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ABSTRACT

While many cities are beginning to experience mass discontent from tough and declining economies, small and medium scale enterprises (SMEs) in Lagos continue to survive despite existing mass discontent brought about by corruption, economic recessions, poor infrastructure, unemployment, poverty, and insurgency in Nigeria. This paper develops a conceptual model to make sense of how SMEs in Lagos use mobile apps as a means of survival in conditions of uncertainty. Underpinned by pragmatic philosophy, the paper draws on the theory of dynamic capabilities (DC) to develop the conceptual model. Whereas the theory of DC asserts that business could compete favourably despite unpredictable business environments through continuous sensing and seizing of opportunities, it also suggests that constructs for measuring DCs vary across contexts. The study adopted a qualitative approach to identify the absorptive, adaptive, and innovative capabilities used by SMEs in Lagos with a view to identifying the role of mobile apps. The key findings suggest that SMEs in Lagos manifest a higher degree of adaptive capabilities compared with their absorptive and innovative capabilities. Specifically, the SMEs are primarily information seekers with a flexible approach to opportunity seeking. The SMEs leverage on adaptive capabilities mainly through customer feedback and referrals, and manifest absorptive capabilities through repackaging and repricing of their offerings. The findings further reveal how SMEs primarily satisfice, and that there is a gap for better contextually appropriate apps that meet the needs of these SMEs. The paper makes a contribution to DC theory in identifying capabilities in conditions of uncertainty in an African and developing context.

Keywords: Dynamic capability (DC), small and medium scale enterprises (SME), mobile applications, information systems (IS), conceptual model.

1. INTRODUCTION

The adoption of mobile technologies triggers frequent changes within business environments and seems to complicate known challenges of small and medium scale enterprises (SMEs) within conditions of uncertainty in Nigeria. The challenges include corruption, poor access to finance, poor infrastructure, inconsistent government policies, poor access to market, poor business development services, and obsolete technologies (Adeola & Charles 2015). Mobile technologies can be threats to businesses through creative destruction but also present new opportunities that could be explored (Michiel 2013). This situation of uncertainty requires effective and efficient ways through which SMEs in Nigeria could explore these opportunities regardless of the challenges. SMEs are important to the economy employing 85% of the engaged labour (SMEDAN & NBS 2013). SMEs owners likely use mobile technologies to support their businesses (Pongwana 2010; Findings 2015; Dinner et al. 2015) yet little is known about how they use the mobile technologies, more specifically in a developing context like in Nigeria.

Using the theory of dynamic capability (DC), this paper investigates how SMEs in Lagos are surviving despite existing discontent in the economic and social environments. The field of IS does not have a theory that specifically addresses SMEs hence this study adapts DC theory from the field of strategic management because DC theory takes into account ICT (Sharma & Shanks 2011; Xiao & Dasgupta 2009). The framework of DC offered a lens through which SMEs could be studied on how they leverage mobile apps to create, and realign their internal competencies and resources towards addressing rapidly changing environments (Teece 1997).

2. OBJECTIVES OF STUDY

The objective of this paper is to investigate how SMEs develop DCs and use mobile apps to enhance business. Specifically, the study seeks to answer the primary research question: "*How could mobile apps enhance SMEs in Lagos, Nigeria?*" The research develops a conceptual model based on the dynamic capabilities framework. It also reveals constructs for measuring the DC. Qualitative research is embracive of the use of propositions to define feasible limits in a case oriented research. Such propositions are often derived from literature, observations, theories or empirical data generalizations (Baxter & Jack 2008).

Subsequent sections of this paper present an overview of Lagos as a case study, followed by the literature review and research methodology. Data collection and analysis are then presented along with the findings. The final section offers the research considerations and conclusions.

3. LITERATURE REVIEW

3.1. The Economy of Lagos

Lagos is one of 36 states in Nigeria covering only 0.39% of Nigeria's territorial land mass, making it the smallest state in the country geographically. Lagos however has the highest population density in Nigeria with 21 million people and 3.2% economic growth rate. Lagos accounts for over 60% of industrial and commercial activities in Nigeria (Mawuna 2015). Lagos also has the highest number of SMEs (15 thousand+) and micro enterprises (5 million+) (SMEDAN & NBS 2013).   Lagos experiences challenges of rapid population growth, urbanisation, and relentless demands for infrastructure as well as macroeconomic pressures from the national level. The city's expansion is nonetheless estimated to continue over the next couple of decades (Lagos State Government 2013).

The primary challenges in Lagos that affect SMEs are poor resource management, poor access to finance, poor infrastructure, government policy inconsistencies and bureaucracy, unfair competition, multiple taxes and levies, inability to access modern technology, poor marketing strategies and non-availability of raw materials locally (Ngwu 2005; Oni 2016; BudgetIT 2016). The choice of Lagos as a case study for this research is based on two reasons - first, Lagos as a city has the highest number of SMEs in Nigeria. Secondly, Lagos as a city arguably represents a Mini-Nigeria, as there are all three main ethnic groups, religions, ages and business types in Lagos. It therefore offers potential access to sufficient empirical material of survival in conditions of uncertainty.

3.2. Mobile Apps as Information Communication Technology (ICT)

Mobile Apps are also known as "mobile applications", or "apps". They are small programs installed or accessible on smart devices which often provide their functionality by interfacing with other hardware components of smart devices to collect, retrieve or store data locally on the smart device or in the cloud (Young 2015; Yang et al. 2014). Apps can be regarded as ICT because they offer access to information through telecommunications; embedded within other technologies like Internet, wireless networks, cell phones, and other communication mediums (Good & Qureshi 2009; Didi-quvane & Twinomurinzi 2013; Eze et al. 2013; Mcgrath 2010; Breytenbach et al. 2013).

Apps have been useful in many contexts and through many concepts. For example, there exist apps for children and adults as well as learning, military, sales, advertisements and entertainment industries. The statistics of apps download from Nigeria could not be

ascertained. However, there are about 93.59 million internet users (Internet Stats 2016; Internet Live Statistics 2017; Statistics Portal 2017) in Nigeria and approximately 90% of internet access are from mobile devices (Ojo 2015; Ojo 2012). It is therefore reasonable to say that SMEs in Nigeria are a significant part of the statistics that use mobile apps. Although, how SMEs make use of mobile apps remains unknown.

<u>Proposition 1</u>: SMEs in Lagos use Mobile Apps as their preferred ICT.

3.3. SMEs and ICT

This study considers Small and Medium Enterprise (SME) as a legitimate business entity with 1 to 49 employees, making less than 50 Million Naira (158,000 USD) annual revenue turnover (SMEDAN & NBS 2013). SMEs create an economic buffer in any country (Kingdom & Taylor 2015). SMEs create jobs, trigger innovation and help citizens achieve financial freedom and personal satisfaction (Kale 2015; Islam et al. 2011; Tushabomwe-Kazooba 2006; Ayanda & Adeyemi 2011). ICTs (Mobile apps) could enhance SMEs in this drive. For example, a fruit-seller builds her small business model around WhatsApp, she identifies bankers on Lagos Island business district that like to eat fruit salad, and creates a WhatsApp group for this purpose. Customers make orders on WhatsApp and and pay cash on delivery. WhatsApp as a mobile app in this case can be seen as a means to reduce cost of doing business and creating a job for a deliveryman.

In today's evolving economy, the success of SMEs requires constant alignment with evolving digital trends (Islam et al. 2011). This change creates a new economic paradigm known as the knowledge economy - suggesting that the most important asset in this emerging economy is information and its correct application. Strategic use of ICT as a business asset helps maximize the benefits of information (Didi-quvane & Twinomurinzi 2013); having established that SMEs that recognise strategic use of information tend to be more productive and profitable (Goldkuhl 2004). Sourcing, analysing and interpreting information has been the main problem of SMEs in the knowledge economy especially in a developing nation like Nigeria (Osotimehin etal 2012). SME's poor management skill which Ngwu (2005) identified as lead challenge of SMEs in Nigeria can be attributed to poor information sourcing, analyses and interpretation (Ngwu 2005). ICT has capacity to help SME acquire and transform knowledge (Good & Qureshi 2009). Emerging mobile technologies present opportunities for SMEs to solve these problems.

<u>Proposition 2</u>: SMEs in Lagos use mobile apps for (a) sourcing, (b) analysing and (c) interpreting information.

3.4. Dynamic Capability Theory

The dynamic capability (DC) framework offers a theoretical explanation as to why different organisations operating within the same economic condition, and with the same resources often exhibit different business outcomes (Eze et al. 2013). The DC framework evolved from the resource-based view (RBV) concept in business management; RBV directly associates organisational business outcomes with organisational resources in a relatively stable and predictable atmosphere (Eisenhardt & Martin 2000). DCs enable a firm to quickly develop or re-align its resources to create or maintain competitive advantages in a dynamic business environment.

Teece (1997) defined DCs as "*the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments*" (Teece 1997); Helfat et al. (2007), defined DC as "*the capacity of an organization to purposefully extend, create, or modify its resource base*". While Wang et'al (2007) projects it as "*behavioural orientation to constantly integrate, reconfigure, renew and recreate its resources and capabilities*" in response to the changing environment; with the intention to attain and sustain competitive advantage (Wang & Ahmed 2007). The common thread in the three definitions is the capacity for "change" by aligning, adjusting, modifying, reconstructing, upgrading, streamlining or configuring resources in a volatile business environment towards business gains (Zahra et al. 2008).

The organizational capacity for change within DC context is three dimensional; it could manifest as adaptive capability, absorptive capability or innovative capability (Wang & Ahmed 2007). However, each of these capabilities depends on "micro-capabilities" to sense opportunities, shape opportunities and seize opportunities (Teece et al. 1997).

3.4.1. Adaptive Capabilities

The ability to exploit evolving market opportunities illustrates a firm's adaptive capability (Wang & Ahmed 2007). Adaptive capabilities could be wrongly perceived as a measure of a business' resilience while passing through difficult economic realities. Adaptive capabilities do not only show resilience, it also exhibits a firm's capacity to identify and quickly use external opportunities by changing its practices in order to adapt to environmental changes.

The constructs for measuring adaptive capabilities vary within the context of study. For example, pharmaceutical industry manifest adaptive capabilities by the rate of "re-patenting to prolong patent protection", while the measure of "how firms information systems allows customers to change outdated information" is a measure of adaptive capability in other industries (Saeedi 2014; Biedenbach & Müller 2012; Wang & Ahmed 2007). It therefore suggests that SMEs in Lagos have differing constructs for measuring adaptive capability.

Proposition 3: SMEs in Lagos have differing adaptive capabilities.

Having a capability suggests that it is being used. It is important to identify the construct for measuring adaptive capability in Nigerian context in order to correctly evaluate it. Asking the SME owners how new business is stimulated will prompt the measurable adaptive capability constructs.

3.4.2 Absorptive Capabilities

Absorptive capabilities emphasize the ability to combine new external knowledge with existing internal knowledge towards discovery of new information that could be explored towards business gains (Wales et al. 2013). SMEs with rich absorptive capabilities work smarter by avoiding mistakes made by competitors based on new information they acquire. The requirements for examining absorptive capabilities seems to have differing units of measurement based on research or business context. For example, it could be measured by the ability to apply latest external information in research and development departments of a research based business organization (Biedenbach & Müller 2012) or the rate at which an entertainment business networks with peers in the same industry (Wang & Shi 2011). This means that absorptive capabilities of SMEs in Lagos Nigeria differ, and are unique to the context.

Proposition 4: SMEs in Lagos have differing absorptive capability.

Understanding what SME does with new information will reveal the absorptive capability constructs.

3.4.3 Innovative Capabilities

According to William et al (2013), a businesses' innovative capability is demonstrated by its creativity at breaking new business frontiers through creation of new products, services, markets or business models (Grimaldi et al. 2013). Innovative capabilities are crucial to business survival. In recent time, mobile apps as ICT are a proven innovative enhancement tool

because significant number of people today interact through mobile apps. The flexibility, acceptability and coverage offered by apps makes an SME stand out. For example, advertising with a single tweet could easily reach many people at a low cost. Aside this, the high rate of smart device proliferation also points to the possibility of mobile app usage as innovative capability by SME.

Measuring innovative capabilities are through identification of clear goals that propel creativity (Biedenbach & Müller 2012); it is also a measure of the rate at which organisations develop new products, services or business models. Since absorptive and adaptive capabilities have been proven to have differing measuring constructs based on research context, it is beneficial to elicit the construct for measuring innovative capability of SMEs in Lagos, although previous researches indicate similar measuring units as creative ability. (Camisón & Monfort-Mir 2012; Parida & Örtqvist 2015; Miles 2008). However, creativity itself is a relative paradigm (Schneider 2015). The paper therefore makes a proposition that SMEs in Lagos have differing innovative capabilities.

Proposition 5: SMEs in Lagos have differing innovative capabilities.

This proposition leads to the need to reveal the manifestations of innovation by SMEs in Lagos, the elicited constructs could provide more insight on the impact of innovative capabilities on SMEs relative to the use of mobile apps.

3.5 Micro-Foundations of Dynamic Capabilities: Sensing Opportunities, Seizing Opportunities or Mitigating Threats

At the foundation of DCs are some cognitive abilities: ability to sense opportunity, shape opportunity, seize opportunities or mitigate threats (Teece et al. 1997). Developing these cognitive capabilities is a learning process that requires continuous practice towards purposeful outcome. (Sharma & Shanks 2011; Butler et al. 2008; Corbett & Neck 2010; Niehaves et al. 2011; Wagner & Wagner 2013; Leiblein 2011; Wang & Shi 2011; Teece et al. 1997; Saeedi 2014). The learning process unveils acquisition of DCs as a non-instantaneous action, it is process driven; developed and mastered over time. SMEs sensing capability is the ability to identify and shape opportunity. The shaping capability helps to interpret and decide if the sensed opportunity should be selected. The seizing or mitigating capability is the ability to execute required actions towards maximizing benefits of selected opportunity (Teece, 1997). Repeating this sequential action could be termed as DC mastery –the act of building DC

expertise by sensing, shaping, and seizing opportunities or mitigating threats continually. DC micro-foundation is illustrated in Figure 1.
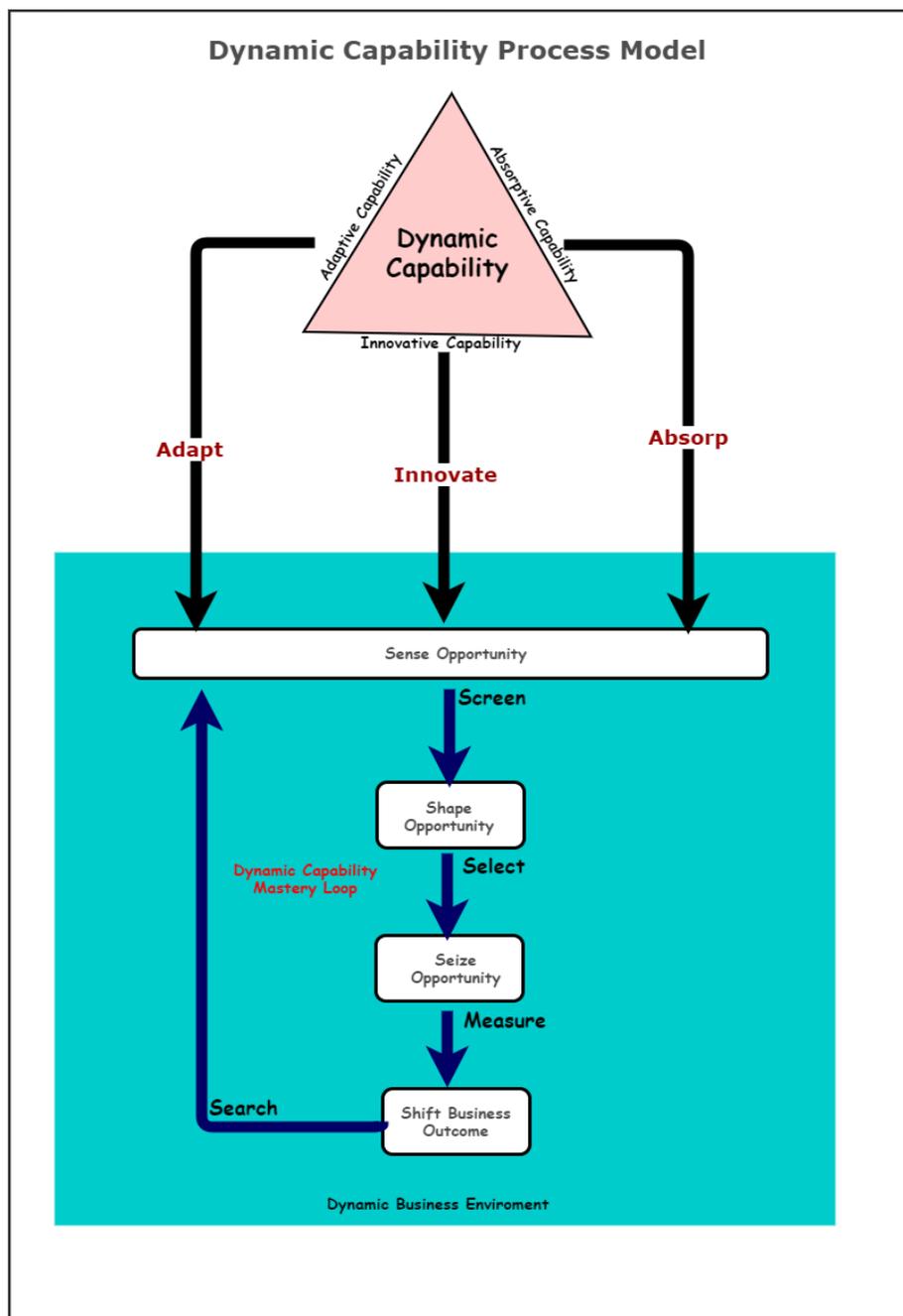

Figure 1. DC Process Model (Source: Literature analysis)

Considering the offerings of mobile apps, it could assist SMEs in developing DC by sensing, shaping and seizing opportunities.

<u>Proposition 6:</u> SMEs in Lagos use mobile apps as ICT to (a) sense opportunity, (b) shape opportunity and (c) seize opportunity.

3.6. The Conceptual Model and Units of Analysis

Aggregating propositions 1 to 6 result into a conceptual model (presented in figure 2); the unit of analysis is the SME owner. The model illustrates how mobile apps usage could help SMEs build their DCs and enhance the business.
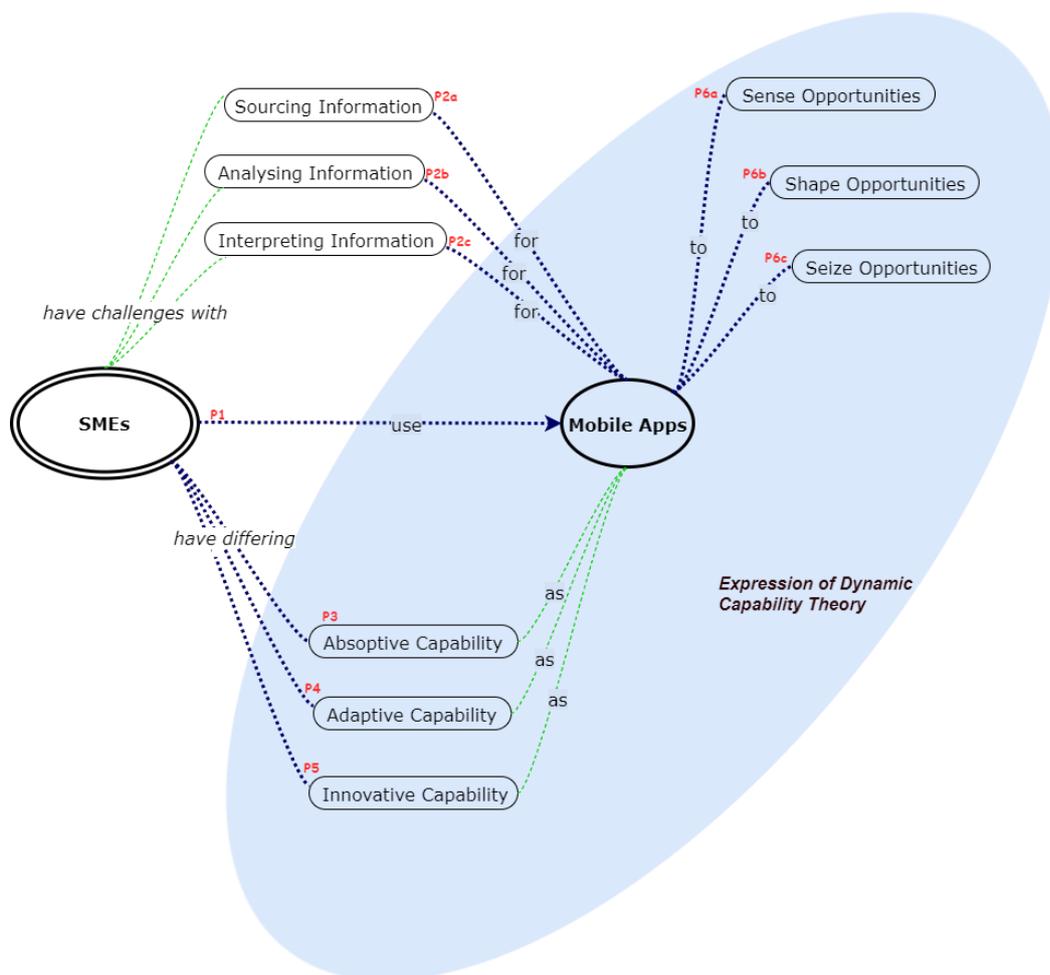
Figure 2. Conceptual model that seeks to investigate how mobile apps enhances SME. (Source: Source: Literature analysis)

4. METHODOLOGY: FINDING DC CONSTRUCTS OF SMES IN LAGOS

4.1. Research Philosophy

Pragmatism provided the philosophical lens to investigate the research. Pragmatism offers a practical approach to solving problems where reality holds true insofar it is workable – meaning reality is what works (Kilpinen 1987; Barton 1994; Goldkuhl 2012). Pragmatism suggests that what works and is deemed useful may become obsolete later. Change and a realisation of new

truth will require continuous interactions and adaptations between man and the environment. These interactions provide a platform for analysing emerging facts that could lead to new truth. Charles Darwin called the interactions "evolutionary" perspectives and these interactions form the centre of pragmatic thinking (Campbell 2011).　　　The study was carried out in the pragmatism philosophy, which supports the principles of DC that emphasize continuous development and practical re-alignment of resources as a requirement for SMEs to remain profitable.

The intent of this study was to focus on what currently works for SMEs in Lagos when building their DCs. It also seeks to gain practical understanding of the use of mobile apps in the process of developing DCs and how mobile apps usage and DCs could be improved. Since the study sought to identify the dynamic capabilities of SMEs in their social context, the paper adopts a qualitative-interpretive research approach (Lincoln & Guba 1994). Qualitative-interpretive researchers emphasise the importance of human thought and live experiences in understanding social and organizational contexts (Klein & Myers 1999). Specifically, the paper adopts a case study design taking the SME owners as the unit of analysis.

4.2. Case Design

Case studies are used to investigate contemporary problems in their real-life context, especially when the problems cannot be clearly separated from its context (Yin 2005). (Seethamraju & Seethamraju 2008; Yin 2005; Lisle 2011). The study used SMEs as the case study with SME owners as unit of analysis.

4.3. Sampling Strategy

A nonprobability convenience sampling method was used to select 20 SME owners to be interviewed. The study received ethics clearance from the University of South Africa. The responses from the interviews were transcribed into text and analysed using content analysis methods through Atlas.ti©.

4.4. Interview: Design

The interview question was segmented into four sections as shown in appendix 1. The questions were based on literature about eliciting absorptive, adaptive and innovative capabilities (Wang & Catherine; Ahmed 2007; Biedenbach & Müller 2012)**.**

4.5. Interview: Reliability and Validity

According to Nahid Golafshani (2003), reliability and validity in qualitative-interpretive research are seen as research credibility. Qualitative researchers adopt the notion of consistency for dependability, applicability for transferability, rigor for trustworthiness (Nahid Golafshani 2003). Interpretive perspectives of qualitative research appreciate the complexity of human behaviour in the natural environment. Qualitative research also enables researchers to make sense of the study as events unfolds (Klein & Myers 1999). It seeks to explain a phenomenon based on observation and open feedback. Establishing credibility in qualitative research cuts across the entire research process. Credibility speaks to the personality of the researcher; his background, biasness, coding and generalizations of research outcome (Adu 2013; Ford et al. 2014; Frels & Onwuegbuzie 2013; Nahid Golafshani 2003).

In ensuring credibility, dependability and trustworthiness of this study, the following were embarked on:

1. Evaluation of existing DC theory on which the study is grounded.
2. Design of research instrument based on DC theory and qualitative research paradigm.
3. University of South Africa ethics committee's review and approval of research design.
4. Consistent administration of interview instrument.
5. Identification of researcher's background and biasness.
6. Consistent coding and categorization techniques
7. Independent review of identified codes and categories.

4.6. Coding Strategy

Content analysis of qualitative data use coding techniques to summarize data without misplacing its significance. Coding is a process of assigning labels to words, phrases or sentences; typically, coding helps to understand a phenomenon and develop constructs (Adu 2013). Since the purpose of coding in this study is to identify constructs, the analysis used the "process coding" method in the first cycle coding procedure and thereafter categorized identified codes by exploring underlining meaning and the relationships between the codes.

Process coding techniques identify action statements, especially words that ends with "-ing" because they usually illustrate actions in data. Process coding technique was considered suitable in this case because it is in line with the interpretive nature of this study and the ontological research question it seeks to answer (Saldana 2009).

After transcribing the recorded interview to text; anchor codes ADC, ABC, and INC were created; these anchors represent adaptive capability, absorptive capability and innovative capability respectively. The anchors helped with the grouping of codes that were subsequently identified. With the anchor codes as "prefixes" to real codes, the researcher read the transcribed text assigning process codes to relevant action statements. The process codes and corresponding frequencies were extracted and analysed. The full list of codes and anchors are presented in tables 3 - 6.

4.7. Role of the Researcher

In qualitative analysis, it is important to understand the researcher bias as it helps the readers to understand the perspectives that lead to research outcome (Klein and Myers, 1999). The principal researcher in this study resides in Lagos and has 10 years' hands-on experience in software (including mobile apps) development as programmer and business process analyst. He has interfaced with small businesses and big corporations to elicit software requirements aimed at automating business processes. He also volunteers for not-for-profit organizations that offer free training to entrepreneurs seeking to start new business or expand existing businesses.

5. DISCUSSION OF FINDINGS

5.1. Background

The SMEs in this study cut across 15 business sectors with employees ranging from 2 to 24 (Table 2). 12 SME owners noted that the number of employees fluctuates because they hire part-time staff when there are new projects. The SMEs have been existing for periods ranging from 2 to 21 years. The average age of businesses in this study is 7.05 years with 7.75 employees.

Table 2. Respondent's background

SMEs	Business Type	Sector	No of Employees	Business Age (Yrs.)
1	Real Estate Development	Housing	24	10
2	Crèche and Primary School	Education	18	10
3	Renewable Energy Consulting	Energy	12	10
4	Crop farming	Agriculture	12	2
5	Block production and cement sales	Manufacturing	11	8
6	Logistics and travels	Transport	8	8

7	Show-Biz	Entertainment	8	5
8	Nylon manufacturing	Manufacturing	7	2
9	Cleaning Services	General Services	7	8
10	Town Planning Consulting	Consulting	7	10
11	Credit Services	Financial Services	6	5
12	Catering Services	Food and Confectioneries	5	3
13	Renewable energy installation	Energy	5	10
14	Events management	Entertainment	5	21
15	IT services / e-Products development	Information Technology	4	3
16	Health management	Health and Wellness	4	4
17	Digital Marketing	Information Technology	3	7
18	Fashion	Fashion	2	2
19	Cakes making	Food and Confectioneries	2	4
20	Sales of Groceries	Retail Consumables	5	9

Source: Fieldwork

5.2. Content Analysis

48 unique codes were identified. However, grouping the codes along their anchors and frequencies revealed 89 adaptive capabilities, 55 absorptive capabilities and 52 innovative capabilities.

Table 3 Distribution along forms of DCs

Anchor Code	Type of DC	Unique Codes	Code Frequency
ADC	Adaptive Capability	19	89
ABC	Absorptive Capability	17	56
INC	Innovative Capabilities	12	52
Total		48	197

Source: Fieldwork

This outcome suggests that small business in Lagos demonstrate more adaptive than absorptive and innovative capabilities. The finding implies that SME in Lagos are primarily information seekers and they are flexible in their business approach. It is a reflection of the uncertainty in the business environment and their survival strategy.

5.2.1 Adaptive Capabilities

The adaptive capability illustrates how SMEs identify and develop new emerging market opportunities; balancing exploration and exploitation strategies (Wang & Ahmed 2007). 19 unique codes were identified and the frequency of code suggests that SMEs in Lagos acquire new business through referrals. The identified codes were categorized based on underlying relationships and this resulted into 5 categories; the categorization further reveals that SMEs in Lagos break new frontiers through "feedback and referrals", closely followed by "social media and internet" usage. Table 4 presents a summary of adaptive capability findings.

Table 4. Adaptive Capability of SMEs in Lagos.

How do SMEs get more business or identify business opportunities?		
Adaptive Capability Categories	**Adaptive Capability Codes**	**Frequency**
ADC – Through Feedback and referrals (24)	ADC - Through Feedback	11
	ADC - Through referrals	13
ADC – Through Social Media and Internet (21)	ADC - Through Social Media Engagement	11
	ADC - Social Media Advertisement	3
	ADC - Through Internet based technologies	7
ADC – Through Customer Interactions (18)	ADC - Through freebies	2
	ADC - Through customer education	6
	ADC - Through market segmentation	1
	ADC - Word of Mouth Marketing	8
	ADC- Through branded Souvenirs	1
ADC – Through Needs or Problems Analysis (16)	ADC - By spying the competitors	2
	ADC - Looking out for new ideas in developed countries	4
	ADC- Through review of government policies	3
	ADC - Identify Problems	1
	ADC - Looking for needs	6
ADC – Through Networking & Advertisement (10)	ADC - Through Print Media Advertisement	2
	ADC - Through Family and Friends	1
	ADC - Feedback from affiliates/parent organizations	1
	ADC - By Networking with other professionals and customers	6
Totals		**89**

Source: Fieldwork

The SMEs cultivate relationships with the customers, the quotes from the interview suggests that they sometimes talk to the needs of their customers:

"We have a feel and a feed from customers"

"The first thing is we try to create relationship and identify the opportunities"

"I try to engage people when I meet them; I do a lot of word of mouth";

"We identify a problem and provide free service or solution; that draws them and we now monetize it based on feedback and referrals."

"We also use social media to acquire customers and then go one-on-one to create a relationship"

"Most of our new customers come through referrals; we also have a number of customers that come via social media"

The relationship and feedback in turn generate referrals that bring new businesses. The finding suggests that the SME adaptive capability focuses on creating intimate and close relationships with customers for increased opportunities.

5.2.2 Absorptive Capabilities

SME's ability to identify new external information and apply it towards business gains demonstrates absorptive capability. Analysed data presents 17 unique absorptive capability codes; grouped into 7 categories. The code frequency shows that SMEs in Lagos "evaluate" new external information and use extracted knowledge to "develop offerings intelligently"; this is achieved by "collaboration" and "re-packaging or (and) re-pricing of offerings" as shown by interview excerpts below:

"In our kind of business; the entry and exit is high because we are into services; the economy also compels potential customers to look for cheaper services. So when we have new information, we review it and sometime resize the service in order to catch customer's attention per time"

"We digest this information along the goal of the business. For example, because government is banning rice importation we now grow rice."

"We put every information into black and white; evaluate it and identify in detail all that is required to develop business from it."

"The information makes us more efficient and positively affect quality of output; it also triggers partnerships; pricing and packaging optimization"

"Whenever we have new information; first we try to analyse it to see how it fit into our offerings; and when we notice an opportunity and we don't have hands-on on the technology, we go for training or we collaborate with partners and we see how we can apply the knowledge to get the business"

"What we do with new information is that we carry out research and the outcome impact the business; for example, we recently invested in drowns and it has helped us a lot".

Table 5 present a summary of absorptive capability findings.

Table 5. Absorptive Capability of SMEs in Lagos.

How do SMEs make use of new external information?		
Absorptive Capability Categories	**Absorptive Capability Codes**	**Frequency**
ABC - Induce Collaboration (14)	ABC - Run idea through customers	6
	ABC - Initiate partnerships	4
	ABC - Create Internet based products/services	2
	ABC - Share idea with experts	2
ABC - Triggers Packaging or Pricing of Offerings (11)	ABC - Adjust packaging	5
	ABC - Adjust pricing	6
ABC - Generate Intelligent Leads (9)	ABC - Intelligently develop products	7
	ABC- stock or unstock inventories	1
	ABC - Mass Advertisement	1
ABC - Induce Information Analysis (8)	ABC - Identify opportunity in new information	1
	ABC - Analyse new information	7
ABC - Induce Research and Training (6)	ABC - Learn new or upscale skills	3
	ABC - New Research	3
ABC - Induce Quality and Faster Delivery of Offerings (5)	ABC - Ensure Faster Delivery	1
	ABC - Increase Quality	4
ABC - Adapt Offerings (4)	ABC - Adapt existing product from competitors	1
	ABC - Adapt existing product in developed countries	3
Totals		**56**

Source: Fieldwork

The absorptive capability constructs of SMEs in Lagos reveal intelligence in offerings development. SMEs tend to develop offering for a ready market through intelligence. In gathering intelligence, the study indicates that SME's collaborates with relevant parties that could contribute objectively; parties like customers, suppliers, colleagues, local and foreign partners.

5.2.3 Innovative Capabilities

Innovativeness is about being creative; this study suggests that SMEs in Lagos demonstrate innovative capabilities by imitating and adapting offering. They also adjust packaging and pricing of offering in an attempt to remain competitive. According to Oded Shenkar's (2010) imitation is a precursor to innovation; it is a primary source of innovative idea generation. Good imitation is difficult, requires intelligence and imagination, and can be more important to business growth because applied imitation is not mindless repetition; it is an intelligent search for cause and effect with a given context. (Shenkar 2010) - This could be considered as innovation.

A few quotes from the interview could explain how SMEs in Lagos imitates and adapts:

"Well, with the global world we are now, it is easy to see what happens around the world, so what we do is to adapt new ideas to our environment; at times it might just be the need in one or two children that will make us create something specially for them."

"So when I see what others are doing which is new to me I try to adapt and replicate it until I can perfect it"

"We keep tabs on business that are ahead of us and try to imitate them; all-be-it rendering the services at a cheaper rate with considerable quality"

"There are new concepts overseas that won't get to Africa in 5 years. So we imitate concepts and adapt it to our environment; and the output usually turns out better"

"We use internet and social media a lot to learn new stuff I can imitate and adapt"

Existing concept could be innovative when applied in a new context. For example, cab owners rely on Uber platform to provide transportation services in major cities of the world, whereas Gommyway in Lagos Nigeria uses same concept to connect travellers with drivers who have spare seats to share at a fee. Gommyway is imitates Uber to create new and innovative concept adaptable to Nigerian context.

Table 6. Innovative Capability of SMEs in Lagos.

How do you create or upgrade your products or services?		
Innovative Capability Categories	**Innovative Capability Codes**	**Frequency**
INC - Imitate and Adapt Offerings (31)	INC - By imitating competitors	6
	INC - Copy and adapt products	11
	INC - Customise to specific need	9
	INC - Develop specialization	5
INC - Adjust Packaging and Pricing (14)	INC - Adjust Packaging	4
	INC - Adjust Pricing	4
	INC - Create Demos	1
	INC - Create product bouquet	2
	INC - Improve Quality	3
INC - Adjust Procurement and Sales Strategy (7)	INC - By creating more brand visibility	1
	INC - Create varieties by change suppliers	1
	INC - Cross sell new product to customers	5
Total		**52**

Source: Fieldwork

This outcome offers some explanation as to why SMEs in Lagos keep surviving despite the under conditions of uncertainties and mass discontent. SMEs survive by maintaining close relation with their customers, and go further to imitate and adapt offerings that suit the customer. SME's adapt their offerings by adjusting packaging and pricing.

In satisfying the second objective of this study, which sought to identify DC constructs of SMEs in Lagos, the following were the key items identified:

1. Adaptive capability
    a. Feedback and referrals
    b. Social media and internet
2. Absorptive capability
    a. Collaboration
    b. Re-packaging and re-pricing of offerings
3. Innovative capability
    a. Imitation and adaptation of offerings
    b. Package and price adjustments of offerings

Based on the findings, the study reveals that SMEs mainly use social media and internet apps for their adaptive capability. This finding is significant because it provides a perspective of how SMEs in conditions of uncertainty take advantage of mobile apps.

7. CONCLUSION

The paper sought to investigate the dynamic capabilities of SMEs and the extent to which the SMEs use mobile apps to enhance their DCs. The research approached the objectives by developing a conceptual model and thereafter identified the DC constructs in the Nigerian SME context.

Despite the uncertainties of Lagos, the SMEs typically survive primarily using the adaptive capability. Specifically, through customer feedback, referrals, collaboration, social media, internet, re-packaging and re-pricing of offerings. Importantly, they also innovate through imitation and adaptation of offerings. Considering the importance of SMEs to national economies, policy makers should look at effecting policies that will aid SMEs in their survival and growth drive; such policies could promote international collaboration, the creation of new

contextually appropriate apps, encourage idea and resources exchange internationally. SMEs can also leverage on internet, social media and related technologies. The context of uncertainty is similar in many other developing country contexts. The new understanding can be used to create better-suited mobile apps for SMEs that share similar economic environment.

This study contributed to DC theory as it suggests that SMEs operating in conditions of uncertainty demonstrate more adaptive capabilities than absorptive and innovative capabilities. The research outcome implies that SMEs primarily approach uncertain situation by seeking information. The research was limited in its focus on the qualitative aspect of DCs and needs to consider the quantitative measures to validate the identified capabilities. Further research will quantitatively investigate the extent and some reasons as to how SMEs use apps for the other identified dynamic capabilities constructs.

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APPENDIX 1

Interview questions and corresponding research objectives

Question	Objective

Section 1
  1. What does your business do?
  2. How many employees do you have?
  3. How long have you been in business?
	Provide constructs that aid understanding of the research context

Section 2 4. How do you get more business or identify business opportunities?	Elicit adaptive capability constructs of small business
Section 3 5. How do make use of new information?	Elicit absorptive capability constructs of small business
Section 4 6. How do you create or upgrade your product(s) or service(s)?	Elicit innovative capability constructs of small business