TOWARDS A MODEL OF SUSTAINABILITY FOR OPEN DATA MOTIVATED START-UPS
We appreciate the effort of François van Schalkwyk for the thorough review of the drafts of this report.

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Executive summary

The Open Knowledge Foundation (OKF) Handbook on Open Data asks whether open data businesses are ‘an oxymoron or a new model?’

Multiple attempts have been made to identify which open data business models might be appropriate for revenue generation (Tennison 2012; Ferro & Osella 2013) and how they might impact on growth (Jetzek, Avital & Bjarn-Anderson 2013), but far less research has focused on how these businesses might be structured for success. This is a vital question, as the OKF article demonstrates, and might broadly be reformulated as, ‘How might an enterprise that relies on a resource freely available to anyone (such as open data), which has often arisen from virtuous but not financial roots, which may have been brought into being by charitable grants and donations, become sustainable?’

There are multiple challenges to ‘straightforward’ commercialisation of open data organisations, whether publishers, users or enablers. These include, but are not limited to, the public or charitable nature of many open data organisations, often launched with one-off grants from foundations; the commonly expressed mission of social impact; the fact that public sector information (PSI), which constitutes the vast majority of current open data, belongs to all citizens; and the unstable nature of PSI – governments, especially in those countries without legal open data policies, could rescind access (or, conversely, enact policies that encourage mass entry into the market).

In this paper we explore the potential for open data companies to adopt the ‘social enterprise’ model, and explore exactly what value this has for the sustainability of open data organisations in Nigeria. Nigeria is an entrepreneurially motivated country. In the most recent Global Entrepreneurship Monitor study (GEM 2012), 44% of Nigerian adults of working age not currently involved in entrepreneurial activity plan to start a business in the next three years. Open markets, infrastructure and cultural norms are all supportive of entrepreneurship. Africa as a whole is also experiencing a ‘youth bulge’, with high levels of unemployment among the youth. In Nigeria, this is not just a challenge but, given the size of the market and the entrepreneurial culture, a substantial opportunity. However, there is extensive corruption, political insecurity and little governmental support for entrepreneurship.

Nigeria has a similarly interesting environment for open data. As recently as 2014, it was ranked 73rd in the world by the Open Knowledge Foundation’s Global Open Data Index but in 2015 rapidly fell to 113th, assessed as only 9% open. However, the World Wide Web Foundation’s Open Data Barometer, using different measures, ranks Nigeria as 67th in the world in 2015 on an upwards trajectory, notably because it publishes two datasets that meet a global criteria of openness that only 10% of datasets worldwide achieve.

The analysis presented in this paper reviews the results of the research via a framework derived from a literature review of social enterprise and institutional theory, utilised to address the emerging nature of both social enterprise and open data. We find demonstrable evidence for all aspects of the ‘social enterprise’ model in the open data businesses surveyed. The discussion focuses on the three main research questions. The first of these is whether social enterprise is applicable to open data businesses in Nigeria, and we find compelling synergies between the two. The second is whether we can see evidence of Nigerian open data businesses operating as social enterprises. We find that companies strongly identify with the ethos, with the nomenclature and, to an extent, with the constituent factors, although (perhaps unsurprisingly) more strongly with the intangible factors than the structural ones. Lastly, we find that social enterprise has possible sustainability power for Nigerian open data business, although this needs to be within the context of improved and supportive policy.

1 Introduction

BACKGROUND

This short research study examined open data businesses in Nigeria with a view to identifying the strategies for enhancing the sustainability of open data motivated start-ups as social enterprises. The research work is a collaboration between Omenogo Mejabi of the University of Ilorin, Nigeria, and Johanna Walker of the University of Southampton, United Kingdom.

Previously, a research team from the University of Ilorin, led by Omenogo Mejabi, participated in the Phase I studies which were part of the Exploring the Emerging Impact of Open Data in Developing Countries (ODDC) project. The Nigeria case study examined the use of...
Nigeria’s open national budget data. The case study report\(^3\) highlighted three organisations that serve as open data intermediaries through re-packaging budget data into simplified information/infographics specific to the local socio-political context. Two of these organisations – BudgIT and Connected Development – can be described as technology start-ups. The third organisation in the Nigeria case study was a project of the Centre for Social Justice (CSJ), Citizens Wealth Platform (CWP), which prints simplified extracts from the budget and makes these widely available to citizens. Combining the ODDC Nigeria case study with Johanna Walker’s expertise in open data start-ups and research in the UK and India,\(^4\) the authors aimed to examine sustainability issues associated with open data businesses in Nigeria as a basis for identifying a model for open data business sustainability that may be applicable in similar developing countries.

The specific objectives of the research are to:

- Test the social enterprise model as being applicable to businesses built on open data as a key resource;
- Develop a better understanding of the kinds of business models that may make open data start-ups sustainable in Nigeria and in other developing countries; and
- Surface and share the innovative business models being developed by open data start-ups in Nigeria.

While there is a growing body of work that examines and specifies the economic potential of open data business and value models (e.g. Bonina 2013; Janssen & Zuiderwijk 2014; Ferro & Osella 2013), there are attributes of open data – including its legitimacy, the fact that in the vast majority of cases it is publicly generated, collected and paid for data, and that often the product or service generated has a social goal – that suggest it may be useful to explore open data business models through the lens of social enterprise.

Social enterprise research situates this type of business at ‘the crossroads between the market, public policy and civil society’ (Nyssens 2006). Further, social enterprises normally have a complex mixture of goals, use market and non-market resources, and are firmly embedded in the political context (Borzaga & Defourny 2001). With a basis in economic sustainability, the social enterprise business poses additional questions about the relationship to institutions and legitimacy that could be crucial for the success of open data businesses.

**KEY QUESTIONS**

- Does the social enterprise model offer opportunities for the sustainability of open data businesses in Nigeria?
- Do open data organisations in Nigeria feel the social enterprise model is applicable to them?
- Is the social enterprise model being used by open data organisations in Nigeria?

**2 Context**

**NIGERIA AND OPEN DATA**

Nigeria is presently a federation with 36 independent states and the Federal Capital Territory (FCT). This means that laws enacted at the national level also have to be enacted at the state level. The economy of Nigeria cannot be separated from social factors as the two are highly intertwined. With 25% of Africa’s population (Oluwafemi & Ojo 2006), the country is seen as an emerging economy; and after the rebasing of the economy in 2014, Nigeria is now considered the largest economy in Africa (Dana 2014). However, the potential inherent in being the largest economy is not manifested in the living standards in Nigeria, with more than 50% of its 170 million populace living in poverty (World Bank 2014). According to USAID, 70% of Nigerians live on less than USD 1 per day, and the average life expectancy is only 47 years (USAID 2013). The country ranks 158 of 177 countries on the United Nation’s Development Programme’s (UNDP) Human Development Index (UNDP 2013). The US State Department attributes Nigeria’s lack of social and economic development to ‘decades of unaccountable rule’, and a series of successive governments that have lacked transparency, accountability and public participation (USAID 2013).

Although Nigerians generally believe that efforts to reduce corruption and improve the living standard of the people have been insufficient, some steps have been taken towards achieving greater prosperity and equality for the citizens of Nigeria. For instance, the Fiscal Responsibility Act promulgated in 2007 provides for prudent management of the nation’s resources.

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through greater accountability and transparency in fiscal operations, among other provisions. The law established the Fiscal Responsibility Commission (FRC) charged with the monitoring and enforcement of the Act to promote the country’s economic objectives.

Following this, the national budget of the country has been published online ever since (Mejabi et al. 2014) and became a catalyst for the open data movement in Nigeria. Following the push for democratic rule after many years of military dictatorship, the Freedom of Information Act (FOIA) was signed into law on the 28 May 2011. The law makes public records and information more freely available, provides for public access to public records and information, and protects public records and information to the extent consistent with the public interest and the protection of personal privacy.

In 2013 and 2014, several events occurred which contributed to the increased awareness of the concept of open data in Nigeria (Mejabi et al. 2014). Edo State became the first to launch an open government data portal in September 2013. At the national level, stakeholder consultations towards a national open government data (OGD) portal for Nigeria commenced in January 2014. During this same period, awareness in the tech community was fuelled by open data ‘hackathons’ and research activities, including events to mark the annual international open data day. At the same time, start-ups such as BudgIT and Connected Development emerged from activities of these tech events and have become the pioneers of open data business in Nigeria. Many of these organisations are youth-oriented, meaning that they are founded by and/or employ young Nigerians. This is significant because according to the World Bank, people aged between 15 and 24 (the youth bracket) account for 60% of all African unemployed (Ighobor 2013). The 2014 youth unemployment figures from the World Bank’s data site shows 14% for Nigeria (in comparison, youth unemployment is at 48.8% in South Africa and 3.2% in Ghana). Nevertheless, Africa’s growing youth population comes with high energy, creativity and talent, which are also the key to future prosperity (African Economic Outlook 2012). Given the current youth bulge in Africa, open data organisations in Nigeria create the opportunity to absorb greater numbers of unemployed youth into the labour market. This view is supported by the 2012 Nigeria country report released by the Global Entrepreneurship Monitor which stated that 44% of working age Nigerian adults not currently involved in entrepreneurial activity plan to start a business in the next three years (GEM 2012).

In terms of an open data culture in Nigeria, there are conflicting reports as to whether it is maturing. While there is an upward movement in its ranking on the Web Foundation’s Open Data Barometer (ODB) from 75 in 2013 to 68 in 2015 (Open Data Barometer 2015), the reverse is the case on the Open Knowledge Foundation’s Open Data Index (ODI), which ranked Nigeria 73rd in the world in 2014 and down to the 113th position in the 2015 rankings (Open Data Index 2015). Furthermore, while the 2015 ODB Africa Regional Report indicates that Nigeria is the only country found to have fully open datasets, the ODI assesses Nigeria as being only 9% open. These contradictions suggest the need for continued research on the Nigeria open data ecosystem.

DEFINING SOCIAL ENTERPRISES

Currently, and in the vast majority of territories, the term ‘social enterprise’ describes the purpose of a business, not its legal form. The British Columbia Centre for Social Enterprise states, ‘a social enterprise has two goals: to achieve social, cultural, community economic and/or environmental outcomes; and, to earn revenue’ and the UK Department for Business, Innovation and Skills (2011) defines a social enterprise as, ‘a business with primarily social objectives whose surpluses are principally reinvested for that purpose in the business or in the community, rather than being driven by the need to maximise profit for shareholders and owners’.

Countries such as the UK and Canada have in place a recognised legal structural vehicle that social enterprises can adopt, such as the Community Interest Company (CIC) in the UK and the Community Contribution Company in Canada. CIC registration confers benefits such as eligibility for social investment tax relief.

Other definitions focus on what a social enterprise is not: ‘a business-like contrast to the traditional non-profit organisation’ (Dart 2004) and ‘distinguished from other organisations in the social economy by virtue of the trading of products and services’ (Spear 2001). Jones (2015) notes that it is common practice to see social enterprise on a spectrum from charity to a traditional profit-maximising company where social impact is merely an add-on or part of a corporate social responsibility programme. The
contrast with either market-driven businesses or charities or non-governmental organisations (NGOs) which focus on the creation of social value without regard to the financial bottom line, fundamentally agrees with the initial definition – that social enterprises aim for sustainability in both spheres.

It should be noted that a social entrepreneur is not (necessarily) someone who founds a social enterprise, and scholars and practitioners identify a clear distinction between the two. A social entrepreneur is an individual who focuses on innovation and impact rather than income, with less regard for financial sustainability. A social enterprise must have an earned-income strategy, and a ‘realistic prospect of generating sufficient income to exceed costs, now or at some point in the future’ (Fury 2010). De Bruin, Shaw and Chalmers (2014) note a social enterprise can be less about the innovation concept of entrepreneurship, and social enterprise activities may include ‘revenue-source diversification, fee-for-service program development, private sector partnership and social-purpose businesses’ (Dart 2004).

It is key that engagement in the entrepreneurial process is for social and public gain, not for the unlimited financial benefit of an individual or capital investors. Part of what makes them entrepreneurial is their independence and economic risk-taking, which is not only more valued than in traditional not-for-profit forms but also more acceptable. Laville and Nyssens (2001) caution that the entrepreneurial basis of social enterprises does not mean that social enterprises should be excluded from appropriate public subsidies.

Social, political and economic reasons for growth of social enterprise

There are multiple, heterogeneous social, political and economic reasons for the growth of social enterprise across the globe, but it is now reasonably established in many developed economies, where the economic and political aspects are inextricable. Three key reasons for this growth are:

1. A reduction in welfare in the developed world and an accelerating movement away from onus resting on the state to solve social problems, leading to ideologies such as ‘The Big Society’ (Laville & Nyssens 2001). Consequently this has led to the importance of social enterprises in the delivery of public services (Mason, Kirkbride & Bryde 2007). This meshes with the philosophy that open data will empower citizens;

2. Social enterprise is regarded as a viable response to disappointments with existing forms of capitalism (Hart & Milstein 2003); and

3. The language of the marketplace has become dominant when talking about productive organisations (Dart 2004).

These ideologies have created an environment in which the social enterprise model can confer both organisational and industry legitimacy.

Social enterprise and legitimacy

Legitimacy is referred to here not in the legal but in the institutional sense. Like other organisations, social enterprises are a product of rational and institutional elements. Institutions are defined as ‘multifaceted, durable social structures, made up of symbolic elements, social activities, and material resources’ (Scott 2001: 49).

Institutional theory posits that organisations seek legitimacy – where those external to the organisation confer a form of approval on the actions of the organisation – for their forms and activities in order to become accepted and established (Low 2006). In deriving their structural form from the commercial market, Dart (2004) suggests that, ‘morally legitimate social-enterprise activities remain relatively immune from performance based criticism and delegitimation’.

This is in part derived from the role of stakeholders in social enterprises. Stakeholder literature is built on the concept that focusing on shareholders above all other stakeholders is problematic and all stakeholders have a legitimate reason to be considered. Social enterprise is widely viewed as a pro-stakeholder organisational form (Low 2006). Central to this is asset ownership where no single person should be able to make a direct claim on the assets. Although there is no single model of ownership, stakeholders are more important than investors (Grootaert et al. 2004).

Consequently, social enterprise as a model may offer open data businesses the opportunity to demonstrate they have chosen a mode of organisation that meets established criteria held by society about valid organisational models. This is potentially important for open data for two reasons. Firstly, taking on the mantle of an already legitimate business reduces the time required for a new sector to become accepted and understood socially. Secondly, it reduces potential for criticism over the use of public sector information for commercial use.
Social enterprises and sustainability

Sustainability is a particular challenge for open data businesses given the requirement for both the demand and supply side to become sustainable concurrently. Currently, on the supply side, governments are the major investors in both opening their own data and supporting initiatives to encourage industry and others to open their data. In some countries (although not Nigeria), the opening of a limited selection of data has a legal basis. To encourage further and sustained opening, however, the successful utilisation of open data in certain sectors, including business innovation, is required. A large number of open data utilising organisations, including some in this study, are currently reliant on funding from external sources. If this funding ceases to exist, the utilisation ceases and the purpose for data opening disappears. Consequently, a workable model for sustainability is key to the success of open data.

The first requirement of sustainability in the context of open data, then, is the creation of an earned-income stream that is not only able to support the organisation's current activities but create profits that can be re-invested in the business. The social enterprise model internalises and integrates self-sustainability in a way charities do not. Further than this, a sustainable enterprise focuses not only on economic value but is also concerned with efforts to address social challenges that create social, environmental and economic (triple bottom line) value (Hart & Milstein 2003).

However, in for-profit firms, social costs have traditionally been seen as imposing a constraint upon the firm. Recently, scholarship has begun to argue that taking into account social needs is the only way that companies will succeed in future (Kramer & Porter 2011). Kramer and Porter (2011) focus on ‘shared value creation’ and suggest that companies could innovate and grow by redefining their purpose to ‘generating economic value in a way that also produces value for society by addressing its challenges’. This approach explicitly connects company success with social progress and clarifies that societal as well as economic needs define markets.

Kramer and Porter (2011) also state that shared value has the potential to redefine capitalism and its relationship to society. This is particularly relevant to countries still developing. The consideration of shared value creates awareness of unserved markets and unmet needs and consequently operates globally as a tool for innovation and growth in productivity.

Social capital, networks and resource mobilisation

Social capital is defined in terms of the non-material groups, networks, norms and trust that are available to organisations for productive purposes (Meagher 2006). Social capital is mobilised in projects, around a dimension of community service. Stakeholders become involved because they see projects as a way to share economic relations and conversely receive collective benefits. Laville and Nyssens (2001: 313) characterise social enterprises particularly as those organisations whose resources in part come ‘from a social capital based on reciprocal relations developed in the public sphere’.

In traditional business there can be a tension between the mobilisation of resources and the distribution of the rewards of those resources. Social enterprise has the capacity to reduce this tension by mobilising social capital for non-financial ends. Jetzek et al. (2013) state that efficient use of data sets resources free. Therefore there appears to be an inherent synergy.

The allocation and control of resources is integral to social enterprise governance, as access to resources enables the organisation to meet social objectives by improving the service that they deliver (Mason, Kirkbride & Bryde 2007). Further, through their actions, social enterprises ‘promote social bonds through voluntary engagement, legal autonomy and equality of members’ (Laville & Nyssens 2001: 332).

3 Methodology

CONCEPTUAL MODEL

The literature review on social enterprise and business sustainability provides a basis for conceptualising a model for sustainability of open data businesses. We posit that the elements contributing to sustainability can be clustered under organisational factors, structural factors, intangible factors, and external factors. These are summarised along with the sources from literature in Table 1 and as a schematic representation of the conceptualised model for open data business sustainability in Figure 1.

The conceptual model is used as a basis for developing the data collection instruments and subsequent analysis.
### Table 1: Sustainability factors and their elements, with literature sources

<table>
<thead>
<tr>
<th>Conceptualised factors:</th>
<th>Elements contributing to sustainability</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational</td>
<td>Motivation</td>
<td>Laville &amp; Nyssens 2001</td>
</tr>
<tr>
<td></td>
<td>Access to resources</td>
<td>Mason, Kirkbride &amp; Bryde 2007</td>
</tr>
<tr>
<td></td>
<td>Allocation of resources</td>
<td>Mason, Kirkbride &amp; Bryde 2007</td>
</tr>
<tr>
<td></td>
<td>Earned income strategy</td>
<td>Fury 2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kramer and Porter 2014</td>
</tr>
<tr>
<td>Structural</td>
<td>Ownership</td>
<td>Low 2006</td>
</tr>
<tr>
<td></td>
<td>Independent management</td>
<td>Laville &amp; Nyssens 2001</td>
</tr>
<tr>
<td></td>
<td>Control of resources</td>
<td>Mason, Kirkbride &amp; Bryde 2007</td>
</tr>
<tr>
<td></td>
<td>Ability to meet social objectives</td>
<td>Mason, Kirkbride &amp; Bryde 2007</td>
</tr>
<tr>
<td>Intangible</td>
<td>Social capital</td>
<td>Laville &amp; Nyssens 2001</td>
</tr>
<tr>
<td></td>
<td>Legitimacy</td>
<td>Dart 2004; Low 2006</td>
</tr>
<tr>
<td></td>
<td>Build trust</td>
<td>Laville &amp; Nyssens 2001</td>
</tr>
<tr>
<td>External</td>
<td>Stakeholders</td>
<td>Grootaert et al. 2004; Low 2006; Kramer and Porter 2014</td>
</tr>
<tr>
<td></td>
<td>Investors</td>
<td>Grootaert et al. 2004; Low 2006</td>
</tr>
<tr>
<td></td>
<td>Political environment – policies, legal framework, etc.</td>
<td>Meagher 2006</td>
</tr>
<tr>
<td></td>
<td>Environmental value</td>
<td>Hart &amp; Milstein 2003</td>
</tr>
<tr>
<td></td>
<td>Access to public subsidies</td>
<td>Laville &amp; Nyssens 2001</td>
</tr>
</tbody>
</table>

### Figure 1: Conceptual model of open data business sustainability

- **Organisational factors**
  - Motivation
  - Access to resources
  - Allocation of resources
  - Earned income strategy

- **Structural factors**
  - Ownership
  - Independent management
  - Control of resources
  - Ability to meet social objectives

- **Intangible factors**
  - Social capital
  - Legitimacy
  - Build trust

- **External factors**
  - Stakeholders
  - Investors
  - Political environment policies, legal framework, etc.
  - Environmental value
  - Access to public subsidies
DEFINING AND IDENTIFYING OPEN DATA BUSINESSES

In identifying the companies to be approached for the study, the first step taken was to establish what defines an ’open data business’.

The Open Data Institute defines an open data business as ‘one that uses, produces, or otherwise invests in open data as a key aspect of its work’. This includes data publishers, end users, and what it terms ‘enablers’, consultancies, training services or other intermediaries such as those identified by Van Schalkwyk et al. (2016b). A less robust but equally important issue in an emergent sector is to determine whether the enterprise regards itself as an open data business, as this will affect what strategies it follows. Consequently, we sought to identify companies for inclusion in the research that:

- Meet the ODI definition;
- Regard themselves as an open data business;
- Seek to become sustainable; and
- Comprise an enterprise, rather than a single service, product or app.

In cases where we did not have sufficient information to establish whether an organisation met the criteria, we asked companies to self-identify based on the first three criteria.

Having identified eight open data businesses, we asked each business for their consent to participate in the study before administering the research instruments. The final list of businesses, their locations in Nigeria and websites are presented in Table 2.

Table 2: List of businesses in the study

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Website</th>
</tr>
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<tbody>
<tr>
<td>BudgIT</td>
<td>Lagos</td>
<td><a href="http://www.yourbudgit.com">www.yourbudgit.com</a></td>
</tr>
<tr>
<td>Connected Development</td>
<td>Abuja</td>
<td><a href="http://www.connecteddevelopment.org">www.connecteddevelopment.org</a></td>
</tr>
<tr>
<td>SabiHub</td>
<td>Benin</td>
<td><a href="http://www.orodataviz.com">www.orodataviz.com</a></td>
</tr>
<tr>
<td>Reboot</td>
<td>Abuja</td>
<td><a href="http://www.pinigeria.org">www.pinigeria.org</a></td>
</tr>
<tr>
<td>Paradigm Initiative</td>
<td>Lagos</td>
<td><a href="http://www.cMapIT.com">www.cMapIT.com</a></td>
</tr>
<tr>
<td>Open Development Initiative</td>
<td>Uturu, Abia State</td>
<td><a href="http://www.reboot.org">www.reboot.org</a></td>
</tr>
<tr>
<td>Orodata</td>
<td>Lagos</td>
<td><a href="http://www.sabihub.com">www.sabihub.com</a></td>
</tr>
<tr>
<td>C-Map-It</td>
<td>Ogbomosho</td>
<td><a href="http://www.connecteddevelopment.org">www.connecteddevelopment.org</a></td>
</tr>
</tbody>
</table>

DATA COLLECTION

Given the few companies operating in the open data space in Nigeria, we adopted a qualitative research design. The data was collected in two parts. Part I comprised a self-administered questionnaire with questions about the company profile (Appendix I). The Part I questionnaire was preceded by the Participant Consent Form. The form was sent to the contact person at each company via email to complete and return using the same channel.

The approach for Part II of the data collection process was to do in-depth, face-to-face interviews with the companies in Abuja and Lagos. Other interviews were done using a combination of Skype and voice calls over mobile phone. As much as the technology allowed, the interviews were recorded. We asked each respondent for answers to the interview questions which were divided thematically to aid the logical flow of questions but which we ensured provided evidence for assessing the components of our conceptual model of open data business sustainability (Figure 1). The thematic clusters were:

- Identifying the business model;
- How the business proves ‘value add’;
- The institutional aspects that affect the ability to create a product/service or revenue streams;
- Using public data to make money; and
- The effect of the political context on sustainability.

The complete interview guide used for Part II of the data gathering is shown in Appendix II.

ANALYSIS

The respondent answers were summarised into a table in Excel and the contents were synthesised to elicit information pertinent to the research.

LIMITATIONS

This qualitative research unveils themes, challenges, and provocations towards a model for open data business sustainability, but does not aim to provide statistical statements about open data or social enterprise in Nigeria or to test the proposed model statistically.

7 http://theodi.org/open-data-means-business
4 Findings

This section provides an overview of some of the demographics of the organisations and gathers their self-perceptions before examining the businesses models to establish whether the structural factors of the social enterprise are present. The section then goes on to examine the intangible factors before going on to address external factors.

The following tables show responses of the surveyed companies to the questionnaire. The order of responses are deliberately inconsistent across tables to preserve some anonymity, and some answers have been edited to remove names. However, this is primarily to enable the responses to be examined at face value, as full de-identification is impossible in a sample of this size.

ORGANISATIONAL DEMOGRAPHICS

All the companies declared social impact as a primary motivator. Six out of the eight had current or near-future revenue streams. Seven of the companies saw themselves as end-users. Of these the majority saw themselves also as intermediaries. One company identified as neither an end-user nor intermediary but as a producer of crowdsourced open data. Self-identification is complicated by the fact that there is no established definition of an NGO versus a social enterprise, and because Nigeria does not officially recognise social enterprises. (A quantitative analysis on social enterprise in Nigeria would be challenging for this reason.)

Table 3: Summary of organisational demographics

<table>
<thead>
<tr>
<th>Current funding</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externally funded</td>
<td>5</td>
</tr>
<tr>
<td>Self-funded</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Open data use</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary focus</td>
<td>7</td>
</tr>
<tr>
<td>Supporting role</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of open data used</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>2</td>
</tr>
<tr>
<td>Education</td>
<td>3</td>
</tr>
<tr>
<td>Elections</td>
<td>3</td>
</tr>
<tr>
<td>Energy</td>
<td>2</td>
</tr>
<tr>
<td>Health</td>
<td>3</td>
</tr>
<tr>
<td>Government spending</td>
<td>6</td>
</tr>
<tr>
<td>Geo-data</td>
<td>2</td>
</tr>
<tr>
<td>Legislation</td>
<td>2</td>
</tr>
<tr>
<td>Security</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 4 below illustrates that, as expected, some companies struggled with self-identification, but others have found it easy to self-identify as social enterprises despite the lack of a legal framework. Company 2 is creating a social enterprise from an amalgam of a revenue-making company and a socially-oriented NGO. This makes it more challenging to understand whether the three companies that clearly identify as NGOs (one of which has a commercial revenue stream) do so because of the regulatory framework or simply because the NGO designation is more recognised and available.

Table 4: Q12 Do you identify as an NGO, or enterprise, a start-up, or social enterprise?

1. You may see us in the next few months growing into an enterprise. But right now, we are more of an NGO. We were a start-up at the beginning but we are no more a start-up. Nigeria does not capture SEs. You are either private or NGO.

2. We identify as an NGO that is evolving into a social enterprise with 50% of revenue from our revenue arm and 50% from grants and other sources.

3. We identify as a civic tech start-up (technology for citizens) that is looking to be a social enterprise.

4. Social enterprise.

5. We are a start-up that will always identify as a social enterprise.

6. We are a ‘social impact firm’. Social enterprise is the closest to this.

7. We identify as a start-up, a social enterprise and as an NGO.

8. NGO.

The self-identification of companies was probed with Q13 (Table 5).
Table 5: Q13 How do you feel about the concept of social enterprises?

It is a good thing. A way to do social good. Though the problem of ownership is there because SE may have equity. Or a private organisation that is doing good. A SE does more of CSR things.

Nigeria is slow in implementing the machinery to help register SEs. That is why we did business name which is closer to enterprise. Company is a Limited Liability Company (Ltd.)

It is not about a feeling – it is what we have to i.e. we have a social goal and we use commercial activities to generate the funds that will allow us carry out the desired goals. Nigeria is a tough environment to do business in.

In 2007 I was referred to as a social entrepreneur. Social enterprise solves social problems. Contributed revenue is from 3 sources. In 2014 biggest revenue came from a social media consulting. Our sustainability secret is consultancy.

There is always a gain somewhere in the value chain. Usership is king.

On the other hand, I think it is good, because it creates conversation. Also a danger, because there are a lot of organisations out there who have a lot of social impact without labelling themselves as social enterprises.

Social enterprises in countries like Nigeria catalyse development especially in the area of electricity supply. For example, Coca-Cola has left Nigeria due to the electricity problem. SEs provide a wonderful approach to solve such problems.

People register as NGOs and call themselves a social enterprise; a lot of mix-up in the registration guidelines.

These responses again refer to the challenges of registration, while also demonstrating concatenation between social entrepreneurship and social enterprise. Company 3 is very close to the definition of social enterprise provided elsewhere in this report and acknowledges that it can be a solution to a difficult business and social environment. Company 4 immediately identifies the idea of earned income as being central. Company 6 sounds a note of caution, warning that labelling runs the risk of exclusion.

Integral revenue streams

The measures of success provided in Table 6 are both financial and social. However, there were no explicit environmental factors suggesting that a more developed triple bottom line is not also a measure of success.

Table 6: Q2 How do you measure the success of your business?

<table>
<thead>
<tr>
<th>Measure of success</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>1</td>
</tr>
<tr>
<td>Assets/resources</td>
<td>1</td>
</tr>
<tr>
<td>Demand for products</td>
<td>1</td>
</tr>
<tr>
<td>Social impact of projects</td>
<td>4</td>
</tr>
<tr>
<td>Influence/recognition</td>
<td>3</td>
</tr>
<tr>
<td>Customer satisfaction/feedback/engagement</td>
<td>2</td>
</tr>
</tbody>
</table>

Interestingly, only three organisations mentioned financial measures as a way of judging success and one did so implicitly. Two organisations identified dissemination or reach of the data as a success measure but not the resulting social impact. None spoke of financial measures alone.

STRUCTURAL FACTORS

Trust-based ownership

Four of the companies (Table 7) are governed by a board of trustees, which is in line with the social enterprise model. Assets are owned by the organisations, as required by Nigerian law.

Table 7: Q4 How is your business ownership structured?

| Started with co-founders. In 2013, a Board of Trustees was instituted. Organisation is still evolving. In 2 to 3 years, the ownership structure may change. |
| Our non-profit is a Trusteeship with two co-founders. Our commercial arm shareholders include the co-founders and some long-serving staff. |
| Registered as an Incorporated Trusteeship. |
| Have a parent company. |
| Very large structure. Parent company in the USA. |
| Owned by founders with investment from one of the other companies. |
| The organisation does not have any shares or shareholders, but is owned by trustees. |
| Limited by Guarantee (LBG) Founder & CEO reports to the Board of Directors. |

We asked Q11 (Table 8) to explore whether companies felt there was an integral and inextricable reason for being a social enterprise with open data, or whether that was simply a choice. About half the companies view the raw material and the broader model as substantially interrelated.

Table 8: Q11 Can you envisage another use for your open data product or service with more financial but less social benefit?

From data gathering, in the community, by aerial survey or aerial census.

A business-to-business model could grow from education, health and social data.

OD for businesses + Visualisation = more financial rewards. Policy reforms e.g. Fulani herdsmen crisis spots in Nigeria superimposed with climate change data could point to the reason for the crisis and therefore lead to a solution.

Our internal open data generates feedback from the public. This has led to saving money through suggestions from the public. For example someone who went through our audited accounts on the Internet made a suggestion on how we could save on generator fuel costs by moving to solar.

Yes, our APIs are still open but capped based on data downloads that triggers the need for subscription. While we also develop simple applications for a fee that covers the API subscription.

Technology platforms will have more financial benefit e.g. platform for public sector that will be more profitable in the private sector.

We imbue all products with sustainability plan e.g. for Crowdwatch data when it is fully up and running will be curated from some sources and a little subscription will be charged for access to the platform. Down the line, the children from the Hackathon Club will start innovating.

Open data from agriculture and education, environment, commerce can produce financial rewards.
Social impact

In Q17 we asked what the sources of the companies’ financial support were. None of the organisations received direct financial support from government. For half this was a matter of policy. However, one organisation did have government as a customer for their training services. All the companies except one explicitly define a social impact in their answer to question Q1 in Table 9. Further analysis of other answers clarifies that social impact is implicit in the other answer.

Table 9: Q1 How would you define the goal of your organisation?

Environmental issues, transparency and accountability
Education of public about data for increased citizen participation
Data research – monitor elections with sentiment analysis
ICT capacity building and ICT policy development
Research and public policy development
Foster relationships between individuals and institutions
Catalyse development for job creation
Address social problems through ICT

INTANGIBLE FACTORS

Legitimacy

Table 10 shows that the organisations make a clear link between value for society – especially from innovation – created by the use of the data and the moral legitimacy (whether real or perceived) of earning revenue from public data: ‘The business should be social enterprise oriented. Private profit is problematic but social profit is good’ [Organisation 7]. Further, there was the suggestion that being open in return legitimises the process: ‘Organisations should open up their own data’ [Organisation 4].

Table 10: Q21 Is there an issue with earning revenue from publicly-owned data?

<table>
<thead>
<tr>
<th>Issue</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a skill set required to use open data. It is morally acceptable only if it is used for social good.</td>
<td></td>
</tr>
<tr>
<td>Money is made from the value-added and from access, inference and perspective. It needs to be done to sustain innovation for citizens. It is ok within the limits of fair use and being innovative with the data. Using the data for public good while making money is fine. You cannot sustain the business without making money. All our data is generated for open access. Organisations gaining income from public data is a bonus for government.</td>
<td></td>
</tr>
<tr>
<td>Yes, because they can see there are benefits such as jobs. They don’t understand the merits of the data business. They associate internet businesses with scams. Yes, it’s creative and interesting to many. The key issue is not legitimacy but impact. Don’t think it matters.</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

All except two of the companies identify multiple stakeholders up and down the value chain and take a very broad, social enterprise-style view of who or what constitutes a stakeholder, with four companies identifying the (traditional) media as such (Table 12). Two companies note that any citizen who is reached by their social media activities are their stakeholders. One company displays a view of stakeholders as the beneficiaries that could be characterised as a ‘charity’ stance and another’s could be characterised as ‘for-profit’.

Table 12: Q7 Who are the stakeholders in your success?

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The whole community, women, farmers. Media has always been a major contributor to our success. Champions in government (sometimes), IDPSs, community leaders, traditional rulers especially in the North. The public, the media, the government, donor partners, civil society organisations, social media fans – which we exploit for viral marketing using Facebook and Twitter. Our clients, staff, personnel/workers. My team, suppliers, investors, EIE Nigeria; Nigerian citizens on social media; This Day on Sunday through EIE Nigeria. Board, partners, employers, beneficiaries. This is still a private information, considering that we are still in talks for potential investments. The beneficiaries of our services – clients. Key people in the team. Knowledge contributors, space contributors. Federal Ministry of Communication Technology, IDRC and World Bank. Other similar organisations. Funders, trainees, partners, government, students, citizens in general, CSOs, journalists and news media, technology entrepreneurs.</td>
<td></td>
</tr>
</tbody>
</table>

Social capital – networks

These networks cover a range of types (Table 13), from sectoral (such as GODAN, Global Open Data for Agriculture and Nutrition), through open government data (such as The GovLab) and technology (Yaba Tech
Community) and also functions: mentoring, coaching, social events and action groups. The variety of types suggests the organisations are well-connected and the variety of functions suggests they are capitalising on these connections.

Table 13: Q28 Are you part of a formal or informal support network?

<table>
<thead>
<tr>
<th>Network Type</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal – OKFN, OGP, Follow the Money international network, School of Data.</td>
<td>In Nigeria, there is the Open Alliance though not so active.</td>
</tr>
<tr>
<td>Informal – of the Technology Community through the Co-Creation Hub (cCHUB)</td>
<td>which is trying to turn Yaba, Lagos into a Tech City. Lagos State Coalition of Civil Society. Networks in Nigeria at large, and across West Africa. International networks like OKFN, IBP, Open Alliance, MAVC, Co-Founder is Fellow of ICFJ, Aspen.</td>
</tr>
<tr>
<td>Part of an informal support group of similar practitioners.</td>
<td>Yes. Net Rights NG, GIPP – this is global. Informal such as annual events. Part of Yaba tech community with the likes of cCHUB, Techno Vision, Andela, etc.</td>
</tr>
<tr>
<td>We are working towards this. But presently with TheGovLab academy getting coached to build a world standard product.</td>
<td>Some formal networks such as in Edo State, Network of NGO’s in Port-Harcourt which is like a coalition. Hack the Hackers from Data Journalism.</td>
</tr>
<tr>
<td>Part of IEEE, Philanthropist for learning and exposure, Executive Directors Forum in LinkedIn. Hoping to catalyse on Open Data Interest Community in Nigeria.</td>
<td>SD4N group through Connected Development. Community which has 250 members. GODAN.</td>
</tr>
</tbody>
</table>

Social capital – resource mobilisation

Question 14 (Table 14) attempted to investigate how democratic the efforts and returns of these businesses are, and there is ample evidence here. Crowdsourcing businesses depend very much on the creators of the data, the crowd, feeling cherished rather than exploited. Other examples include the creation of narrative that is relatable to citizens and the almost open source-like activities of Organisation 8, who spent time creating something that anyone could use.

Table 14: Q14 How are you adding value to open data?

<table>
<thead>
<tr>
<th>Value-Adding Activities</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using for storytelling and publishing in accessible form</td>
<td>Through analysis, visualisation, access</td>
</tr>
<tr>
<td>Advocacy work with data</td>
<td>Creating apps</td>
</tr>
<tr>
<td>Providing analytics and cheaper access to datasets</td>
<td>Input into research</td>
</tr>
<tr>
<td>Identifying and publishing data</td>
<td>Value is in giving. One of our products, Open Data Companion on Android, designed to give access to all open data around the world, is on the platform of UK Open Data portal.</td>
</tr>
</tbody>
</table>

Analysis of Q18 (Table 15) is challenging as it is difficult to separate resources from impact in the answers. However, two organisations clearly saw a relationship where the data and the knowledge it created allowed them to seek resources in the form of ‘volunteers, partners or donors’ or building a community. Others noted that knowledge was created.

Table 15: Q18 Does the data you use allow resources to be mobilised?

<table>
<thead>
<tr>
<th>Resource Mobilisation</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge, more assets from the government source.</td>
<td>Yes. Through tracking the country’s budget data which increases the number of assets available to the masses, reduces overheads of the government in the budget, increased efficiency in government. Through making the budget of Nigeria available, we are bridging knowledge gaps across board, saving money for government.</td>
</tr>
<tr>
<td>Knowledge which led to empowering people, leading to actionable decision.</td>
<td>Spending between PDP and APC on newspaper advertisement alone preceding the 2015 elections was crunched from data on csj.org. – citizens (people, electorate); knowledge which led to empowering people, leading to actionable decision.</td>
</tr>
<tr>
<td>Knowledge more than ever; building a more vibrant community.</td>
<td>We use the data to seek volunteers or partners or donors.</td>
</tr>
</tbody>
</table>

EXTERNAL FACTORS

This section addresses aspects beyond the control of the organisations, such as the effects of governmental policy on operations. Open data is addressed first (Tables 16 and 17), then social enterprise (Tables 18 and 19).

Table 16: Q19: Is the variety and quality of open data in Nigeria enough to support new open data businesses?

<table>
<thead>
<tr>
<th>Quality of Open Data</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real open data is not available. Enterprises need to go an extra mile in making their data open.</td>
<td>Yes and No. Access to information is a problem. Organisations need to know that there is no harm in opening up their data.</td>
</tr>
<tr>
<td>Quality of data even when published is a problem.</td>
<td>No, not practised by default. Quality of data even when published is a problem.</td>
</tr>
<tr>
<td>Improved efficiency in applying allocated funds, also policies are influenced, learning or knowledge is revealed.</td>
<td>Not yet, but we are building towards a platform that will open up access to local datasets in innovative ways.</td>
</tr>
<tr>
<td>Yes, very, very well. It allows data to be mobilised, utilised and distributed.</td>
<td>No, it is not even a start or a scratch. It is not updated in a timely manner.</td>
</tr>
<tr>
<td>Yes. Through tracking the country’s budget data which increases the number of assets available.</td>
<td>No. A lot of data in silos, duplicated everywhere and incomplete. Data clashing at the State level/Federal level. Unverified data. Low quality.</td>
</tr>
</tbody>
</table>

The companies identified a lack of not just public, but commercial data; and at several levels, including national, regional and municipal. They suggest there will always be a gap, even with excellent data, for data enrichment.

‘There should be compulsory sensitisation especially of top management of those organisations.’ [Organisation 3]
“For any data driven project you have to include data enrichment or data collection especially with education, health, etc.” [Organisation 8]

To the question ‘How does Nigeria compare to other countries in creating open data businesses?’ organisations felt that Nigeria was at the very early stages of open data provision and use, and that the problem was not solely limited to governmental efforts, or lack thereof.

“We have not started.” [Organisation 4]

“The awareness is not really there. The interest from government is not there … The champions of open data are very few.” [Organisation 8]

“There is a problem in the whole open data chain.” [Organisation 7]

Most organisations noted that a general lack of data characterised Nigeria. However, one company reported that despite the fact that open data was just emerging, they felt optimistic. Countries that were compared positively to Nigeria include Tanzania, Kenya, South Africa, Ghana and Rwanda. One organisation noted that they felt other countries were achieving more by focusing on a specific aspect of open data; that Ghana had a ‘business strategy’ for open data and South Africa focused on research data.

Table 17: Q32 What would be the effect on your business of the Nigerian government enacting an open data policy?

<table>
<thead>
<tr>
<th>Effect Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A constraining policy would affect the company but not close it</td>
</tr>
<tr>
<td>Expand tremendously</td>
</tr>
<tr>
<td>If a culture develops, this will create opportunity</td>
</tr>
<tr>
<td>Half our problems will be solved</td>
</tr>
<tr>
<td>Not sure</td>
</tr>
<tr>
<td>It will be easier to work with something that has more awareness and understanding</td>
</tr>
<tr>
<td>Some states do have an open data policy. It could be constricting or reduce effort</td>
</tr>
<tr>
<td>Confidence, support and business will grow</td>
</tr>
</tbody>
</table>

The majority of organisations felt that the effects of an enacted open data policy would be positive. However, this was one of the more surprising results as there was a wide range of conflicting responses which sounded a note of caution. One organisation envisaged that a policy might be limiting rather than opening up more data and two were unsure of what the effects might be. One organisation noted that another of the surveyed organisations was active in ‘pressurising’ for Nigeria to adopt an open data policy. Another commented that a change in administration and priorities had pushed open data further down the agenda.

Table 18: Q24 What do you think are the biggest challenges for social enterprises?

<table>
<thead>
<tr>
<th>Challenge Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge bank or knowledge resource to know how to grow and scale the organisation. Many of us jump into creating organisations not knowing how organisations evolve. Being in the right network. Funding.</td>
</tr>
<tr>
<td>1. Government unwilling to adapt to the concept. 2. Society doesn’t understand. 3. Trust is an issue, fear of fraud. 4. The process of registration is very slow with a lot of bottlenecks.</td>
</tr>
<tr>
<td>From data point of view – most understand the problems but they do not know the solutions. Also funding is necessary so when the solution is known, it can be actualised.</td>
</tr>
<tr>
<td>1. Making nomenclature to be more important than value. Similar problem to ICTs. 2. Sustainability – balance between adding value and being sustainable. 3. Focus – people want to do everything instead of focusing on one thing to do that well.</td>
</tr>
<tr>
<td>I cannot think of any for now except for finances.</td>
</tr>
<tr>
<td>The market is the biggest challenge.</td>
</tr>
<tr>
<td>1. Most people don’t even have knowledge/passion of SE. 2. Funding. 3. Contacts and network of mentorship</td>
</tr>
<tr>
<td>Sustainability and consistency. On consistency – SE’s need to be known for something and doing just that. Funding.</td>
</tr>
</tbody>
</table>

We asked this question (Table 18) in order to understand whether the organisations identified anything insurmountable for the adoption of social enterprise as an appropriate business model for sustainability. The issues were largely structural in terms of the social enterprise model above, with issues around the regulatory framework for and experience of social enterprise being noted. Beyond that, many of the issues were those of finances and market challenges that any business might face.

Q27 (Table 19) produced a broad range of suggestions. A number of comments were around the lack of regulatory framework for social enterprises, for instance, creating a specific tax code might be encouraging. It is interesting to see a suggestion that government could itself become a customer of open data social enterprises.

Table 19: Q27 What more could the government do to support social enterprise?

<table>
<thead>
<tr>
<th>Suggestion Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitate registration as social enterprises and improve funding</td>
</tr>
<tr>
<td>Facilitate start up, create an appropriate tax code, fund social impact projects and open data sets</td>
</tr>
<tr>
<td>Join the Open Government Partnership, institute open data policies and engage enterprises to provide services</td>
</tr>
<tr>
<td>Provide infrastructure</td>
</tr>
<tr>
<td>More funding</td>
</tr>
<tr>
<td>Reduce overhead costs of doing business in Nigeria</td>
</tr>
<tr>
<td>Reduce registration fee for social enterprises, harmonise taxation</td>
</tr>
<tr>
<td>Funding, easier incorporation</td>
</tr>
</tbody>
</table>

However, again, the comments are largely applicable to all types of businesses, such as funding, incorporation and the challenges of burdensome overhead costs. This is particularly true where infrastructure is not robust.
Data companies can consume a lot of energy and this can be problematic: ‘If power is fixed, the cost of that to [Organisation] goes down and this releases more funds to be applied to programmes’ [Organisation 4].

5 Discussion

In this section we explore what can be determined from the above analysis that offers support or critique to the dimensions of social enterprise as a model for sustainability for open data businesses in Nigeria.

Does the social enterprise model offer opportunities for sustainability for open data businesses in Nigeria?

There are compelling synergies between the open data and social enterprise concepts. They ‘allow citizens to intervene in everyday life problems’ (Fury 2010), to transform that which previously went undiscovered or taken for granted. Open data is particularly good at surfacing this.

Throughout this paper we have returned to the question of whether there is something inherent in open data that allows multiple types of resources to be mobilised in a sustainable social enterprise manner and concluded that for multiple areas, the organisational, structural, intangible and external factors of social enterprise complement and facilitate the open data activities taking place in Nigeria as demonstrated by the companies in our survey.

In terms of financial sustainability and ensuring open data products and services are focused on eager and receptive audiences, there is a very good match. However, this is probably not sufficient in the absence of supportive policies. More policy guidance would be desirable in order to facilitate continuation and growth. Ecosystems, and their place in developing a strong open data environment, have been at the heart of open data research for some time (Davies 2010; Heimstadt 2014; Sanderson 2013). On the one hand, all the companies are accessing open data networks. On the other, they note a lack of governmental effort in this area that leads to the absence of crucial components of a successful ecosystem. The importance of stakeholders in the social enterprise model could help companies overcome these limitations; by focusing on their wider stakeholder group, they could be enabled to build an ecosystem with minimal government help.

Open data businesses, perhaps especially in developing companies, need to have sustainable inputs and outputs and social enterprise could be a model for this. Companies seem well-networked, although this finding is attended by the caution that Nigeria has not been able to utilise social networks for growth as effectively as other countries (Meagher 2006).

Largely, the organisations see greater financial opportunities in the future but all intend to continue to provide social benefit. An interesting observation is that what is developed for the public or third sector might become valuable for the private sector. This suggests that more financially stable commercial enterprises might enter the open data arena once the concept has been proven by smaller, socially oriented enterprises. By developing their own financial sustainability, they could inadvertently be putting themselves at risk by successfully demonstrating the viability of the industry. A similar concern is raised by Van Schalkwyk et al. (2016a: 10–11) in their research on the higher education data ecosystem in South Africa:

An unfortunate irony would be if the less-sustainable actor – CHET – disrupted the closed data system only for the vacuum in the ecosystem to be filled by a more financially sustainable actor – IDSC. Stated differently, a less-sustainable virtuous cycle premised on openness could potentially facilitate a more sustainable ‘vicious’ cycle in which public data are not only used for private gain, but in which access to data on higher education performance becomes increasingly restricted. This raises questions about the viability of not-for-profit, civic-minded intermediaries and, ultimately, the sustainability of open data ecosystems; particularly those ecosystems in which the state plays a weak supportive and co-ordinating role.

Putting into place systems that would reduce friction for social enterprises to start up could assist with ensuring that the social enterprises can become stable more rapidly and thus compete with new entrants.

Do organisations regard the social enterprise model as applicable to open data organisations in Nigeria?

Nigeria lacks both social enterprise and open data frameworks. The companies surveyed were selected for being open data organisations but, interestingly, are largely
more positive about the social enterprise environment than they are about the open data environment, on which some organisations sounded a note of caution regarding the effects of policy. They are often not even pure open data companies; as Q14 ‘How are you adding value to open data’ shows, the organisations are often using a combination of open, closed and crowdsourced data.

Companies are confident about the legitimacy of open data as long as it has social impact. The positive response to Q13 ‘How do you feel about the concept of social enterprises’ suggests that promoting the social enterprise model for open data businesses would be well received. However, the broad range of challenges identified in Q24 ‘What do you think are the biggest challenges for social enterprise’ suggests that a substantially increased number of social enterprise and open data businesses may not be expected in the current environment.

The organisations surveyed appear more focused on the intangible factors than on the structural ones. For example, companies seemed more committed to creating legitimacy and networks than ensuring they had in place equal financial and social impact measures. However, this conclusion should be considered with caution, as it may potentially be a function of any number of things, including the company’s stage of development.

Is social enterprise being used as a model for business by open data organisations in Nigeria?

The lack of clarity as to what actually defines a ‘social enterprise’ both legally and informally presents a challenge when identifying companies as such. For instance, one of the companies explicitly identifies itself on the website and in our research as a ‘social enterprise’; however they do not presently have, nor plan to have, a commercial revenue stream. They are clearly engaged in ‘social entrepreneurship’, or socially impactful innovation, but this is being supported by sponsors, partners and funders. In contrast, other companies who were meeting the informal definition of a social enterprise identified themselves as NGOs because of their legal form of incorporation. However, on both the structural and intangible characteristics, the companies showed themselves to be aware of and utilising social enterprise-like models and opportunities in their organisations, either naturally or consciously. This is particularly true of their stakeholder focus.

The survey also contained a question to elicit whether companies had in fact moved beyond social enterprise to the so-called ‘triple bottom line’ model. We asked this to ensure that we were correctly identifying social enterprise traits, and not just ‘cherry picking’ traits from a wider triple bottom line approach. However, unless environmental issues were at the heart of an organisations activities, they did not seem to be particularly relevant to companies.

Financially, the companies surveyed are not focusing on being ‘traditional’ for-profit businesses, nor on solely having a long-term donation funding strategy. The earned-income strategy is a desirable one to these companies, allowing them to be free of government influence and to take control of their own financial destinies. This is accomplished in a number of ways, however, in some cases this domain diverges from social enterprise. One company, for example, has a charity arm and a separate earned-income arm, structured more like a traditional NGO plus trading activities than a fully-integrated social enterprise.

6 Implications of the findings

POLICY ACTIONS

Our findings lead us to conclude that policy actions are needed in three main areas – promulgating the right company registration for social enterprise to thrive, providing access to government grants and low-interest loans, and finalising the drafting of an open data policy for Nigeria.

The right registration vehicle for social enterprise

We found that a major lacuna for open data businesses in Nigeria is the non-recognition of social enterprises under the 1990 Companies and Allied Matters Act of Nigeria. The Act established the Corporate Affairs Commission (CAC) charged with the responsibility of registration of companies, business names and incorporated trustees. According to the CAC, four types of companies are recognised for business ventures in Nigeria, namely: Private Limited Company (LTD), Public Limited Company (PLC), Companies limited by guarantee (LBG), and Unlimited Companies. The minimum number of members for each of these companies is two and the maximum for private companies is 50 members, while there is no upper limit for public companies (Corporate Affairs Commission 2016). As a result of this gap, the open data businesses
in the study, though pursuing social goals and earned income, resorted to registering either as a business name or NGO (i.e. incorporated trustees) as an LBG company. Respondents noted during our interviews that the conditions for obtaining an LBG registration were very stringent. In the words of Company 8:

‘... it is a rigorous process – requiring Attorney General’s sign-off, and Minister of Science and Technology sign-off, before CAC agreed to register. Consequence is that there is no funding before being recognised as a registered entity. Had to use a lawyer in Abuja because those to sign-off are based in Abuja and CAC headquarters is in Abuja. Paid the lawyer a handsome amount for the service.

The Legal Alert (2010) writing on Taxation of Charities, Trustees and NGOs in Nigeria provides the following explanation of the Act as it concerns a company limited by guarantee: It is one that is incorporated primarily to promote the objects of such a company, with its shareholders barred from distributing its profits among its members, as dividends or otherwise. Also, the liability of the shareholders of a company limited by guarantee is restricted to the amount that they have subscribed to pay in the event that the company limited by guarantee is wound up or dissolved. It is not registered with a share capital and requires the prior approval of the attorney general of the federation before it can be incorporated and it is exempted from companies’ income tax obligations provided such profits are not derived from any trade or business carried on by such an organisation or association, and distributed among the members, trustees or shareholders of such a company, association or organisation. However, what constitute a ‘trade’ or ‘business’ are however not defined or described in the Companies Income Tax Act (as amended).

When compared to the Community Interest Company (CIC) registration provision in the UK, which was enacted in 2004, the LBG option in Nigeria comes up short. For the CIC, determination of an applicant’s community interest is decided by the Office of the Regulator of Community Interest Companies. Indeed the CIC regulation body boasts of a CIC that is quick, easy and inexpensive to set up and specifically designed for social enterprise (Community Interest Companies 2016). We recommend that the Corporate Affairs Commission should reshape the LBG requirements by removing especially, the requirement of the attorney general’s approval if the LBG is to serve social enterprise in Nigeria. Better still, a category similar to the UK’s CIC is preferable and should be drafted without delay. Implementing these would promote an enabling environment for socially minded entrepreneurs, a new space for funders and venture capital, and increased labour market opportunities for Nigerian youth.

Provision of government grants and low interest loans to social enterprises

When asked what the major challenge to their open data business was and also, what more government could do to support social enterprise, more than half of the companies interviewed mentioned funding. And they provided suggestions. For example, Company 1 said ‘More funding, which they have done in the past to MSMEs though we don’t know where all the money goes’; Company 2 said that government could ‘provide seed money like the one done under YouWin (which was not properly administered)’; and Company 8 wants government to include mini grants in the policy to fund projects of social enterprises. The Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) also provides loans to micro, small and medium enterprises (MSMEs) (Nigerian Bulletin 2015; SMEDAN 2016).

In an attempt to diversify the economy and reduce the dependence on oil, Nigeria has been focusing its attention on agriculture. Among the many incentives being offered are low interest loans to practitioners. The same policy should apply to open data businesses, and data-driven businesses in general, as a holistic approach towards the data revolution and subsequent achievement of the Sustainable Development Goals (SDGs). Thus, we propose that the open data policy being drafted should include statutory provisions in the budgets at the federal and state level for mini grants and low interest loans for data-centric businesses.

An open data policy for Nigeria

The lack of an open data policy in Nigeria was confirmed by respondents in our survey. According to Company 6, ‘Nigeria was in the process but it fizzled out due to political time that ran out for the previous administration and the present administration has not returned to it because it is grappling with the economy.’ An open data policy will go a long way in providing the structural basis for opening up more data in the country. Company 3 puts it succinctly: ‘It (an open data policy) will create more opportunity because it becomes a culture, it becomes a discipline that must be instilled in the people and MDA’s [ministries, departments and agencies] will be forced to engage
professional services to help them open their data and present it in the best format.’ Company 6 said, ‘It makes it easier to work with something that everybody knows about. People will understand better.’ An open data policy is necessary for the growth and legitimacy of open data enterprises and should be a priority of all stakeholders including the Open Government Partnership (OGP).

**IMPLICATIONS FOR PRACTICE**

More emphasis should be placed on an earned-income strategy because many of the companies surveyed downplayed earning income since their primary objective was social. This is very important to the continued existence of a company and it should be a point for capacity building. Furthermore, grant-making organisations should request grantees to provide an earned-income strategy of the business, in addition to the usual sustainability section common in many proposals.

**OUR MODEL OF OPEN DATA BUSINESS SUSTAINABILITY**

Earlier in the methodology section we presented our conceptualisation of a model of open data business sustainability (Figure 2) as a synthesis of the review of sustainability and social enterprise. Based on our findings from the study, we revisit the model to make revisions as needed. Concentrating on the elements or factors that contribute to a sustainable open data business, we now include: availability of data, access to government grants, access to low interest loans; and split political environment into enabling policies and appropriate company registration laws. We question whether environmental value is really a critical factor for sustainability. The companies surveyed had different interpretations of environmental value, with some seeing it as carrying out projects with benefits to the environment and others seeing it as taking deliberate strategies as a company to reduce their ‘carbon footprint’. Perhaps environmental value as envisaged by Hart and Milstein (2003) is more of a ‘noble’ pursuit of open data social enterprise – something they should do because it is good to do but which not doing, does the company no harm. We include this in the recommended model with a question mark to indicate our conclusion from the study that environmental value is doubtful as a factor in sustainability of open data business. We make explicit social capital by splitting this into part of local networks, part of international networks, and access to mentors. We also reword some of the items in Figure 2 to reflect that these are factors, which if present, contribute to the sustainability of an open data business. We also identified something quite unexpected – that the older, more established companies were being mentioned by the smaller, much younger companies as having provided funds and/or mentorship to them. So we include an arrow showing that a sustainable open data business will plant other allied companies, mentor new allied companies and have influence – for instance, Company 4’s mentioning that Company 2 has been pressurising to have the open data policy enacted. We represent this as a feedback loop and also include directional arrows to show the direction of action and interaction between the organisational, structural, intangible and external factors. The model of open data business sustainability we propose is shown in Figure 2 overleaf.

**7 Conclusion and further research**

This paper presented an early-stage analysis of the open data landscape in Nigeria with specific reference to businesses using open data as a key resource. Given that the social enterprise model is more fully developed in developed countries and has no specific legal identity in Nigeria, it is perhaps surprising that both a strong stated affinity for the social enterprise model and also some clear examples of the various integral constructs of social enterprises have been evidenced.

These findings allowed us to build upon a theoretical model of social enterprise and create a model of open data business sustainability (see Figure 2 overleaf). This model also provides several lines of investigation for further research. Firstly, the current data can be used to assess organisations against the model to assess the level to which a single organisation holistically meets the criteria for a sustainable open data business, or whether each individual company displays only some of the factors. Secondly, the model can be tested empirically to confirm or reject the factors as contributors to sustainable open data business. Thirdly, it would be interesting to determine the degree to which each factor contributes to sustainability – in other words, which are the most important factors responsible for a sustainable open data business.
Influence

• Plant other allied companies
• Mentor new allied companies

External factors

• Availability of data
• Stakeholders’ (interest is protected)
• Investors (are motivated by social goals)
• Enabling policies
• Appropriate company registration laws
• Environmental value?
• Access to government grants
• Access to low interest loans

Intangible factors

• Part of local networks
• Part of international networks
• Access to mentors
• Legitimacy
• Build trust

Structural factors

• Ownership matches registration
• Independent management
• Control of resources
• Ability to meet social objectives

Organisational factors

• Motivation is both social and economic
• Access to resources
• Equitable allocation of resources
• Earned-income strategy

Sustainable Open Data Business

Figure 2: Model of open data business sustainability
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Appendix I Questionnaire about the company

INTRODUCTION

We, Omenogo Mejabi of the University of Ilorin, Nigeria, and Johanna Walker of the University of Southampton, UK, are collaborating on a research on Open Data (OD) Business Sustainability. We are looking at this from a social enterprise perspective using OD businesses in Nigeria as a case study.

Since our research questions are mostly about the business strategy of the organisation, only one respondent is required per enterprise. As such, we would be grateful to have a respondent who is knowledgeable about the start-up stage of the company, its present business strategy, and the plans for the future.

Before you answer the questions in this questionnaire or provide responses to any interview questions, we would like you to read the statements on the Participant Consent Form, and confirm your agreement to take part in this study, to be quoted or not, and whether you want to receive a copy of the results of the study.

Thank you.

Signed

OV Mejabi & J Walker
PARTICIPANT CONSENT FORM

Kindly confirm your agreement to take part in this study, to be quoted or not, and whether you want to receive a copy of the results of the study. Please tick where appropriate. Thank you.

1. I agree to participate in this study on a voluntary basis Tick to confirm ( )

2. I confirm that I have read and understood the aim of the research and that I am free to withdraw from the study at any time, without giving reason. Tick to confirm ( )

3. I confirm that any interviews with me for the purpose of this research: (Tick one)
   - can be audio/video recorded ( )
   - should not be audio/video recorded ( )

4. I confirm that information I provide for this research: (Tick one)
   - can be quoted, stating me as the source ( )
   - can be quoted without stating me as the source ( )

5. Tick the appropriate box if you would like to receive a summary of the results of this study: (Tick one)
   - By email ( )
     Give email address: ........................................................................................................................................
   - By personal copy ( )
     Give mailing address: ...................................................................................................................................

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(please print) Signature* Date Participant’s name

......................................................................................................................... .........................................................
Name of Enterprise Position in the Enterprise

......................................................................................................................... .........................................................
Researcher’s name Signature Date

*It will suffice to give surname and initials in place of signature
Part I – Information about the Enterprise

Please provide the following information about the organisation. Feel free to add comments and remarks that provide clearer understanding of your response.

1. State name of Enterprise:

2. Date registered:

3. Date that the enterprise commenced business:

4. Address of physical location:

5. Telephone number(s):

6. Website:

7. Twitter:

8. Number of employees:
9. State the names of any institutional investors or support to the company (through grants, credit, in-kind, etc.):
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10. How does your company use Open Data?
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11. What Open Data does your company use?
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12. Is Open Data a primary focus of the company?
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13. Is Open Data a support for other activities of the company?
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14. Please provide the Vision/Mission of the Company:
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15. Please give a Brief Biography of your Company:
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Please expect Part II of the Questionnaire after you return this. Thank you.
Appendix II Interview guide

INTRODUCTION

Please recall that you have earlier completed Part I of the Open Data Business Sustainability research questionnaire. Below are the questions for Part II which we hope you will find time to respond to.

Thank you.

Signed

OV Mejabi & J Walker
A. Identifying the business model

Q1. How would you define the overarching goal of your business or organisation?

Q2. How do you measure the success of the business?

Q3. What measures do you use for your social and environmental impact?

Q4. How is your business ownership structured?

Q5. How is your business management structured? (Please include/provide a copy of the organogram)

Q6. Who owns your assets?

Q7. Who are the stakeholders in your success? Please include everyone who contributes to your efforts as well as benefits from them.

Q8. To whom do your gains (profit, impact) flow?

Q9. Do you promote transparency and accountability? How?

Q10. Is an activity of social benefit integrated into your main activity? Or is it a ‘side effect’? Describe the activity.

Q11. Can you envisage another use for your open data product or service with perhaps less social benefit but more financial rewards?

Q12. Do you identify as an NGO, or enterprise, or just a start-up, or social enterprise?

Q13. How do you feel about the concept of social enterprises – businesses with a social goal who use commercial activities to support them?

B. How does the business prove ‘value add’?

Q14. How are you generating value from open data?

Q15. Do your business operations enable access to something previously inaccessible? How?
C. What are the institutional aspects that affect the ability to create a product/service or revenue streams?

Q16. How does your business model work? (Broadly)

Q17. What are your sources of financial support (commercial activities, donations, investment, others)?

Q18. Do you feel the data you use allows resources to be mobilised? (could be people, community, knowledge, money, assets, reduction of use of consumables, increased efficiency, etc.)

Q19. Is the variety and quality of open data available in Nigeria enough to support new open data businesses?

Q20. How would you compare Nigeria to other countries in the area of creating businesses from open data?

D. Using public data to make money

Q21. How do you feel about making money off public sector information and publicly owned data? Do you feel it is generally ‘morally acceptable’?

Q22. Do you think that people in general feel open data businesses are legitimate businesses?

E. How far is the possibility of sustainability affected by the political context?

Q23. What do you believe to be the biggest challenge to the success of your organisation?

Q24. What do you think are the biggest challenges for social enterprises?

Q25. Do you think the government understands and/or supports social enterprises?

Q26. What type of state (government) support do you receive (finance, mentoring, networks, etc.)

Q27. What more could the government do to support social enterprises?

Q28. Are you part of a formal or informal support network? Describe.

Q29. Do you receive support of any type (finance, mentoring, networks)?

Q30. What type of policy changes do you think may affect your business?

Q31. Does Nigeria have an open data policy?

Q32. What happens to your business if an open data policy is enacted?

Thank you for participating and giving your time to respond to our questions.
For more information on this project, visit our website at labs.webfoundation.org or get in touch with us directly at contact@webfoundation.org. Other related media are also available in the resources section of our website.

- If you want to learn more about the project, email us at contact@webfoundation.org
- If you want to look at other open data projects, see www.webfoundation.org
- If you want to give it a try and implement the approach – with or without us – let’s talk!