Factors Giving Rise to Digital Payments Service Munificence: The Case of Zimbabwe

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Factors Giving Rise to Digital Payments Service Munificence: The Case of Zimbabwe.

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Paper Category: Research Paper; Theoretical lenses and empirical studies that enable an understanding of ICTs & Sustainable Development.

ABSTRACT

Use of digital payments has become prevalent globally, including in countries with developing economies. Yet there is still limited understanding of the factors giving rise to digital payments service munificence in these contexts. This interpretivist study utilized the abductive qualitative content analysis approach to develop propositions and a context sensitive theoretical framework grounded in empirical data on Zimbabwe that explains the underlying factors giving rise to digital payments service munificence. It utilized secondary data from 12 monetary policy statements published online over a period of 6 years. The factors that emerged included technological characteristics and institutional interventions these resonating with diffusion of innovations theory and institutional theory respectively.

Keywords: digital payments, institutional factors, developing economy, qualitative content analysis (abductive QCA), service munificence, diffusion of innovations, abduction

INTRODUCTION

The use of digital payments has experienced rapid growth globally over the last decade. This has been attributed to advancements in technology, wider adoption of the Internet, higher mobile device penetration, and a general move by governments towards a cashless society (Alkhowaiter, 2020). Digital payments have revolutionized payment processing by improving efficiency and reducing paperwork and transaction costs (Humphrey et al., 2001). They have enabled ease of transacting by consumers, at their convenience, even without holding cash (Mishra et al., 2021) and helped businesses extend their market reach (Qureshi, 2013). With digital payments, consumers can instantly settle unanticipated expenses, track their payments, and account for their finances (Abrazhevich, 2001). Consumers use digital payments to perform financial transactions like bill payments, purchase of airtime or data bundles, pay for insurance and many more (Senyo et al., 2021). Thus, digital payments enhance financial inclusion and promote economic growth.
(The World Bank Group, 2015). On the contrary, lack of access to digital payments could extend marginalization and financial exclusion.

Use of digital currencies are relatively new on the African continent (Naboulsi, 2018) but have become prevalent (Kabanda & Brown, 2017; Mwangi & Brown, 2015; The World Bank Group, 2015) creating opportunities and positive outcomes for citizens. Debit cards, credit cards, digital wallets like PayPal, Google Pay, and Visa Checkout among others are quite prevalent, but require reliable Internet connectivity which is still limited and/or intermittent in many countries with developing economies (Simatele & Mbedzi, 2021; The World Bank Group, 2015). The latter digital payment options are hence not readily accessible for many consumers living in remote areas in developing economies. The emergence of mobile banking and mobile money services has provided several alternative digital payment options to consumers in developing economies.

These digital payment services are available in various countries around Africa, including Zimbabwe, South Africa, Ghana, and Nigeria to name a few (Mas & Morawczynski, 2012). Scant research is available about digital payment service munificence and more so in the context of a developing economy. Developing economies are commonly known for challenges with poverty, inadequate infrastructure, and inequalities in development (Mishra et al., 2021). They commonly have many digital divides and challenges that impede their socio-economic development. This study draws from data on Zimbabwe a developing economy where cash shortages necessitated the greater use of digital payments. Zimbabwe had predominantly been a cash economy with digital payment infrastructure mainly concentrated in urban areas.

Zimbabwe offers a unique context in that, it has one of the highest usage levels of digital payment methods in the region (Reserve Bank of Zimbabwe, 2018b; Simatele & Mbedzi, 2021) but has been marginally represented in the studies within this subject (Boateng & Sarpong, 2019; Simatele & Mbedzi, 2021). Zimbabwe has an enabling environment for digital payments, (Burns, 2018; Soutter et al., 2019), with the volume and value of digital transactions having experienced exponential growth (Reserve Bank of Zimbabwe, 2018a). Nevertheless, the country has not reached the same level of munificence as seen in Kenya, which is often held up as an example of digital payment success in Africa (Burns, 2018). Consumers’ willingness to adopt the new payment methods is not in question, so what is of interest are how users navigate the available option when they transact without cash (Singh, 2017).
Few studies have been undertaken to understand digital payments at a national level. The majority of studies in Africa have been on the Kenya M-Pesa success story, and merely describe the prevailing situation (Boateng & Sarpong, 2019). Such studies do not build contextual theory, hence the need to conduct a study which develops propositions and a theoretical framework that explains the phenomenon under investigation. Our research question is hence: What underlying factors give rise to digital payment service munificence in the Zimbabwean context? We use abductive Qualitative Content Analysis (abductive QCA) to investigate this question. The theory generated is relevant to government, policy makers, and citizens in general. It also adds to the body of literature on service munificence and digital payments in the context of developing countries and ICT4D in general.

LITERATURE REVIEW

Digital payments

A payment system is a set of instruments, procedures, and rules for the transfer of funds (Ehrentraud et al., 2021) Its infrastructure involves the front-end arrangements that initiate the payment and the back-end arrangements that process, clear, and settle payments. Digital payments refer to electronic means of payments that are conducted through internet banking, mobile money, plastic money and other online forms of payment that do not include the use of physical cash and cheques (Singh, 2017). These payment methods include e-payment systems such as digital credit cards, digital wallets systems, and micro-payment systems that enable consumers to perform their transactions regardless of time and location (Boateng & Sarpong, 2019). Whilst they are convenient for consumers, in some economies, merchants tend to avoid using them for fear of government taxes (Ng et al., 2021).

A survey of literature on digital payments shows that the area of digital payments has been widely researched. Some studies have focused on design (Kazan & Damsgaard, 2014), crime and security (Ngwenya & Malufu, 2012), stakeholders’ concerns in the development of mobile banking (Mujuru & Brown, 2016), evaluation of e-payments (Adeyeye, 2008), their effect on financial development (Burns, 2015) and the adoption of digital payments (Simatele & Mbedzi, 2021; Soutter et al., 2019). Some studies have revealed that digital payment usage is negatively affected by fraud, poor information and network congestion (Simatele, 2021), technical problems, and lack
of requisite facilities nearby (Wambalaba et al., 2012). There is dearth of literature on digital payment service munificence.

Due to fears that coronavirus could be transmitted by exchanging cash, some consumers are now skeptical of cash transactions (Auer et al., 2020), further accelerating the use of digital payments. A study in Kenya found that, although 93% of the population was registered for mobile money, M-Shwari, which gives short-term loans, was used by high-income earners and excluded the unbanked and the underbanked members of society (Enriquez & Jackson, 2021). This is evidence that, digital payments have not fully addressed financial exclusion as they are still not fully servicing all the social levels of persons within an economy.

Digital payment services are widely offered by banks and other non-bank financial service providers like mobile network operators (MNOs). These non-bank service providers tend to provide e-money accounts, e-wallets, the processing of electronic funds for third parties, and money transfer services in general (Ehrentraud et al., 2021). Since MNOs have wider network coverage, their payment services are widely accessible to the transacting public. Banks now offer online bill payment services and allow transfer from bank to mobile wallets. However, these systems rely on network connections, so consumers cannot make offline payments (Abrazhevich, 2001). Although many people in developing economies now have access to computer-based internet, the majority do not use it when making payments (The World Bank Group, 2015). Instead, they use mobile phones to transact from their accounts.

Convincing more people to use digital payments requires education, trust-building, and extensive marketing (Kendall et al., 2014). Some consumers do not make online payments due to perceived risk of fraud (Rouibah et al., 2016). Banks and financial institutions adopt best practice security measures to diminish the occurrence of fraud (George & Kumar, 2013; Ngwenya & Malufu, 2012). Therefore, it is imperative that consumers be rightly educated in this regard to enhance financial inclusion.

Implementation of digital payments varies greatly among countries throughout the world. Whilst there are some commonalities, each country context has its nuances. Regulatory requirements, laws, and policies for providing digital payment services are country-dependent and even vary on implementation and enforcement by each jurisdiction. For example, in South Africa, only banks are allowed to issue e-money whilst in India and Mexico, non-bank institutions can be granted
permission to offer a limited set of banking services (Ehrentraud et al., 2021). Even within the same country, some of these payment services operate like silos as there is no interoperability, thus there is no ease of movement of funds between consumers that are subscribed to different providers. How such factors affect digital payment service munificence in a country specific context warrants investigation.

Service Munificence

The major focus of service munificence research has been on business environmental munificence in relation to corporate social responsibility (Qiao, 2020) and firm performance (Tang, 2008). There is dearth of literature focusing on digital payment service munificence. Service munificence concerns the “scarcity or abundance” of digital payment services that are made available to consumers (Ashworth et al., 2010; Castrogiovanni, 1991). A munificent environment facilitates consumers’ access to various services with ease and convenience by exploiting abundant resources and capabilities (Şener, 2012). Some studies have found that offering of digital payments services is affected by the nation’s level of infrastructure development and the central bank's regulations (Ng et al., 2021). Those countries with supportive governments have succeeded in ensuring digital payment service munificence (Yu & Ibtasam, 2018) through digital payment-friendly regulations. Most innovations including the payment solutions, whether high-tech or low-tech, need to be adjusted to meet the local context and to fit the special needs of different users (Ng et al., 2021). Considering that ICTs can quickly become obsolete, they need to be constantly improved to retain the loyalty of their users (Fagerberg et al., 2010; Fischer et al., 2020; Greenstein, 2010).

Due to technological advancements, and changes in consumer tastes and preferences, with increased demand for efficient, convenient, easy to use, frictionless, contactless, and low-cost digital payment methods, many economies are investing in cashless payment systems (Ehrentraud et al., 2021). In some jurisdictions, big-tech companies have captured a sizeable market share in the digital payments arena. Because of their enormous power, big-techs tend to set the standards and determine the quality of service that will be provided to the consumers (Ehrentraud et al., 2021).

Zimbabwe uses a wide range of payment methods which are categorized as: Large value payment systems; Securities settlement systems; and Retail payment systems (Reserve Bank of Zimbabwe, 2021).
2019). Of the three categories, this study focuses on the retail payment systems which are available to the transacting consumers. The cash crisis in Zimbabwe led the government to encourage citizens towards cashless payments (FSDAfrica, 2020) which resulted in a surge in the availability and use of digital payments for the transacting public. Although the cash crisis has been identified as having led to the use of digital payments by the transacting public, it is not clear as to what factors give rise to digital payments service munificence. Contextual theory is beneficial to the development of the ICT4D field (Walsham, 2017), hence the value of using abductive QCA to develop a context-sensitive theory that emerges from situated secondary empirical data.

**RESEARCH METHODOLOGY**

An interpretive abductive QCA was employed in this study (Schreier et al., 2019). Such an approach is suitable for analyzing secondary document sources, which was the case in this study, where the corpus of data consisted of monetary policy statements on Zimbabwe. Abductive strategies (Elo & Kyngäs, 2008; Gregory & Muntermann, 2011; Želinský, 2019) facilitate better contextual understanding of a phenomenon and lead to the generation of new theoretical knowledge through an emergent process. Existing concepts or theories may be used to explain the phenomenon if emergent patterns suggest a match to these.

**Data collection**

This study utilized 12 monetary policy statements (MPS) from the Reserve bank of Zimbabwe (RBZ) published over a period of 6 years. The documents were chosen after considering the usefulness relative to the study aim; the quality of their content; and their fit with the research question (Rapley & Rees, 2018). The documents are publicly available and accessible to the public through the government website at no cost. Secondary documents are suitable and reliable for analysis as they reveal the author purposes and trace their thoughts as interviews would do (Kibiswa, 2019) While a single homogenous source may be considered restricting, as with single case study research, a narrow focus enables a rich and in-depth analysis to be executed with the goal of generalizing and abstracting from data to theory and concepts, and not to some target population (Lee & Baskerville, 2003).

Table 1 below shows the list of documents that form the corpus of data and their sources.
**Table 1**: List of Monetary Policy Statement documents analyzed

<table>
<thead>
<tr>
<th>Document No.</th>
<th>Document name</th>
<th>File Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doc_02</td>
<td>MPS Jul 2015</td>
<td><a href="http://www.baz.org.zw/policy-information/policy-pronouncements/rbz-mid-term-">http://www.baz.org.zw/policy-information/policy-pronouncements/rbz-mid-term-</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>monetary-policy-statement-july-2015</td>
</tr>
<tr>
<td>Doc_03</td>
<td>MPS Jan 2016</td>
<td><a href="http://www.baz.org.zw/policy-information/policy-pronouncements/rbz-mid-term-">http://www.baz.org.zw/policy-information/policy-pronouncements/rbz-mid-term-</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>monetary-policy-statement-july-2015</td>
</tr>
</tbody>
</table>

**RESEARCH FINDINGS AND THEORY DEVELOPMENT**

Data analysis started with induction where codes and categories were developed from the data. This was followed by the ex-post review of the literature that helped to position the emergent themes with existing literature, theories and frameworks (Birks et al., 2013). The emergent themes resonated well with the Diffusion of Innovations (DOI) (Rogers, 2003) and the Institutional Theory (King et al., 1994). As such concepts from these theories were adopted (Elbanna & Idowu, 2021; Mishra et al., 2021) and the emerging categories and themes were then mapped to them. The discussion of emergent concepts and theories is weaved in together with the findings in this section as is often the case with abductive research (Strong & Volkoff, 2010).

Each MPS document was selected as the unit of analysis. Open coding resulted in 30 emergent concepts, each with supporting evidence from the documents. Though each concept was supported by many cases, some cases did not support every emergent concept. Related concepts were grouped into 10 key categories and finally into 3 main themes which were integrated and contextualized for the development of a theoretical framework. The summary of emergent themes and their descriptions is presented in Table 2 below.
Table 2: Summary of emergent themes and key categories and related definitions

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional interventions</td>
<td>Institutional actions that come in form of influence and regulation</td>
</tr>
<tr>
<td>Institutional directives</td>
<td>A command to produce or to use innovations, or be involved in an activity that purposely promotes the production and/or use of innovations</td>
</tr>
<tr>
<td>Knowledge building</td>
<td>Activities undertaken to provide the basic skills and exposure required for consumers to exploit the digital innovations. These includes funding of research projects</td>
</tr>
<tr>
<td>Knowledge deployment</td>
<td>The provision of education services and digital skills training to create a literate and educated population to support the use of digital payments</td>
</tr>
<tr>
<td>Mobilization</td>
<td>A subtle force that can be applied to citizens by the government or the industry to achieve a desired goal. It involves the encouragement of decentralized actors and organizations to think in a particular way regarding an innovation, includes promotional and awareness campaigns.</td>
</tr>
<tr>
<td>Standards</td>
<td>A form of regulation aimed at confining choices of distributed actors and organizations within larger social or institutional objectives and to describe one way of doing things as &quot;preferable&quot;</td>
</tr>
<tr>
<td>Subsidy</td>
<td>Government incentive or support extended to an economic sector with the aim of promoting the use of digital payments and direct or indirect suppression of certain unwanted activities.</td>
</tr>
<tr>
<td>Nature and Characteristic of technology</td>
<td>This entails the technology characteristics that are: complexity, compatibility, relative advantage, trialability (ease of use), usefulness and other attributes that are key drivers of adoption and use of ICTs like observability.</td>
</tr>
<tr>
<td>Compatibility</td>
<td>Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters</td>
</tr>
<tr>
<td>Relative advantage</td>
<td>Relative advantage is when an innovation is perceived as economically better than its predecessor. It can include social prestige factors, convenience, and satisfaction</td>
</tr>
<tr>
<td>Service Munificence</td>
<td>Service munificence concerns the scarcity or abundance of digital payment services that are made available to consumers</td>
</tr>
<tr>
<td>Availability</td>
<td>Presence of electronic payments or measures put in place to ensure they are available and accessible to consumers</td>
</tr>
<tr>
<td>Use</td>
<td>Use of electronic payments and consumer confidence in the use of digital payments</td>
</tr>
</tbody>
</table>

It is possible to generalize from empirical evidence, even from a single case study, to wider theoretical constructs and structures (Lee & Baskerville, 2003; Walsham, 2017). The emergent themes are discussed below with supporting evidence leading to the construction of the final theory.

**Service Munificence**

The study initially focused on the availability and use of digital payments. As the study progressed and through the review of literature review a more eloquent label was found to capture the essence, this being digital payment service munificence. Service munificence entails the availability and use of digital *payments and* has been discussed at a conceptual level in the prior literature review section.
Availability of digital payment methods

In Zimbabwe, retail payment systems that include plastic money (credit cards, debit cards, cash cards) used through point of sale (POS) machines and Mobile POS; the Zimswitch Instant Payment Interchange Technology (ZIPIT); Mobile Money (Ecocash, One money, Telecash, etc.); Electronic Funds Transfer (EFT), Electronic Processing of payment instructions – Paynet; Internet banking, and Mobile Banking are generally available to the transacting public. Mobile money differs from mobile banking in that, it involves the use of mobile wallets and mobile payments to enable person-to-person payments even without having a bank account whilst mobile banking is an extension of access to normal banking services through a mobile device (FSDAfrica, 2020). The following quotations explain the category of availability:

“The Bank remains committed and focussed on achieving a cash-lite society through the promotion of e-payments – cards, mobile banking, internet banking, and electronic transfers” (Doc_06).“... in addition, Easylink provides convenient consumption products such as ZESA electronic prepaid tokens, Medical and Funeral Assurance in all its 29 branches and through the Web (internet) for relatives of Zimbabweans in the Diaspora” (Doc_02). “The national payment stream is characterized by large value (Real Time Gross Settlement) and small value (mobile financial services, cheque, automated teller machines, point of sale and internet)” (Doc_09).

Table 3 below summarizes the available payment platforms and the number of banks providing access to retail payment streams that serve customers utilizing digital payment methods.

<table>
<thead>
<tr>
<th>FINANCIAL MARKET INFRASTRUCTURE (FMI)</th>
<th>NUMBER OF DIRECT PARTICIPANT BANKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switches &amp; Cards</td>
<td></td>
</tr>
<tr>
<td>POS, ATM, Local Switch, Zimswitch Instant Payment Interchange Technology (ZIPIT), MasterCard, Visa, Union Pay International</td>
<td>15</td>
</tr>
<tr>
<td>Mobile payments</td>
<td></td>
</tr>
<tr>
<td>Mobile Financial Services/Mobile Money – Ecocash, One money, Telecash, iecash, Mymoney, Nettcash, Getcash</td>
<td>7</td>
</tr>
<tr>
<td>Internet and Mobile banking</td>
<td></td>
</tr>
<tr>
<td>Electronic Funds Transfer (EFT), Electronic Processing of payment instructions- Paynet</td>
<td>16</td>
</tr>
</tbody>
</table>

Table 3: Retail digital payment Platforms and participating banks. (Extracted from RBZ Annual reports, 2015 to 2020)

Whilst traditionally banks have supported the consumers’ use of cash, cards, RTGS, and internet banking for most of their transactions, there is a notable increase in the number of banks supporting the use of mobile money in the period 2015 to 2020. Table 4 below shows the details on the number of payment systems access points and access devices.
Table 4: Payment Systems Access Points and Devices. (Compiled from RBZ MPS and Annual reports 2016 to 2021)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMs</td>
<td>556</td>
<td>569</td>
<td>561</td>
<td>551</td>
<td>542</td>
<td>532</td>
<td>-4%</td>
<td>-0.9%</td>
</tr>
<tr>
<td>POS</td>
<td>16,363</td>
<td>32,629</td>
<td>59,939</td>
<td>99,935</td>
<td>121,413</td>
<td>125,277</td>
<td>666%</td>
<td>133.1%</td>
</tr>
<tr>
<td>Bank Agents</td>
<td>1,723</td>
<td>4,059</td>
<td>4,865</td>
<td>4,815</td>
<td>4,840</td>
<td>4,840</td>
<td>181%</td>
<td>36.2%</td>
</tr>
<tr>
<td>Mobile banking Agents</td>
<td>38,745</td>
<td>40,590</td>
<td>47,838</td>
<td>50,740</td>
<td>59,219</td>
<td>52,065</td>
<td>34%</td>
<td>6.9%</td>
</tr>
<tr>
<td>MPOS</td>
<td>21,248</td>
<td>29,991</td>
<td>29,991</td>
<td>29,991</td>
<td>29,991</td>
<td>29,991</td>
<td>*41%</td>
<td>20.6%</td>
</tr>
<tr>
<td>Total</td>
<td>57,387</td>
<td>77,847</td>
<td>113,203</td>
<td>177,289</td>
<td>216,005</td>
<td>212,705</td>
<td>271%</td>
<td>54.1%</td>
</tr>
</tbody>
</table>

Table 4: Payment Systems Access Points and Devices. (Compiled from RBZ MPS and Annual reports 2016 to 2021)

* Represents the change from the year MPOS was introduced (2018) to 2020.

The highest increase (666%) was on the Point of Sale (POS) devices which increased from 16,363 devices in 2015 to 125,277 devices in 2020.

“All access points recorded a positive growth during the year under review except ATMs” (Doc_07). “The increase in the usage of plastic money is testimony of the efforts by banks to promote electronic payments to make it easier and cheaper for the banking public to use cards. Efforts are also being made by the Reserve Bank, Zimswitch, financial institutions, and mobile banking providers to ensure that a stable infrastructure to support the electronic payment system is available” (Doc_04). “Momentum to grow devices and access points dovetail with the national financial inclusion policy thrust where the planned deployment is expected to reach 100,000 POS and 90,000 mobile payment agents by year 2020” (Doc_05).

An increasing number of access points and devices improved consumers’ digital payment options.

Use of digital payment methods

There has been a surge in the use of digital payments by the transacting public. This is supported by the following quotations:

“The growth in the use of plastic money ... was phenomenal in 2017 to the extent that more than 96% of the $97.5 billion - from the 1 billion transactions - processed in the entire country in 2017 were through electronic and mobile banking systems” (Doc_07). “Electronic transaction volumes increased from two million in 2009 to over two billion in 2019, (1,000 times in 10 years) while value of electronic transactions also increased from $7 billion in 2009 to $430 billion in 2019, (an increase of 60 times in 10 years)” (Doc_11).
The summary of the distributions by year is shown in Table 5 below.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RTGS</td>
<td>44.87</td>
<td>78,939%</td>
<td>48.11</td>
<td>77,95%</td>
<td>61.72</td>
<td>65,73%</td>
<td>85.35</td>
<td>56.23%</td>
</tr>
<tr>
<td>CHEQUE</td>
<td>0.14</td>
<td>0.25%</td>
<td>0.11</td>
<td>0.18%</td>
<td>0.07</td>
<td>0.07%</td>
<td>0.05</td>
<td>0.03%</td>
</tr>
<tr>
<td>POS</td>
<td>1.72</td>
<td>3.03%</td>
<td>2.9</td>
<td>4.70%</td>
<td>6.64</td>
<td>7.07%</td>
<td>8.99</td>
<td>5.92%</td>
</tr>
<tr>
<td>ATM</td>
<td>3.05</td>
<td>6.77%</td>
<td>2.28</td>
<td>3.69%</td>
<td>0.43</td>
<td>0.46%</td>
<td>0.17</td>
<td>0.11%</td>
</tr>
<tr>
<td>MOBILE</td>
<td>4.65</td>
<td>8.18%</td>
<td>5.82</td>
<td>9.43%</td>
<td>18.02</td>
<td>19.19%</td>
<td>44.14</td>
<td>29.08%</td>
</tr>
<tr>
<td>INTERNET</td>
<td>1.61</td>
<td>2.83%</td>
<td>2.5</td>
<td>4.05%</td>
<td>7.02</td>
<td>7.48%</td>
<td>13.1</td>
<td>8.63%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>56.85</td>
<td>100%</td>
<td>61.72</td>
<td>100%</td>
<td>93.9</td>
<td>100%</td>
<td>151.8</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 5: Value and Volume of Transactions from 2015 to 2020. (Compiled from RBZ MPS and Annual reports 2016 to 2021)

Whilst RTGS, mobile banking, POS, and Internet banking experienced unprecedented growth both in terms of value and volume, the volume of ATM and Cheque transactions declined by 76% and 92% respectively in the period from 2015 to 2020. The following quote further supports use:

“In volume terms, more than 99% of payments were through electronic and mobile banking platforms with mobile banking constituting 84% in Zimbabwe in the year 2018. This has significantly contributed to the increase in financial inclusion through mobile banking, which now stands at more than 80%. In terms of regional comparison, it is pleasing to note that Zimbabwe is now amongst the leading countries in the use of mobile banking products” (Doc_08).

This is a clear indication that digital payments have dominated the payment landscape in the Zimbabwean economy. Based on this analysis, we postulate:

**Proposition P1.** The availability of digital payment facilities drives the use of digital payments.

**Nature and characteristics of technology**

According to the diffusion of innovation theory (DOI), five innovation characteristics are influential in the adoption of innovation: Relative advantage; Compatibility; Complexity;
Trialability; and Observability (Rogers, 2003). Relative advantage and Compatibility emerged from the analysis as the most important characteristics influencing use of digital payments.

**Relative advantage**

Relative advantage reflects an innovation that is perceived as economically better than its predecessor. It can include social prestige factors, convenience, and satisfaction (Rogers, 2003). Digital payments are being perceived as economically better than cash payments in which consumers spend lots of hours in bank queues, thus giving vital convenience and satisfaction.

“Agent banking and e-banking are being recognized as efficient and cost-effective delivery channels of financial products and services” (Doc_03). “Going digital is the best way of beating cash queues at banks” (Doc_06). “Cash shortage has subsided especially in view of the surge in the use of cashless payment systems” (Doc_04).

**Compatibility**

Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential users (Rogers, 2003). Using digital payments is satisfying the payment and safety needs of the consumers including enabling consumers to successfully transact even without cash.

“Measures undertaken by system operators were largely adequate and ensured the efficient and safe functioning of the payment system” (Doc_09). “Individuals ...undertake Person to Person transfers, Person to Merchant payments for goods and services, settlement of bills and purchase of airtime” (Doc_08). “...adoption of friendly banking and plastic money payment platforms such as tap-and-go systems and pre-funded cards to enhance the ease of transacting and ease of passage at tollgates within the country” (Doc_07).

DOI theory posits that the innovation must have a nature suitable for the context in which it is spreading, and the vectors of communication diffusion must be in place to transmit information (Rogers, 2003). The socio-economic, cultural, and political environment shape and characterize how innovations are spread (Weerakkody et al., 2009; Zanello et al., 2016). Based on this analysis, we postulate:

**Proposition P2. The nature and characteristics of digital payment facilities influence service munificence.**
Institutional interventions

An institution is any standing, social entity that exerts influence and regulation over other social entities as a persistent feature of social life, outlasting the social entities it influences and regulates, and surviving upheaval in the social order (Hughes, 1939 as cited by King et al., 1994). Although technology is not its central focus, institutional theory is of interest when researchers are concerned with relationships between ICTs and institutional contexts in which they are embedded (Walsham, 2017). Some authors have focused on both influence and regulatory features of institutions (Arias et al., 2020; Brammer & Jackson, 2012; Rodrigo et al., 2009) while others have focused specifically on information technology, using institutional perspectives (Crowston & Myers, 2004; Nichols, 2008; Shrestha et al., 2020). Institutional factors are ubiquitous and important components for understanding or explaining nationwide use of digital payments or information technologies (Faik et al., 2020; King et al., 1994; Sharma et al., 2007).

Whilst individuals make their own decisions, the institutional framework influences the processes of change, coordination, and dynamic adjustment (King et al., 1994). Digital payment service munificence in a country is contingent on the expectations and interactions between consumers and service providers (Frolov & Lavrentyeva, 2019). There is an interaction of influence and regulation along the dimensions of supply-push and demand-pull forces for innovation (King et al., 1994). Building on the influence and regulation roles of institutions, this study illustrates the kinds of institutions that are involved in ensuring digital payment service munificence. The nature of institutional intervention depends on whether the desired changes are in service provision or use. Both issues in the Zimbabwean context are matters with considerable political consequence, especially for the service providers. Regardless of how they may be construed, interventions are necessary when there is market failure (Morshed et al., 2020) to protect the public interest.

Types of institutions affecting digital payments service munificence

Government authorities

The national government, its agencies, and its various institutions have legal authority to promote, support, facilitate and regulate digital payment services and promulgate various requirements within which all other institutions should operate (Burns, 2018; King et al., 1994). The government
may set IT standards and enforce compliance for consumers’ safety and the interoperability of firms.

**Trendsetting institutions**

These are powerful organizations (business, religious, labor, professional, etc.), media, service providers, vendors, and the black market that decide whether or not to accept digital payments (King et al., 1994). Such organizations may encourage their members to use digital payments methods by encouraging the swiping of their contributions or sending them through mobile money and bank transfers. On the contrary, the black market can influence the prices charged to consumers using digital payment methods. Merchants and street vendors who try to avoid government taxes, high agency fees, and have a preference for cash affect the prices charged to consumers transacting with digital payment instruments (Simatele & Mbedzi, 2021).

**Supporting industries**

This refers to the presence, development, service level, and cost structure of the support-giving institutions such as telecommunications, financial, trust enablers, and the IT industry (King et al., 1994), whose activities affect the availability and use of digital payment initiatives in developing economies. However, unlike developed economies, developing economies tend to have weak interactions and cooperation between the private and the public sector (Bashir et al., 2010). In general, the governments in developing economies have greater power as the regulator and tend to give directives to the supporting institutions (Mishra et al., 2021). However, the latter institutions being private and for-profit, will only cooperate when meeting such requirements is financially viable, or noncompliance has adverse consequences. In some cases, firms can collaborate and produce “collective invention” by sharing information about the design and effectiveness of new technologies or even to promote use of certain inventions (Powell & Giannella, 2010).

**Forms of Institutional interventions**

Institutional action comes in the form of influence and regulation (Weerakkody et al., 2009) with the "supply-push" and "demand-pull" forces providing context for the actions taken (Garcia-Quevedo et al., 2017; King et al., 1994). The influence of an institution is the exerting of persuasive control over the practices, rules, and belief systems of those under the institution's sway (Kimberly...
1979 as cited in Gurbaxani et al., 1990). Influence is exerted through education and socialization processes of individuals (Ferguson et al., 2019), or the systematic articulation of particular points of view (e.g., propaganda), and provision of more resources to support or subsidize "appropriate" social activities or withholding of resources from those activities deemed as "inappropriate" (King et al., 1994).

*Regulation* by institutions is the direct or indirect intervention in behaviour of those under the institution's influence, with the specific objective of modifying that behaviour through sanction or other affirmative means (King et al., 1994). Regulation can help create a safe, stable environment for consumers and promote advances that reduce barriers to availability and use of digital payments (Ferguson et al., 2019). Too much regulation has a negative effect on ICT investment (Papaioannou, 2017). To guarantee a positive effect, regulation should create conditions, reduce barriers, encourage, facilitate the legal system rather than formalizing processes or giving direct subsidies (Arias et al., 2020; Frolov & Lavrentyeva, 2019). Whilst both influence and regulation are important (Ferguson et al., 2019; Liu et al., 2015), regulation greatly impacts digital payments service munificence in Africa as it affects the ability of entrepreneurs to freely develop and deploy the required services for the market (Ferguson et al., 2019).

Influence and regulation can play different roles depending on the "supply-push" or "demand-pull" forces driving the innovation (King et al., 1994). The *supply-push* force for digital payment methods comes from their availability. Demand affects the adoption of digital payment systems based on the consumer’s characteristics, the nature and characteristics of the technology, and how consumers respond to the promotional activities advancing the use of digital payments (Coffie et al., 2020; Ferguson et al., 2019). The *demand-pull* force arises from consumers’ willingness to transact using digital payments (Capone et al., 2013; García-Quevedo et al., 2017). Both supply and demand are required for digital payments to be used. However, the dominant force, whether supply or demand, shapes the institutional actions regarding the digital payments service munificence. The conditions like the relative state of technical knowledge, the availability of complementary services like networks, the availability of alternative payment methods, the nature of the needs of society at a given time, and the effectiveness of the market at translating needs into clear demands, influence the services availed to consumers (Bessen & Nuvolari, 2014; Palcic et al., 2014; Sekerin & Gorokhova, 2016; Sharpe, 2009). Each of the institutional actions is classified within the following categories: knowledge building, knowledge deployment, subsidy,
mobilization, standards, and innovation directive (King et al., 1994). Figure 1 below shows the dimensions of institutional interventions.

<table>
<thead>
<tr>
<th>Influence</th>
<th>Supply-Push</th>
<th>Demand-Pull</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Building</td>
<td>Funding of research projects</td>
<td>Knowledge Deployment</td>
</tr>
<tr>
<td>Knowledge Deployment</td>
<td>Provision of education services and digital skills training</td>
<td>Training programs for consumers and organisations’ employees to provide base of skilled talent for using digital payments</td>
</tr>
<tr>
<td>Subsidy</td>
<td>Funding of digital payment infrastructure deployment</td>
<td>Subsidy</td>
</tr>
<tr>
<td>Encouragement of organisations to invest in digital payments and in R&amp;D</td>
<td>Direct or indirect suppression of the use of cash</td>
<td></td>
</tr>
<tr>
<td>Innovation Directive</td>
<td>Funding of digital skills training</td>
<td>Direct or indirect provision of complementarities required for use</td>
</tr>
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<td></td>
<td></td>
<td>Mobilization</td>
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<td></td>
<td></td>
<td>Programs for awareness and campaign</td>
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</tbody>
</table>

**Figure 1: Dimensions of institutional interventions (Adapted from King et al. 1994)**

*Knowledge-building*

Knowledge-building is undertaken to provide the requisite skills and exposure for consumers to exploit digital innovations (Damsgaard & Lyytinen, 2001; King et al., 1994). It includes funding of research projects, often supported by governments and other institutional sponsors of research activities. Knowledge-building can take place through the support of basic research with limited immediate application potential, or applied research to yield particular payoffs (King et al., 1994). Institutions can have multiple objectives for supporting knowledge-building activities and can change their funding modalities over time. In Zimbabwe, the government, due to financial constraints, provides 1% of its GDP to support a relatively small amount of the nation's research activity (Research Council of Zimbabwe, 2018), but it plays an important role in mobilizing the
corporate investment in funding research around particular topics of identified national importance.

“The Bank continued to ensure that the National Payment System (NPS) is safe, secure, efficient, and cost-effective on the back of a number of measures instituted. These included oversight, supervision, research, licensing and operational activities” (Doc_11). “The objective of this collaborative effort is to come up with a National Fintech Strategy. …to put in place a regulatory framework to avoid regulatory arbitrage, create an enabling environment for Fintech as well as a consistent approach in understanding and regulating Fintech, build consumer awareness and education, and establish institutional arrangements to ensure a coordinated approach among stakeholders” (Doc_10).

**Proposition P3.** Institutional intervention to promote knowledge-building is essential to the provision of digital payments methods, but it is not required for successful diffusion.

**Knowledge Deployment**

Knowledge deployment aims to stimulate the dissemination of new knowledge to society, either by creating knowledgeable individuals and societies or creating repositories of knowledge like archives and libraries of research findings. This includes the general provision of education services and digital skills training to the population (King et al., 1994). Creating a literate population is essential to any broad innovative tradition (Green et al., 1985; Hove & Ndawana, 2019). Knowledge deployment may aim to provide requisite skills to potential users of digital payments through training programs for individuals and organizations (King et al., 1994). Such programs have played important roles in major innovation efforts in the past (Mukoyama, 2006; Wang & Ramiller, 2009) by ensuring that a significant number of individuals in the population recognize the prospects and potential for exploiting an innovation. The government and the trendsetting institutions collaborated in ensuring consumers' awareness and use of available digital payment methods.

“Financial literacy capacity-building programs will continue ...the Bank will roll-out targeted financial education programs, which will be implemented through various delivery channels such as print and electronic media. ... to embed financial literacy from early childhood development ... the Bank has initiated engagement processes with stakeholders to promote appropriate financial literacy content in the education curricula” (Doc_07). RBZ “in collaboration with various stakeholders, continue to implement initiatives to enhance financial education and consumer protection, including ...issuance of consumer education material ...to promote responsible access to financial services” (Doc_10). “...collaborating with stakeholders in various outreach programs aimed at raising awareness to members of
the public about available financial products and services as well as financial inclusion initiatives” (Doc_11).

**Proposition P4.** Thoughtful and sustained institutional interventions for knowledge deployment promote digital payment service munificence.

**Subsidy**

A subsidy or government incentive is a form of financial aid or support extended to an economic sector, a business, or an individual generally to promote economic and social policy (Myers, 1998). Subsidies may involve the provision of institutional grants for knowledge-building activities, provision of free or subsidized general education, reduction in general liabilities for organizations that support specific government activities, and procurement support for products and processes that facilitate the provision of services as directed by the government (King et al., 1994). Good examples of subsidies may include the funding of digital payment infrastructure deployments, direct or indirect suppression of the use of cash. Such subsidies may be provided by the government or other institutional sources (Rogers, 2003). The encouragement of financial institutions to make funds available for innovative activity, though not a direct subsidy, has similar effects as subsidies. To support the use of digital payments, the government of Zimbabwe took various measures including the funding of digital payment infrastructure deployments and both the direct and indirect suppression of the use of cash.

“Government will continue to invest heavily in expanding the electronic payment infrastructure, as the economy continues to move towards a cash-lite society” (Doc_08). “Central Bank will remain resolute in driving the growth of access devices and points through collaborative efforts and address any challenges that may be faced on an on-going basis, as we move towards a cash-lite society” (Doc_05). “Financial market participants continued to increase access points for the convenience of the transacting public” (Doc_06).

The encouragement of financial institutions to make funds available for innovative activity, though not a direct subsidy, has similar effects as subsidies.

**Proposition P5.** Subsidies are crucial but not always essential instruments of institutional intervention for service munificence.
Standards

Standard-setting is a form of regulation aimed at confining choices of distributed actors and organizations within larger social or institutional objectives (Damsgaard & Lyytinen, 2001). Standards are socially constructed agreements or "treaties" among interested parties to describe one way of doing things as "preferable" (King et al., 1994). They both derive from and help direct the course of knowledge-building activities, and they significantly influence knowledge deployment and subsidy instruments. Whilst at times they are completely voluntary, standards can be mandatory (Hovav et al., 2001) like requiring adherence to security standards in offering digital payment services to guarantee consumer protection (Simatele & Mbedzi, 2021). Some standards have been set to govern the provision and use of digital payment services.

"All banking and microfinance institutions are now required to electronically log complaints they receive from clients into a Complaints Return on the Consumer Protection Module in the Bank Supervision Application (BSA) System” (Doc_12). “Linked to the cyber security concern, the Central Bank has been encouraging the market players ...to migrate to Euro MasterCard and Visa standards (EMV) which ensure enhanced card security features. ...The Central Bank urges those institutions, which have not yet complied to expeditiously implement the requisite EMV standards” (Doc_08).

**Proposition P6.** Standards are an important tool of institutional intervention in ensuring digital payment service munificence.

Institutional Directive

Institutional directive is a command to produce or to use innovations, or be involved in an activity that purposely promotes the production and/or use of innovations (King et al., 1994). Another form of a directive is requiring conformance with other standards (King et al., 1994) that essentially require organizations to alter their modes of operations in ways that fit in within the confines prescribed by the authorities. In this case, these are directives that encourage or even mandate (Damsgaard & Lyytinen, 2001) the provision and use of digital payment services. Whilst command innovations often fail as they fall short of meeting consumer expectations or even fail to take off as innovators have no self-drive to innovate, directives can play important roles in innovation and diffusion (King et al., 1994; Weerakkody et al., 2009). In such instances, individuals may be willing to sacrifice personal discretion and follow the directives of the national leadership.
“Providers of financial services are urged to continue embracing technology to reach out to marginalized communities” (Doc_01). “Providers are urged to innovate and move towards less cash-based models of payment” (Doc_05). “Multi-pricing and refusal to accept plastic money is counter-productive … the 2018 Finance Bill … is making this malpractice of multi-pricing and the refusal of plastic money illegal” (Doc_07).

The study results show that service munificence in Zimbabwe is inherently political, and the desirability of actions is generally dependent on the stance taken by the government. Failure to cooperate is met with sanctions or other forms of punishment.

**Proposition P7.** Institutional directives are a powerful intervention in a crisis for ensuring digital payment service munificence.

**Mobilization**

Mobilization is a subtle force that can be applied to citizens by the government or the industry to achieve the desired goal (King et al., 1994). It involves the encouragement of decentralized actors and organizations to think in a particular way regarding an innovation, hence, it affects its acceptance and use (Damsgaard & Lyytinen, 2001; Kling & Iacono, 1988). The main institutional instruments used for mobilization are promotional and awareness campaigns. There is a special mobilization role played by higher education and professional associations that enable significant actors within organizations to see innovation as necessary to organizational welfare. Their advice usually targets highly placed executives within organizations and the graduates who get to take up various positions in the economy. In principle, mobilization's effects are like the effects of advertising on consumer behaviour, which is difficult to measure. Potential technology adopters will embrace an innovation only if they come across it or hear of it (King et al., 1994). However, simple mobilization efforts are likely to have little effect on actual innovation without the other interventions of knowledge building, knowledge deployment, and subsidy. Nevertheless, mobilization efforts can have a marked catalytic effect in the presence of these factors. The curriculum in Zimbabwe is used to encourage students to accept certain viewpoints and, possibly push them toward embracing the use of electronic payments.

“The Bank has initiated engagement processes with stakeholders to promote appropriate financial literacy content in the education curricula” (Doc_07). “The increase in the usage of plastic money is testimony of the efforts by banks to promote electronic payments to make it easier and cheaper for the banking public to use cards” (Doc_04). “It is, therefore, imperative for the market and key stakeholders to continue promoting the use of electronic…"
means of payment that are cost-effective and efficient for the benefit of the transacting public” (Doc_03).

Higher education institutions and professional associations play a special mobilization role that enables significant actors to perceive innovation as necessary to organizational welfare.

**Proposition P8.** Mobilization efforts are important but not essential in stimulating digital payment service munificence and are useful mainly in conjunction with other institutional interventions

**Summary of findings**
It is possible to generalize from empirical evidence, even from a single case study to wider theoretical constructs and structures (Walsham, 2017). The development of theory is crucial in the ICT4D field (Heeks & Bailur, 2007; Walsham, 2017). Propositions have been developed using the outcomes from the abductive QCA process. The emerging concepts were mapped to related constructs from the DOI and the institutional theory. The systematic linking of the key categories and propositions culminates in Figure 3 below which presents the factors giving rise to service munificence as discussed above.

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*Figure 3: Illustration of factors giving rise to availability and use of digital payments*

Availability affects the use of digital payments. Both availability and use are collectively called service munificence and are directly affected by the nature and characteristics of technology and the institutional interventions like knowledge deployment, subsidy, standards, and directives. Knowledge-building only has a direct effect on availability and not use. The effect of all variables
is enhanced by mobilization which catalyzes as it cannot independently affect digital payment service munificence.

**Conclusion**

The focus of this study is on understanding the factors giving rise to digital payments service munificence in a developing economy. We argue that the current literature has focused on other issues like adoption and on environmental munificence and its effects on business activities. The state of ICT4D research with regards to service munificence has been highlighted and the use of an abductive approach to QCA has been articulated. Where no theory exists to explain the phenomenon, abduction is a useful strategy to develop and test theory. The abductive QCA was used to develop a context sensitive ICT4D theory for better understanding of the phenomenon under investigation. The developed theoretical framework is well-grounded in the empirical data and better explains the factors affecting service munificence in a developing economy context. More research is needed to test the emergent theory. This research has added to the current discourse by using the abductive QCA to develop a new theory that provides a better explanation of digital payments service munificence than existing adoption theory. The result of the research study was a new theory termed the digital payment service munificence theory which presents a holistic theoretical framework of explanation and prediction.

**Limitations and future research**

The limitation of this study is that it relied on the analysis of published MPS documents. Future research could focus on utilizing multiple sources of data like newspapers, commentaries, magazine articles, etc. for triangulation purposes. Additionally, a future research opportunity could be conducting a similar study that covers more countries within the region. Finally, a possible future research opportunity could be to investigate the effects of individual characteristics on digital payment service munificence.

**Acknowledgements:**

This work was financially supported by the Hasso-Platner Institut for Digital Engineering through the HPI Research School at UCT.

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