africa?

Cees van Beers: Frugal innovation in BOPMs is a recent phenomenon, around ten years old. BOPMs are generally a small part of visible economic activities in Africa. In order to see a significant effect on sustainability or advancement of the SDGs, there must be some successful innovations that are scaled up. Local NGOs and communities start projects that are very sustainable but the scale at which they produce becomes very hard to say they contribute to the SDGs.

Niek van Dijk: There must be a sustainable approach to BOPM and of course ultimately the companies should be in the driver's seat. The partnership approach where companies are trying to foster collaboration among companies, governments, NGOs and knowledge institutions, holds the greatest potential to contribute to how we can create more sustainable business models

Beryl Oyier: Designing business models where the four As are achieved is a big contribution to the market-based approaches to sustainability. BOP ventures do not give aid but rather they are embedded in a local value chain. As a result, local entrepreneurship opportunities are enabled, especially the micro-entrepreneurship. Creating an entrepreneurship ecosystem lowers unemployment and increases the prosperity of the BOP population.

What are the limits of BOP to sustainability, and to sustainable development of Africa?

Cees van Beers: The biggest challenge as far as I can see is the creation of business models which do not collapse at the slightest counter movements. Sustainable business models should allow scaling up of the use of innovations in low-income groups at the BOPMs. The question is: what kind of business model can be used that really fits into the preferences of the people in the BOP and which creates social and economic value particularly in remote rural areas?

Niek van Dijk: We do know from experience that being involved in BOPM requires companies to strike a very delicate balance between business interests and development interests. A way for companies to better manage this delicate balance is to engage in partnerships, for instance with governments, NGOs and knowledge institutes. An eye-opening lesson for us was when our organisation was involved in a project some time ago, where we worked on horticultural development in East Africa with a number of Dutch companies. We witnessed on several occasions a conflict of interest between the type of business solution that was needed locally and the interest of the Dutch companies. True and sustainable solutions for reaching BOPMs can be found somewhere in the middle. Looking at the SDGs, BOPM can basically contribute to all SDGs. I follow most closely the developments in the Netherlands, where the Dutch government is setting up more and more public-private partnership financing instruments that are specifically tailored around some of the SDGs like SDG2 (zero hunger), SDG5 (gender equality), and others. This is an important approach that underpins the sustainable way of looking at the future. From the evaluations of these funding instruments, I know that striking a balance and marrying all these different interests in one approach is very difficult.

Beryl Oyier: The biggest limit is the access to finance to local SMEs in order to start a relevant innovation or even to replicate a successful one into another community. Financial inclusion of customers is also critical. The challenge is how to make profit from BOP consumers without distrusting households; I would call this a safe profit. Another limit is literacy. When a radical innovations is introduced to BOPM, the different literacy levels become relevant. In this respect, how BOP consumers access different variations of the innovation becomes a challenge.

What needs to be done to mitigate the negative consequences of BOP initiatives / ventures in Africa?

Cees van Beers: The most important thing is that innovations should be done in a polycentric way. This means engaging local stakeholders, creating different scenarios, and considering what can be done in the design of new innovations and business models. Companies also need to take into account, when designing a product or service, the negative consequences of that innovation on the local community. It is also possible that you might have a product that fits in the local preferences but which is not really ethical or sustainable. If companies do not consider all these issues in the innovation development process, the local people may reject the innovation. In case of a foreign Western company, the company might run into trouble because the Western customers might not like the innovation for moral reasons. Consequently, the company is most likely to lose in both markets. Additionally, the governments have a role to play and should definitely be on board. Local governments in Africa and their administration are not very effective. In theory, governments should play a role but in practice there is a big "but"!

Niek van Dijk: This is difficult to answer in a general manner, as potential negative consequences are often quite specific and so is the approach to mitigate them. For example, when working on the inclusion of small farmers in value chains, quite often middlemen are crowded out, and consequently, they lose their economic position. Inclusive business models need to have an answer to what role these middlemen can still play in a more inclusive model for agricultural value chains, for instance as service providers to farmers. If I were to pick one more particular negative consequence related to the development of BOPM, that in my opinion should be tackled more actively, it would be finding a solution to the increasing volumes of waste, especially plastic packaging. How can we help companies to better develop food products and at the same time create a system to minimise the use of packaging materials or find models to re-use or recycle them? While there are some early stage initiatives that focus on this challenge, in my opinion, they are not sufficient. We need to see how we can grow the number of, often local, companies that do a great job in collecting and valorising this waste, and creating new jobs while doing this. Also, bigger companies like Unilever need to further step up their game in countering waste. Recently, several coalitions of companies working on tackling the waste challenge emerged in countries like Nigeria and Kenya, and more of these should see the light.

Beryl Oyier: First, before we innovate we need to have clear market research in order to generate insights of what the market needs are and the nature of these needs. We should then pilot the innovation before its commercial launch to ensure that the innovation actually works. Recognising what works and what does not before going full-scale is important for the sustainability of the innovation and its replication in other communities. The pilot also gives a clear evaluation of the positive or negative impact on the consumers.

What is the future of BOPMs in Africa?

Cees van Beers: The potential is high both in the short and medium run. I think if BOP products or services become very successful, this will lead to a more economic development and in turn, the local people in the BOP will be able to migrate to the middle-class. The implications are that the BOPM might become a bit less important, but this will take a very long time to achieve.

Niek van Dijk: I would say that the future is bright. Of course, we should question and be very cautious and careful of some of the abovementioned negative consequences of BOPM and how to mitigate them. The growing class of local SMEs that are tapping into these BOPMs is a clear sign that the market holds great potential. For the multinationals, becoming active in BOPM is no longer a-nice-to-have but really a must-have. Initiatives focused on further developing BOPMs can help in solving many societal problems and challenges across Africa. For instance, the demographic dividend in many African countries is seen by many as a problem; youth unemployment rates are huge and are causing migration. But this demographic dividend can also be seen as a great economic asset when companies can provide the opportunities for these youth to find employment and economic opportunities. The future is bright if we manage to develop BOPMs in such a way that they can tackle the social and also the environmental challenges in Africa.

Beryl Oyier: This five-trillion-dollar market is growing and open to new technologies. The BOP consumers are curious and ready to adapt new solutions and services. This challenges the assumption among many businesses that the BOPM is a traditional market that does not look at new technologies and new innovations. The BOP consumers are very aspiring and constitute a great business opportunity. On the one hand, if companies tap into BOPM with a sustainable business model which also addresses the local developmental problems, they will be able to harvest big profits. On the other hand, creating innovations to solve problems such as nutrition, women empowerment, entrepreneurship, and gender inclusion is very important to the future of the continent.

Concluding Remarks

Africa is a great business opportunity for BOP ventures to emerge. However, it is a different context that is "highly personalized, it challenges our understanding of both market and non-market strategies" (Barnard et al., 2017. p. 9). The environment is volatile and resources are scarce (Arnould & Mohr, 2005). Given that the BOP initiatives are not homogeneous and vary across geography and communities (Kolk et al., 2014), African BOP ventures may be not only different from the implicit view of BOP initiatives prevalent in the literature, but that they also vary significantly across the different African contexts. The complex dynamism of the context across Africa offers a broader understanding of contextualising BOP and how to address complex problems like the lack of institutional support, corruption, inequality, and conflicts, which might uncover specific determinants, patterns, and implications for BOPM in other contexts.

To address these grand challenges both market and non-market-based solutions are privileged by different state and non-state actors in the BOPM. A partnership approach amongst different actors, i.e. MNCs, SMEs, governments, intermediary organisations, progressive financiers and philanthropic donors, BOP consumers, and local communities, ought to be forged to advance the BOP market. However, the pursuit of development (social and environmental) and business (profit) goals are sometimes viewed as incongruous and the opposite of one another. For example, social ventures seem to struggle to reconcile and successfully address both business and developments goals (Battilana & Lee, 2014). The BOP business model might provide a solution to this dilemma as an opportunity to create social value in BOPM even if the explicit social mission is absent. Panum et al. (2018) showed how six social enterprises in Kenya overcame the BOPM pressures and demands by adapting a BOP approach in order to access resources. Subsequently, they improved their commercial performance and remained true to the social missions. The problem seems to arise in the assessment of the overall impact of BOP and reporting the created social and environmental value; as a consequence, studies have focused on the value as created to the business, which is usually "profit" (Mason et al., 2013), and ignored the impact on BOP population.

The wide range of actors in the BOP space, the different definitions of what constitutes BOP population in the literature, challenges of collecting data at the BOP, paucity of empirical verification of successes and failures, and lack of agreed-upon constructs have dwarfed the theory development and advancement of the field. Studies of poverty alleviation which could invoke BOP are cross-fertilised and pursued under the guise of different literature such as development economics, microfinance, subsistence marketplaces, inclusive business, and social entrepreneurship, which seems to be the outcrop; some of the BOP business models use social entrepreneurship framework and vice versa (Simanis & Hart 2008; Panum et al., 2018). As a result, by and large, there is little-known empirical evidence of the overall impact of BOP initiatives to either BOP ventures or BOP communities (Dembek et al., 2019). This scarcity of reporting on the economic, social, and environmental impact of BOP initiatives has contributed to the claims that BOP ventures do not deliver on the anticipated promise of alleviating poverty through profits. Hart (2015, p.1), who is one of the advocates of the BOP approach, argues that *"…most BOP ventures and corporate initiatives over the past decade have either failed outright or achieved only moderate success at great cost"*.

We are beginning to see BOP case studies emerging from the Africa continent; however, research in BOP in Africa continues to be scarce. In a recent systematic review conducted by Dembek et al. (2019), they found that only 10% (i.e. 29 of 276) of the articles published between 2002 until 2016 focused exclusively on Africa as compared to 60% (i.e. 178 of 276) of the articles focused on Asia. With the developmental challenges that Africa continues to face, it is important to explore how market-based solutions might contribute to the sustainable development of the continent. All in all, a number of avenues for further research have emerged to build knowledge about BOP in Africa, for example: i) evaluating the effectiveness of BOP initiatives to alleviate poverty; ii) the role of the BOP community as co-creators, mutual value creation, cross-sector partnerships; iii) incorporating and assessing the triple-bottom-line impact including the negative consequences of BOP initiatives on communities; iv) describing and contextualising BOP initiatives; and v) financial inclusion and empowerment for both BOP enterprises and the BOP population. The findings can be marshalled to enhance the BOP model and enrich scholarship of how BOP ventures can succeed in highly complex and underdeveloped marketplaces. We add our voice to those who have called for more studies that help us understand how BOP initiatives operate within and across the intricate African contexts (Dembek et al., 2019; Kolk et al., 2014).

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