THE JOBS FUND

South Africa Siyasebenza

Learning Series

26 JULY 2021

Emerging Community Retail Businesses – Paper 3

Transport Effects on Households Accessing the A2Pay-supported Spaza Outlets in Soweto

national treasury
Department:
National Treasury
REPUBLIC OF SOUTH AFRICA

GTAC Analyse Activate Assess
Strategic & Technical Advisory
National Treasury
REPUBLIC OF SOUTH AFRICA

THE JOBS FUND

South Africa Siyasebenza

The Jobs Fund is a R9 billion fund established by the South African Government in 2011. It was established to encourage innovation and give greater impetus to initiatives with potential to generate sustainable employment. The Fund aims to catalyze innovation in job creation through structured partnerships with the private and public sectors as well as NPOs by awarding once-off grants to organisations through a competitive process. The Jobs Fund operates on challenge fund principles and aims to incentivise innovation and investment in new business approaches that directly contribute to long term sustainable employment creation.

vimeo.com/thejobsfund

twitter.com/JobsFund_NT

jobsfund.org.za

Programme of the National Treasury

national treasury
Department:
National Treasury
REPUBLIC OF SOUTH AFRICA

GTAC Analyse Activate Assess Strategic & Technical Advisory
National Treasury
REPUBLIC OF SOUTH AFRICA

Abstract

This paper presents the results of a household survey conducted in Soweto by the Jobs Fund as part of a larger evaluation study of the A2Pay project's impact on project participants between 2017 and 2020. It is the third of a series of four papers representing the different aspects of the findings drawn from the evaluation study. The survey was focused on investigating the effects of the A2Pay intervention on household transport expenditure between 2017 and 2020. A quasi-experimental approach was employed by drawing two similar samples of households using GeoTerra Image (GTI)[1] and Stats SA household data repositories. One sample represented households that have access to an A2Pay supported Spaza shop and the other represented households without such access in a two to five-kilometer radius. The survey found that A2Pay supported households had reduced transport expenditures in the period under investigation which the respondents attributed to the presence of the intervention in the area.

1. Introduction

This is the third in a series of papers emanating from the evaluation of the Jobs Fund supported A2Pay interventions in Gauteng, Western Cape, KwaZulu Natal and Eastern Cape provinces. The paper presents the results of the household surveys conducted in these provinces by Upendo consulting in October 2020. The purpose of the surveys was to shed light on differences in household transport expenditure associated with Spaza operators who were supported by A2Pay with technology devices and coaching clinics, and those Spaza shops who did not receive any support from A2Pay. The evaluation sought to explore the extent to which the A2Pay project realised its Theory of Change regarding household savings on transport expenditure arising from the use of the A2Pay technology.

In spite of the fact that cellular services have become more readily available to communities across South Africa, it has generally remained the case that those residing in rural and peri-urban locations lack easy access to essential pre-paid products like electricity vouchers and airtime. As a result, most households in these areas are forced to allocate time and money to travel, purchasing these products from shops in village centres or in (often distant) towns and cities. In addition to placing a burden on households that can scarcely afford it, this need to travel also creates an opportunity cost, in which spending on transport takes away money that households could have allocated more productively to other needs, whether their own small businesses, meeting healthcare or education costs, or purchasing food and other essential goods in their community. For local retailers in these communities, or among the unemployed in these communities who could become retailers, an inability to capitalise on the considerable local demand that exists for these products creates a missed opportunity in terms of potential income and employment.

The A2Pay 'JF6 Innovation and Application of Technology Project' focused on supporting Spaza shop owners in the Fast-Moving Consumer Goods (FMCG) component of the informal sector by employing technology in the form of vending machines loaded with prepaid products, as well as its own in-house entrepreneur coaching programme, to support Spaza shop owners to manage four specific business problems (A2Pay Business Plan Guidelines, 2018):

1. Lack of access to technology and record management systems for daily business performance management and monitoring;
2. Loss of control when the business owner is not present and the resulting disintegration of

[1] NB GeoTerra Image is a private company that provides industry specific information through innovative products and solutions to support a wide range of scientific, public and commercial sectors. https://geoterraimage.com/about-us/

operations resulting in increased theft and cash management costs;

3. Lack of collective buying power due to a lack of consolidated trading information, insufficient cash to place bulk orders and a lack of availability of business performance information; and
4. Minimal or zero access to formal business finance services.

The desire to address the above problems served as a catalyst for A2Pay to develop, with co-financing from the Jobs Fund an intervention that would introduce enabling technology together with other business development support services. In addition to selling a range of popular pre-paid products and services, the vending technology enables Spaza shop owners to:

- track stock movement, turnover, gross profit and net profit (daily, weekly, monthly);
- securely store historical transactional data;
- track cash movement;
- manage loyal customer accounts.

The point of sale device and all related hardware is structured to be a capital transfer to the Spaza shop owner at the end of the project, meaning that the shop owner will formally own the equipment.

The household survey results present specifically to what extent the A2Pay technology intervention was successful in reducing household transport costs and increasing household saving in the participating households.

2. Method

2.1 General Research Design and Approach

The household survey employed a quasi-experimental research design based on comparable 'treatment' vs. 'control' groups. This distinction was between households accessing the Spaza shops supported by A2Pay (and which were thus assumed to be purchasing pre-paid products from the shops' vending machines) and those households accessing Spaza shops not supported by A2Pay (and which were thus assumed to not be purchasing pre-paid products from vending machines). The key purpose of this comparison was to try and understand whether any differences were evident between the two groups of households when it came to their transport expenditures and how they used savings (if any) resulting from reduced transport expenditures (if any) resulting from their use of A2Pay supported spaza shops. To the extent that any such differences could be identified, statistical analysis would be done to try and gain a sense of which of these outcomes were likely attributable to project activities.

It should be noted that there was no random allocation of households to any type of 'treatment' or 'control' groups at the beginning of JF6 intervention (nor would it have been practical to undertake this random allocation). This means that some confounding factors (differing inter-community socio-economic dynamics), particularly those related to socio-economic differences in those areas where households were surveyed, may be evident.

The decision to focus only on Soweto for this survey was based on:

1. The challenges of carrying-out any type of household survey in light of the Covid-19 pandemic. Keeping the survey geographically focused was deemed a way to minimise potential disruption that could further delay survey implementation; and
2. It was deemed easier to control for potential confounding factors within a single location than multiple communities in different locations.

The downside of this is that while the household survey findings provide a reasonably representative picture of a single important project location, they may not be generalizable to the wider set of project communities across South Africa. However, the results of the survey are a very important indicator of how the theory of change regarding transport savings fared during implementation.

2.2 Sampling Approach

The key challenge Upendo experienced in designing its household survey approach was obtaining the type of spatial information on household distributions required to draw a random sample.

The data, made available by a Pretoria-based firm called GeoTerra Image (GTI) included detailed maps of all Enumerated Areas (EAs) in Soweto, including land use designations. This allowed for the clear identification of households vs. other types of structures (e.g. commercial properties). Crucially, these maps included the identification of individual households and backyard structures serving as households. Through a numbering of these households, it was possible to choose a stratified random sample.

Working alongside GTI mapping experts, the 'treatment' vs. 'control' distinction was realised. Upendo provided the GPS coordinates for the A2Pay-supported Spaza shops in Soweto that were included in the Spaza shop survey. From these coordinates, the GTI maps were able to project a radius – defined in relation to walking time – that allowed for an assumed 'catchment area' for a likely 'treatment' sample. It was determined, based on the Spaza shop survey fieldwork, that those households within a 2-5-minute walk from a Spaza shop were very likely to make use of that Spaza shop. The treatment sample was then selected from these two strata:

1) those within a 2-minute walk of the A2Pay-supported Spaza shop; and

2) those within a 5-minute walk of the A2Pay-supported Spaza shop.

All households eligible for inclusion within these strata constituted Upendo's household sampling frame and households were randomly selected from these strata.

For the 'control' sample of households, a random sample in Enumerated Areas (EAs) away from the surveyed A2Pay-supported Spaza shops were selected. As much as possible, differences in socio-economic conditions between areas constituting the 'treatment' and 'control' samples were minimised through the use of GTI profiles covering a range of socio-economic data, including average household income levels and employment levels. A review of these socio-economic profiles, which existed at the EA-level, ensured broad normative equivalence between the areas in Soweto that were surveyed (e.g. a 'treatment' sample focused on lower-income or low-middle income parts of Soweto was not matched with a 'control' sample derived from upper-middle income parts of Soweto). All of the GTI data were taken from Statistics South Africa's 2019 meta-data and were thus largely up to date.

The final decision on whether a household was eligible for inclusion in the 'treatment' or 'control' samples was made not merely on the basis of location, but also on the subsequent screening of households with the questionnaires. 'Treatment' and 'control' households, once sampled, were not surveyed unless it could be ascertained through preliminary screening questions that they were/were not customers at Spaza shops with/without the A2Pay vending machines.

In order to obtain a household sample that allowed for 95% confidence and a margin of error of +/- 5%, a sample size of 400 'treatment' households and 400 'control' households was required. Unfortunately, it was not possible to realise this sample size due to:

1. High levels of household distrust towards data collectors,
2. An unwillingness of household respondents to engage face-to-face with data collectors due to Covid-19, and
3. The fact that the households had no practical incentive to participate in the survey (e.g. there was no financial incentive or obvious practical benefit for doing so).

The final sample achieved for the household survey was 118 'treatment' households and 104 'control' households.

2.3 Data Collection

The survey of households was carried-out through the administration of a structured questionnaire. The questionnaire was designed to capture data on the following topics:

1. Household expenditure and income;
2. Household savings;
3. Household employment; and
4. Access to pre-paid products.

The questionnaire was shortened to focus on the most essential topics namely:

- current household incomes;
- transport expenditures and changes in the values of these over the past three years;
- household consumption patterns in relation to members' visits to Spaza shops;
- purchase of pre-paid products;
- use of transport-related savings (where these were evident); and
- how evident savings were being redirected into the community.

This focus enabled the team to quickly collect data related to transport savings in the households during a difficult time of the COVID pandemic.

3. Results and Findings

The household survey data were intended to offer a representative reflection on the extent to which A2Pay support led to improvements in household transport expenditures, household incomes and community-level effects in terms of increased economic activity. These effects were supposed to be brought about by household savings generated through easier access to pre-paid products at the Spaza shops.

3.1 Demographics

The majority of household respondents in both the 'treatment' and 'control' samples of households were young, with 61% of 'treatment' household respondents (N=118) being between 18-34 years of age. 45% of respondents in the 'control' sample (N=104) were in this age category. Just over half of household respondents in both the 'treatment' and 'control' samples reported that they were the heads of their households and the ones who made the main financial decisions on behalf of their households.

3.1.1 Household Income

The survey results show that there has been no obvious increase in monthly incomes over the past three years among surveyed households. Although the A2Pay Theory of Change did not directly assume an increase household income in the locations where Spaza shops were supported by A2Pay it did assume that the availability of higher levels of expendable household income would result in savings on transport being re-directed towards more 'productive' economic activities in the community.

The survey did not reveal any obvious substantial economic activity that has arisen as a result of the A2Pay support.

There were, however, notable differences between household incomes of the 'treatment' and 'control' groups, with the treatment registering consistently higher incomes than the control (particularly in 2020).

This data would seem to suggest that there has been no single factor that has provided a substantial economic boost to households in the surveyed areas of Soweto regardless of whether households in these areas were accessing A2Pay-supported Spaza shops with pre-paid products available from the vending machines or not.

3.1.2 Household Transport Expenditure

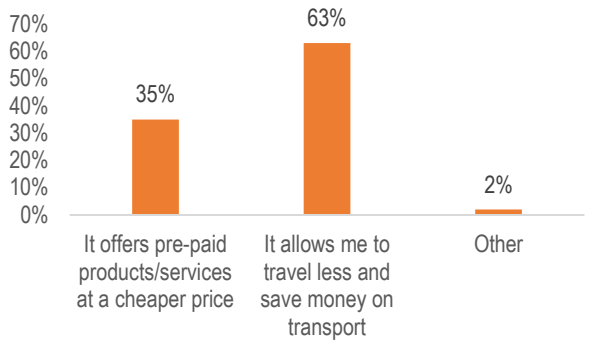
In spite of the wide array of locations where households are able to purchase pre-paid products, the majority of 'treatment' households (70%) reported that the presence of the A2Pay vending machine in their local Spaza shop had contributed to reducing their monthly household expenditure on transport.

When asking a more generic question about how household transport expenditures had declined in the last 18-24 months a smaller percentage of

'treatment' households (48%) reported that their transport expenditures had decreased (Figure 1).

Only 11% of 'control' households reported the same.

Figure 1 - Main Reason the A2Pay Vending Machine Has Contributed to Reduced Household Expenditures (N=83)



For those 'control' households not accessing pre-paid products through the A2Pay vending machines, 51% reported that their transport expenditures had increased over the last 18-24 months.

Just under two-thirds of 'treatment' households reported that the presence of the vending machine in their local Spaza shop allowed the respondent and their household members to 'travel less and save money on transport'.

This is the most notable finding from the household survey. It works to establish the credibility of the project's core assumption in the ToC, that the introduction of the A2Pay vending machines at the Spaza shops would produce savings on transport expenditures for households accessing the supported Spaza shops.

Higher-level statistical analysis in the form of a two-sample t-test indicated a high level of statistical significance for this difference and a p-value <0.05, which suggests that the difference in means between the 'treatment' and 'control' groups is unlikely to be caused by chance. It is safe to assign a degree of attribution to the project intervention when it comes to explaining this difference.

When 'treatment' households, reporting decreased transport expenditures, were asked the extent to which they would attribute this change to the easy accessibility of pre-paid products through the A2Pay vending machine, 48% attributed this change to a 'high extent' to the accessibility of these products, while a further 44% did so to a 'moderate extent'.

4. Conclusions & Recommendations

The household survey proved to be a challenging exercise and the data could admittedly have been more robust with a larger sample size. However, responding to the core issue underpinning much of the project's ToC, around household transport expenditures, it can be cautiously observed that those households accessing pre-paid products through the vending machines at the A2Pay-supported Spaza shops have seen a reduction in their transport expenditure. Average and median monthly transport expenditure for these households fell by 27% and 44%, respectively, between 2017 and November 2020. By contrast, those 'control' households continuing to access traditional Spaza shops without the A2Pay vending machines have seen 11% increases in both average and median household transport expenditure over this same time period. The data should be interpreted in light of overall transport expenditure still being higher (often notably so) among 'treatment' households.

It would be useful to see if these differences hold over a larger sample size and in different intervention sites. A follow-up household survey, combined with an incentive(s) could be considered to encourage participation.

These findings lend validity to the assumption in the ToC that there is a connection between making pre-paid products more readily available in communities and the possibility of households generating useful savings as a result.

However, the household survey found little evidence of substantial changes in economic activity at community-level in Soweto that could be directly linked to project-related initiatives. The findings of the household survey suggest that when

savings are generated (particularly at relatively small values), they are readily used for consumption than for productive investment.

The findings of this evaluation suggest that savings are used most frequently to purchase food, which could be a sign that these savings are important as a means to improve household food security and/or dietary diversity.

The conclusion from the above is that the provision of pre-paid products in closer proximity to households reduces the need for household members to travel, or at least travel exclusively for these products. It is unclear whether, in the absence of the new developments around different township communities (e.g. shopping centres and associated transport infrastructure), reductions in travel time (and expenses) would still be so apparent. In fact, if new shopping centres and other amenities were not existing in these locations, it seems likely that many households would still have members travelling longer distances to access formal retailers, which are still seen as essential even with the growing sophistication of the project-supported Spaza shops.

Wide reaching community development effects are likely to be seen in the quality of life of the households in the intervention locations as discussed in the results of the Qualitative evaluation presented in LSP14 “A Qualitative Evaluation of the A2Pay Innovation and Application of Technology Project “.

5. References

Final report. Impact Evaluation of the A2Pay projects, Upendo Consulting, December 2020.

Notes on the Emerging Business Learning Series

The Emerging Community Retail Business series consists of four papers:

1. *Emerging Community Retail Businesses – Paper 1: A Qualitative Evaluation of the A2Pay 'Innovation and Application of Technology' Project*

   This paper is the first in a series of four papers that present the results of the impact evaluation conducted by Upendo Consulting on the implementation of the A2Pay technology support to Spaza shops in the country. The paper presents the results of the qualitative component of the study conducted in KwaMashu, Inanda, Soweto, Katlehong, Khayelithsa and East London.

2. *Emerging Community Retail Businesses – Paper 2: Technology and Coaching to Enhance Business Performance of Spaza Shops, The case of A2Pay*

   This paper is the second in a series of four intended to highlight findings from a larger evaluation of A2Pay that used different research methodologies. It presents the results of a survey conducted on Spaza shops in four provinces in South Africa (Eastern Cape, Kwa Zulu Natal, Gauteng and the Western Cape) suing a quasi-experimental approach to investigate the business performance outcomes of A2Pay supported Spaza shops in the four provinces

3. *Emerging Community Retail Businesses – Paper 3: Transport effects on households accessing the A2Pay supported Spaza outlets in Soweto*

   This is the third of a series of four papers representing the different aspects of the findings drawn from the evaluation study on A2Pay done by Upendo Consulting. It presents the results of a household survey conducted in Soweto by the Jobs Fund as part of a larger evaluation study of the A2Pay project's impact on project participants between 2017 and 2020.

4. *Emerging Community Retail Businesses – Paper 4: The Sustainability of Township Businesses: A Longitudinal study of the A2Pay 'Access to Wireless Retail Technologies' Project*

   This paper is the last in a series of four papers that present the results of the impact evaluation conducted by Upendo Consulting on the implementation of the A2Pay technology support to Spaza shops in the country. It uses a longitudinal approach to study the sustainability of supported business ventures. It presents data from a follow–on survey to the first survey that was conducted in 2015 on 100 A2Pay vendors by Impact.