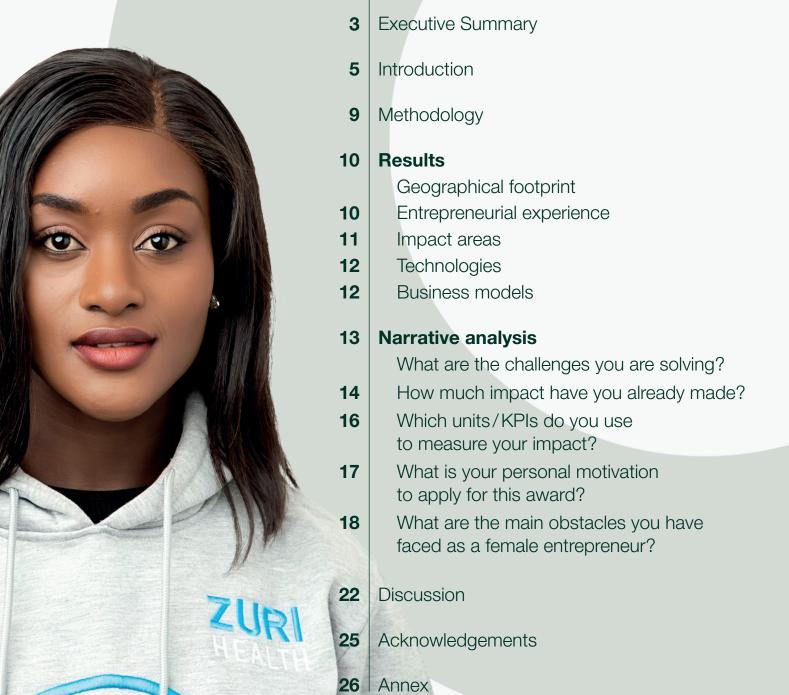**Bayer | Foundation**

White Paper

Accelerating Change In Sub-Saharan Africa By Supporting Female Entrepreneurs

2022

Content

Executive Summary

The purpose of this research is to identify the needs of female entrepreneurs in sub-Saharan Africa, their impact on society, and the obstacles they face while running their businesses.

Bayer Foundation aims to empower female entrepreneurs to scale their innovations and generate positive social impact.

The project used the 2022 applicant survey for the Bayer Foundation Women Empowerment Award to gain insights into these issues. The survey included both multiple-choice and open-ended questions, and was completed by 501 applicants from different African countries and of African origin.

The data extracted from the survey responses was analyzed in three ways: Firstly, to obtain a better understanding of the applicants, their background information was used to create a general profile, covering their countries of origin, levels of entrepreneurial experience, impact areas, needs and wishes, sector focus, business models, technologies, and funding needs.
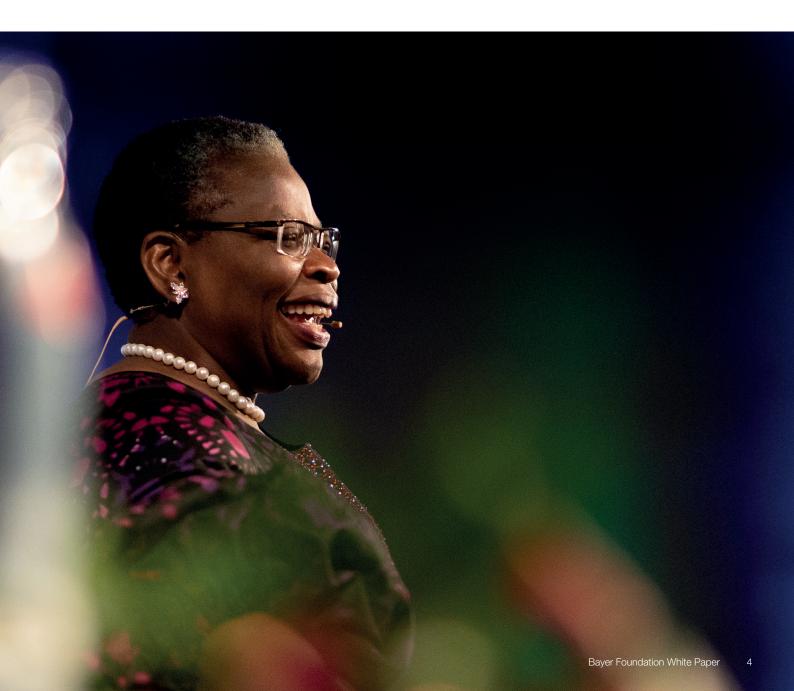
Secondly, the free-form text responses were used to identify narratives regarding the challenges tackled, personal motivations for applying, impacts achieved, KPIs used for measuring their impact, and perceived obstacles. This narrative analysis used AI-powered natural language processing (NLP) techniques to cluster answers based on similarity of meaning. Each cluster was qualitatively analyzed based on the share of applicants mentioning the given issue. And thirdly, a further set of multidimensional scaling analyses was carried out to gather deeper insights into the types of obstacles faced and to determine whether the different obstacles can be categorized into broader groups.

Several insights emerged from the analyses made. According to the results, lack of funds is the most prominent issue faced by female entrepreneurs in Africa.

The research found that this problem is exacerbated when combined with other issues that affect female entrepreneurs more than their male counterparts, such as challenges in building networks, finding mentors as well as difficulties with being taken seriously. Reflecting the significance of this recurring narrative of financial insecurity, the leading motivation for applying for the award was a desire to achieve business growth. Although the applicants care about their community and impact, they are more focused on first overcoming financial hurdles. Furthermore, the research revealed that finding guidance or support through networking and mentoring is also a critical need among female entrepreneurs. The lack of women in many sectors makes it difficult for female entrepreneurs to find contacts and mentors with relevant experience. Lastly, the issue is worsened by not being taken seriously and cultural barriers against female entrepreneurs.

All in all, these insights shed light on how to effectively design and build supporting mechanisms to help female entrepreneurs tackle their specific challenges and empower them as business leaders to scale up innovation.

Introduction

Climate change, poverty, global inequality, and hunger are putting the prosperity of people across the globe at risk, particularly those who are most vulnerable.

These issues have an increasingly significant social dimension and are as much a threat to social prosperity as to economic prosperity for millions of people worldwide. Social innovation and entrepreneurship are crucial building blocks toward overcoming societal problems.[1] Female entrepreneurs play a key role in the fight against poverty and in advancing the development of the regions in which they operate.[2]

However, the female social entrepreneurship journey is marked by major challenges. In 2018, research conducted by Boston Consulting Group[3] showed that women-owned startups deliver twice as much per dollar invested as those founded by men: For every dollar of funding, women-owned startups generated 78 cents in revenue, while those founded by men generated less than half that amount – just 31 cents.

Source: [1] https://www.weforum.org/agenda/2022/06/how-supporting-social-entrepreneurs-can-help-combat-health-inequality/
[2] Femi Ademiluyi L (2019) Institutional inhibitions to female entrepreneurship in Nigeria: Implications for entrepreneurship education. Business Education Innovation Journal 11(2):92-99.
[3] https://www.bcg.com/publications/2018/why-women-owned-startups-are-better-bet

Ironically, World Bank statistics[4] show that female-owned enterprises in Africa have six times less capital than male-owned enterprises. A similar situation prevails when it comes to government funding[5], with disproportionately low grants to female founders, which impacts the ability of their companies to grow. World Bank statistics[6] further reveal that discrimination and lack of access to information are additional limiting factors for the growth of female-owned companies. To empower female entrepreneurs, Bayer Foundation set up its Women Empowerment Award in 2021 to highlight female entrepreneurs as role models and provide them with supporting mechanisms to scale their innovations in sub-Saharan Africa.[7]

The Foundation focuses on supporting female entrepreneurs in Africa, as the economic growth on the continent offers great opportunities to connect and increase the impact of female-led enterprises. Indeed, studies show that there are currently many more female entrepreneurial initiatives on this continent than anywhere else in the world.[8]

Through the Women Empowerment Award, Bayer Foundation offers a supporting mechanism that goes far beyond a one-off cash prize. The award includes EUR 25,000 in cash plus a participation in a 24-week growth accelerator program, as well as an alumni and investor network that leverages the domain expertise of Bayer's global organization. The award seeks out highly motivated, vision-driven female entrepreneurs who can cooperate with Bayer Foundation to contribute to achieving a shared vision of a world with Health for All and Hunger for None.

Source: [4] https://www.worldbank.org/en/news/opinion/2018/11/29/women-entrepreneurs-the-future-of-africa
[5] Malin Malmstrom (2017). We Recorded VCs' Conversations and Analyzed How Differently They Talk About Female Entrepreneurs (hbr.org)
[6] https://www.worldbank.org/en/news/opinion/2018/11/29/women-entrepreneurs-the-future-of-africa
[7] https://www.bayer-foundation.com/wea
[8] Accelerating Women's Entrepreneurial Dynamics in Africa | Roland Berger

The Women Empowerment Award had an excellent start. In 2021, Bayer Foundation received close to 400 applications. The five winners were selected by a jury composed of senior female Bayer business leaders and external advisors. Following completion of the accelerator program, two of the five winners went on to secure grants from the Google for Startups Black Founders Fund. The award was covered on different websites and blog pages internationally, and more than 10,000 people visited the campaign landing page on Bayer Foundation's website.

Anticipating a large number of applications again in 2022, we incorporated survey questions into the application form, aiming to capture insights into the needs of the female entrepreneurs and how to best support them. Bayer Foundation received more than 500 applications from female entrepreneurs generating social impact in sub-Saharan Africa.

The responses and insights provided in their application forms were extremely vivid and enlightening – their voices need to be heard by a broader audience. In addition, by analyzing the applications using AI-based methodology, we hoped to extract insights as objectively as possible to help us build effective support mechanisms.

This white paper comprises four main parts. The first outlines the methodology used. The second part gives an overview of the profile of the female entrepreneurs drawn from the statistical information provided in their applications. The third part delivers an analysis of the applicants' narrative responses to the open-ended questions, using an AI-based natural language processing algorithm (see Methodology), which forms a basis for key insights. Finally, the fourth part sets out a roadmap for applying and implementing the key insights.

Woman Empowerment Awardees

2021

Cynthia Mene
Vetsark

Vetsark helps agribusinesses in Africa increase their productivity and income through digitalization of their businesses. With our tool – ‚Cleva', a farm management app for livestock farmers in Africa you can easily manage, track, and analyze your farm data like a pro.

Abimbola Adebakin
myMedicines

myMedicines works to ensure quality medications are delivered at the last mile using a combination of technology, logistics and network of almost 1000 licensed pharmacies across Nigeria.

Caitlin Dolkart
Flare

Flare provides a subscription-based emergency-response platform, ensuring life-saving ambulance services for Kenyans all over the country.

Morenike Fajemisin
Whispa Health

Whispa Health is an organization that uses technology to provide people (particularly women) with affordable, confidential, and shame-free access to Health Information, Sexual and Reproductive products, and services.

Angella Kyomugisha
Kaaro Health

Our company provides access to affordable, neighborhood, end to end health care by installing modular container clinics in rural and hard to reach villages of Uganda where there is no health infrastructure within 20 km or more. We also use technology to connect clinics to doctors using telemedicine.

2022

Claire Van Enk
Farm to Feed

Farm to Feed is East Africa's first online marketplace for surplus and imperfect produce.

Diana Orembe
Novfeed

NovFeed is a blue biotechnology company that uses bacteria as a cell factory to recycle organic waste into clean protein for aquaculture industry.

Yvette Ishimwe
IRIBA Water Group

IRIBA provides access to safe and clean drinking water for rural communities and schools, by advanced RO and UV treatment technologies for water purification.

Muzalema Mwanza
Safe Motherhood Alliance

Safe Motherhood Alliance's mission is to reduce maternal and infant mortality through improved quality of care at the time of childbirth, our vision is to prevent deadly and debilitating infections for over 20 million pregnant women across the sub-Saharan region with no access to maternal healthcare by giving them increased access to a clean, safe delivery and a healthy start for their newborns.

Daisy Isiaho
Zuri Health

Zuri Health is a Pan-African Healthtech company providing affordable and convenient healthcare services to patients across Africa via Mobile App, Website, Whatsapp bot and SMS service!

Methodology

The narrative analysis from the 501 applications was carried out using AI-based natural language processing techniques.

The information submitted by the 501 applicants for the 2022 Women Empowerment Award formed the basis for the analysis.

Of the 501 applicants, 14 were discounted because they were male (12 applicants) or failed to submit the required basic information (two applicants). The remaining 487 applicants were covered in the analysis.

The survey included both multiple-choice and open-ended questions. The applicants' basic statistical information (e.g., country of origin, level of entrepreneurial experience, impact areas, and business models) was mostly obtained from the multiple-choice questions. This was used to create a general profile of the applicants. The free-form text responses to open-ended questions were used to identify narratives regarding challenges tackled, personal motivations for applying, impacts achieved, KPIs used for measuring their impact, and perceived obstacles. The narrative analysis was carried out using AI-based natural language processing techniques. This method clusters responses based on the similarity of their content, resulting in a set of recurring narratives determined bottom-up from the responses. On a technical level, this involves training a FastText language model to give each text response a mathematical vector representation in an abstract,
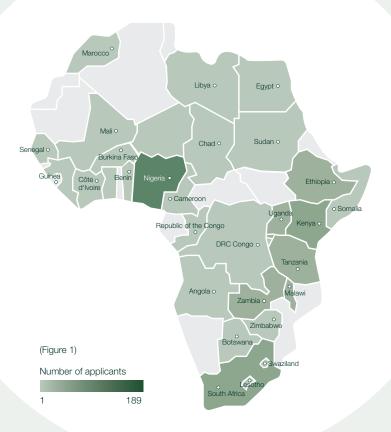
high-dimensional semantic space, where distance between vectors represents content similarity, enabling content-based clustering. The detected topic narratives were used to ascertain the share of applicants who gave answers related to the identified topics and who expressed the narrative in their responses. The share of applicants (%) is calculated based on the percentage of all applicants who mentioned the specific topic. Since an applicant may have mentioned multiple topics in their response, the total share of applicants (%) in each analysis exceeds 100 %.

The relationships between obstacles were further investigated using multidimensional scaling, a method that helps to organize data based on similarity. The method was applied to display obstacles in a two-dimensional plane in such a way that obstacles that tended to be expressed by the same applicants were presented in close proximity to each other. In other words, a short distance between obstacles implies that these obstacles were often expressed by the same applicants, while a large distance implies that they were less frequently mentioned by the same applicants. This way of organizing obstacles revealed two underlying dimensions, which helped group the obstacles into four types (corresponding to the quadrants in Figure 4a).

Results

Profile Analysis:
The applicants in numbers

Geographical footprint

(Figure 1)

Number of applicants

1   189

Country	Number of applicants	Share of applicants (%)
Nigeria	189	38,8
Kenya	**46**	**9.4**
South Africa	37	7.6
Uganda	35	7.2
Zambia	22	4.5
Tanzania	**20**	**4.1**
Rwanda	12	2.5
Cameroon	11	2.3
Ghana	11	2.3
Zimbabwe	**10**	**2.1**
DRC - Kongo	10	2.1
Côte d'Ivoire	9	1.8
Ethiopia	9	1.8
Senegal	**8**	**1.6**
Malawi	8	1.6
Benin	7	1.4
Egypt	6	1.2
Burkina Faso	**4**	**0.8**
Mali	4	0.8
Lesotho	3	0.6
Others*	26	5.3
Total	**487**	**100**

(Table 1)

Though the call for applications was not targeted at specific countries in sub-Saharan-Africa, most applicants were from Nigeria (almost 40 %). This is not surprising considering the size of its population, as well as the country's vibrant startup ecosystem. Statistics of StartupBlink[9] show that it is Africa's second leading country for startups after South Africa. The call for applications for the award covered a broad geographical area, with applicants from 35 countries in Africa (Figure 1). Kenya, South Africa, Uganda, Zambia, and Tanzania were among the countries with the most applicants. Other nations on the list came from all parts of the vast continent, often in smaller innovation ecosystems: for example, Rwanda and DR Congo in the east, and Cameroon, Côte d'Ivoire and Ghana in the west.

Source: [9] https://www.startupblink.com/startups/nigeria

Entrepreneurial experience

Secondly, we were interested in how much entrepreneurial experience the applicants had. The results show that more than a third of them had previous work experience in a startup setting. A further 30 % of applicants had prior experience of leading the establishment of a startup. Another 25 % were serial entrepreneurs, with a track record of starting more than one company. Only 7 % of the applicants indicated that they did not have any startup experience.

Impact areas

As part of its vision "Health for All, Hunger for None," Bayer Foundation encourages female entrepreneurs to submit business innovations for the Women Empowerment Award in two impact areas: health and nutrition. In the application process, applicants could select one of these options if they wished. Interestingly, almost half of the applicants checked both boxes. We also investigated whether there was a particular focus topic in each country (Figure 2a). Most of the applicants who chose nutrition as their impact area came from Malawi, DR Congo, and Ghana. Applicants who chose health came mostly from Zimbabwe, Uganda, and Nigeria. Applicants who indicated their business was related to both nutrition and health were chiefly from Nigeria, Benin, and South Africa.

With regard to the sectors in which the applicants were active, the data showed that those from Tanzania and Ghana focused rather strongly on agriculture, whereas applicants from Kenya and Zimbabwe focused on sectors such as healthcare, and food and beverage. Of all of the countries, applicants from DR Congo showed the strongest focus on food and beverage (Figure 2b).

What are their impact areas

■ Both	48 %
■ Health	31 %
■ Nutrition	21 %

Countries that chose nutrition the most:
Malawi, DRC-Congo, Ghana, South Africa, Zambia, Mali
Needs and wishes:
Investment, talent, and expertise.

Countries that chose health the most:
Zimbabwe, Uganda, Nigeria, Côte d'Ivoire, Cameroon
Needs and wishes:
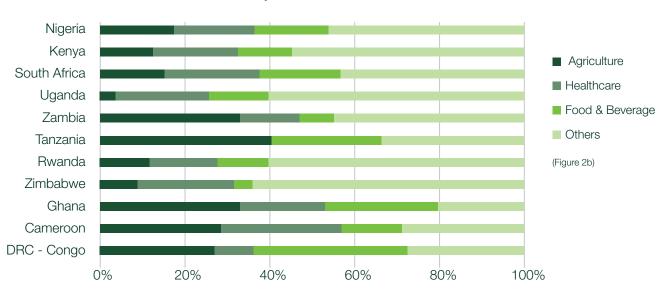Brand awareness and workspace.

Countries that chose health the most:
Nigeria, Benin, South Africa, Kenya, Egypt, Zambia
Needs and wishes
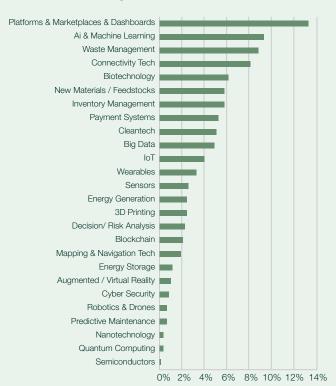Brand Awareness, expretise, and customers.

(Figure 2a)

How are the sectors distributed for top countries?
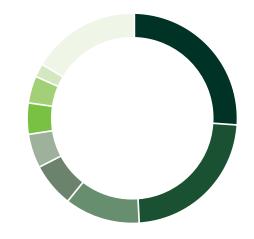

(Figure 2b)

Technologies

The results show that the entrepreneurs use a wide variety of different technologies, with platforms such as online marketplaces being the most widely used technology (Figure 2c). The second most widely used technological solution is AI and machine learning, followed by waste management and connectivity tech. The second tier in terms of technologies used included biotech, new materials and feedstock inventory management, payment systems, clean tech, big data and IoT. Among the smaller mentions listed were wearable sensors, 3D printing, block chain technology, and energy storage.

Which technologies do they use?

(Figure 2c)

What business model do they use?

■ B2C	26 %
■ B2B	23 %
■ Manufacturing	12 %
■ Subscription	7 %
■ Marketplace	5 %
■ Ecommerce/Trading	5 %
■ Commission	4 %
■ Advertising	2 %
■ Other	16 %

(Figure 2d)

Business models

The question on business models was presented as a multiple-choice question (Figure 2d). Results are presented as the percentage of the number of votes and not the percentage of all applicants. Both B2C and B2B were out in front, with 26 % and 23 % respectively, followed by more specific business models such as manufacturing (12 %), subscription models (7 %), and marketplace models (5 %).

Narrative analysis

"What are the challenges that
 your company is solving?"

"What is your personal motivation
 to apply for this award?"

"How much impact have you already made?"

"Which units/KPIs do you use to
 measure the impact of your startup?"

"What are the main obstacles you
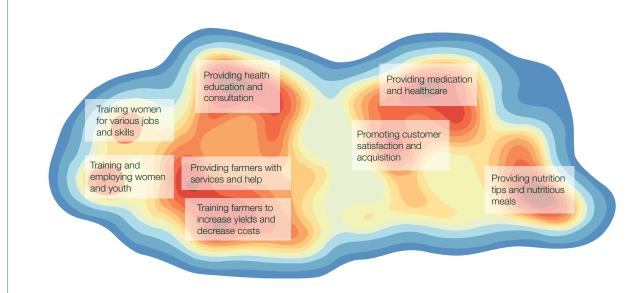 have faced as a female entrepreneur?"

When applying for the 2022 Women Empowerment Award, female entrepreneurs were asked to answer the five questions above.

By analyzing the free-form text using AI-driven algorithms like natural language processing to understand and group the meanings associated with the text (see Methodology), different narrative landscapes were formed. For example, for the question "How much impact have you already made?", we clustered the responses based on similarities to create an overview in the form of a landscape with hotspots (Figure 3a), where the hotter red areas represent a high concentration of responses and the cooler blue areas represent a lower concentration. Each hotspot in the landscape corresponds to a theme, each of which was analyzed. For example, one hotspot might relate to providing nutrition tips and nutritional

meals, while another represents responses concerning education or healthcare. Furthermore, because multiple narratives could be expressed in an individual response, we did not treat each response as a single unit. We also extracted smaller narratives from the different responses. The percentage of the narratives expressed indicates how frequently this topic was mentioned by the female entrepreneurs. Among the top responses to this impact-related question, the most prevalent related to providing nutrition and nutrition education (for example, creating awareness, eradicating hunger among children, and nurturing vulnerable children). The second most significant topic related to providing training to workers and personnel from different sectors, increasing yields and sustainability in farming, improving the healthcare system, and providing education on personal health and vocational skills (Figure 3b).
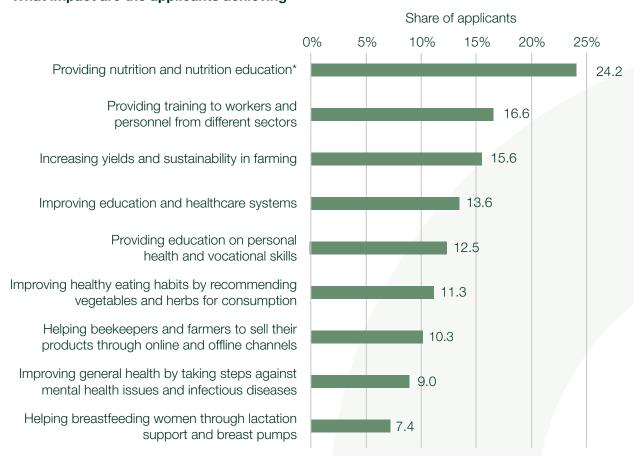
Components from responses are clustered into a "narrative landscape".

Example: "How much impact have you already made?"

Training women for various jobs and skills

Providing health education and consultation

Providing medication and healthcare

Training and employing women and youth

Providing farmers with services and help

Promoting customer satisfaction and acquisition

Providing nutrition tips and nutritious meals

Training farmers to increase yields and decrease costs

(Figure 3a)

What impact are the applicants achieving

Share of applicants

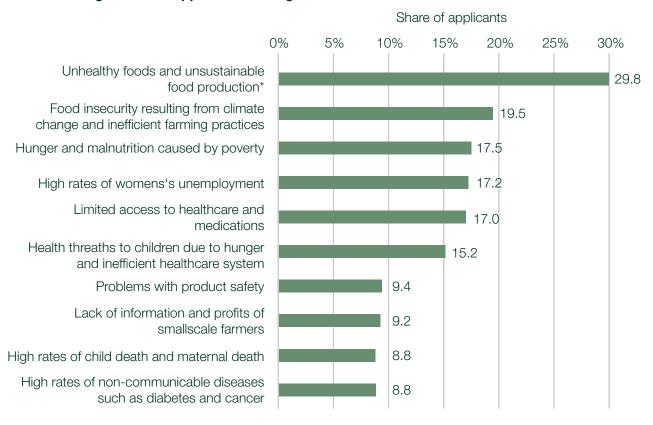|	Share
Providing nutrition and nutrition education*	24.2
Providing training to workers and personnel from different sectors	16.6
Increasing yields and sustainability in farming	15.6
Improving education and healthcare systems	13.6
Providing education on personal health and vocational skills	12.5
Improving healthy eating habits by recommending vegetables and herbs for consumption	11.3
Helping beekeepers and farmers to sell their products through online and offline channels	10.3
Improving general health by taking steps against mental health issues and infectious diseases	9.0
Helping breastfeeding women through lactation support and breast pumps	7.4

(Figure 3b)

Challenges faced

In response to the question "What are the challenges that your company is solving?", the main challenge mentioned was unhealthy foods and unsustainable food production. Solutions to this challenge related to providing easier access to healthy food, adapting technologies to grow food sustainably, addressing poor farming methods, and reducing post-harvest losses. The second most significant challenge was food insecurity due to climate change and inefficient farming practices. Placed third were three different challenges: hunger and malnutrition caused by poverty, high rates of female unemployment, and limited access to healthcare and medications. The fourth challenge mentioned related to health threats to children due to hunger and inefficient healthcare systems (Figure 3c).

What challenges are the applicants solving

Share of applicants

Challenge	Share
Unhealthy foods and unsustainable food production*	29.8
Food insecurity resulting from climate change and inefficient farming practices	19.5
Hunger and malnutrition caused by poverty	17.5
High rates of womens's unemployment	17.2
Limited access to healthcare and medications	17.0
Health threaths to children due to hunger and inefficient healthcare system	15.2
Problems with product safety	9.4
Lack of information and profits of smallscale farmers	9.2
High rates of child death and maternal death	8.8
High rates of non-communicable diseases such as diabetes and cancer	8.8

(Figure 3c)

> **Provide nutrition education and engage actively in creating Diabetes Awareness among over 3000 young adults, women and the elderlies quarterly.**
>
> Quote from applicant from Nigeria on the challenges
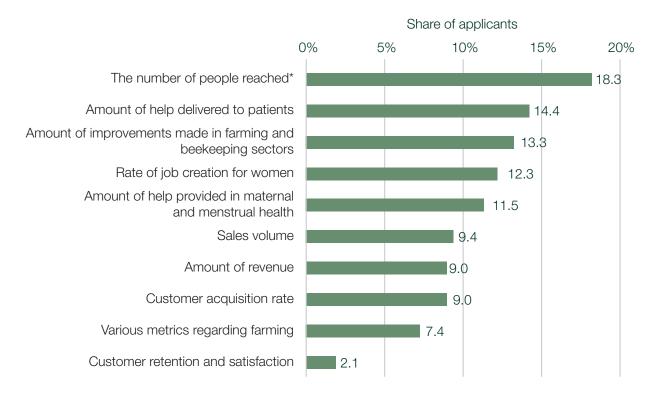
Credits:
Micky Schepers

KPIs used

On the question regarding the KPIs most frequently used by female entrepreneurs to measure impact, 18.3 % mentioned the number of people reached as the most significant indicator. In second place, almost 15 % mentioned measuring the amount of help delivered to patients. This was followed by the number of improvements made in farming and beekeeping sectors (13.3 %). The number of jobs created for women was also mentioned quite often (12.3 %), followed by the amount of help provided in relation to maternal and menstrual health (11.5 %) (Figure 3d).

We look at the impact on the lives of population and the number of members.
Quote from applicant from Côte d'Ivoire

What are the Units / KPI's used for measuring the impact of applicants' startups?

Share of applicants

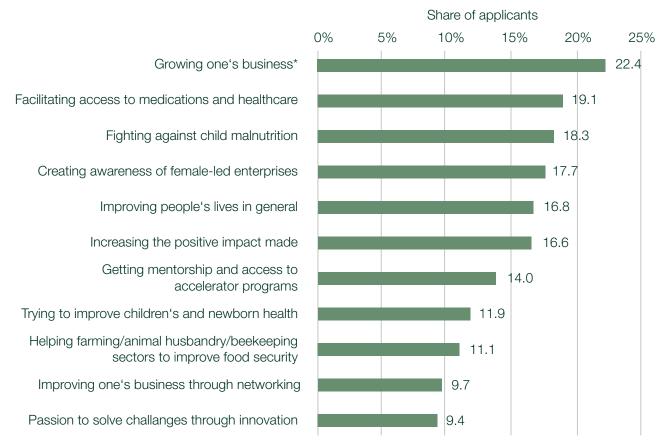|	
The number of people reached*	18.3
Amount of help delivered to patients	14.4
Amount of improvements made in farming and beekeeping sectors	13.3
Rate of job creation for women	12.3
Amount of help provided in maternal and menstrual health	11.5
Sales volume	9.4
Amount of revenue	9.0
Customer acquisition rate	9.0
Various metrics regarding farming	7.4
Customer retention and satisfaction	2.1

(Figure 3d)

Motivation

The biggest personal motivation for applying for the award was to achieve business growth. Applicants specifically mentioned that to have an impact they first need to ensure their business is successful and achieve a certain level of scale.

The second motivation mentioned related to providing access to medication and healthcare, followed by fighting child malnutrition.

Interestingly, beyond goals directly related to their business themes, applicants were also motivated in general to foster culture and community by contributing to raising awareness of female-led enterprises and helping improve people's livelihoods, as well as enhancing success through networking and access to mentorship, for example (Figure 3e).

What are the applicants' personal motivations for applying?

Share of applicants

Motivation	Share
Growing one's business*	22.4
Facilitating access to medications and healthcare	19.1
Fighting against child malnutrition	18.3
Creating awareness of female-led enterprises	17.7
Improving people's lives in general	16.8
Increasing the positive impact made	16.6
Getting mentorship and access to accelerator programs	14.0
Trying to improve children's and newborn health	11.9
Helping farming/animal husbandry/beekeeping sectors to improve food security	11.1
Improving one's business through networking	9.7
Passion to solve challanges through innovation	9.4

(Figure 3e)

" **We are at the stage where we need to accelerate our growth and other than funding, we need the right skills and knowledge on our quest.**
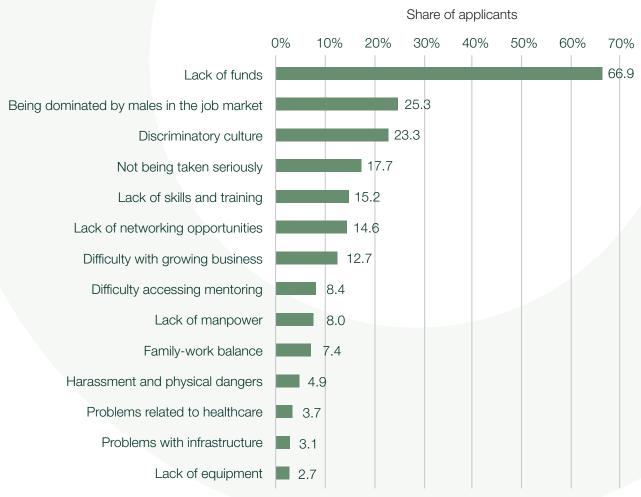
Quote from applicant from Nigeria

Obstacles

Lack of funds was the biggest obstacle perceived by all applicants – with around two-thirds specifically mentioning this issue. The second most widely mentioned obstacle related to the perception of male dominance of the job market, followed by a perception of discriminatory culture preventing women from being taken seriously, lack of skills and training, lack of networking opportunities, difficulties growing business, and difficulty accessing mentoring (Figure 3f).

What are main obstacles faced by applicants as female entrepreneurs

(Figure 3f)

Strikingly, the applicants tended to express several different obstacles for each response, indicating that they perceive these obstacles to be intertwined. For example, someone who mentioned male dominance of the job market may have also mentioned several other obstacles, creating a relationship between the different obstacles. This formed the basis for the next analysis we ran, which investigated how these different obstacles relate to each other and whether there are any underlying dimensions.

Categorizing and connecting obstacles

Using multidimensional scaling (see Methodology), different obstacles mentioned by the same applicants are displayed in close proximity to each other. For example, the two obstacles discriminatory culture and male dominance of the job market are displayed quite close together, which means the same people tended to mention both of these obstacles. Figure 4a shows a self-organized map with a horizontal and vertical dimension, which can be used to interpret the reasons behind the perceived obstacles. To interpret the map correctly, we need to ask: What do the horizontal and vertical dimensions mean? Why do some obstacles appear close together?

We found that one dimension lies between external and environmental obstacles (for instance, themes such as lack of funds and not being taken seriously appear at the top) and more internal barriers within the startup itself (for example, difficulty accessing mentoring, difficulties with growing business, lack of staffing, and other factors affecting business operations). Toward the left of the horizontal axis, we find more cultural and social factors, such as discriminatory culture and lack of networking. On the right-hand side, harder factors appear, such as: skills, staffing, financial and human resource-related issues (Figure 4a).

(Figure 4a)

Credits:
Zuri Health

Based on this categorization, we were able to depict the obstacles in a four-quadrant model. Each quadrant in Figure 4a roughly corresponds to a category (with the exception of a few bubbles that could ideally be pulled into a different quadrant). Each quadrant roughly corresponds to one type of capital to which these obstacles correspond (Figure 4b). The most significant (mentioned by 66.9 % of the applicants) is financial capital – difficulty obtaining funds. The second most significant (47 %) is cultural capital, which is based on discrimination

and stereotypes, for example male dominance of the job market, discriminatory culture, not being taken seriously, family-work balance, harassment, and physical dangers. The third most significant is human and physical capital (31.2 %), such as: lack of skills and training difficulties related to growing business, lack of staffing, infrastructure problems, lack of equipment. Social capital is the fourth most significant type (mentioned by 19.5 %) and relates to difficulty finding guidance and support.

Cultural Capital 47.0 %*
(Difficulties originating from discrimination & stereotypes)

Being dominated by males in the job market 25.3 %
Discriminatory culture 23.2 %
Not being taken seriously 17.7 %
Family-work balance 7.4 %
Harassment and physical dangers 4.9 %

Financial Capital 66.9 %*
(Difficulty finding funds)

Lack of Funds 66.9%

Social Capital 19.5 %*
(Difficulty finding guidance & support)

Lack of networking opportunities 14.6 %
Difficulty accessing mentoring 8.4 %

Human & Physical Capital 31.2 %*
(Difficulties with human and physical resources)

Lack of skills and training 15.2 %
Difficulty with growing business 12.7 %
Lack of manpower 8.0 %
Problems related to healthcare 3.7 %
Problems with infrastructure 3.1 %
Lack of equipment 2.7%

(Figure 4b)

... of what female entrepreneurs are saying ...

Financial Capital

I find it difficult to obtain funds, especially when they know that I am the sole shareholder and that there is no man with me.

Human & Physical Capital

At the start of my journey, I wish I had had financial literacy and leadership management skills. I wish I had had systems for data.

Cultural Capital

Being undermined and not given a chance for expression due to the cultural beliefs that women can't head up anything or influence any decision.

Social Capital

You wish you'd had access to a mentor and networks of entrepreneurs that would have made things easier.

The findings above shed light on the perceived needs, which should be considered when designing programs that aim to support the growth and empowerment of female entrepreneurs, as discussed below.

Discussion

Lack of funds is the most prominent obstacle faced by the applicants. Although it is not an issue specific to female entrepreneurs, our research suggests that it is exacerbated by other obstacles they face.

For female entrepreneurs, a lack of funds is combined with other issues that affect them more than their male counterparts, such as challenges building networks and finding mentors, and difficulties with being taken seriously as a business leader. The obstacles related to cultural capital therefore constitute the second most significant type of obstacle following lack of funds.

All applicants value making a positive impact on their communities, but many believe they should first grow their business to actually achieve a more substantial positive impact. Consequently, although motivations related to directly impacting the community – such as food security – were among the more notable personal motivations for applying, achieving business growth was the most prominent motivation. This parallels the most significant obstacle faced by the applicants, namely a lack of funds. Together, these highlight financial insecurity as a recurring narrative among female entrepreneurs.

Concerns regarding funds and business growth were recurring business-related narratives among many applicants. However, finding guidance and support through networking and mentorship was also a critical unmet need expressed by the applicants, with 14.6 % expressing a need for networking and 8.4 % mentioning difficulty finding mentors. The lack of women in many sectors makes it difficult for female entrepreneurs to find contacts and mentors with relevant experience. Lastly, the issue is worsened by not being taken seriously and by cultural barriers against female entrepreneurs.

With the aim of supporting female entrepreneurs to develop market-creating innovations[10] in and for sub-Saharan Africa, Bayer Foundation launched the Women Empowerment Award in 2021. It includes a cash prize of EUR 25,000 accompanied by a participation in a 24-week growth accelerator program focusing on developing key business capabilities for scaling social ventures, such as innovation processes and methodologies, business model canvas, hands-on experimentation, and reducing ecosystem barriers.

The fundamentals of the accelerator program are based on the already proven Bayer Catalyst Fund Program[11, 12], which developed 72 projects over three years (of which 29 secured a second round of funding, with 17 going on to demonstrate feasibility and viability in a pilot and continued by the business with further investment, and five subsequently launched into the market). For the 2021 Women Empowerment Award accelerator, the program was supported by Verhaert/AfCE[13] and enhanced by additional ecosystem barriers training provided by Endeva[14]. The winners also tapped into an extensive network of Bayer experts who offered domain expertise in health and nutrition-related areas. As a result of the accelerator program, two of the 2021 winners went on to apply for and win Google for Startups Black Founders Funding.[15]

The program and training received excellent feedback from the participants.

"

The facilitators were competent to the needs of our company. This worked well for us. The program was amazing and the tutorials about business management/design thinking/mapping etc. came in handy for the company team.

Angella Kyomugisha,
Kaaro Health

Source: [10] Christensen, Clayton & Ojomo, Efosa & Gay, Gabrielle & Auerswald, Philip. (2019). The Third Answer: How Market-Creating Innovation Drives Economic Growth and Development. Innovations: Technology, Governance, Globalization. 12. 10-26. 10.1162/inov_a_00272.
[11] Building a World-Class Innovation Culture: Bayer (strategyzer.com)
[12] https://hbr.org/2018/12/fostering-employee-innovation-at-a-150-year-old-company
[13] https://afce.verhaert.com/
[14] https://endeva.org
[15] https://techeconomy.ng/2021/10/50-startups-to-benefit-from-google-for-startups-black-founders-fund-in-africa-see-list/

"

The mentoring worked really well for my team. (…) it is clearly one of the core ingredients of the empowerment that has had huge impact in how we implement and coordinate our initiatives.

Abimbola Adebakin,
MyMedicine

However, we also realized that there is a fair level of diversity in the maturity of the various winning business models. We therefore modified the design of the growth accelerator to make it "buffet style" with flexible modules. Each participant can select specific modules that best align with what they need to grow their business. In the study, business growth was the most frequently mentioned motivation for female entrepreneurs. This further emphasizes the importance of maintaining the core business-strengthening curriculum to ensure that the entrepreneurs develop the strong business skills required to bring new products and services to market quickly and successfully. Consequently, although we are applying a gender lens to adapt the supporting programs to address gender-specific challenges, helping female entrepreneurs strengthen their businesses is crucial and must not be neglected.

The study suggests that the design of supporting mechanisms for female entrepreneurs – for instance, incubators and accelerator programs – needs to apply a clear gender focus in order to address the challenges related to cultural and social obstacles. We will also reflect on the insights gained in the accelerator's module design, incorporating mentoring by other renowned female leaders, and leadership training to shine as business leaders, for example. We look forward to the 2022 Women Empowerment Award winners' feedback to further improve the accelerator program design, ensuring the program is as closely tailored to each participant's needs as possible.

We are aware the results extracted from the research data cannot be extrapolated to all African female entrepreneurs. Nevertheless, with a sample size of more than 500 applications, the data represents a large group of female entrepreneurs in Africa. **We believe we have identified interesting trends and patterns that reveal insights into their needs and aspirations and into the wider ecosystem in which these entrepreneurs operate.** It would be fascinating to repeat the study for the Women Empowerment Award on an ongoing basis to see whether the obstacles are reduced or worsen in the future. It would also be interesting to look at other geographical areas to compare the challenges female social entrepreneurs are overcoming and the obstacles they face along the way.

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Monika Lessl,
Executive Director
Bayer Foundation

A special thank you goes to all **501 applicants** for the **2022 Bayer Foundation Women Empowerment Award.** Your time and insights coupled with the generous sharing of your experience and challenges were the most instrumental factors in the study's success. You are the **true role models in empowering other women to drive positive change in their communities.**

We wish you **all the best** in what you do!

Annex

Impact Intelligence:

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Women Empowerment Award Jury (2021):

Obiageli Ezekwesili, Fatoumata BA, Daniella Foster, Sara Boettiger, André Habisch, and Monika Lessl

Women Empowerment Award Jury (2022):

Jeanne Kehren, Madelon Bangma, Sieka Gatabaki, André Habisch, and Monika Lessl

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