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Entrepreneurial Cognition, Mindset and Selection: Developing the Talent of African Entrepreneurs



Entrepreneurial Cognition, Mindset and Selection: Developing the Talent of African Entrepreneurs

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Abstract

Africa has the highest percentage of entrepreneurs among working-age adults of any continent in the world. In this report, we review findings from a research partnership with the Tony Elumelu Foundation, a key supporter of entrepreneurial activity in Africa.

We discuss entrepreneurship using the applications the Foundation received from 2015 to 2017. We delve into the mindsets of entrepreneurs to understand where they see potential for growth and where they see roadblocks. We close with some recommendations on how to help entrepreneurs thrive.

Introduction



"My company now employs 109 employees. Our growth has more than doubled each year. Our team now has capacity to deliver over \$15M in construction projects as well as over \$50M in architecture, engineering, procurement and project management."
- African entrepreneur and Applicant to the TEF Entrepreneurship Programme

Africa is the second largest and second most populous continent in the world. Its working population is estimated to grow 70 percent from 2015 to 2035, to 455 million people. **Businesses less than five years old and with fewer than 20 workers employ the majority of jobs across the continent** (African Economic Outlook 2017 and 2019).¹ Leaders of government, business, and international organizations hail entrepreneurship as an economic imperative for the future. However, knowing entrepreneurship is a key pathway is an important start to economic growth, but it is far from its end. Scholars working at the intersection of the study of Africa and entrepreneurship have documented systematic difficulties that exist across the continent, including corruption, lack of regulation, and barriers to accessing capital. For entrepreneurs, these factors combine with challenges regarding human capital and training. Additionally and perhaps most pressingly, in recent history a lack of economic prosperity has led to social unrest and unanticipated ramifications in various places (Mensah and Benedict 2010). This is why scholars such as Brixiova et al. (2015) have argued entrepreneurship is a solution and there is the "need to train more African youths in order to address long-term unemployment concerns that can only be handled by massive engagement with the private sector" (Asongu and Tchamyou 2016; Brixiov´a et al. 2015).²

Echoing these concerns shared by scholars, as authors we were pleased to begin a discussion of a research collaboration with the Tony Elumelu Foundation in 2017 that culminated

¹ Outlook 2017, 2019.

² See page 4 in Asongu and Tchamyou 2016 for the quote.

in our commencing the project and receiving data from TEF in the latter half of 2018. The report that we now present is a broad overview of the work that we have completed that focused specifically on understanding key questions about

who is seeking out entrepreneurship as a pathway to economic stability, and what are their mindsets as they do so?

We understood when first embarking on this project that beneath the surface of a continent with a strong resilient population and entrepreneurial spirit are a **set of conditions facing entrepreneurs that knowingly strike us as quite different from those facing entrepreneurs in Silicon Valley** where we reside. We were motivated to understand these conditions while juxtaposing them with our knowledge of entrepreneurship in the U.S. and especially a high-growth, high-innovation context like Silicon Valley.

In this study we delve into data to understand the demographic composition of a non-randomly selected group of entrepreneurs who applied to the Tony Elumelu Foundation (TEF) for training and support and the way these entrepreneurs conceive of their businesses. By delving into the experiences and lives of entrepreneurs that are motivated to apply to the TEF, we were able to get a snapshot of entrepreneurs that are striving to grow, change, and create economic value in society. Because it is a non-random sample, at all times we are careful not to extrapolate our interpretations of the rich sample of data to African entrepreneurs overall. We treat the entrepreneurs' data as a "select group" that on average, is better educated and more motivated than the modal entrepreneur on the continent. In our inquiry, to the degree that we learn that this selected set of entrepreneurs is facing challenges, then we surmise realistically that these challenges are likely heightened among the entrepreneurs not in this sample around the continent.

In our analysis we report, we consider the question of how demographic characteristics of entrepreneurs shape their experiences. In doing this, we very pointedly turn our attention to gender and the way it interweaves itself in the entrepreneurial selection and cognition processes of entrepreneurs. In Africa women make up the majority of entrepreneurs on the continent, but they have less profitable businesses and they have more stagnant growth compared to men's businesses. The differences across gender are not a uniquely African problem. In the United



States, for example, men comprise over 90% of the partners in the top 100 venture capital firms and receive a disproportionate amount of funding.³ A key difference between the drivers of entrepreneurship across both regions and gender, however is what is at stake. **For women in Africa, being successful might be the difference between a sustainable way of living or not.** In the U.S. for women the stakes are much lower for a few reasons. Chief among them is the average level of education is higher for women than it is for men and there are a great deal of options outside of entrepreneurship for economic stability. It is rare in the U.S. that entrepreneurship is a “forced choice” for women because they are unemployed or lack education to be able to find employment through other means.

To provide an overview of this report, we begin by highlighting what we learned about the select pool of nearly 140,000 individuals that applied to the TEF Entrepreneurship program from 2015-2017. We delve into detailed demographic data and provide insight into who has become an entrepreneur. Next we turn to the mindset of entrepreneurs, and provide analyses using advanced techniques involving natural language processing to uncover how individuals approach their businesses. Finally, we provide some somewhat sobering statistics on how the “entrepreneurial mindset” has and has not infused itself into the aims of entrepreneurs that applied to the TEF from 2015-2017. From herein, when we refer to the data we call it the TEF applicant pool, to represent the applications over the course of 2015-2017. For the rest of the report we probe the following two questions.

Who becomes an entrepreneur, and which entrepreneurs are being selected for TEF?

How do these entrepreneurs view the entrepreneurial enterprise, and in what ways can the entrepreneurial mindset be encouraged?

³See discussion in of funding and gender differences in tech at <https://www.bizjournals.com/bizwomen/news/latest-news/2019/01/percentage-of-vc-dollars-for-women-led-startups.html>.

Who Becomes an Entrepreneur?

One of the ways to understand who becomes an entrepreneur is to understand how individuals describe their choices regarding why they entered entrepreneurship. In Figure 1 we provide a word cloud description of the many reasons TEF applicant pool gave for why they enter into entrepreneurship. Word clouds are symbolic representations of the narratives that are provided by applicants, and have the benefit of driving insight into the “big picture” before researchers drill down to more nuanced research questions. A striking aspect about this word cloud is that while there are some overlapping words that we tend to see on various descriptions of word clouds for Western-based entrepreneurs such as “idea” or “marketing” there is less overlap than what one might have assumed. It is common to see “profit”, “growth” or “capital” appear prominently in word clouds of entrepreneurs’ espoused motivations, but these are noticeably absent from the espoused motivations of entrepreneurs in the TEF applicant pool. Instead words focused on specific products, services and industries appear. ***It is also striking that worlds like “community”, “country” and “local” appear often.***



Figure 1. Reasons Individuals State they become Entrepreneurs

There is something truly inspiring about the narratives of these entrepreneurs, and in particular, their focus on community and country. Additionally, we were struck by and draw attention the fact that in Western contexts, entrepreneurship can oftentimes be an outcome of the arrival of capital (e.g. after investors have provided capital to the startup team). Here the way capital interweaves into the decision-making process of African entrepreneurs seems much further removed. Based on only the word cloud analysis, it would be wrong to assume that capital considerations enter into the reasons individuals have chosen to be entrepreneurs in TEF. Thus, one key difference that struck us early on as we compare the mindsets of African entrepreneurs to those in other contexts is

an absence of a discussion of capital as a motivation for founding a business.

The reason this could be important is that capital often influences the size, scope, and scale of the businesses individuals aspire to create. When entrepreneurs have access to capital from the start, they think about founding businesses with a much larger footprint. They also have the capital to do upfront investing in research and development, that is key to understanding the design elements required for products, services, and to meet changing consumer demands. It would seem to us a key challenge facing those wishing to help entrepreneurs across the continent is getting them to “think big enough from the start.”

Differences by Region

We delved further into differences in the way Nigerians and non-Nigerians discussed their motivations. We found that there were sharp distinctions in how **Nigerians versus non-Nigerians** described them. There was a strong social justice orientation for non-Nigerians, as they described their reasons for doing entrepreneurship with words such as “community” as well words that described their products/services or businesses such as “farmers”, “rural”, and “development”. Nigerians described their motivations for becoming entrepreneurs, in contrast, with profit-oriented language, such as “sales” and “customers.”

Further, we looked at differences across Northern, Western, Eastern, and Central Africa. In North Africa, entrepreneurs mentioned more project-based work. This aspect of why individuals



pursue entrepreneurship did not come up to a great extent in other regions. In Eastern and Western Africa, there was a greater emphasis on farming and agriculture. Central African entrepreneurs had a lot of overlap in how they discussed why they became entrepreneurs with Eastern Africans.

A comparison across the regions are shown in Figures 2 and 3. While we highlight these differences, it is worth noting that there were a great deal of similarities across the regions.

Most individuals discussed motivations having to do with products or services, and many stressed the internal aspects of their company, such as training, products, and people.

The starkest differences we saw were not by region, but by gender. Women and men described their motivations and aims very differently, especially in how they discussed their customers, products, and aims. We will come back to this point later in the report.

Who is Being Selected from the Applicant Pool?

Region, Stage and Industry

We now turn to the characteristics of entrepreneurs selected by TEF versus those not selected. For all of these analyses, we run appropriate statistical analyses (most often Multivariate Analysis of Variance or MANOVAs), and report statistics where appropriate. We begin with a discussion of who is selected by region. We found that statistically, there are differences by region in who is selected.⁴ There were no differences across regional years. In other words, there were not changes in the importance of regions over the three year period. Western Africa is underrepresented in the selection pool given who applies. While 81 percent of the applicant pool is from Western Africa, only 64 percent of the selected pool is so. East Africa and Central Africa are over-represented. While only 13 percent of the applicant pool is from East Africa, 27 percent is in the selected pool. The rate is doubled across applicant and selected pool rates for Central Africa (see Figure 4).

⁴From herein, statistical differences mean that $\text{Prob} > F$ is significant, with tests such as Wilks' Lambda, Lawley-Hotelling Trace, and Roy's largest root.



Figure 2: From Left to Right, Northern and Eastern Africa



Figure 3: From Left to Right, Western and Central Africa

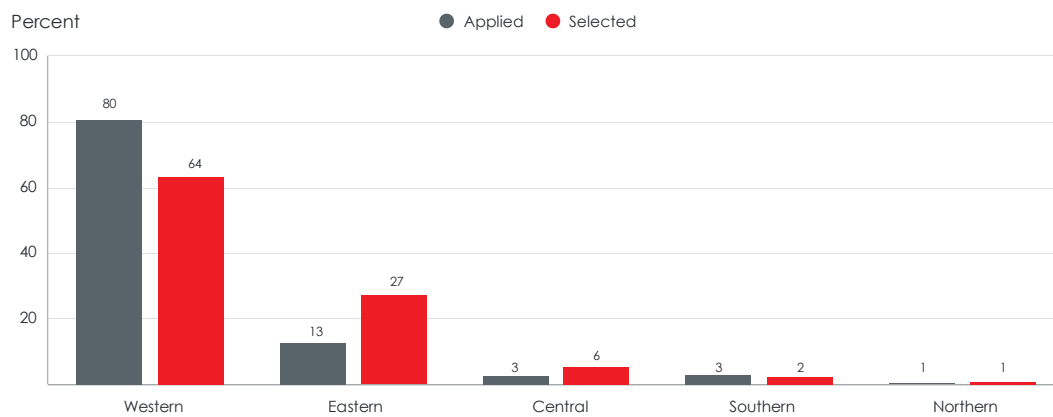


Figure 4. Applicants versus those Selected Across Regions

Next we consider how the business stage of the applicant affected whether or not they were selected. We again ran MANOVA and found that the business stage an entrepreneur is at did indeed influence who was selected. One of the strongest predictors of not being selected was not specifying one's business stage, and 47 percent of entrepreneurs who were not selected by TEF did not specify their stage. We found overall that TEF selects entrepreneurs who are early in the entrepreneurial process than the average applicant. We categorized 34 percent of the entrepreneurs businesses as in the "Infancy" stage in the selected pool. Only 15 percent of those businesses not selected by TEF were categorized in the same way. There were also slightly higher numbers of entrepreneurs that were at the "Idea" stage that were selected, or 22 percent, while this was 19 percent among those not selected.

Finally, before turning to the demographics of the entrepreneurs and what is occurring at the intersection of demographics by region and other factors, we also investigated variation in the industries where entrepreneurs worked. We found that here, again, there is evidence that the industry influences which entrepreneurs are selected by TEF. We again find the same evidence using MANOVA. We also again find there are not year-industry differences, meaning there are significant effect of entrepreneurs' industries on being selected, but these do not vary across years. Further some industries are over-represented in the selected applicant pool, including agriculture, education and training, manufacturing and healthcare.

Figure 5. Business Stage of Entrepreneurs Businesses Selected by TEF

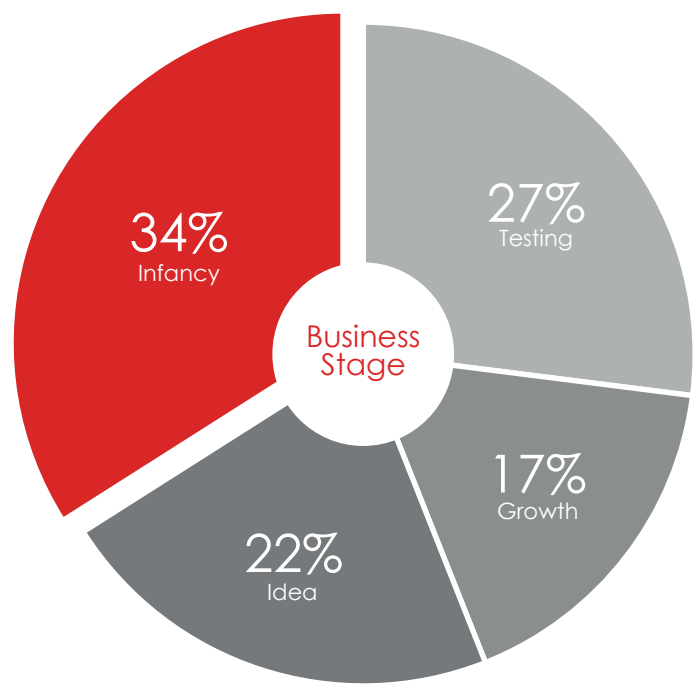


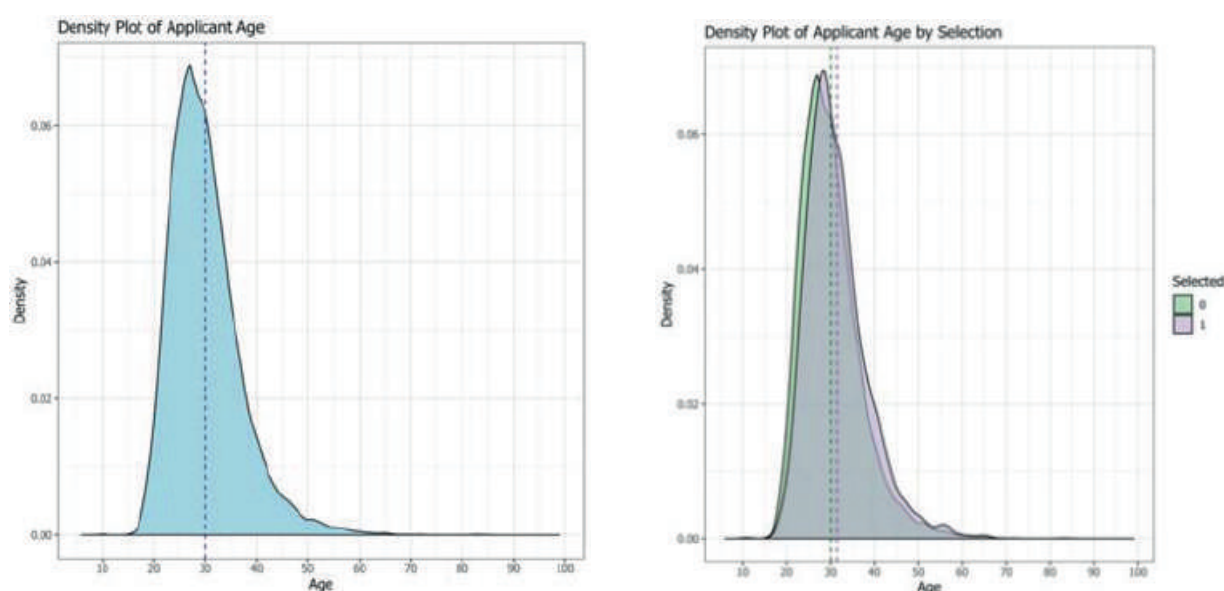
Figure 6. Top 10 Industries Selected by TEF

INDUSTRY	APPLIED (%)	SELECTED (%)	OVERREPRESENTED IN SELECTED POOL
Agriculture	24.5	29	Yes
Fashion	9	5.5	No
Education and Training	7.3	8.5	Yes
Commercial and Retail	6.9	7.2	Inconclusive
Manufacturing	6.6	8.7	Yes
Media and Entertainment	4.7	3.3	No
Healthcare	3	4.7	Yes
Professional Services	2.9	1.8	No
Construction	2.5	2.9	Inconclusive

Demographic Characteristics

Overall, we have found above that there are statistically significant differences in the characteristics of the applicant pool and who is ultimately selected by TEF. This is not a statement about quality of the selected pool. Only, it suggests that a non-random selection process is accounting for who ultimately is supported by TEF. Is the same true on the basis of demographic characteristics? To answer this question we begin with age. Overall, we find the age of those selected skews slightly to the right (older) by a year. There is no difference in the age of applicants across regions. The average age in all of the regions is 30 years, and the average age of those selected is 31 years.

Figure 7. Applicant Age versus those Selected



We now turn to a discussion of gender. Gender is an extremely important aspect of entrepreneurship in Africa. The World Bank reports Africa is the only continent in the world where more women than men become entrepreneurs, and policy makers have argued this is “a phenomenon that is not the subject of adequate discussion.”⁵ We begin by noting that unlike some other regions of the world, a choice in which types of businesses to fund is likely a key driver of whether or not women's businesses are being funded at rates comparable to men's. The motivational word cloud we show in Figure 8 describes the very distinct way that women versus

⁵ <https://www.worldbank.org/en/news/opinion/2018/11/29/women-entrepreneurs-the-future-of-africa>.



Figure 8. Reasons Individuals State They Became Entrepreneurs Across Men and Women

Note: Women's reasons are shown on the top and men's reasons are shown below. Women's reasons were much more concentrated into a few areas's including fashion and children. Men describe the reasons they decided to become entrepreneurs, and there are few overlaps between the two.

From Figure 8, what was striking to us was the difference in women's ambitions and men's ambitions for entrepreneurship. We wonder if this suggests that to the degree that men and women are approaching entrepreneurship differently, if the program has to be focused on the unique needs of both groups. On some other dimensions, however, there is some evidence that women's businesses do not vary substantially from men's businesses. This is the case for the stage of development. Overall we found that among those selected, women's businesses had evidence of being slightly further along in their stage of development. Specifically, while only 25 percent of men's businesses were at the market entry stage, 30 percent of women's were.

We probe further if there is evidence that the pool of women being selected differs from men. We found that on the basis of age, there was greater differences in the age of those who applied versus those that were selected for women than men. For women, they were two years

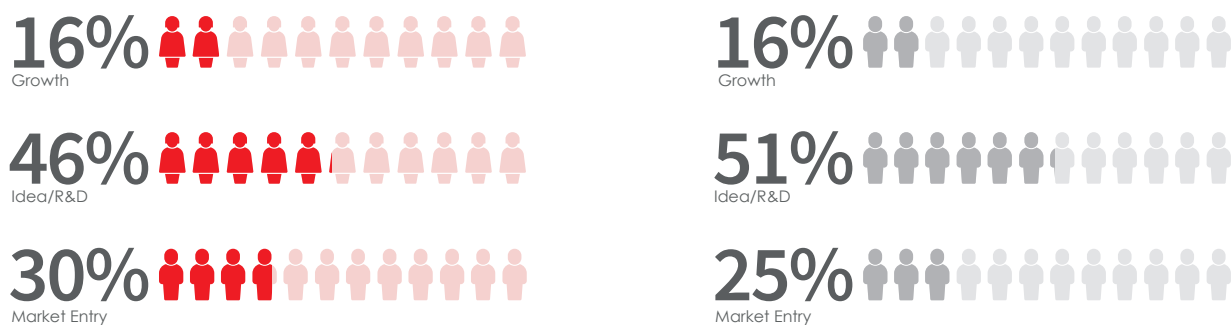


Figure 9: Among Applicants Business Stage Selected Women vs. Men

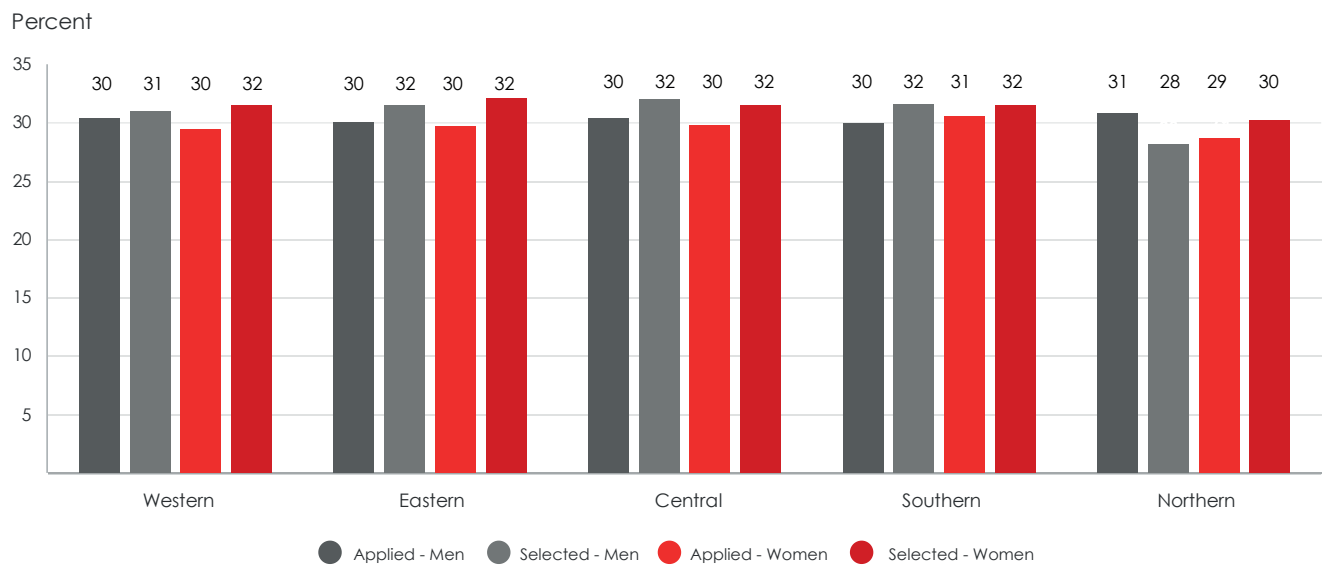


Figure 10. Differences in Age Across Region by Gender

older, on average than those not selected, whereas men selected were only older by a year. These differences by region are shown in Figure 9.

Some have argued, “expanding the opportunities for female entrepreneurs through policies that foster gender equality would have a tremendous impact on Africa's growth” (World Bank, 2018), and it is in the spirit of considering the overall aims of TEF that has been an extremely strong advocate for entrepreneurs that we point out the descriptive differences we see by gender from 2015-2017. We close this section by highlighting further evidence of this possibility of

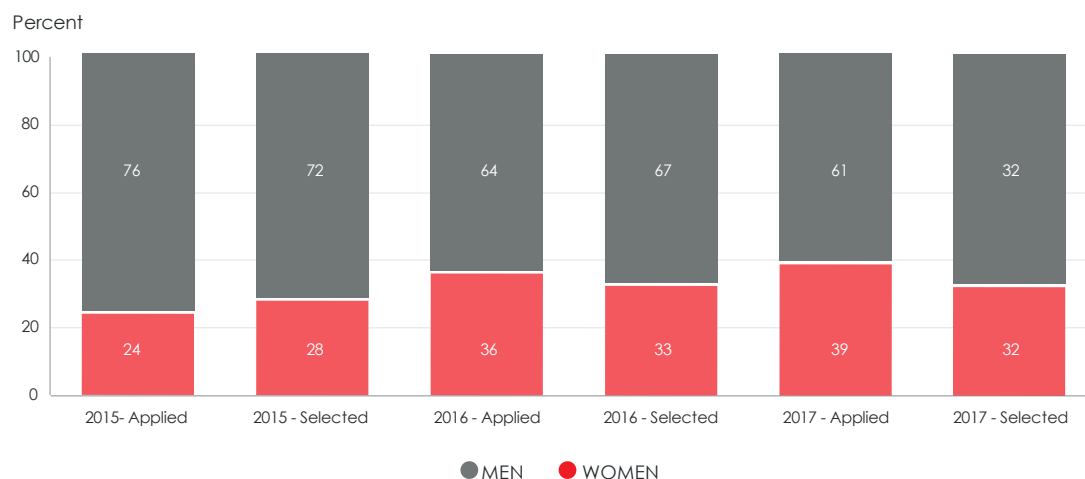


Figure 10. Differences in Age Across Region by Gender

differing factors being accounted for by gender.⁶ We do a comparison across years for those selected by men and women overall and show this in the figure below. In a more sophisticated analysis (i.e. logistic regression) we did find evidence that there is a correlation between gender and being selected during the 2015-2017 years.

How do entrepreneurs view the entrepreneurial enterprise?

In addition to looking at who becomes an entrepreneur and which entrepreneurs are selected by TEF, the TEF applications gave us a unique opportunity to delve into entrepreneurial mindsets. We used the open-ended answers from the nearly 140,000 applications to systematically analyze the language entrepreneurs use when describing themselves and their ventures. The differences in word usage highlighted by the word clouds suggested that a more nuanced dive into these open-ended answers would provide interesting insights into the entrepreneurial mindsets of the TEF applicants.

Initial differences in entrepreneurial mindsets and how TEF applicants view the entrepreneurial enterprise emerged as we conducted inductive analyses on the applications. Through the iterative, deep-reading and hand-coding of open-ended answers, we found that entrepreneurial mindsets diverged into two main categories. In the first category, which we call

⁶Again, we are not suggesting this is definitely the case – no amount of observational data allows researchers to rule in definitely that there is any bias in selection criteria. Our aim here is to present statistics.



the “exchange mindset”, entrepreneurs focused on the act of ‘doing entrepreneurship’. This mindset is characterized by a micro-level, ‘on-the-ground’ view of what the entrepreneurs and their companies are doing. In particular, entrepreneurs with an exchange mindset cared greatly about the exchange of products and/or services, their relationship with their employees and customers, and providing value to others. In the second category, which we call the “organization mindset”, entrepreneurs focused on ‘being an entrepreneur’. These applicants discussed a more macro-level view of themselves and their activities. Rather than orienting themselves around the exchange of products and/or services with customers, they oriented themselves around their purpose of creating and growing a company. We found that individuals with this mindset often discussed growth and performance, managing people and assets, and industry dynamics.

**exchange
mindset**

**organization
mindset**

Differing views of the entrepreneurial enterprise

We now take a deep dive into these differences we found across the two mindsets and how these differences manifested in how the TEF applicants discussed themselves and their businesses. We found that entrepreneurs with an exchange mindset tend to focus on what their business is creating or providing, rather than on the firm as a whole. These individuals discuss their products and services in length, and show concern about providing quality products or services. This concern often emerges in discussions about customer satisfaction. One TEF applicant who expressed this sentiment wrote, “We seek to have a unique and valuable position in the market to offer our quality products and services. We provide an integrated capability of multi-sourced and proprietary flow of products and services which are tailored to satisfy customers’ specific needs”. This same applicant further notes their “deep understanding of our products and customer needs” and ability to provide customers with the “best solutions that fit your needs”.

While TEF applicants with an exchange mindset tend to focus on the product or service that their business is providing, we found that entrepreneurs with an organization mindset direct their attention to the broader organization as a whole. Rather than discussing specific products or services, these applicants focus instead on profits and other performance metrics such as growth.

For example, one applicant wrote, “The human capacity of the company has grown to 12 team members, 4 associate freelance consultants, with a board of 3 members. [The company] has built training presence in 8 Nigerian universities where it trains about 500 students every year”. Another applicant similarly discussed growth, writing, “Part of the business plan. . . is to expand into major cities as a notable brand in [the industry] over a short period of time. This company aims at revolutionizing [the industry] and making [it] an economic hub”.

12

Team Members

500

Students yearly

08

Universities

We found that these differences in entrepreneurial mindsets did not apply only to how applicants described what they and their businesses are doing, but also in how they expressed their motivation and management style. Many of the applicants with an exchange mindset discussed deriving personal satisfaction through their external focus on customers. One such individual expressed this external motivation for becoming an entrepreneur: “I became an entrepreneur because I love rendering people my services, [and] satisfying their needs to put smiles on their faces”. Another noted, “My passion lies in filling people's needs. I want to create value not just for myself but for others, in such a way as to impact their lives positively”.

Those with the exchange focus tended to not just discuss relationships with customers, but also with their employees. Rather than treating their employees as resources to be managed, these applicants described them as equals whose opinions are valued. One entrepreneur wrote that she prefers “to see my subordinates as equals”, and another noted, “I value suggestions from my workers and I have a good personal relationship with them.” We found that applicants with this exchange mindset often viewed their relationship with employees as a means to enhance their relationship with customers. For example, one individual wrote, “I listen to my staff's concerns and suggestions because sometimes they have more accurate points of view regarding relationships with customers”.

In contrast to the exchange mindset's focus on external relationships with customers, those with an organization mindset expressed internal motivation such as feelings of ownership and control, which is consistent with this mindset's focus on ‘being’ an entrepreneur rather than ‘doing’ entrepreneurship. One entrepreneur with this mindset described “birth[ing] a business of



[their] own". Another wrote that being an entrepreneur meant being "willing to make sacrifices" and being able to "control his business". The individualistic focus of the organization mindset is also seen in individuals comparing themselves to world-famous entrepreneurs. One such applicant described himself as "an entrepreneur with a vision of becoming the [world's] greatest entrepreneur one day". Another expressed that "I have a great feeling that someday I will be mentioned together with Mark [Zuckerberg] and Bill Gates".

"an entrepreneur with a vision of becoming the [world's] greatest entrepreneur one day"

We found that this individualistic, growth-oriented organization mindset manifested in management style as well. Unlike the relational management style typical of the exchange mindset, sentiments of control and ownership were reflected in discussions of managing the business and its resources. These entrepreneurs tended to talk about employees as another resource to be managed, along with financial and material assets. For example, one applicant wrote, "I consistently manage both human and material assets to achieve organizational goals". Another noted, "I possess the ability to take appropriate decisions in managing people, assets, and time".

In summary, we found that entrepreneur's mindsets vary in three main ways. First, in the conceptualization of what they and their companies are doing – whether it is exchanging products and/or services with customers or if their attention is directed toward the characteristics of their business and its performance and expansion. Second, we found that these two mindsets manifested differently in how entrepreneurs viewed themselves and their motivation. Finally, the two mindsets diverged in how entrepreneurs discussed their management style and how they view their employees. Figure 12 provides a summary of these findings with relevant quotations drawn from the TEF applications.

Linking entrepreneurial mindsets to business characteristics

We now turn to a discussion of how differences in entrepreneurial mindsets might matter, particularly to the entrepreneur's success. After recognizing the differences in entrepreneurial mindsets, we scaled these findings across the TEF applicant pool using a natural language



Figure 12. Examples of differences in entrepreneurial mindsets

Ways in which mindset differences manifest	Representative data
How entrepreneurs describe their own and their firms' activities and focus	<p>Exchange Mindset- products, services, customer satisfaction</p> <ul style="list-style-type: none"> ■ "I am passionate about provid[ing] unique goods and services that wow clients." ■ "I sold shoes and clothing to sustain myself in school. Through that process I developed a passion for business. I saw it has a process of providing people with a variety of services and at the same time making it affordable." ■ "My customers are my king and queens." ■ "I have been able to provide satisfactory services to clients and most time exceeding their expectations with a unique approach to service delivery." ■ "We listen to clients and deliver, we do not reduce the quality of our products." <p>Organization Mindset- company characteristics, performance, and expansion</p> <ul style="list-style-type: none"> ■ "[I plan to] expand my greenhouse coverage to have about 20 houses (8mx30m) and be the leading producer of greenhouse vegetables (tomatoes, pepper and straw berry) to supply eastern and northern Uganda." ■ "Our innovative business concept will systematically grow every business in Nigeria that has an online presence...and catalyze the birth of millions of new weblog entrepreneurs in Nigeria." ■ Amongst its numerous outstanding relevance to users, [our company] has the potential to become a highly trafficked website that is used by millions of people around the world on a daily basis." ■ "I aim to continually set new frontiers of performance." ■ "I have managed a business from scratch to generating millions of revenue on a monthly basis."
How entrepreneurs view themselves and their motivations	<p>Exchange Mindset – external motivation coming from relationships with customers</p> <ul style="list-style-type: none"> ■ "The satisfaction one can derive from making a lasting impact [on others] by meeting needs is inspiring and has spurred me to own an establishment of my own." ■ "I'm a dynamic and hardworking entrepreneur who derives satisfaction [from] putting smiles on customers' faces; no matter how irate the customer may seem - there is joy in converting that to a smile. Couple this desire for customer satisfaction with my passion for fashion and you have [me] - a lady who simply loves creating fashionable wears to keep customers smiling." ■ "I have been able to build a client-friendly business environment through establishment of good customer relations. I have also built client's confidence in my business such that they always require my services anywhere I am not minding the distance. I also ensure that my clients are always satisfied with my services by taking time to give them what they need. That is what I have been known for." <p>Organization Mindset- internal motivation coming from the self and importance placed on ownership, control, and ambitious visions</p> <ul style="list-style-type: none"> ■ "My major factor in becoming an entrepreneur is not only to be rich or be my own boss alone, but to fulfill my vision: To build a solid and influential empire through viable investment practices." ■ "I see myself as having a huge role to play towards Africa Rising." ■ "My business idea is aimed at transforming the entire trucking industry to a more corporate, science driven industry with global influence and impact."
How entrepreneurs describe their management style	<p>Exchange Mindset – treating employees as equals</p> <ul style="list-style-type: none"> ■ "[I focus on] relationship building; I trust my staff to make good decisions. I provide them with as much information as possible about what's happening in the business. This empowers them to shine." "I allow the workers to share in the profit and loss of the company like they are partners." ■ "I try to sell my vision well to my employees, so they feel like vision helpers and not just workers." <p>Organization Mindset- viewing employees as one of many resources to manage</p> <ul style="list-style-type: none"> ■ "I have consistently managed both human and material assets to achieve organizational goals." ■ "I [supervise] a team of workers by working out the human and material resources needed in order to implement the company policy efficiently and also help improve the company net profit over the years."

processing technique called supervised machine learning. This technique includes training an algorithm to predict categories. Our initial findings of the two mindsets came from 600 randomly selected applications that were categorized by hand. We then inputted the text from these hand-coded applications, and the algorithm used this text to predict which categories the remaining applications fell into – the exchange mindset, the organization mindset, a mixture of both, or neither (which typically was only the case when an applicant did not write enough to classify the application as any mindset). The algorithm produced a model that leverages statistical models to predict the label that a human coder would have assigned in hand-coding. After the algorithm labeled each application, we used the appropriate validation methods to ensure that the model accurately categorized mindsets.

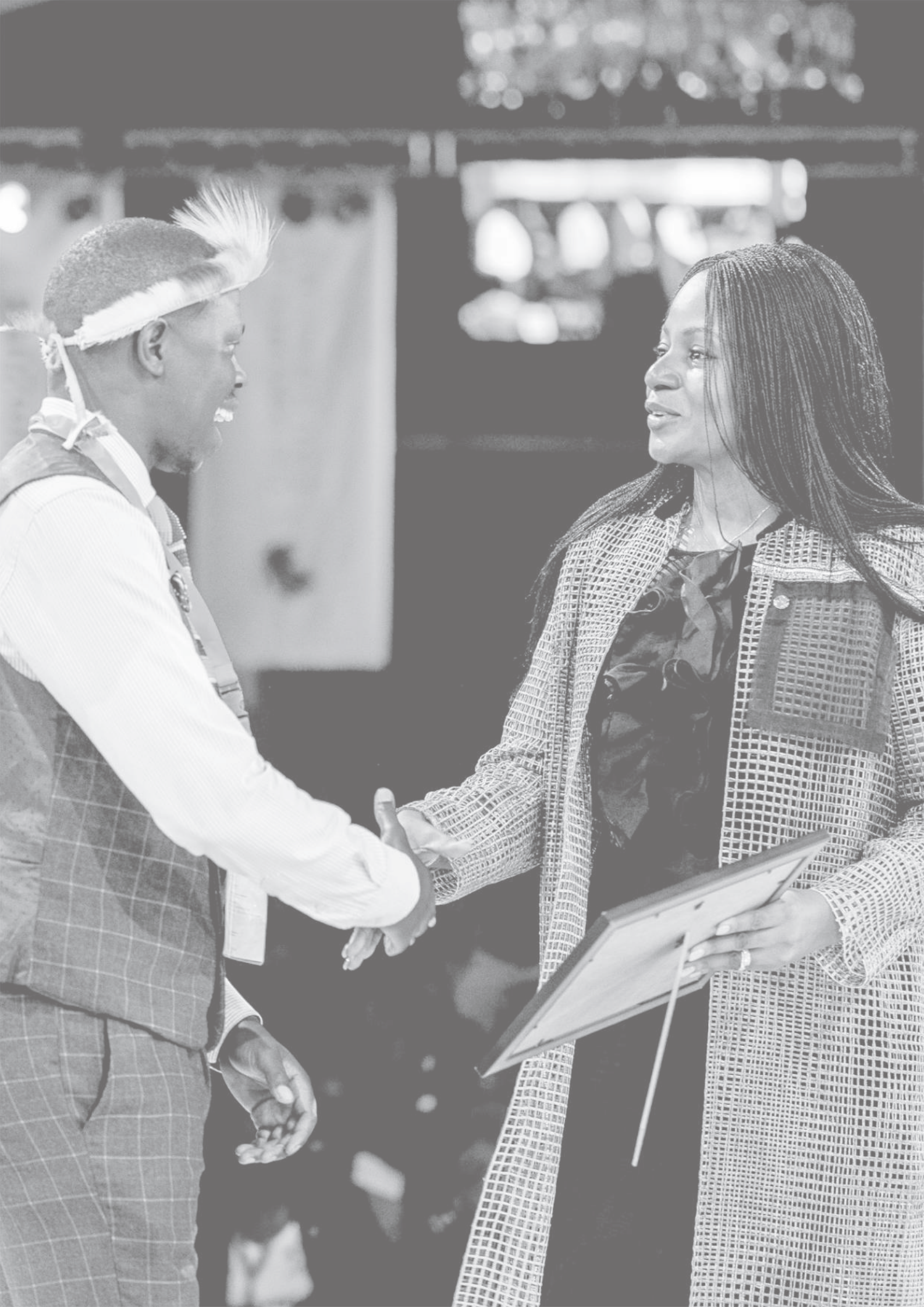
We then used these categorized applications to explore how mindsets might be related to business revenue. Using Ordinary Least Squares (OLS) regression models,

we found that entrepreneurs with an organization mindset were significantly associated with higher revenue,

while entrepreneurs with an exchange mindset were significantly associated with lower revenue. These findings remain even after accounting for other factors that might affect revenue such as region, application year, industry, entrepreneur age, gender, business size, business age, and business stage.

We note here that because this data is observational in nature, and we observe each applicant at only one point in time rather than across stages, it cannot be claimed that there is a causal relationship between entrepreneurial mindset and revenue. In other words, the amount of revenue earned could also be influencing the mindset that an entrepreneur shows.

Our next analyses try to unpack whether mindsets are driving outcomes such as revenue, or vice versa. We first looked at the percentage of each mindset across business stages, aggregated by businesses. If revenue is driving an entrepreneur's mindset, we might expect that the proportion of those with an organization mindset is high in later stages (Testing and Growth) than in beginning stages (Idea and Market Entry). On the other hand, we might expect that in the early stages, because entrepreneurs are focused on their market opportunity with a product or service,



the proportion of those with an exchange mindset is higher and decreases as stages progress. However, our results in Figure 13 suggest the opposite. The proportions of each mindset hold fairly constant across stages, and if anything, the proportion of entrepreneurs with an exchange mindset increases, while the proportion of those with an organization mindset decreases.

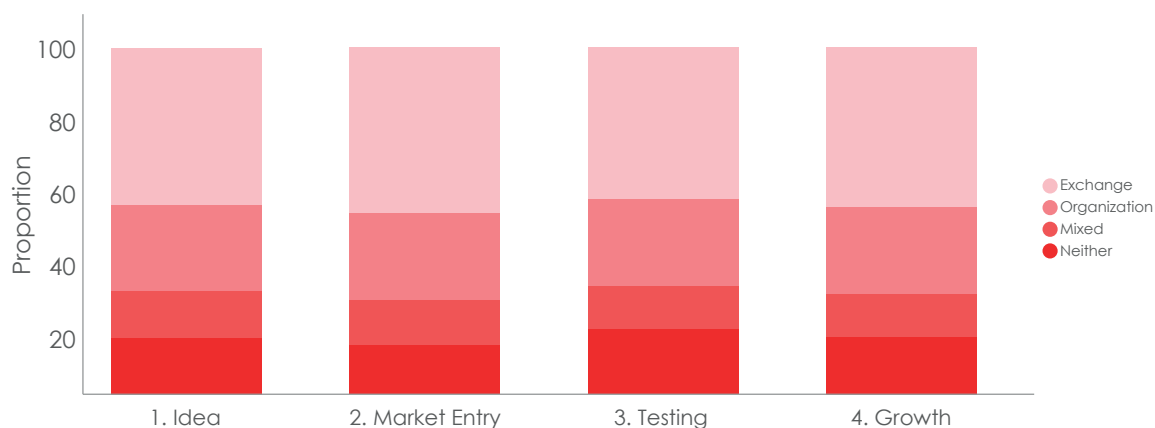


Figure 13. Breakdown of entrepreneurial mindset proportions across business stages

Further, we might suspect that certain industries are driving the results. Figure 14 provides the breakdown of mindsets across five top industries in the applications. We found that the relative proportions of each mindset remain fairly consistent across all industries in the applications, meaning that certain industries are not likely driving these findings.

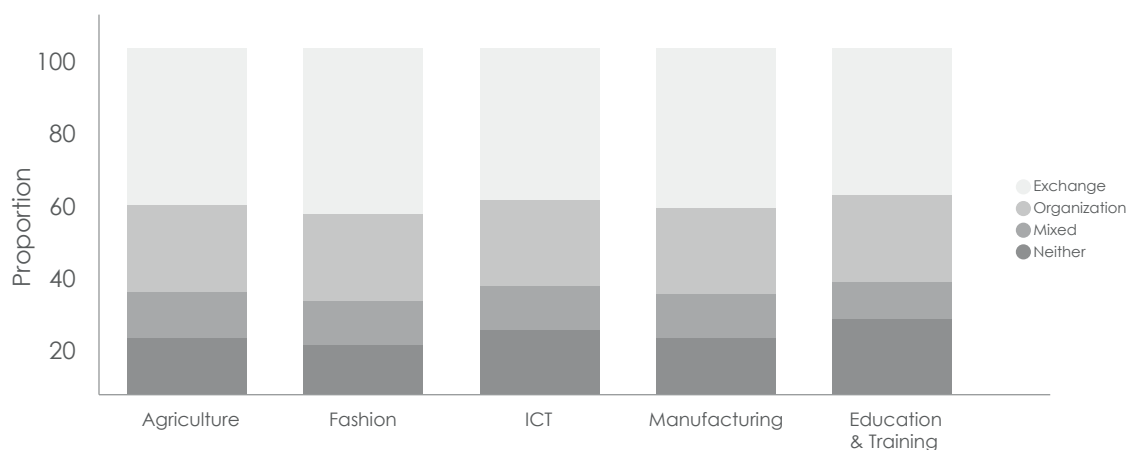


Figure 14. Breakdown of entrepreneurial mindset proportions across industries

We close this discussion of entrepreneurial mindsets by considering mindsets in the context of gender. As suggested by the word clouds, we find that men and women differ in how



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they describe themselves and their businesses. While the exchange mindset is the most common among both men and women, we find that men and women differ significantly in their likelihood to have an organization mindset - women are significantly less likely than men to have this mindset. When taking this difference into account, along with the finding that higher revenue is linked to the organization mindset, it suggests that differences in entrepreneurial mindset are a potential driver in the differences seen in business outcomes between men and women

III. Conclusion

How can the entrepreneurial mindset be released?

In a final set of analyses we took one final look at the entrepreneurial mindset. Instead of focusing specifically on how individuals' thought about crafting their businesses, we used examined words typically associated with the entrepreneurial mindset more broadly. That term is typically taken to mean a mindset that allows one to overcome challenges that one is presented. It is linked often to the social psychological concept of self-efficacy, which refer to the ability of an individual to persist in the face of obstacles due to the belief that they will succeed. We probed for words that were linked specifically to optimism, striving, and being able to bounce back from failure. Specifically, we ran queries on the words listed below

- aspire
- build
- change
- failure
- first
- grow
- solve
- success
- initiative
- launch
- leader
- learn
- motivate
- risk
- vision

We performed unique queries using the MaxQDA Analytics Pro software, and for each of the words above, assessed how entrepreneurs described themselves and their businesses. What we found was that while it varied some based on the word, the average number of times entrepreneurs described their businesses with any one of these words ranged from 3,000 to 6,000 times, out of nearly 140,000 applications.



This means that entrepreneurs were only using these words 2 to 4 percent of the time.

Given that this was on the applications for funding, this stood out to us. It suggests that part of helping to continue to foster the entrepreneurial mindset among entrepreneurs is to give them training. It might be useful to introduce the “language of disruption” or the “language of creation” or “growth logics” into the narratives of entrepreneurs around the continent to help them cast a clear vision for which they are striving. While we have no doubt that they strive to make a difference and see entrepreneurial growth, the specific “how” in their narratives are less salient than what we would hope.

In conclusion, the TEF applications shed broad light on the mindsets of entrepreneurs in Africa. We suggest three major interventions based on these analyses.

- Select women at higher rates and consider foster their growth and development in different ways than men given their different pathways into entrepreneurship.
- Focus on helping entrepreneurs understand the right pathways to set up their businesses across the exchange vs. organization mindset, and get them to move to an organization mindset earlier.
- Help entrepreneurs include in their vision and narrative a broader, more disruptive and growth-oriented mindset.



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A grayscale photograph of three people (two men and one woman) celebrating at an event. They are all smiling and raising their hands in the air. The woman on the left is wearing a light-colored shirt and jeans, and has a small bag slung over her shoulder. The man in the center is wearing glasses, a light-colored shirt, and a patterned waistband. The man on the right is wearing sunglasses and a light-colored shirt. In the background, there are other people and a banner that partially reads "THE TONY... FOUND".

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