



Market Review | Rwanda

April, 2020

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Country Overview



Population & Economy

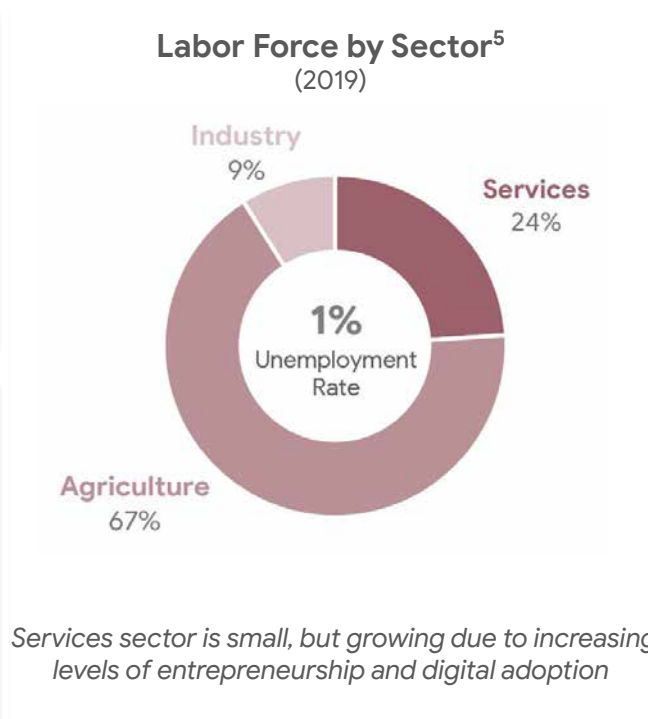
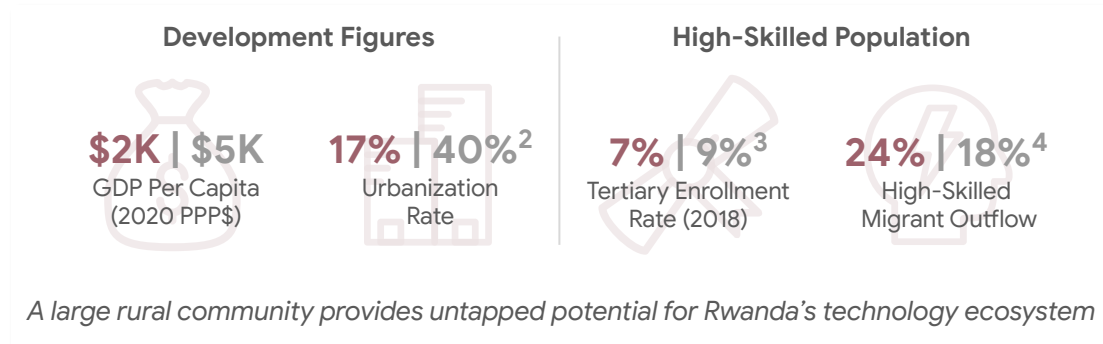
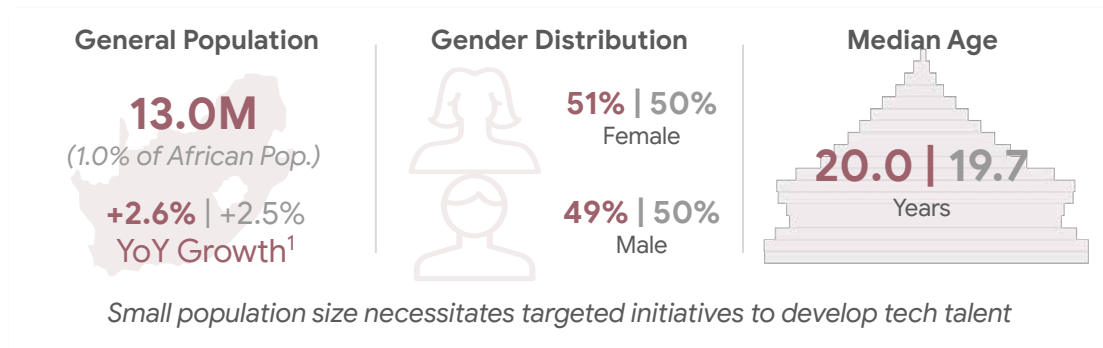


Technology Infrastructure



Government Involvement

Rwanda produces high-quality tech talent despite a relatively small population and rural economy due to investments in technology-focused education



Rwanda struggles with accessibility and quality of fixed broadband, but mobile coverage is widely available

Infrastructure Indicators

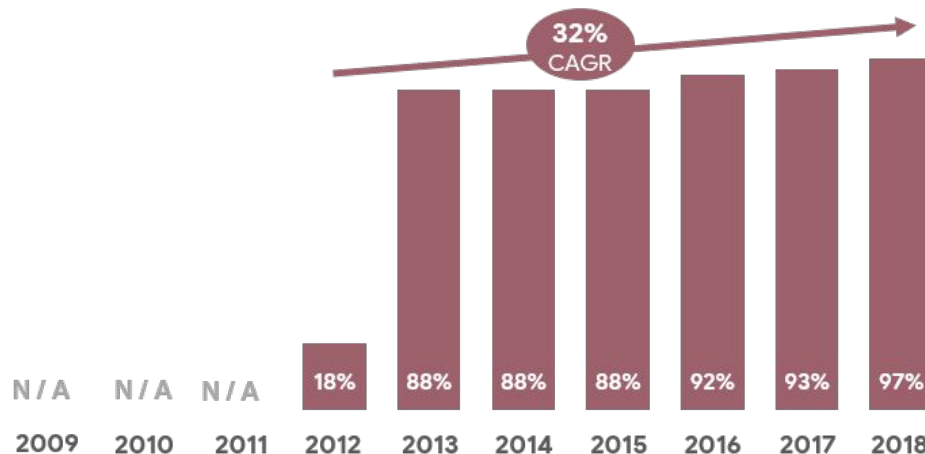
Above / Below Global Average | Global Average

29% 59%	79 69
Internet Penetration (FY20E)	Mobile Phone Subscriptions per 100 People
10.1 30.5	\$0.56 \$8.53
Mobile Internet Download Speed (Mbps)	Cost of 1GB Mobile Internet (PPP\$)
20.5 74.3	\$230 \$50
Fixed Internet Download Speed (Mbps)	Monthly Cost of 5GB Fixed Internet (PPP\$)
35 1,620	34% 89%
Servers shipped (FY20E)	Population with Access to Official Electric Grid

Rwanda is heavily mobile-first, as low speeds and high prices reduce accessibility of fixed broadband

Population Covered by at Least 3G (2018)

(90% global average)



Rwanda 3G coverage spiked from 2012-2013, increasing by 4x but has stabilized since then, maintaining a coverage well above the global average

Rwandan government built a progressive tech ecosystems by enacting policies to support entrepreneurship and ICT education

Notable Government Policies



Rwanda has established a **\$100m venture fund to support early stage startups** and achieve 100 local tech companies valued over \$50m by 2030



Entrepreneurship visas and 15-minute business registration are offered to fast-track startup creation and attract foreign talent

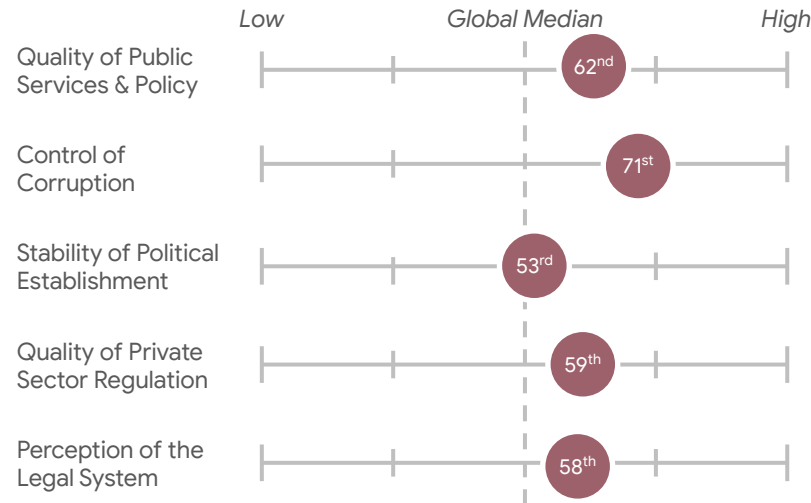


Rwanda government partnered with Carnegie Mellon in 2011 to create a CMU campus in Rwanda that offers **world-class ICT education**



Government partners with private sector players to deliver public services, such as Zipline for drone deliveries and Nokia for smart city tech

Governance Indicator Percentiles



Rwanda's government performs above the global median, with a steady political establishment and high-quality regulation



Developer Population



Demographics



Education



Employment



Experience

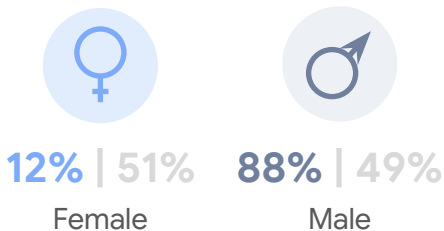
Rwanda's developers are young and primarily learn how to code on their own or through university programs

Developer Population (FY20E)

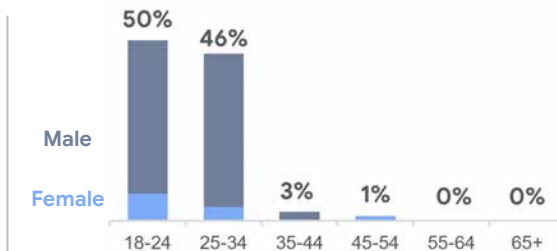


Gender Breakdown^{1,2}

Developer Pop | Rwanda General Pop



Age Distribution^{1,2}



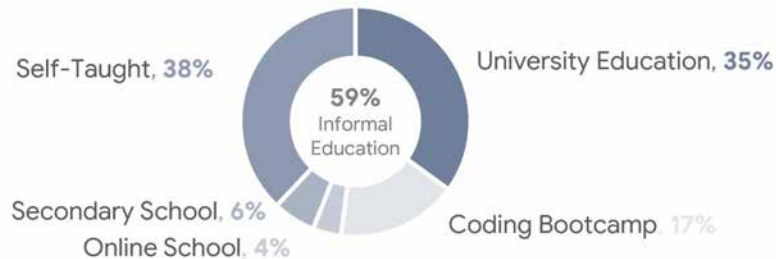
Top Cities for Developers

- 1 Kigali
- 2 Gisenyi
- 3 Butare, Byumba (Tied)

Activities¹



Technical Education



Over 40% of Rwandans attend universities or public secondary schools for technical training as coders

FORMAL EDUCATION

University³, Secondary School

41%¹

Gender²



82% 18%

Top Industries

- 1 Software & Hardware
- 2 Gov. Services
- 3 Agriculture

Median Age

25-34

Avg. Monthly Salary

\$600

Full-Time

64%

INFORMAL EDUCATION

Bootcamp, online courses, on-the-job, self-taught

59%¹

Gender²



91% 9%

Top Industries

- 1 Software & Hardware
- 2 Gov. Services
- 3 Consumer Products

Median Age

18-24

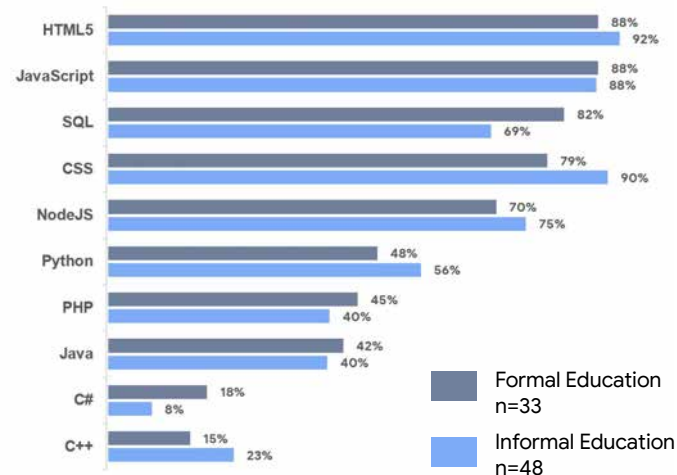
Avg. Monthly Salary

\$500

Full-Time

54%

LANGUAGE PROFICIENCY by EDUCATION



"Rwanda has Carnegie Mellon, the best university on the continent, producing extremely high-quality developers."
-Investor, Pan-Africa

Question: How did you primarily learn to program or code?



Sources: Accenture Surveys, Accenture Analysis

Notes: Source data directional due to small N (N/A used if fidelity of data is too low), Survey was partially distributed by GDGs; 1. n=81; 2. Does not include those who refrain from answering, 3. Only universities with ICT programs are included in this analysis

The majority of developers work full-time roles unlike in most African countries

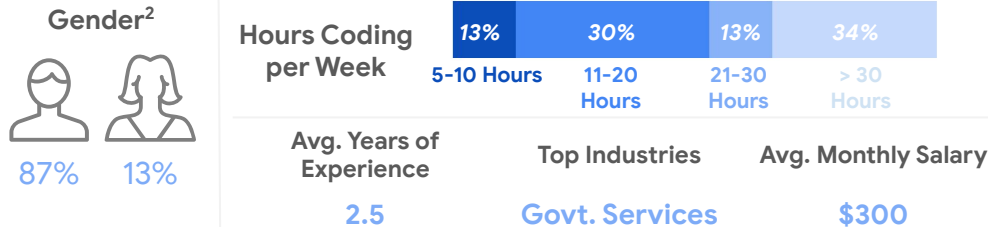
FULL-TIME ROLE

69%¹

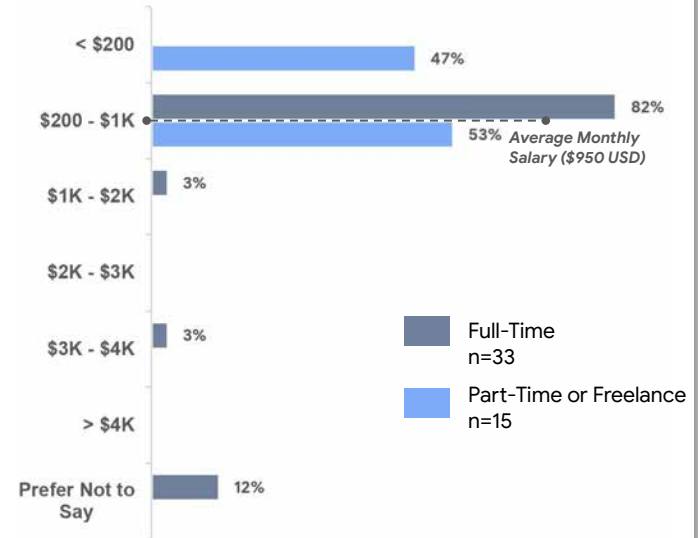


PART-TIME or FREELANCE ROLE

31%¹



MONTHLY BASE SALARY FROM CODING



Question: How do you spend your time coding or programming?

Developers are predominantly junior coders focused on mobile and web

JUNIOR DEVELOPER

Less than 6 years of coding experience

94%¹

Gender²



Open Repository Contributions



11% Once a year
8% Once every 6 months
27% Once a month
11% Once a week
43% Have never contributed

Top Languages

1. HTML5
2. JavaScript
3. CSS

Top Industry	Avg. Monthly Salary	Full Time
Software & Hardware	\$500	58%

SENIOR DEVELOPER

Over 6 years of coding experience

6%¹

Gender²



Open Repository Contributions



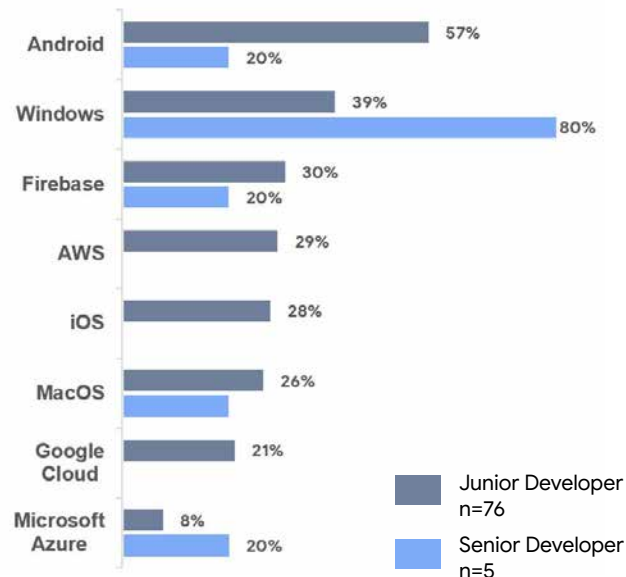
40% Once a year
20% Once every 6 months
0% Once a month
0% Once a week
40% Have never contributed

Top Languages

1. JavaScript
2. NodeJS
3. Java

Top Industry	Avg. Monthly Salary	Full Time
Govt. Services	\$1,600	60%

DEVELOPER PLATFORMS OF CHOICE



Question: How many years of professional coding or programming experience do you have?



Technology Ecosystem



Innovators (*focus areas*)



Innovators (*fundraising*)



Investors



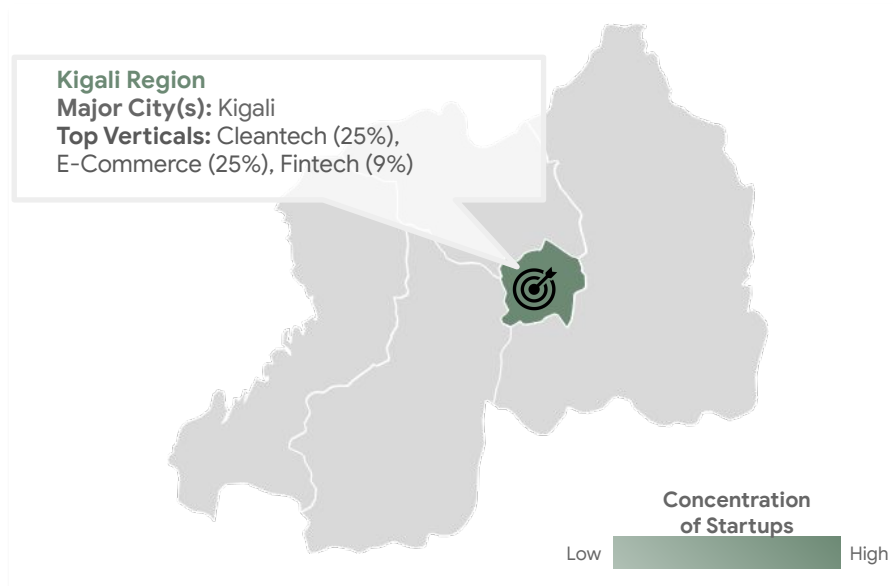
Educators



Enablers



Cleantech solutions are in high demand followed by e-commerce and agritech



"The government is looking to increase their startup fund from \$30M to \$70M. The government also hinders tech from other countries entering Rwanda."

- Investor, Kampala

Breakdown by Top Verticals



26%
Cleantech



23%
E-Commerce



11%
AgriTech



9%
Social Innovation



6%
FinTech



4%
Mobility



3%
EdTech



3%
Blockchain

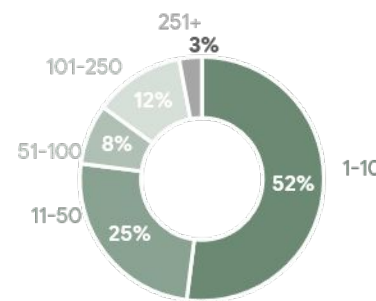


3%
HealthTech



12%
Other

Headcount & Founder Demographics (2020)



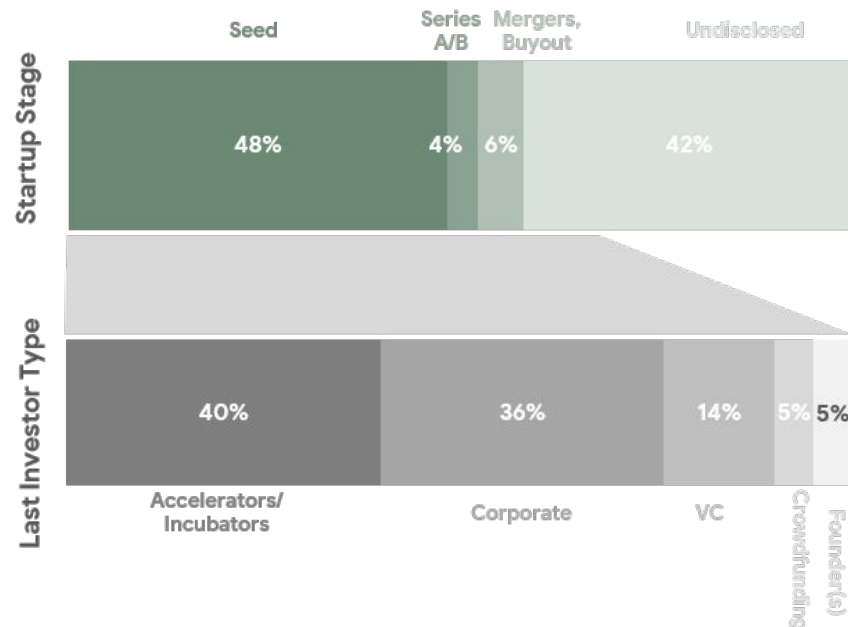
30%

Startups with **at least one woman founder**; of which e-commerce & social innovation are leading verticals



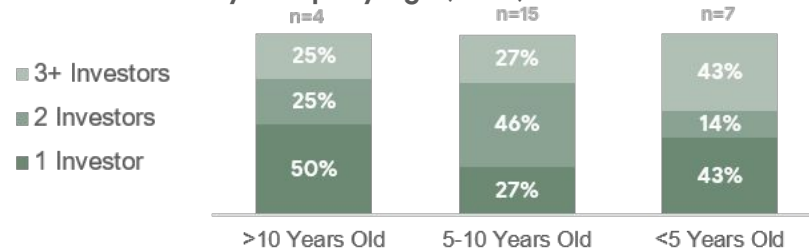
Rwandan startups attract a substantial amount of corporate investment relative to other African markets

Distribution of Startups by Stage (2020)



Most startups are in seed rounds of funding and are largely funded by accelerators, incubators and corporations

Investor Count by Company Age (2020)



The majority of Rwandan startups are between 5-10 years old and have gained traction with two or more investors

Innovator Characteristics

40%

of startups
primarily focus on
the B2B market



41%¹ of the startups operating in Rwanda are headquartered internationally

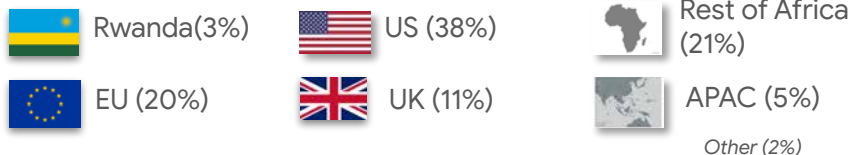


17% of the startups are part of the agriculture, forestry and fishing sector



Foreign investment firms view Rwanda as a high potential growth market

Investors



Leading Rwandan Investors



Face the Gorillas makes real time investments in a Shark Tank format allowing ventures to gain upto \$200K in investments and potential accelerator support.



Crystal Ventures provides growth capital investments to companies in civil, agriculture and telecom sectors, with 1 exit thus far.

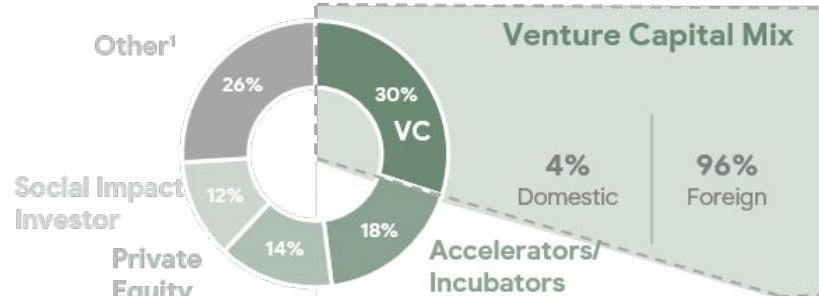


AECF invests in agriculture, renewable energy and financial services/comms focusing on rural areas. They've invested in 3+ Rwandan ventures.

"Foreign investors are labeling Rwanda as the next hub for innovation and tech-enabled ventures.."

- Investor, Germany

Type of Investors (2020)



Areas of Focus



38% of foreign investors only invest in seed or early stage



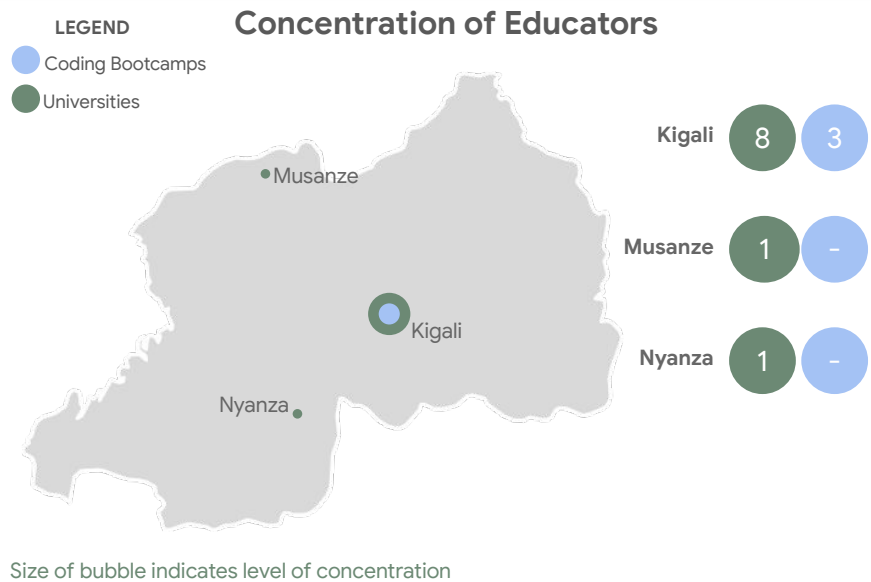
58% of investors active in Rwanda invest in the software sector



32% of investors active in Rwanda invest in cleantech



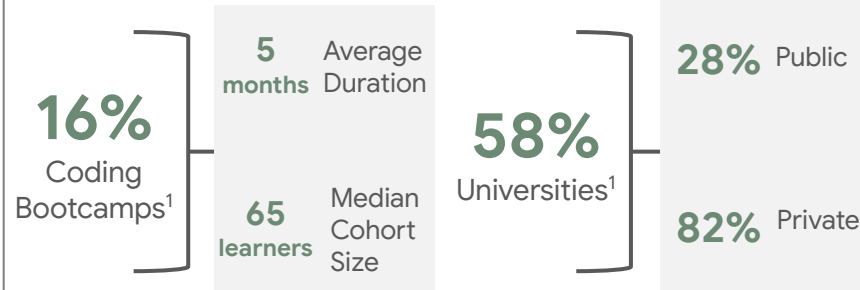
Kigali provides multiple formal and informal options for technical training



"Andela has helped shape the ecosystem in Rwanda by providing young talent with training, which drove growth of meetups and developer communities forming."

-Educator (Tokyo-based company), Kigali

Educator Type Breakdown



Case Study: Davis College

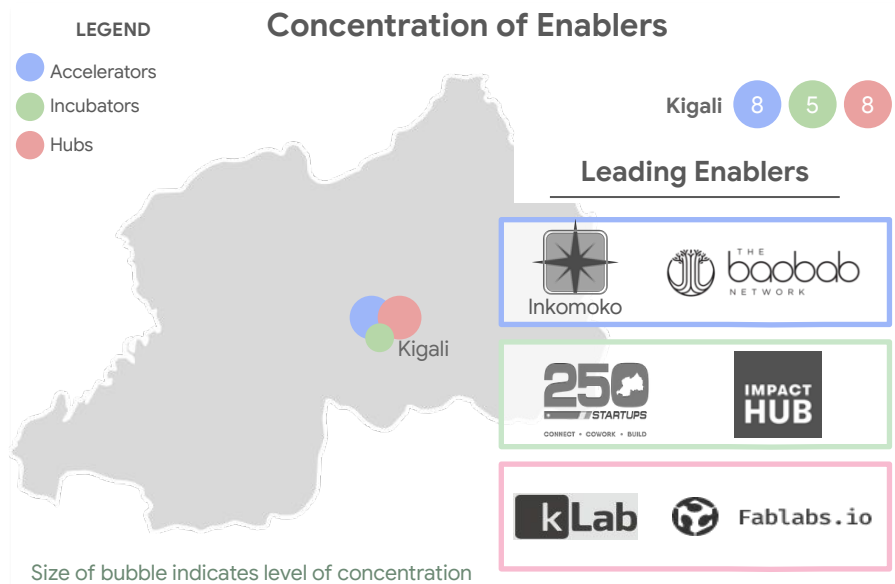
Overview: A unique **hybrid of a liberal arts education with technical curricula**. Students learn entrepreneurship and coding, compete in startup competitions, complete internships, and participate in conferences to receive a **2-year Advanced Diploma**

Tech Stack (sample):





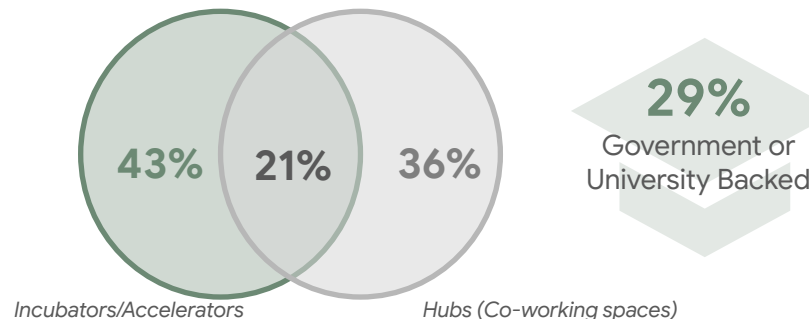
Kigali is the central hub for enabler networks and is expanding with government support



"By investing in startups and local talent pool, the government is trying to develop a mini-ecosystem for startups to succeed and develop additional jobs."

-Educator, Kigali

Incubators/Accelerators vs Hubs



Case Study: IBS Rwanda

Overview: A project of the Rwanda Development Board and the South Korea Cooperation Agency, they provide guidance and investment to technology-based startups and **connect them with the South Korean tech ecosystem**. They have incubated **80 startups**.

Focus Industries (sample):



Media &
Entertainment



Travel &
Tourism



Software



Agriculture



Supporting Materials

Glossary

Term	Definition
Countries Analyzed	South Africa, Egypt, Morocco, Nigeria, Kenya, Ghana, Rwanda, Ethiopia, Uganda, Tanzania, Ivory Coast
African Startup	A company that meets the following criteria: <ul style="list-style-type: none"> • In growth stage of funding (e.g., seed round, series A - F) • Technology-focused • Headquartered in Africa or driving the majority of its revenue in Africa
Tech Ecosystem	The network of people, organizations and institutions that enable innovation
Innovator	African startup (see definition above)
Investor	Provides funding in the tech ecosystem (e.g. venture capital, corporate venture capital, angel investors, government funding, private equity)
Educator	Provides technical training or education (e.g. university, bootcamps, online courses, on-the-job training)
Enabler	Provides support in the form of work space, training, education, mentorship or funding (e.g. accelerators, incubators, work hubs)
Professional Developer	An individual that is employed in a job that involves coding and spends 5 or more hours per week coding
Junior Developer	An individual with less than six years of coding experience
Senior Developer	An individual with six or more than six years of coding experience
Formal Education	Universities or secondary schools that provide information communication technology (ICT) curriculum
Informal Education	Bootcamps, online course, self-taught or on-the-job curriculum to teach coding skills
Female Founded Startup	Startup with at least one female founder