



**INNOVATION AWARD**

Advancing financial inclusion through data innovation

# ZPOS: The potential of merchant data in improving credit access

DataHack4FI Innovation Award Season 2

**Winner of the Women & Youth focus prize for Zambia**

Discovering the prospect of using financial management and accounting systems to generate credit scores

**Author: Rinelle Chetty**  
February 2019

An initiative of



Advancing Financial Inclusion

## About ZPOS

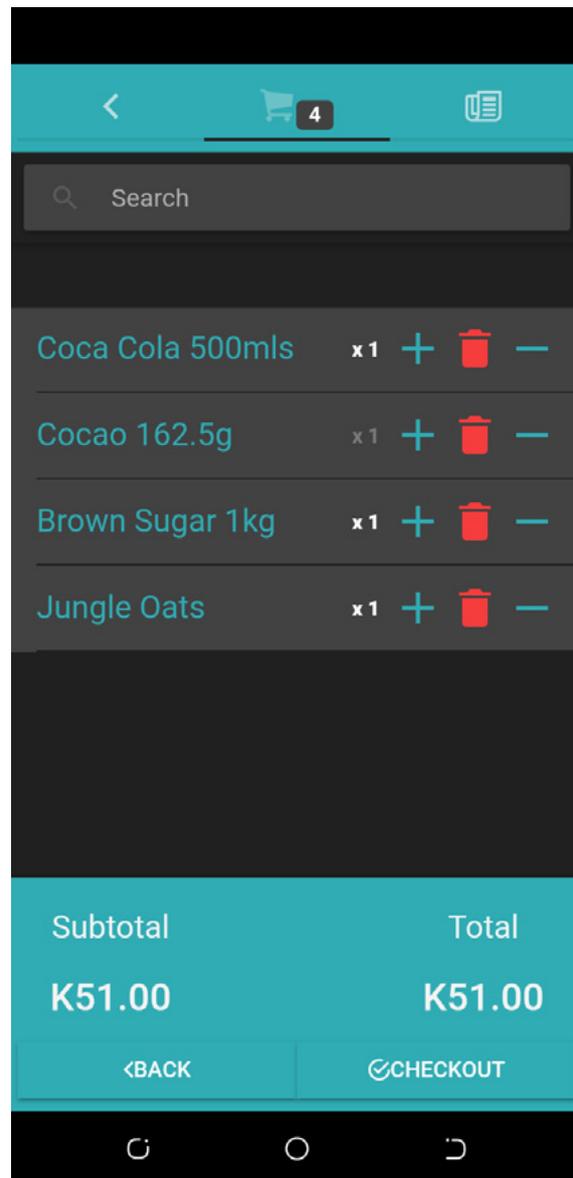
Established in October 2016, ZPOS (previously operating as Outsource Now) is a Zambian startup that participated in the 2018 DataHack4FI Season 2 Innovation competition. ZPOS has developed a point-of-sale software solution that digitises sales incomes, expenditures and stock levels for micro-, small and medium-sized enterprises (MSMEs)<sup>1</sup> in the informal sector.

After the DataHack4FI competition, ZPOS sought to explore how its data could be used to generate an alternative credit score for women- and youth-owned MSMEs that were already using the ZPOS solution – a credit score that could better position them to access credit from formal lenders.

## The challenge in Zambia

MSMEs comprise approximately 80% of all private-sector businesses in Zambia<sup>2</sup>. They are the driving force behind employment and opportunities for the low-income population, employing around 88% of Zambia's labour force<sup>3</sup>. However, almost half of MSMEs perceive the lack of access to credit as a significant hurdle for their business operations<sup>4</sup>. There is also the perception that women-owned businesses are not offered the same credit opportunities as male-owned businesses. While financial services providers (FSPs) are increasingly lending to MSMEs<sup>5</sup>, they are still restricted due to the lack of collateral, financial records and information on the business.

Figure 1: ZPOS point-of-sale interface



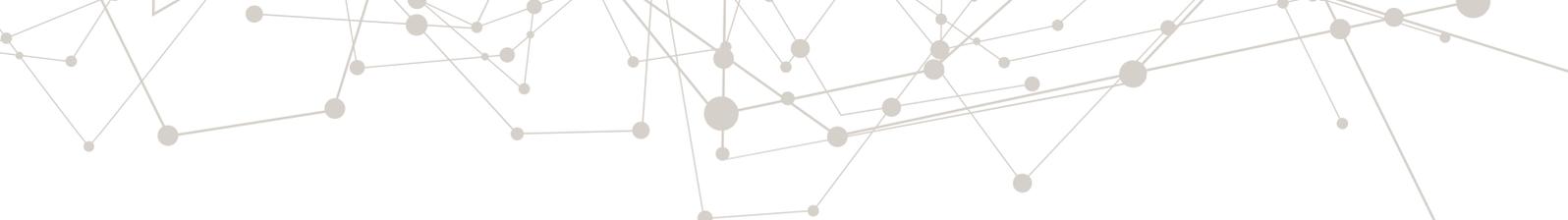
Source: ZPOS



...women are more formally and informally financially excluded in terms of credit than men are, with 67% of men being excluded from access to credit compared to 74% of women.



- 1 An MSME can be classified as a firm with fewer than 250 customers (Copenhagen Business School) and fewer than 50 employees (Zambia Business Survey).
- 2 World Bank (2010). Zambia Business Survey – An Analysis of Micro, Small and Medium-sized Enterprises.
- 3 Zambia Business Survey (2010). The profile and productivity of Zambian businesses.
- 4 University of Zambia and the Zambia Institute for Policy Analysis and Research. (2013). Formal Bank Credit to Micro, Small and Medium Enterprises in Zambia: Lessons and Implications.
- 5 Inclusive Business Action Network. n.d. Access to finance for inclusive businesses in Zambia.



## About the product

The ZPOS platform provides financial management and accounting services to MSMEs. Among others, the software:

- Keeps track of the MSMEs' inflow and outflow of transactions
- Allows merchants to track the types of inventory being sold, manage and update stock levels and know which goods move faster than others
- Captures the date and time stamps of when goods are purchased or sold

The point-of-sale feature allows merchants to more efficiently calculate total amounts for goods purchased and to share invoices with customers. An example of this interface can be seen in Figure 1.

The application can be downloaded onto any computer or tablet device from the ZPOS website<sup>6</sup>. An MSME can register on the platform by providing the business name, address, type of goods sold, and tax number. Once the software is set up, transactions can either be backed up to the cloud or used offline, with sales data being sent to ZPOS on a daily basis.

## Data and analytical approach

After the DataHack4FI Innovation Award, ZPOS sought to explore how ZPOS data could be used to better position merchants to gain access to credit from formal financial institutions. To get a sense of the demand for credit – and to understand what data attributes financial institutions would require of merchants – ZPOS analysed publicly available data. This included FinScope survey data, World Bank data and SME<sup>7</sup> survey reports. These sources were used to gain insights into merchants' needs and wants regarding credit and to gain an understanding of the challenges reported by merchants.

To supplement this with qualitative research, ZPOS conducted in-person interviews in which three FSPs and 50 ZPOS users were interviewed. FSPs were interviewed to identify the main factors that prevent an FSP from issuing a loan. Micro-merchants were interviewed to get a better

sense of their intentions to borrow money, how easy it has been for them to borrow money, where they had borrowed from in the past, etc. The interviews also delved into the borrowing behaviour of men versus women. They uncovered that 46% of men in the sample who applied for a loan actually received it, while this was true for only 20% of women. FinScope Zambia (2015) iterates that women are more formally and informally financially excluded in terms of credit than men are, with 67% of men being excluded from access to credit compared to 74% of women.

Using this research as inputs into the product design phase, ZPOS intends to outline and develop a credit-scoring add-on feature to the app in 2019. This score will be based on data from existing users that feeds into the ZPOS database each day. These data points include sale purchases, investments into the business and expense records.

ZPOS plans to analyse and model the data by using logistic regression: a predictive analytical method that is used to describe the odds – or the likelihood – of an event occurring, given a set of explanatory variables. In particular, it will use MSME data to predict the probability of a merchant being able to repay a loan. Once the credit-scoring algorithm has been piloted and tested, ZPOS seeks to supply the information to FSPs to serve as an alternative creditworthiness score for when an MSME applies for a loan.

## Implications of the solution

The ZPOS software seeks to address the hurdle that MSMEs face when they apply for formal credit. It aims to do this by providing an alternative credit score that captures vital information required by FSPs, such as business records, transactions and financial history.

It also aims to provide a way for women- and youth-owned MSMEs, which make up 41%<sup>8</sup> of MSMEs in Zambia, to invest more in their business operations and have greater opportunities as a result of improved access to credit. Information and insights from the platform can also be used to inform strategic decisions of the MSME and aid overall growth of the firm.

The new ZPOS credit-scoring feature is set to be developed and piloted in 2019.

---

6 <http://zpos.co.zm>

7 Small and medium-sized enterprise

8 World Bank (2010). Zambia Business Survey – The profile and productivity of Zambian businesses.

This case study is part of the DataHack4FI Innovation Award competition Season 2 series. It describes the solution as developed by the tech startup and its partnered data fellows during the competition. The competition brings together data enthusiasts and financial service providers to promote the use of data-driven decision-making in financial inclusion. Find out more about the competition at [datahack4fi.org](http://datahack4fi.org).

## The DataHack4FI team



**Chisepo Chirwa**  
Co-founder



**Vernon Ushibantu**  
Co-founder



**Mukopaje Singogo**  
Co-founder



**Yoram Gondwe**  
Data Mentee



**Sipho Muyangana**  
Data Mentee



**Kateula Sicalwe**  
Data Mentor

## How to find us:

Get involved. Contact us.

+27 21 913 9510  
[i2ifacility.org](http://i2ifacility.org)  
[datahack4fi.org](http://datahack4fi.org)

 @i2ifacility  
 /insight2impact  
 /insight2impact  
 /i2ifacility

Established by



Sponsored by

