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QUANTITATIVE PERCEPTIONS OF BACKUS'S E-GOVERNANCE MODEL

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ABSTRACT

This study was conducted to determine measures of dispersion for normal distribution of nation brand ranking in line with Backus's e-governance model adoption. The significance of this study dwells in the quantitative interpretations of Backus's e-governance model for rebranding African nations. This is an exploratory study, which is based on the emic perspective (author's viewpoint) built on literature reviewing and inferential statistics. The results show that the probability for investors to select randomly South Africa as business destination P (RSA) is 35%. The mean of top 10 African nation brands being 61.2; South Africa's brand variance of 156.8; and standard deviation of 5.8 translates better reputation and positioning from the sample (n).

Keywords*: E-Governance, Backus's Model & Quantitative Perceptions*

JEL Codes: *H70, H83, O3, O38*

BACKUS'UN E-DEVLET MODELİNİN NİCELİKSEL ALGILARI

ÖZ

Bu çalışma, ülke marka sıralamasının normal dağılımına yönelik dağılım ölçütlerini Backus'un e-devlet modelinin benimsenmesi doğrultusunda belirlemek amacıyla yapılmıştır. Bu çalışmanın önemi, Backus'un Afrika uluslarını yeniden markalaştırmaya yönelik e-devlet modelinin niceliksel yorumlarına dayanmaktadır. Bu, literatür taraması ve çıkarımsal istatistiklere dayanan emik bakış açısına (yazarın bakış açısı) dayanan bir keşif çalışmasıdır. Sonuçlar, yatırımcıların Güney Afrika'yı rasgele iş yeri olarak seçme ihtimalinin% 35 olduğunu göstermektedir. En iyi 10 Afrika ülkesi markasının ortalaması 61.2; Güney Afrika'nın marka varyansı 156.8 ve 5,8'lik standart sapma, örneklemin dopru konumlandırıldığını göstermektedir.

Anahtar Kelimeler: *E-Devlet, Backus'un Modeli, Niceliksel Algılar*

JEL Kodları: *H70, H83, O3, O38*

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1. INTRODUCTION

Electronic governance (e-governance) is the application of Information Systems (IS) in the processes of public service delivery to induce Simple, Moral, Accountable, Responsive and Transparent (SMART) governance (The World Bank, 2019). Western countries adopted e-governance, therefore transforming public organizations to strong brands engaging with citizens (UN e-governance Survey, 2018).

E-governance adoption based on Backus's model rebranded Asian countries such as India and China. In Africa, public organizations re-branding translates different perceptions to citizens. For some countries, re-branding is merely a logo; and for others, it is an underpinning philosophy (UN e-governance Survey, 2018). However it seems that few government employees in Africa would understand the strategic role of e-governance as re-branding tool.

Visual expression is one aspect of communication, which captures interest and loyalty of citizens. However, effective nation rebranding is less about logo, motto, and banners, rather innovation when engaging with citizens (UN e-governance Survey, 2018). Various studies elaborated on the successful adoption of e-governance models (United Nations, 2018; World Resources Institute, 2017; The World Bank, 2016). However, the significance of this study dwells in the quantitative interpretations of Backus's e-governance model adoption for re-branding African nations.

This paper attempts to determine measures of dispersion for normal distribution of nation brand ranking when adopting Backus's e-governance model. This is an exploratory study based on author' s view and built on literature and inferential statistics.

2. LITERATURE REVIEW

2.1. E-Governance

Government agencies adopt e-governance for various reasons namely information exchange with citizens, faster public service delivery and smart governance reducing value chain costs (UNDESA, 2017).

With no exaggeration, there is positive relationship between e-governance adoption and the development of computer technology, networking of computers and communication systems. In Africa, the above-mentioned became available with a perceptible time lag as compared to developed nations (UNDESA, 2018).

E-governance proceeds through four phases namely computerization, networking, online presence and online interactivity. In the computerization phase, government departments are equipped with computers, which enable word and data processing. The networking phase includes hub of information sharing and flow of data between different governments entities (The World Bank, 2017).

Increased Internet connectivity and need for maintaining presence on the web translate online presence phase. This results in government websites containing information about organisational structure, contact details, reports and publications being maintained by government departments (Estonia E-Governance Academy, 2017).

The online interactivity phase is a natural consequence of online presence, which opens up communication channels between government departments and citizens. The main aim of Backus's model is to minimize the scope of personal interface with government departments by providing downloadable forms, instructions, acts and rules.

2.2. Backus's E-Governance Model For Rebranding African Nations

The study acknowledges the implications of other e-governance models, namely Oracle (2006), Zwahr and Finger (2005). Figure 1 indicates Backus's e-governance model framed around e-commerce concept, making it more relevant in this study.

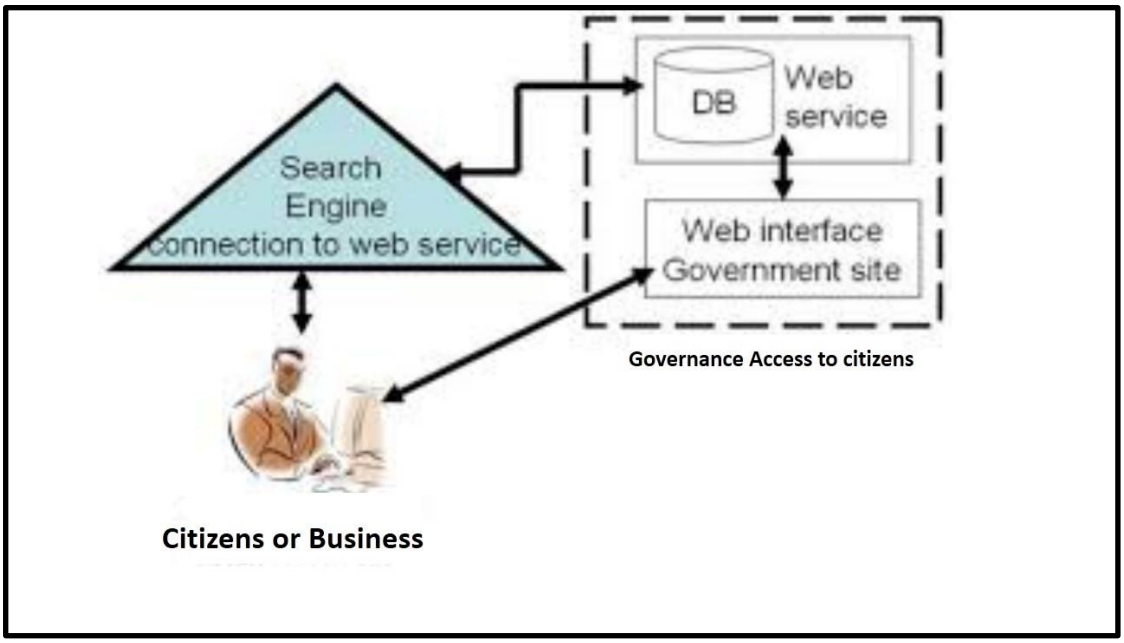

Figure 1. Backus's e-governance model for African nation rebranding

(The computer graphic stands for any ICT tool (or actors) involved in e-governance)
(Source: Mphidi, 2017)

South African e-government provides online services indicated in Table 1.

Table 1. Online services in South Africa

N0	**Service**
01	Birth registration
02	Business registration
03	Education and training
04	Youth and relationships
05	Disability assistance
06	Job search
07	Social benefits
08	Housing and settlements
09	Tourism information
10	Sport and recreation
11	Citizenship application
12	Enforcement procedure
13	Retirement and old age
14	Death registration

(Onyancha, 2017)

In its framework of planning and implementing e-governance, Oracle (2006) spells out business strategy, infrastructures and management skills as components that are mandatory in several activities that need to be accomplished for successful e-governance implementation.

Business strategy is important to clearly define the strategy and implementation plan in order to avoid duplication, wastage of effort, minimize chances of mistakes and lead to the creation of an integrated system. In terms of infrastructures, managers in government departments should specify how various government offices would be interconnected with one another and with external entities (Harwich, 2017).

The hardware description primarily should contain specifications matching service employee's knowledge and skills to improve the processes and avoid service delivery mismatch. Database management is a planning tool enabling electronic version of government information.

Further, to avoid service failure, public service provider has to choose relevant technology from speech interface, security solutions, web hosting, multi-lingual support to middleware (Onyancha, 2017). However, Backus argues that e-governance stages are not always mandatory in the implementation since, even in the Western world, some government departments could be in phase 1, 2 or 3. Indeed governments start by delivering online information. Thus, public demand and internal efficiency soon require more complex services (World Economic Forum, 2018).

Most importantly, Backus's e-governance model emphasises on a two-way system of communication among the role players namely Government to Citizens (G2B), Citizens to Government (C2G); Government to Business (G2B); Business to Government (B2G); Citizens to Business (C2B) and Business to Citizens (B2C) (World Economic Forum, 2018).

From the above, Backus e-governance model promotes African nation re-branding. The model facilitates G2B, C2G, G2B, B2G and C2B interactions via governmental platform by providing the latter's hyperlinks on the government websites. The hyperlinks may include those pointing the citizens to jobs available in the industry, business tenders and contracts, contact addresses of companies operating in a given province. Table 2 indicates top 10 African nation brands, which invested in improving interactions between government departments and citizens.

Table 2. Top 10 African Nation Brands

Ranking	Country	Brand value	Brand rating
1	RSA	218	A
2	Egypt	109	A-
3	Nigeria	88	BBB
4	Morocco	48	A-
5	Algeria	45	BB
6	Angola	31	B
7	Tunisia	24	A
8	Kenya	19	A-
9	Ghana	18	A-
10	Ethiopia	12	BBB

(How we made it in Africa, 2019)

Within their nation-branding journey, African nations would want to explain situations where branding effort outcomes significantly and materially differ from planned, expected and targeted results (DW, 2019). From Table 2, the study engages in the process of standard deviation analysis and probability.

3. METHODOLOGY

The study is exploratory and seeks to paint a quantitative picture of Backus's e-governance model for African nation re-branding. The study utilized inferential statistics, which is extremely useful in data analytics to understand and solve nation-branding problems via information systems adoption in government departments (Quora, 2019).

The purpose of using statistical inferences was to conclude about the whole research population at hand. Analysis of variance was the overarching statistical method, which was used to test and analyze the differences between means from the data set. The significant differences between the means were obtained, using this test (Acad Gild, 2019).

To avoid jumping from one transitory conclusion of data to the other, the study was informed by standard deviation in Table 3, which measured the spread of brand value for each African nation brand within the given set of data (Laerd Statistics, 2019).

4. DATA ANALYSIS AND INTERPRETATION

Table 3 indicates that the mean of top 10 African nation brands is 61.2. South Africa's brand variance of 156.8, and standard deviation of 5.8 translates better reputation and how far

the country's image is positioned from the sample (n). RSA, Egypt and Nigeria record positive brand variance.

Furthermore, in the set of top 10 African nation brands, probability of RSA element noted $P(RSA) = \frac{r}{n}$ in Table 3 is a prominent indicator for the local business community. From the experiment drawn, the chance for investors to select RSA randomly as a first business destination in Africa is 35%.

Table 3. Measuring Dispersion Values Of The Top 10 African Nation Brands

Ranking (n)	**Country**	**Brand value** (X)	X- $\overline{X}$ **Variance**	$S = \sqrt{\frac{\sum (x_i - \overline{x})^2}{(n-1)}}$ **Standard deviation**
1	RSA	218	218-61.2=156.8	5.8
2	Egypt	109	109-61.2=47.8	1.8
3	Nigeria	88	88-61.2=26.8	0.9
4	Morocco	48	48-61.2=-13.2	0.4
5	Algeria	45	45-61.2=-16.2	0.5
6	Angola	31	31-61.2=-30.2	11.2
7	Tunisia	24	24-61.2=-37.2	1.4
8	Kenya	19	19-61.2=-42.2	1.6
9	Ghana	18	18-61.2=-43.2	1.6
10	Ethiopia	12	12-61.2=-49.2	1.8
	ΣX	612		
	$\overline{X} = \frac{\Sigma X}{n}$	$\frac{612}{10}$=61.2		
	$P(RSA) = \frac{r}{n}$	$\frac{218}{612}$=35%		

(Source: Survey, 2019)

For normal distribution of e-governance resource and nation branding, it is agreeable that simplicity, efficiency and, accountability in the government department underscores the application of information systems to business process re-engineering.

Expanded reach of governance suggests that rapid growth of communications technology and its adoption in governance helped in bringing government departments to the doorsteps of the citizens in South Africa, Egypt and Nigeria.

Expansion of telephone network beyond the average (61.2), rapid strides in mobile telephony, the spread of internet and strengthening of other communications infrastructure facilitated the delivery of a large number of services provided by South African government as indicated in Figure 1.

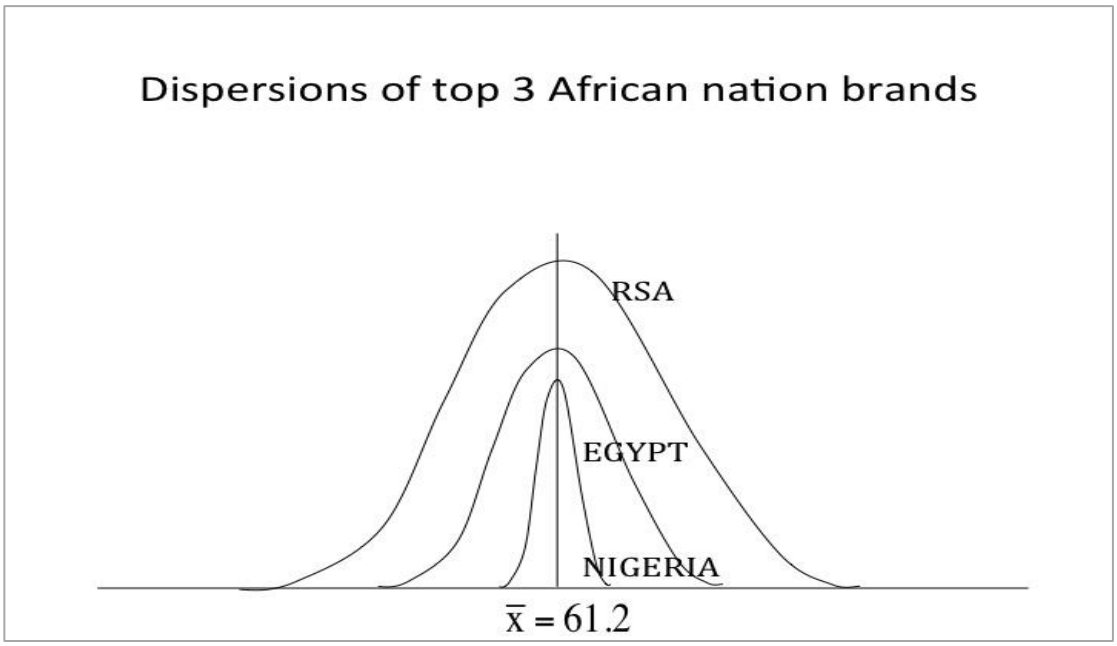

Figure 2. Dispersions Of Top 3 African Nation Brands

Source: Survey, 2019

5. FINDINGS

Given variance of 156.8 and standard deviation of 5.8, South African government successfully adopted e-governance inspired from Backus's model.

Findings reveal that the probability for investors to select randomly South Africa as a business destination $P(RSA) = \frac{r}{n}$ is 35%.

Globalization continues to increase at an accelerating rate, competition between South Africa, Egypt and Nigeria has emerged as one of the challenges facing these African governments across the continent. The African market has become a battlefield for savvier citizens, Western and Chinese Multi-National Corporations (MNCs) and African Direct Investment (ADI).

The above has compelled South Africa, Egypt and Nigeria to excel with innovative ways of delivering public services to become the destinations of choice for investments (Sodhi, 2017). Despite negative variance from the Mean (61.2) namely Morroco (-13.2), Algeria (-16.2), Angola (-30.2), Tunisia (-37.2), Kenya (-42.2), Ghana (-43.2) and Ethiopia (-49.2), these countries still emerged and cannot fall under the unbranded state nations.

As a result of the above findings, the unbranded state will have a difficult time attracting global attention (Public and cultural diplomacy, 2017). Thus, e-governance process

strengthens democracy, helps both internal development, regional and global integration. South Africa plays a prominent role in the international marketplace in the Brazil-Russia-India-China-South Africa (BRICS) community while standing as national umbrella brand for the SADC region (Public and cultural diplomacy, 2017) and Africa's brand ambassador in the G20.

Thus, a positive brand image can help African countries to reverse the brain drain. One of the consequences of globalization is the haemorrhaging of its best-educated and most talented workers, entrepreneurs and academics to the developed nations. Brain drain remains one of the most difficult challenges, which can be addressed by e-governance adoption in Africa (Public and cultural diplomacy, 2017).

The final finding is that the benefits of Backus's e-governance model include better access to information and quality services for citizens, simplicity, efficiency and, accountability in the government and expanded the reach of governance. Regarding services, there is an immediate impact in terms of savings in time, effort and money, resulting from online and one-point accessibility of public services backed up by automation of back-end processes (The World Bank, 2019).

6. CONCLUSION AND RECOMMENDATIONS

More emphasis should be on the extensive implementation and improvement of Backus's e-governance in African countries. Given the similarities like competition, it is not surprising that public service organizations are adopting marketing strategies that parallel private companies.

People tend to think about countries as a complete entity when they are considering whether to visit them, buy their products, or engage with them in some other way. Indeed, people think of countries as brands (Brands and Branding, 2017). South Africa's variance of 156.8 and standard deviation of 5.8 demonstrate that despite challenges, early e-governance adoption indicates nation-re-branding efforts. Even though globalization continues to increase at an accelerating rate, competition between South Africa, Egypt and Nigeria has emerged as one of the challenges facing these African governments across the continent. However, e-governance investment positions South Africa at least at 35% of probability as a business destination in the continent. The above in return confirms benefits associated with e-governance adoption such as better access to information and quality services for citizens,

simplicity, efficiency and accountability in the government and expanded the reach of governance in South Africa.

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