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Last mile delivery in low income communities: The Sekulula spaza express experiment in South Africa

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Abstract. This article is a description of Sekulula Spaza Express, a business model to deliver goods to informal traders piloted in Khayelitsha and Nyanga in Cape Town, South Africa by Reciprocity, a consultancy based in South Africa. The Sekulula Spaza Express model was established by Reciprocity, with funding from PepsiCo, and tested and tracked over a period of 3 months from January to March 2010. The results allowed to gain a better understanding of the dynamics of last mile delivery in low income communities in the South African context, and identify the bottlenecks that need to be addressed in order to create a financially viable business model. It also demonstrated the value of “learning by doing”, and the valuable learnings that can be gathered at little cost to understand the dynamics of last mile delivery and trading in very low income communities. In this regard, Cape Town and its immediate surroundings present unique features, making the area an ideal testing ground for inclusive business models.

Keywords. Informal sector, Last mile delivery, Informal distribution

1. Background: South Africa's dual economy

As is the case with most other aspects of its society, South Africa's economy is characterized by a huge dichotomy and extremes. More than almost anywhere else in the world, vastly different levels of economic development coexist and co-depend on each other. One part of South Africa's economy is highly developed, and endowed with all of the classic enablers that support modern economies, such as sound financial institutions, excellent infrastructure, a few world class universities, a functional and generally efficient legal and regulatory system, and a small but efficient pool of qualified human resources. A traveler landing in Johannesburg from California for a meeting in Sandton, the city's main business district, would hardly notice any difference between that city and Los Angeles.

The other part of South Africa's economy functions almost in a kind of parallel universe. In this environment, most of the economic structures are informal. Here, hundreds of thousands of informal entrepreneurs struggle to gain access to financial services, endure sub-standard infrastructure, have low skills levels and don't have a legal existence, making it almost impossible for them to enforce contracts or

enter into partnerships or formal agreements. Such entrepreneurs, and the economic ecosystem in which they function, are excluded from the formal economy.



Figure 1. Entrance of a self-service spaza, Khayelitsha

Despite this dichotomy, revolving doors link the formal and informal economy. For instance, informal traders in the townships (as South Africa's mainly black residential areas around formerly “white” cities are called) sell products that they buy wholesale from giant formal wholesalers that are strategically

located at the edge of the townships.

The dynamics behind this duality are complex and of course not unique to South Africa. It is the magnitude of the dichotomy which is specific. It can at least partly be traced back to South Africa's history of apartheid (white minority rule) that ended only in 1994. By and large, the pre-1994 formal economy was white-managed and white-owned, while the informal economy was black. One of the central challenges of the post-1994 settlement and the advent of democracy is to translate political power into economic inclusion for the majority of South Africans. Perhaps as a result of this specific context, the challenge of integrating the "base of the pyramid" or low income communities into the mainstream economy is far more sensitive and politicized than in most other parts of the world.

2. A gap in the market, but also an opportunity to link formal and informal?

As in many other emerging economies, a significant portion of the retail needs of South Africa's low income market is serviced by thousands of informal retailers, usually referred to in South Africa as "spazas" or "tuck shops". Spazas typically sell essential household goods and local staples: food items such as cooking oil, sugar, maize meal, flour and snacks, household essential such as soap, paraffin, candles, matches and disinfectants, but also cigarettes and prepaid air-time for mobile phones, with the last two products often mentioned by spaza owners as significant revenue generators.

Estimates vary widely as to how many spazas exist in South Africa: by definition, informal businesses don't have any legal existence and are therefore not registered in any company registrar or database, so one has to rely on estimates and extrapolations. A recent conservative estimate by the University of the Western Cape (UWC) is that the number of spazas hovers around 100,000¹, with a collective turnover estimated at R 7 billion (Around US \$ 700 million). But the Bureau of Market Research estimated in 2006 that there might be as many as 750,000 spazas and hawkers, with a collective turnover of R 35-50 billion². Whatever their actual numbers are, spazas are undoubtedly a ubiquitous feature of South Africa's townships, and considering that shopkeepers would typically have at least 3 or 4 dependants, spazas provide a livelihood for at least several hundred thousand people in South Africa. They also vary vastly in terms of size, sophistication and customer experience: Some are barely more than a hole in the wall selling cookies, snacks and sugar, while a few allow customers to enter the store and select their own items from the shelves. As a rule, however, customers are served by the store manager, limiting the sales opportunities that impulse purchases offer in self-service stores. This is partly the result of South Africa's high crime rates, which makes spaza managers feel vulnerable to robberies and pilferage.

The spaza model is under threat, however: As most spaza owners have little formal business training, and since they

intrinsically depend on higher margins rather than volumes to be viable, they are ill-equipped to respond to the changing dynamics of South Africa's low income market. Their market share has been put under huge pressure by large formal retailers, as well as newcomers in the informal market: At the formal level, companies like Shoprite Checkers and Pick n Pay, two of South Africa's largest retail chains, are expanding in many large townships and are able to offer lower prices than spazas. Another major player is Walmart, the world's largest retailer, which has purchased South Africa's Massmart chain, owner of several giant wholesalers in the townships. At the informal level, local spaza

owners face heavy competition from highly successful migrant traders: Over the past 15 years, immigrants from other parts of the continent, especially Somalia, Ethiopia and Tanzania, as well as South Asia (mainly Pakistan and Bangladesh), have opened thousands of spaza shops around the country. These traders leverage informal financial networks and social capital with business skills acquired over generations, and are competing fiercely with local traders on price.



Figure 2. Sugar, maize meal, cooking oil and flour account for most sales in value

Low income consumers have arguably benefited from the increased competition in the form of lower prices. However local traders, which form the backbone of South Africa's informal businesses, and their dependants have suffered greatly. Their margins have been squeezed, and they have lost customers to the competition. They typically lack the working capital needed to upgrade premises and make shops more appealing, or to gain better skills in bookkeeping or stock management. Owning and running a spaza shop in South Africa today involves very hard work, long hours, high risks and low returns.

Despite this rather bleak picture, spazas should not be written off: in fact, they could actually leverage some crucial competitive advantages. One such advantage is location: Like any convenience store, they can use proximity to their clients to attract foot traffic. Their second major competitive advantage is the intimate knowledge they have of local markets and trends: At the micro-level, spaza owners possess an expertise on South Africa's low income market that larger

¹ Source: A Charman; L Petersen; L Piper: "From local survivalism to foreign entrepreneurship: the transformation of the spaza sector in Delft", University of the Western Cape, Cape Town

² <http://www.eprop.co.za/index.php/news/item/7487-Retailers-drive-into-the-township-market-threatens-spaza-shops>

retail stores are unable to match.

The challenge, in this context, is to enable spazas to use these competitive advantages and allow them to compete on a level playing field. One way that spazas could collectively improve their position is by running more efficient **delivery** systems and **ordering** processes. Indeed, during the pre-field immersion phase in Kliptown and Khayelitsha, Reciprocity found that many spazas tended to have particularly inefficient practices in this regard.

- **Delivery:** Many spazas are one-man shows, where the owner typically closes his or her store several hours every week, during business hours, in order to purchase stock. Spaza owners usually purchase stock from giant wholesalers who operate from massive warehouses located in industrial areas on the edge of the townships. Typically, spaza owners make use of public transport (combi taxis) or hire pick-up trucks to get the purchased goods to their shop. Either way, this involves not only an opportunity cost (store closed during business hours several times a week) but also an actual expense (transport fare or van rental fare) which typically varies between R 40 – R 60 (US \$ 4 to US \$ 6).
- **Ordering process:** During the pre-field study, Reciprocity found that spaza owners tend to have limited stock management processes: The practice is often to simply top up on an ad-hoc basis when the store runs out of a particular product. On the other hand, many products that don't sell gather dust on shelves and remain there long after their theoretical sell-by date. This translates into lost opportunities as well as wasted shelf space which could be used more efficiently.

As a result of these findings, the Reciprocity team decided to focus on these two aspects in order to develop a business model that could help to fill a gap in the market, create employment, and ultimately increase the sales figures of the spazas.

3. Testing a model: Determining the variables of the experimental protocol

During the pre-field phase, Reciprocity had to:

- Identify the ideal location to run the pilot
- Identify the wholesalers willing to contribute to the research
- Understand how the informal retailers get their supplies, and the costs associated to their stock-taking
- Identify and define the research variables of a viable supply model by way of a distribution service
- To start the business model, we had to:
- Recruit and train a sales force

- Develop marketing tools adapted to the context of the informal retailers
- Develop and implement a tool-pack specifically designed for the entrepreneur
- Establish and formalise a relationship with the supplier, i.e. the wholesaler



Figure 3. A logo and brand was developed during the pre-field phase

The pre-field surveys and focus groups helped Reciprocity to establish a set of independent variables that each play a role at one step along the value chain. These variables were each likely to influence the outcome of the pilot, and each was linked to a specific aspect of doing business in low income communities:

- **The profile** of the shop owner: for instance, is the shopkeeper a migrant or a local, male or female, old or young, etc? This was a fundamentally important aspect as many informal traders are entrepreneurs by necessity rather than opportunity. There is no way of telling for sure what the most common characteristics of successful entrepreneurs are, and Reciprocity sought to challenge and test widely held assumptions about “entrepreneurial migrants” vs. “local survivalists” and other preconceived ideas. What we could presume however was that Sekulula’s prospects would be influenced by whether or not the clients it seeks to serve had entrepreneurial drive or not.
- **The delivery vehicle:** Should it be a truck, a bicycle, a donkey cart, a tuk-tuk, or something else altogether? Again, this variable sought, from a business perspective, to test assumptions about what kind of vehicle would be most suitable for deliveries. What is the best combination of cost effectiveness, terrain suitability, carrying capacity, cultural acceptability, while remaining compliant with safety regulations, etc. ? For instance, accessing some shops in informal settlements may be impossible for motorized vehicles, so the delivery mode would have to be suited to local terrain and infrastructure. Or a vehicle may not be commonly used, increasing the difficulty of finding qualified drivers and ensuring maintenance. In the case of Sekulula, the tuk-tuk turned out to be highly suc-

cessful in terms of cost effectiveness, but finding licensed drivers was a challenge as experienced drivers are usually not qualified on such vehicles.

- **Should the pilot focus on a selection of the 10 most popular products**, or offer a universal service? From Sekulula's perspective, it would be far more cost effective and easy to offer a limited range of the 10 or 15 most popular products sold by informal traders. But the service might only be of value to traders if Sekulula was able to deliver the entire range of product lines, including the marginal ones. This trade-off therefore needed to be tested in the field.
- **How should the spaza send its order:** a mobile phone application, a phone call, a fax, or something else? While there is, for good reason, huge enthusiasm about mobile phone applications in low-income contexts, the reality is that many traders are not necessarily able or willing to use such applications unless there is a clear advantage for them, and then only if such applications are easy to use and reliable. From a business perspective, the challenge was to find which channel is most suitable and realistically usable for a trader in a South African township, where smartphones are not yet ubiquitous and more 'traditional' means of communication might be more familiar, effective and reliable.
- **Timeframe of order-taking:** How much notice would wholesalers need from spaza owners to place their orders? Assuming that wholesalers would accept to prepare orders from spazas to be picked up, how much time do they need to do so?
- **Payment method: Cash or mobile money?** As

with the previous point, mobile money payments are making fast inroads into payment systems in several parts of Africa, and there is indeed great interest in decashing transactions. The assumption needs to be tested in real life however: In fact, the experience of Sekulula showed that despite the advantages of mobile money payments, many traders and their customers still have a preference for physical cash transactions, which are perceived to be practical, easy, and totally reliable while mobile money payments may, in the local context and environment, be seen as complicated, costly (banks offering mobile money payments usually charge their customers per transaction), scary (what if I make a mistake and pay too much / too little) and potentially unreliable (unconfirmed transactions resulting from network issues, etc).

This list of variables and the business challenges Reciprocity sought to address illustrate that to successfully test a new business model, assumptions need to be set aside.

Regardless of which independent variables were at play, the model needed to generate an income stream that covered the costs.

The **income stream** of the model depended on the number of deliveries: At its simplest level, assuming a flat fee for each delivery, the level of revenue is simply a multiple of the number of deliveries made. With a more complex fee scale, factors such as distance covered, weight, volume and type of produce delivered could be made factored into the pricing model. For the purposes of the pilot, it was decided to initially experiment only with flat fees, as the business model's basic potential viability needed to be established first.

Sekulula's **financial outflows** were mainly made out of operational costs such as vehicle finance, maintenance, fuel, insurance and a salary for the drivers.

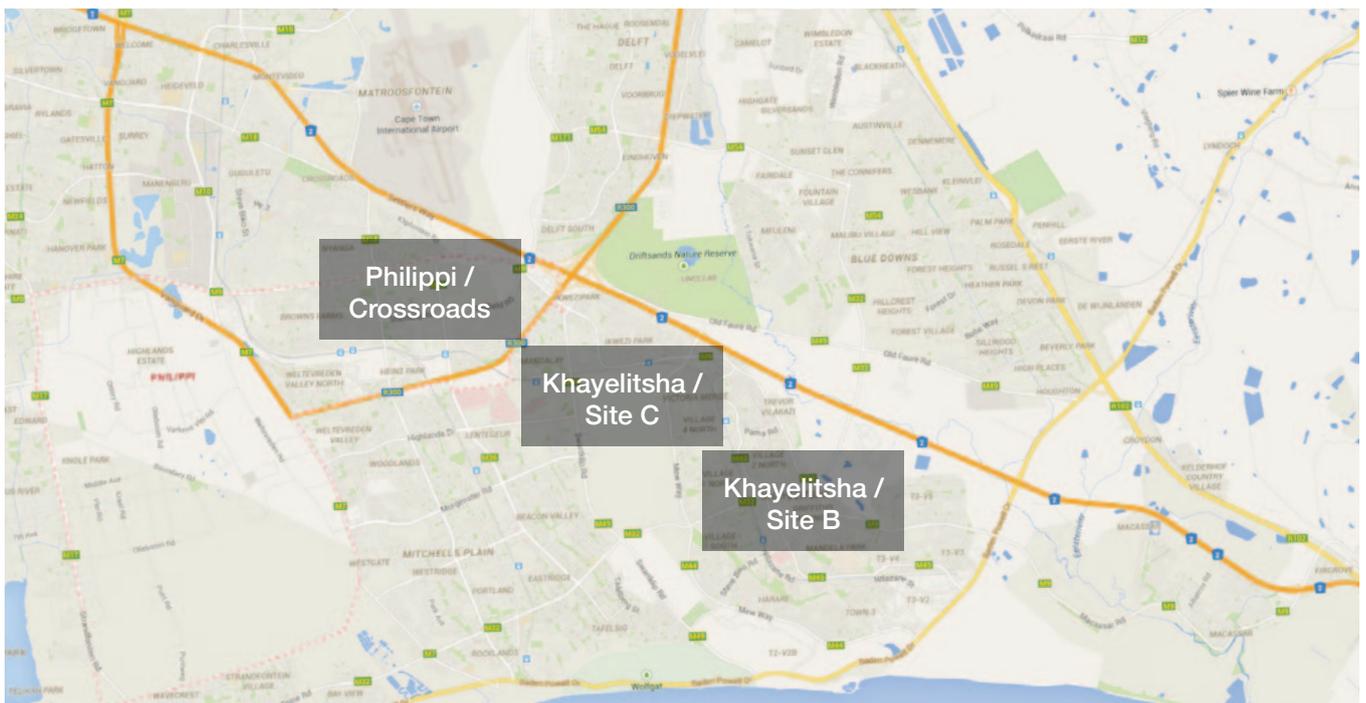


Figure 4. Area detail of Cape Town's Philippi, Nyanga and Khayelitsha townships



Figure 5. Delivery in progress, Nyanga

4. Results and Learnings

Sekulula spaza express was tested and operated as a going concern over a period of 3 months, which enabled Reciprocity to gather reliable sales data, imagine the possible business models that could result from the pilot, and assess the level at which a delivery service can be economically viable.

Reliable sales data: The live testing phase enabled us to collect detailed sales data which helped us to get unique insights into the basket of products purchased by spaza shops, and therefore get a precise picture of consumption patterns in the households which shop for staples at these spazas. All purchases were broken down per category, product, brand and packaging.

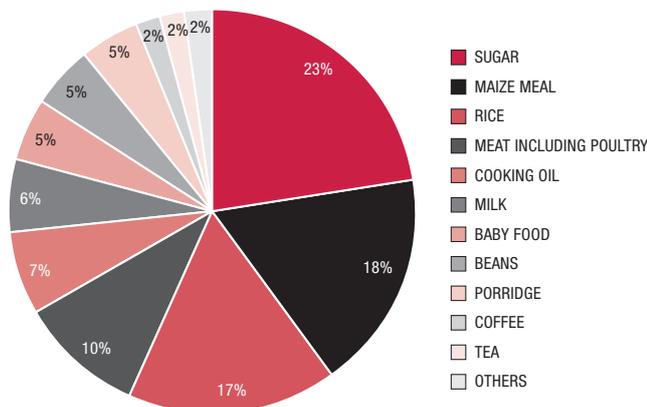


Figure 6. Breakdown of food products purchased by Sekulula clients. Data gathered from Sekulula sales

The pilot allowed us to track a sample of 120 deliveries made to a client basis of ca. 100 spaza shops mapped in the areas of Gugulethu, Nyanga and Khayelitsha (the largest townships in Cape Town), located in a radius of ca. 15 km from the main wholesalers. Around 20 of these spaza shops became regular clients over the period. The average delivery value was R 835 (ca US \$ 85). Around 43% of all goods purchased on behalf of clients was made up of food products, while another 42% was made up of snacks and soft drinks.

The remaining categories were household products (11%) and personal care products (3%). Remarkably, only 4 products accounted for half the total value of purchases in the “food” category: white sugar (18%), maize meal (corn flour, 17%), rice (11%) and meat (7%). This type of data is very valuable to consumer goods companies, who often have only vague indications of how their products are positioned with spazas, and faint understanding of consumer preferences. The testing also became an appropriate way in which to track not only the type of products sold but also frequency, size of packaging, prices and payment methods.

Two possible business models: The experience of testing the variables helped us to design two broad options for inclusive business models that could fill gaps in the market identified during the study, while creating jobs and consolidating the local entrepreneurial ecosystem:

1. An “**owner-driver**” model, in which the driver is a subcontracted entrepreneur of a wholesaler or a coalition of consumer goods companies, which would provide vehicle loan finance (similar models have been successfully used in South Africa by SAB-Miller and impact paper recycling)
2. An **independent entrepreneur** model, in which the driver is completely independent and the costs of operating the business are entirely covered by revenue

In an ideal world, the only model sustainable in the long run should be the independent entrepreneur model, which allows the entrepreneur to succeed or fail on his or her own merits. But in this case, the owner-driver model could be seen as a useful first step towards full autonomy.

Table 1. A summary of most likely business models for Sekulula

	Business status	Basic revenue stream	Basic cost structure
Model 1. Owner-driver model	Subcontracted entrepreneur	Fees paid by end-customers for delivery service.	Owner-driver in charge of vehicle-related costs Other costs determined in contractual arrangement
Model 2. Micro-entrepreneur model	Independent entrepreneur	Fees paid by end-customer for delivery service	Entrepreneur: in charge of vehicle related costs and all other costs

Potential for economic viability: Based on Sekulula’s revenue and expense projections, the break-even point is reached at 6 deliveries per day, and long-term profitability is reached around 10 deliveries per day. At 10 deliveries per day (on a basis of 5 days per week), the driver-entrepreneur’s operating costs can be covered, and sustainable income levels

are reached.

In a 10-delivery per day model, Sekulula could generate monthly revenue of R 8,000 (ca US \$ 800), compared to operating costs (fuel, insurance, phone, vehicle finance...) of R 4,250, generating a net monthly income of approximately R 3,750 (ca US \$ 375) for the entrepreneur (i.e about R 125 or US \$ 12.50 per day). This is significantly above the average income in a South African low-income environment: an estimated 35% of South Africans live on less than R 20 per day.

3. Conclusion

Sekulula spaza express is a business model designed to address a proven demand from informal retailers for more efficient ways of managing deliveries and stock. Scaling up the model could potentially create hundreds of self-employment opportunities in low-income communities, while at the same time significantly improving the prospects of small informal retailers, who form the backbone of entrepreneurial activity at the base of the pyramid in South Africa.

The Sekulula pilot has also demonstrated that there is a gap in the market for

- An efficient delivery system enabling spaza shop owners to outsource the task of stocking up on goods to an external party, and be delivered in the most cost-effective way
- An efficient ordering system that could help spaza owners to access up to date information on the lowest prices available.

At the conclusion of the pilot, the delivery service reached a maximum of 6 deliveries per day, and now needs to overcome two significant bottlenecks to become viable:

Cash management: Ensuring cash flow is a challenge, as the driver needs to have enough float (in cash or on a bank account) to pay for goods upfront. The driver can also be at risk for theft given the amount of cash he is carrying. An appropriate mobile money solution will address this issue, but it still needs to be tested.

Logistics: Finding the most appropriate channel through which the spaza owner can place orders at the wholesaler, how to send these orders to wholesalers, and efficiently collect the orders still needs to be further explored and tested: A mobile application that is usable on a feature phone and a smartphone would need to be developed in this regard.

At least three categories of people at the base of the pyramid would benefit from Sekulula's success: The **spaza shop owners** would benefit from the cost savings of this approach, with better information on which wholesalers offer the lowest prices on which products, and capitalize on the delivery service being able to bulk-buy on behalf of a number of spazas. They would also benefit from the ability to remain open to customers while their goods are being re-stocked. The **owner-drivers** of the delivery vehicles would benefit through employment and income generating opportunities, but also from the ability to run their own businesses. Finally, **consumers** could benefit in the form of more cashless payments, and potentially lower prices for goods and services.

Sekulula could be a sustainable business model which can be scaled up across South Africa, creating employment opportunities, viable small businesses, and consolidating the ability of informal retailers from low income communities to compete with formal retailers and multinationals.

The cost of testing such pilots is low, with high returns are high in terms of knowledge gained. The pilot would also be replicable elsewhere in Africa.

On a broader level, the testing of Sekulula also constitutes an opportunity to ask to what degree businesses should also seek to influence outcomes: Should inclusive or social business models seek to simply respond to needs and expectations in the market as they are, or seek, on the contrary, to influence consumer behaviour and social outcomes by "pushing" some products or services, for example more "nutritious" or "healthy" products? The case of Sekulula, which highlights the huge spending on white sugar, sweet drinks and processed foods in low income communities, illustrates this dilemma: Where does the social responsibility of business to influence consumer behaviour begin, and where does it end? Questions such as these demonstrate the need for far more research and testing to be done in this field.