

Startups, Know-How and Sustainability in the Emerging Addis Ababa Smart-City: How an Improved Mind Frame for Glocal Startups in Addis Ababa Can Lead to a Smarter Sustainability and Governance

Manuel Lozano^{1*} Philipo Petros²

1. Disclosing Social Science, OAJ, Cornellà de Llobregat, Spain,

2. Higher Education Institutions' Partnership, POBOX 14051, Addis Ababa, Ethiopia,

* E-mail of the corresponding author: manel.editor@disclosingsocial.science

Abstract

Achieving the new standards of livability while ensuring the sustainability of the booming urban settlements is getting more and more difficult in a world where the new actors and technologies will make the difference. In this paper, we explore the need to rely more on small and micro enterprises (SME) to face the Addis Ababa's future and how the acquisition of knowledge through a more personal-entrepreneurial networking can bring the required readiness and sustainability. We have approached to this issue through the study of the smart-city and the possibilities of the public-private-partnership (PPP) with SME. In the same way, we have weighted the problems of colonialism and how it makes more difficult to live in a well-run smart-city when is burdened by this past. We have found that there is a relation between more sustainable countries and a greater prevalence of successful startups according the size of their economies although this can be hindered by the colonial legacy. In this way, the social impact of colonialism in a country is associated with a worse top performance of their smart-cities. In conclusion, Addis Ababa (as well other emerging Ethiopian smart-cities like Hawassa, Bahir Dar, Dire Dawa, Mekelle, Harar, Adama, Gonadar, Debre Birhan, Bishoftu, Jimma, Wolaita Soddo, etc) would be improved importing the know-how through SMEs and adapting the products to their own culture and diversity rather than doing quite the opposite. For this to happen, some governance initiatives must to be taken: lighten the SMEs tax burden, sharing risks and returns in PPP and enhance financial security around knowledge import.

Keywords: Addis Ababa, smart-city, startup, sustainability, socioeconomic justice

1. Introduction

“...the only development worth having is sustainable development.”

Former Ethiopian Prime Minister Hailemariam Desalegn [1]

That article is addressed to policy makers, investors and smart technologies' start-ups interested in Addis Ababa as well as any other professionals working in sustainable growth, entrepreneurship and socioeconomic justice.

Enhancing livability through know-how, services and devices from SME can lead to additional social benefits. Agile and closer to public businesses can enhance the civic engagement with the smart-city thanks to tailored and culture-sensible solutions. To become a smart city, stakeholders from each of these diverse groups must create “smart spaces” that collect and share data that help them each improve their effectiveness and keep people safe – with the city providing the innovative infrastructure to connect it all together. While Utopia might still be beyond our reach, smart cities, businesses and organizations are innovating, using technology to improve our lives and society [2]. Smart cities must be agile, adaptable and able to accelerate adoption of new technologies while remaining a competitive place for businesses, jobs and visitors. Studies suggest that the role of developmental government (means with active involvement and role of Private sector and other development actors) should stimulate new technology and Smart cities need to focus on these key Smart City investment themes: IT & Telecoms Infrastructure; Data & Technology; Finance and Economy; Governance and Partnerships; Safety & Security; Mobility; Sustainability and Society [3]. Nevertheless, in Addis Ababa, in despite of the smart-solutions' feasibility and a crowded market opportunities, nor the quality neither the quantity of smart-solutions offered haven't got optimal results, “the reality in all of these cities stands in stark contrast to the glass-box towers, manicured lawns and water features on developers' and architects' websites” [4, p. 215]. Therefore, listening successful start-ups and SME worldwide offers both a fresh and flexible approach.

The clusters and start-ups offering smart solutions are more resourceful than ever and the approach of smart-city in a box, unusual in the SME, wouldn't be efficient in the Ethiopian capital whose quantitative and qualitative changes demands thinking out of the box. Its population is estimated to be over 4 million (its population in the near future is expected to grow to exceed 6.5 million residents) with higher female population than their male counter parts. It is thought that the land that is the current site of Addis Ababa was first occupied and made a settlement in the early to mid-15th century, although the city as it is known today was not founded until 1886. It's interesting to note that evidence of humans living in the area up to 100,000 years ago has been

discovered. The city was founded by Emperor Menelik II. When Menelik II was named as the emperor of Ethiopia, the city was designated as the capital city. In 1936, the city was invaded by Italian troops and was liberated again five years later in 1941. The African Union was headquartered in Addis Ababa upon its creation in 1963, while many international organizations and communities reside in the city as well. The city is considered to be one of the safest in Ethiopia. In terms of the economy, Addis Ababa is very diverse. Trade and commerce are the most popular industries, followed by manufacturing and industry, homemaking, and civil administration. Tourism is a growing industry in the area as more shopping centers, restaurants and attractions are built. In fact, the city is becoming known as the “spa capital of Africa” [5]. A developmental frame focused in the city of in-formation rather than a colonized and biased futuristic one would lead to a more sustainable conditions in the emerging Addis Ababa smart-city.

This article explains how relying in start-ups and SME worldwide when developing the Ethiopian capital would lead to a significant two-way learning and satisfying results for both people and business without harming social justice and understanding the sustainability as a human right.

This paper wouldn't had been possible without the Markos Kidane's papers about the financial issues in Addis Ababa and the Patrick Ziltener, Daniel Künzler and André Walter's research on the impact of colonialism [6-9]. The Alok Tiwari works on urban infrastructure also has helped us to shape the content of this article [10,11].

This theory invites the public sector to enact more efficient policies and encourages (mainly technological) SMEs worldwide to contribute to the Ethiopian smart-cities prosperity. These results can be useful to unlock new business opportunities and further studies in the rocketing cities in the eastern Africa region.

2. Literature Review

The ever-changing expansive urbanization requirements “provide serious challenges for governments all over the world with regard to the realization, maintenance, and operation of public urban infrastructures” [12, p. 284]. Ensuring living standards and creating conditions for sustainable development while facing the lack of adequate public funds and the inefficiencies of public service provision, poor governance and implementation capacities is overwhelming:

“a city can be perceived as complex and interconnected infrastructure system to handle wide-range and gigantic resource flows needed to back people's prosperity” [10, p. 2].

Thus, contacting with private partners around the world is invaluable for the Ethiopian capital when dealing with pressing issues as the ICT-driven smart city infrastructure or the innovative financing since: “[The Addis Ababa] ... ethnic diversity and variation on geographies probably makes above challenges more multifaceted which calls for specific solutions for each urban settlement indeed” [11, p. 23]. Thankfully, a “strong support for public-private partnerships was observed” [13, p. 86].

The Addis Ababa Action Agenda (AAAA) published during the United Nations' Third International Conference on Financing for Development in 2015 highlights that the public management won't be able to cope with both the current smart transformation and the accelerated growing without the civil society, academia and the private sector [14, p. 58; 15, pp. 16–17]. The whole Ethiopia, among many other states at risk, will prevent or not themselves through pro-poor policies and improved governance and implementation capacities through public-private partnership from becoming failed states in the next generations and it will rely, in addition to the usual capabilities, in enjoying a plastic enough networking between public and private spheres as well as reach an unseen big data handling [16, pp. 15–16].

In despite that the big picture of the Ethiopian sustainability and its forecast are not flattering (according the World Bank data), the country's urbanity is being reinvented anyways (through the NESTown, e.g.) and the smartest Addis Ababa ever is under the spotlight [17, p. 326;18, pp. 115–133], [19,20]. As the Markos Kidane's studies shows, the start-ups owned by the first digital generation performance can be greatly improved. Even when the most consultants were provided with financial and non-financial aid and, in despite of the trust (and confidence) in microenterprises as a solution to scarcity in the Ethiopian capital, the most youth entrepreneurs don't use the consultancy services provided by the different stakeholders: MSE Agency, Addis Ababa Youth Association, multitude of Microfinance Institutions actively operating in the city, and NGOs [8,7].

Both policy makers and scholars agree in that the relationship between technological clusters and start-ups from many countries, as happened before in India, Indonesia and Kenya among many other emergent countries, can produce an enrichment in the work culture as well as an initial impetus to the local smartness [21,22, pp. 101, 119]. This enhanced openness would generate high-value employment while retaining the Addis Ababa today talented individuals (including thousands of young university graduates in the field awaiting to enter to this market) and sowing the seeds for a better future in the capital and the whole country [23, p. 42].

3. Method

We employed review of relevant literature from empirical studies and gray papers in the field that involved both

quantitative and qualitative data and analysis.

With regards to data analysis, the correlation between the number of startups / log(GDP) and the SSI's different measures of sustainability was tested from a wide sample of 137 countries, interpretation was adapted to the Ethiopian context.

Spearman's rank correlation rho
data: Startups and SSI_Economic
S = 449670, p-value = 2.043e-06
alternative hypothesis: true rho is not equal to 0
sample estimates:
rho -0.4151566

Spearman's rank correlation rho
data: Startups and SSI_Environmental
S = 193360, p-value = 8.235e-06
alternative hypothesis: true rho is not equal to 0
sample estimates:
rho 0.391465

Spearman's rank correlation rho
data: Startups and SSI_Human
S = 470760, p-value = 2.29e-08
alternative hypothesis: true rho is not equal to 0
sample estimates:
rho -0.4815358

Nevertheless, focusing in Africa alone shows a different pattern where the startups' weight in human wellbeing sustainability plays no role:

Spearman's rank correlation rho
data: Startups_Africa and SSI_Economic_Africa
S = 7304, p-value = 0.007853
alternative hypothesis: true rho is not equal to 0
sample estimates:
rho -0.4725806

Spearman's rank correlation rho
data: Startups_Africa and SSI_Environmental_Africa
S = 3282, p-value = 0.06324
alternative hypothesis: true rho is not equal to 0
sample estimates:
rho 0.3383065

Spearman's rank correlation rho
data: Startups_Africa and SSI_Human_Africa
S = 6416, p-value = 0.1091
alternative hypothesis: true rho is not equal to 0
sample estimates:
rho -0.2935484

This different pattern don't happen when considering the impact of colonialism in the entrepreneurial outcome in the African countries. A semipartial correlation of the colonialism impact over the SSI has been performed.

```
> spcor.test(Startups_Africa, SSI_Economic_Africa, Colonialism, method = c("kendall"))  
estimate      p.value      statistic      n      gp Method  
-0.3377382    0.004319453    -2.853838    36 1    kendall
```

```
> spcor.test(Startups_Africa, SSI_Human_Africa, Colonialism, method = c("kendall"))  
estimate      p.value      statistic      n      gp Method  
-0.2869061    0.01533733    -2.424314    36 1    kendall
```

```
> spcor.test(Startups_Africa, SSI_Environmental_Africa, Colonialism, method = c("kendall"))
estimate      p.value      statistic      n      gp Method
0.2411232     0.04160443     2.037455     36 1     kendall
```

Also a significant correlation can be found controlling the colonialism against the association strength between top startups and top smart-city by country:

```
lm(formula = IESE ~ Political_Colonialism + Economic_Colonialism +
    Social_Colonialism, data = IESE_and_Colonialism)
```

Residuals:

```
Min      1Q      Median 3Q      Max
-74.702 -9.962  2.203  14.575 52.377
```

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	188.4034	30.3103	6.216	1.2e-06 ***
Political_Colonialism	0.6374	0.3617	1.762	0.0893 .
Economic_Colonialism	-0.1255	0.4228	-0.297	0.7688
Social_Colonialism	-0.7582	0.3592	-2.111	0.0442 *

 Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 33.11 on 27 degrees of freedom
 Multiple R-squared: 0.215, Adjusted R-squared: 0.1278
 F-statistic: 2.465 on 3 and 27 DF, p-value: 0.08382

Startups: Number of Top Startups / Log(GDP)
 Source of Startups: Number according Startups Ranking [24]
 GDP: GDP (current US\$) according World Data Bank [25]
 SSI: Sustainable Society Index [26]
 Colonialism: Impact of colonialism (index) [9]
 HDI: Human Development Index by United Nations Development Program [27]
 IESE: IESE Cities in Motion Index 2017 (the top by country) [28]

A significant and specific portion of variance in the startups outcomes in the African countries is explained by a colonial legacy. They would follow the better and usual pattern and their startups would bring similar profits if they were in a decolonized scenario. Thus, the optimal growth of a smart-city is hindered by colonialism as proven.

4. Conclusion

Back to the Addis Ababa and Ethiopian emerging smart-cities' context: they can be greatly improved if the startups would be helped to importing the know-how rather than brands and products. It would allow reach a long-term socio-technical cohesion able to avoid a state failure; a glue for the interstices that the incoming geopolitical changes are widening up.

Future research that can be originated from this paper would include a participative SME business monitoring and evaluation tool for the booming African smart-cities with a decolonized vision of the idiosyncratic meanings that the smartness has in the different regions. The changes in the logic of values through a rising multiculturalism and diversities in entrepreneurial sustainable practices also would deserve attention.

The main and most immediate implications for practice of the content of this paper are:

- grounding the change of the current mindset about technical expertise in Addis Ababa
- becoming also an invitation to know-how exporters to value the chances for reverse innovation

Rethinking the entrepreneurial narrative in Addis Ababa can solve the dilemma between the sector's focus on short term return on investment and financial insecurity with the long term sustainability requirements.

5. Recommendations

On the basis of a review of literature on startups and sustainability, as well as the results obtained, this article identifies sustainable governance practices that may improve the livability and resilience of the estimated 5 million of Ethiopians citizens living in Addis Ababa.

6.1 Lighten the tax burden for startups, including tax derogation

It will be very difficult to get an optimal readiness and collaboration amidst daily bankruptcy. The startups' entrepreneurs hardly will be able to face both a high taxation and shop rents [29, p. 6]. Since startups are needed for rising the urban livability it would be wise to haste the technical and commercial activity and crumbling financial and non-financial barriers paving the road for the incorporation of fresh entrepreneurial initiative [30]. Besides that, some startups are more suitable for the public good than others and may deserve a tax derogation:

- Those which opt for contracting rather than licensing: it gives more weight to public institutions in changes and decisions [31].
- Those owned by entrepreneurs with proven networking skills and experience in social ventures: their greater chances to success and their ability obtaining the other people's commitment will be easier to obtain a social profit from their commercial activities [32-34].
- Those owned by women: reducing the gender gap is a common goal in both the 2030 Agenda for Sustainable Development and the Addis Ababa Action Agenda, in addition to this, the blatant inequality against the female startups owners in the whole Ethiopia represents a pressing need for social justice [35,36].

6.2 Improve sustainability thanks to a proportional share of risks and returns from public projects with collaborative startups and clusters

In an usual public-private partnership PPP the asymmetrical information always play on one side or another. Sometimes the public side wants to make more appealing a project barely unprofitable and sometimes the private side is pulling the wool over the institutional eyes. That's a toxic board game for both sustainability and startups that can be avoided with a more even partnership that would lead to be all-in for feasibility as the best strategy [37].

When the sustainability performance was assessed by the SpbEM model, an optimal investment distribution enhanced the outcomes [38]. By the way, a growing city as Addis Ababa, could be benefited from a thriving and sustainable urban agriculture as soon as multiple stakeholders make a common cause with it [39].

In addition to this, sharing risks and returns with institutions showed better results when the theory of games was applied to a brownfield redevelopment negotiation and when the transit projects peculiarities were analyzed [40,41].

6.3 Importing know-how (and cuddling it)

In despite that the microcredit institutions have played a great role helping the startups to face the financial insecurity in Ethiopia, they can't deal with the absence of technological know-how and the integration in the global market, so it must to be imported [6,42].

Even when the foreigner startups could be weaker against corruption out from their borders and deserves special protection, they are also an option for importing know-how. The SME's plural ethics contributes with a heterogeneous value logic that can lead to a more suitable mind frame in the road to sustainability [43,44].

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