



**{ DATA
HACK
-4FI- }**

INNOVATION AWARD

Advancing financial inclusion through data innovation

Season 2

An initiative of



Advancing Financial Inclusion

DataHack4FI is an innovation competition that brings together data enthusiasts and financial service providers (FSPs) to promote the use of data-driven decision-making in financial inclusion.

Find out more about the competition at datahack4fi.org.





Contents



Message from i2i	2
Season 2 - The journey continues	3
Season 2 participants	4
Meet the i2i team	6
Meet the finalists	8
Collaborating partners	20

Message from i2i



Hennie Bester
Programme Lead of i2i

At insight2impact (i2i), we believe the future of financial services in Africa is data-driven. People who are currently outside the financial system or poorly served by it can be brought in simply because we have data about them and the ability to analyse that data.

DataHack for Financial Inclusion (DataHack4FI) is part of our drive to ensure that this happens.

By running the innovation competition in six African countries, we've been able to identify and mobilise young finance, tech and data enthusiasts to collaborate in using data to develop creative solutions to the problems people face in accessing and benefiting from financial services.

We've departed from Season 1's more traditional hackathon to working with fintechs or tech start-ups that either have a product in the market or will launch one soon. This approach has demonstrated that many start-ups are collecting data but underestimate the value of that data and the potential it has for unlocking additional benefits for their customers. Therefore, they fail to analyse it.

I've been moved by the feedback we've had from participants who say the competition has either whetted their appetite for data science or motivated them to be more intentional about building on the data knowledge they already have. It's also been

inspiring to see several participants draw on their skills to design solutions that could improve the lives of the communities in which they grew up or live currently – for example, those who want to improve the lives of farmers like their parents or fellow students who've had to drop out because they cannot raise funding. This embodies the essence of what i2i is about.

Congratulations to all the teams selected to pitch in the finals and a heartfelt thank-you to our partners – especially the innovation hubs that supported the contestants and linked them to expertise and Canada's International Development Research Centre (IDRC) support for women and youth – and also to our data fellows and experts.

“ I've been moved by the feedback we've had from participants who say the competition has either whetted their appetite for data science or motivated them to be more intentional about building on the data knowledge they already have. ”

Season 2

The journey continues



Dumisani Dube
i2i's DataHack4FI lead

The DataHack4FI competition seeks to advance financial inclusion through data innovation. It does this by encouraging and upskilling young finance, tech and data enthusiasts in Africa to use data and data analytics to collectively solve business challenges and to make appropriate financial services more affordable and readily accessible to unserved and underserved communities.

The competition runs over multiple stages. In the first stage of the competition, we engage with demand-side and supply-side challenges. We survey FSPs to determine challenges they might face in providing financial services to women, youth and the financially excluded at large, and to establish where data-driven solutions might be needed most. We then identify, select and invite participants, tech start-ups and data fellows to participate.

In-country meet-up sessions are facilitated through strategic local partnerships, experiences are shared, and skills development and direct mentorship are offered. These are further supported by cross-country webinars where teams interact with international experts.

We then match tech start-ups with data fellows. At the in-country finals, the winner from each country receives a cash prize of USD5,000, and the best women- and youth-centric solution per country, thanks to support from Canada's International Development Research Centre (IDRC), receives a prize of USD2,500. The overall winner, to emerge from the grand finale, will receive USD25,000.

The winning teams will also receive Microsoft Cloud-based credits from our partner Liquid Telecom.

Season 2's core objective has been to create opportunities for upskilling youth and women in data science. Our broader objective is to bolster existing and new networks that allow for the empowerment of youth and women to design scalable, financial inclusion solutions.

We are excited to have worked with over 185 individuals making up 38 teams with 38 data science experts across the six countries.

Congratulations to all our entrants and participants. You've showcased your talents and passion to develop innovative solutions that serve your communities. Many thanks to our partners and country-level stakeholders who have supported us and the participants throughout this journey, to whom we owe the success of the season.

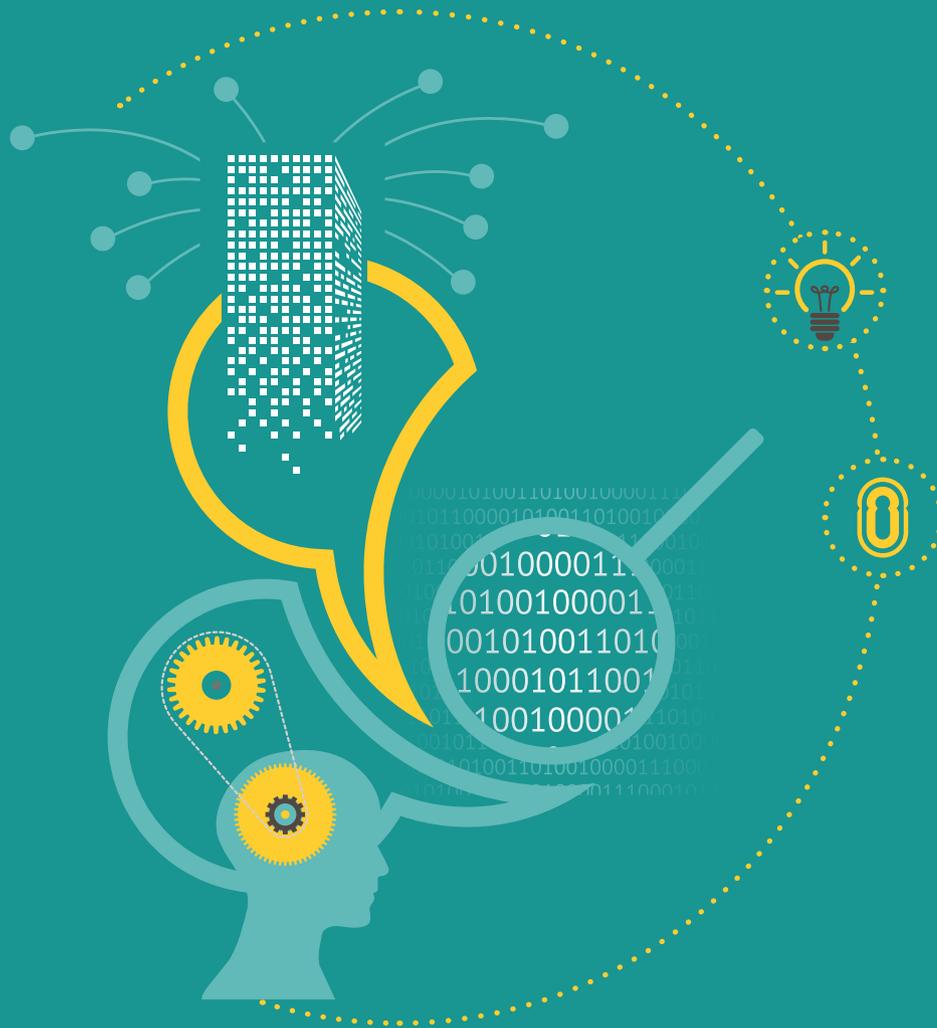
Visit DataHack4FI.org for more about the journey to the final.

“Season 2's core objective has been to create opportunities for upskilling youth and women in data science.”

Season 2 participants

Using data for good

In Season 2, tech companies were paired with data enthusiasts to explore the potential of their data for financial inclusion. In turn, the data enthusiasts were mentored by data science experts.



Tech team members Data fellows Data science experts

Rwanda

- Spiderbit (eHaho)
- Uplus
- Exuus
- AgriGo
- Milsports
- Ewawe

Ghana

- InvestED, PBC
- Invest XD
- TROTRO Tractor
- Inclusive FT

Zambia

- Affordit Loans
- Broadpay Zambia Ltd
- Outsource Now Ltd
- ProBASE Limited
- Zambian Pawn
- ZedCredit

Tanzania

- A-Trader
- BizFundi
- Credit Info
- Cytrone
- Safari Wallet

Uganda

- Sula Pay
- MCash
- Mambopay
- NFT Consult
- Akello banker
- Future Link Technologies
- Moquid
- True African
- Ezeemoney

Kenya

- Apps:Lab Co
- Asilimia
- Data Integrated Limited
- Finplus
- MFI
- Mose
- Pezesha
- WazInsure



Meet the i2i team



Dumisani Dube
i2i's DataHack4FI lead

Dumisani is a research associate, working within i2i's Applications Lab, and is responsible for leading the i2i DataHack4FI innovation competition. He has a passion for helping organisations realise and embrace the value of data analytics and alternative sources of data in informing strategic decisions and gaining new insights.



Herman Smit
Head of i2i Client Insights

As head of i2i's Client Insights and Director at Cenfri, Herman has been a keen contributor behind the DataHack4FI competition. His current research activities consider the role of behavioural science, alternative data and technology in advancing the benefits of the financial sector to society.



Nicola Schoeman
Data Science Project Manager,
i2i Applications Lab

Nicola assisted with DataHack4FI planning, coordination, initial engagements, documentation, management of teams and data science experts and logistics in Kenya. She provided oversight in other focus countries and was a judge for the Zambia final. As an econometrician, she plays a role in bridging the gap between FSPs and data.



Louise de Villiers
Engagement Manager, i2i Client Insights

Louise played a pivotal role in designing the research component of the DataHack4FI, assisting in aligning the activities with specific research questions and learning objectives. She assisted with planning and logistics of the overall DataHack4FI innovation competition. Her research interests include different data collection techniques, using data for decision-making, and the use of alternative data to understand the gender gap in financial inclusion.



Krista Nordin

Research Associate, i2i Client Insights

Krista led the DataHack4FI planning, coordination and logistics in Uganda, managed the data science experts and led the case study research. Her research interests include data science and analysis, data in decision-making and the use of alternative data to improve financial inclusion.



Renée Hunter

Senior Researcher, i2i Client Insights

Renée led the DataHack4FI planning, coordination and logistics in Ghana and Rwanda, collaborating with the in-country partners, managing data experts, and case study research. Her research interests include the use of alternative data to address the gender gap in financial inclusion, ethics in data applications, and the use of data in decision-making.



Rinelle Chetty

Researcher, i2i Client Insights

Rinelle assisted with DataHack4FI planning, coordination and logistics in Tanzania and Zambia, managing data experts, case study research, as well as judging in Tanzania. Her research interests include data science and analysis, data in decision-making, behavioural science and the use of alternative data to improve financial inclusion.



**Meet the
finalists**

InclusiveFT

Winner of DataHack4FI Ghana



Problem statement: A lack of traditional identity documentation forms a significant barrier to many African consumers who are accessing financial services. Moreover, in jurisdictions that do not have a national ID system, a lack of integrated infrastructure for FSPs can hinder even those individuals who have official identity documents from accessing financial services in a timely and user-friendly manner – as application times are often increased significantly by the bureaucracy involved in verifying identities.

Solution: InclusiveFT's identity verification solution links to various identity databases from government (national ID, passport, driver's licence, voting registration, etc.), and work is being done on incorporating linkages to telco databases and utilities payments. Once an individual signs up with an FSP, the company collects sign-up data. The InclusiveFT API automatically compares the collected demographic information with the information in the linked databases. This is done through an automated process of text-matching. The upcoming version of the solution will incorporate an element of machine learning, so as to allow for slight deviations to be included in results as well – allowing for, among others, misspellings of names.



Paul Damalie



**Evalyne Wangari
Gachirwa**
(data fellow)

“ InclusiveFT's identity verification solution links to various identity databases from government, and work is being done on incorporating linkages to telco databases and utilities payments. ”



WazInsure

Winner of DataHack4FI Kenya



Winnie Badiah



Eric Odenyi



Martin Wambugu

Problem statement: The boda-boda industry is big in Kenya. Of the 600,000 motorcycles on Kenya roads, over 99% are boda-bodas, and about 15 million people ride them every day. This segment of the transport sector brings over USD6 million into the economy daily and is increasing youth employment. However, very few insurance companies offer cover for boda-boda drivers. In fact, only three of the 40 general insurers in Kenya provide cover to this segment of the market. This is largely due to limited data being available on this informal sector, which makes it hard for insurance companies to underwrite the drivers.

Solution: WazInsure developed supervised and unsupervised machine-learning models that analyse both internal and external data sources to predict the likelihood of a boda-boda driver claiming for a high-risk event. The model uses structured internal data from surveys conducted on drivers. The external data used includes unstructured and crowd-sourced data from social media platforms and others. The outputs of the analysis performed allow insurance providers to better assess risk for boda-boda drivers.

“ WazInsure developed supervised and unsupervised machine-learning models that analyse both internal and external data sources to predict the likelihood of a boda-boda driver claiming for a high-risk event. ”

AgriGO

Winner of DataHack4FI Rwanda



Problem statement: Due to seasonal harvests, farmers have infrequent access to income. This contributes to financial insecurity, financial stress and a weaker negotiating position when the harvest is sold – a lack of access to finances makes farmers more likely to accept prices that are less favourable to them. However, with a lack of formal financial records, it is generally not possible for smallholder farmers to access formal credit. This problem is exacerbated for female farmers, who, despite doing much of the farming work, often don't own the land and thus cannot use it as collateral.

Solution: AgriGO and its data fellows and expert worked on developing a data solution that can assist farmers in accessing a monthly “salary”. Farmers can apply for this monthly credit line with their cooperatives, who base their approval on AgriGO’s five scorecards. These scorecards are based on five different types of data that AgriGO has access to: behavioural data (farmers’ activities following AgriGO’s farming advice and the extent to which they match the advice), daily activity costs (farmers’ inputs as recorded on the platform), farmers’ assets (plot size, location and characteristics), historical data on the AgriGO platform, and external factors (including weather forecasting, currency inflation, market prices, market demand for certain crops, bank risks assessment, and regional crop indexes). The combination of these scorecards informs a credit score, which the cooperative uses to judge in providing monthly credit to the farmer.

“ AgriGO and its data fellows and expert worked on developing a data solution that can assist farmers in accessing a monthly ‘salary’. ”



Serge Danson Ndekezi



Dioscore Shikama



Joshua Muhire
(data fellow)



Irénée Ikibaruta
(data fellow)



A-Trader

Winner of DataHack4FI Tanzania



Andrew Tesha



Chacha Magebo



Zaid Mkwangwa
(data fellow)



Anthony Auffret
(data expert)

Problem statement: In 2017, only half of Tanzania's adult population had some form of savings, and fewer than 2% of the 56-million population were able to invest in local capital markets. Access to trading securities on the majority of Africa's exchanges is limited to physically visiting, calling *and* e-mailing a brick-and-mortar broker. A customer fills out multiple forms, physically deposits the money and returns to fill another form and execute the trade. 82% of Tanzania's population are unbanked, the majority live in rural areas, there is a lack of physical access, no financial track record, and financial illiteracy. This prevents millions from growing their savings, accessing investment opportunities and having a greater chance at economic prosperity.

Solution: A-Trader's platform digitises African capital markets by enabling users to access trading and investment options using the internet or any mobile device. A-Trader bypasses traditional models, as it provides direct access to stock markets, financial tools, investor education, investment management and micro-investment options for mid-to-low-income earners. The time and efforts required to visit, e-mail or call a broker are removed, resulting in time- and cost-savings, accessibility, real-time transactions/monitoring, regular updates and multiple automated functionalities. Through artificial intelligence and robo-advisors, A-trader is building a micro-investment algorithm to provide savings and investment options for Africa's growing middle class, and financially excluded population.

“ A-Trader's platform digitises African capital markets by enabling users to access trading and investment options using the internet or any mobile device. ”

NFT Consult

Winner of DataHack4FI Uganda



Problem statement: Agent networks provide critical infrastructure required to ensure last-mile delivery and to enable financial inclusion. However, agent networks are difficult to manage and optimise for a myriad of reasons. One such challenge is liquidity or float management for the agents, due to the lack of real-time visibility of key KPIs and fraud.

Solution: NFT Consult leveraged internal data from four client agent network managers to develop a liquidity management and float score. Of the 1 million transaction records selected, 30,000 were used to develop the score. This score will help to improve commission or sustainability and identify when an agent will not be able to serve its next customer. This, in turn, will improve the quality of service and strengthen the agent network to drive access to financial services.



Patrick Kadama



Joan Ajilong



Shem Kironde



Kenneth Legesi
(data expert)

“ We leveraged our internal data from four client agent network managers to develop a liquidity management and float score. ”



ZedCredit

Winner of DataHack4FI Zambia



**Tundwa
Siyubo**



**Dominic
Kapalu**



**LuckJoe
Wamundila**
(data fellow)



**Chanza
Thomas
Simuzingili**
(data fellow)

Not pictured:

Rhoda Chiwele
(data fellow)

Chansa Kabwe
(data expert)

Problem statement: According to FinScope research in 2015, more than 600,000 Zambians make use of informal savings groups to manage over 3.3 billion Kwacha. However, informal savings groups present members with challenges relating to inadequate record-keeping, a lack of transparency, and safety concerns given the large amounts of money under management. The need for alternative low-cost, low-commitment savings solutions is clear given the recent success of mobile application-based savings wallets in Zambia and the surrounding countries.

Solution: The solution is a mobile savings wallet targeted at women within informal savings groups, which allows users to better manage risk and ultimately create wealth. The wallet record manager digitises savings group records to unlock access to financial services. The primary objective of the wallet (called EDU-SAVE) is to enable parents of school-going children to pay for school fees and manage unforeseen circumstances without financial stress. The solution gives savings group members a formal method of saving by supplying a digital footprint of their money usage, and it provides unique insights into financial products that could improve their lives.

“ The primary objective of the wallet (called EDU-SAVE) is to enable parents of school-going children to pay for school fees and manage unforeseen circumstances without financial stress. ”





Mose

DataHack4FI Kenya: Women & Youth category winner



**Mungai
Constantine**



**Steve
Ileri**

Not pictured:

**Mary Mutua
Benson Thiongo
Simon Chege**

Problem statement: In Kenya, agriculture is the second-largest contributor to GDP and the largest supporter of livelihoods. 75% of the labour force in Kenya are employed in agriculture, and 33% of all adults derive their main source of income from it. But, agriculture remains largely out of reach for the financial sector. Only 4.3% of private-sector credit goes to agriculture, and less than 1% of smallholder farmers have access to credit from formal financial institutions. This is in part because most smallholder farmers lack collateral, credit histories and a stable cash flow or banking records, which are requirements by most FSPs to extend credit.

Solution: The solution (called Fama plus) provides farmers with a simple digital record-keeping platform on their phone. Farmers can use their digital records to gain valuable insight into their own farming operations and to maximise the potential of their farms. In addition, the data captured through the platform is also leveraged and combined with existing agricultural data to develop a credit profile for the farmer. The farmers can then use this credit profile to unlock access to credit at formal financial institutions.

“ The solution (called Fama plus) provides farmers with a simple digital record-keeping platform on their phone. ”

Exuus

DataHack4FI Rwanda: Women & Youth category winner



Problem statement: In 2016, there were 36,000 savings groups in Rwanda, collectively holding around 16 billion Rwandan francs. Over 1 million Rwandans belong to a savings group, which is almost the same as the number of Rwandans that are banked. However, very little information is available about these savings group members, and it is still difficult for this large group of financially active individuals to access additional products such as credit.

Solution: SAVE is a digital platform that financially empowers Savings Groups sustainably through a comprehensive, adequate, open and user-friendly savings groups registry. The platform digitises savings contributions (through USSD-based mobile money contributions) and provides dashboards for savings group management. The now-digitised transaction data from the group is used to provide individual members with a credit score, which can be used to receive bank loans.



**Steve
Shema**



**Gilbert
Kayumba**



**Christian
Bigirimana**



**Emmanuel
Mpunga**



**Claude
Twahirwa**

“SAVE is a digital platform that financially empowers Savings Groups sustainably through a comprehensive, adequate, open and user-friendly savings groups registry.”



MamboPay

DataHack4FI Uganda: Women & Youth category winner



**Charles
Muhindo**



**Jolly
Mbambu**



**Peter
Naphlin**



**Masika
Gorretti**



**Juma
Oboth**



**Nelson
Mugisha**
(data expert)

Problem statement: A recent survey conducted in primary, secondary and tertiary institutions in Uganda indicates a poor savings culture among young people, especially students. Students in boarding schools receive money from their parents, yet they are not taught sufficient practical skills on personal finance management and savings. This could be partly because the students are not allowed to have mobile phones at school and therefore cannot engage in mobile financial services such as saving.

Solution: MamboPay enables pocket money remittances straight from a parent's Mobile Money wallet to the Student's MamboPay card. The card allows mobile money to be deposited, withdrawn or saved easily. Considering the transactional data that we accumulated over the years, we were able to run an analysis against different data sets to develop a savings product for the students to use. The product allows students to save a portion of their pocket money for future use in a fixed deposit account within MamboPay's partner financial institutions. These accounts generate interest, adding to the incentives for students to save. The solution can be found by dialing *166*8# on MTN and selecting option 3 on the menu.

“ MamboPay enables pocket money remittances straight from a parent's Mobile Money wallet to the Student's MamboPay card. ”

Outsource Now

DataHack4FI Zambia: Women & Youth category winner



Problem statement: The more than 60,000 micro-merchants in Zambia represent a crucial sector of the country's economy. Yet, research indicates that these merchants are under-lent and under-banked (about 30% only, according to the World Bank). The apparent lack of access to formal credit is due to the absence of data generated by merchants that provide information to potential lenders about the business. While a number of financial institutions express a desire to provide loans to SMEs, micro-merchants have insufficient business information and record-keeping to facilitate suitable lending.

Solution: The solution is an application that administrates financial management and accounting for SMEs. It keeps track of the merchant's stock, sales (income) and expenses. This information is then supplied to FSPs to help determine the merchant's credit score and capacity to pay back loans. FSPs can also use this data to develop products that are better suited to SMEs, a key shortcoming of the financial products currently available for micro-merchants. According to 90% of merchants in Lusaka's Kalingalinga area, stock advances would help their businesses the most. Such stock advancing facilities can be considered a form of lending, where the supplier advances goods and receives payment at a later stage.



**Chisepo
Chirwa**



**Mukopaje
Singogo**



**Vernon
Ushibantu**



**Kateula
Sicalwe**
(data expert)



**Sipho
Muyangana**
(data fellow)



**Yoram
Gondwe**
(data fellow)

“ The solution is an application that administrates financial management and accounting for SMEs. It keeps track of the merchant's stock, sales and expenses.”

Collaborating partners

Ghana



Kenya



Rwanda



Tanzania



Uganda



Zambia





How to find us:

Get involved. Contact us.

Dumisani Dube

dumi@i2ifacility.org

Hennie Bester

hennie@i2ifacility.org

+27 21 913 9510

i2ifacility.org

datahack4fi.org

 @i2ifacility

 /insight2impact

 /insight2impact

 /i2ifacility

Established by



Sponsored by

