International Research Journal of Applied Sciences, Engineering and Technology
Vol.7, No.9; September-2021;
ISSN (1573-1405);
p –ISSN 0920-5691
Impact factor: 4.33

PUBLIC VALUE IN ICT DEVELOPMENTAL OUTCOMES. A CRITICAL DISCOURSE ANALYSIS

[123]Yinka Oyerinde and [1]Felix Bankole

[1]School of Computing, University of South Africa (UNISA), South Africa
[2]UNESCO Regional Office, Abuja, Nigeria
[3]Department of Computer Science, University of Jos, Nigeria

Abstract: *In this research, we carry out a Critical Discourse Analysis on the UNDP Human Development Research Reports from 2010 to 2016 in order to determine if any public value is intended or derived from the policy directions being put forward or from their corresponding implementations. There has been a lot of focus on policy formulations from governments and international institutions over the years aimed at improving Human Development with respect to the Human Development Index. With many of these policies providing optimism for socio-economic growth resulting from increased ICT investments and usage, the resultant effects have not been as promising as proposed and sometimes not evident at all. This research is theoretically founded on Habermas Theory of Communicative Action carried out from a Critical Theorist's epistemological viewpoint and falls within the progressive perspective of ICT-enabled development. Findings show that indeed public social value is intended to be created and at the core of policy directions being called for in these reports with respect to ICT interventions and developmental outcomes. This research provides both a theoretical and practical contribution to the ongoing global discourse on ICT4D with respect to ICT developmental outcomes and their impacts on socio-economic development.*

Keywords: *ICT4D; Critical Discourse Analysis; Socio-Economic Development; Public Value; Communicative Action*

1 Introduction

Information and Communication Technology (ICT) policy adoption has been a central issue in the recent discourse of ICT for Development (ICT4D) to guide countries in planned and strategic intervention of ICT, in order to accelerate socio-economic development (Hasan, 2016). As a result, many developing countries have been steadily progressing over the years in implementing ICT-based applications and initiatives in the hope that it would lead to an increase in efficiency in the public sector, thereby providing public value and ultimately promoting socio-economic development (Hanafizadeh et al., 2019). Consequently, many international bodies and organisations have taken strong positions on the development and utilization of varying ICT policies with the aim of aiding socio-economic development and growth because, as Ayogu (2006) succinctly postulated, policymaking that is informed by careful research can promote efficiency by narrowing the scope for bad decisions. These bodies include the International Development Research Center (IDRC) (IDRC, 1999; Rathgeber, 2000); The Organization for Economic Cooperation and Development (OECD) (OECD, 1992; Marcelle, 2000); The World Bank (WB); The International Telecommunication Union (ITU) (Nulens & Van Audenhove, 1999) and the United Nations via its United Nations Development Program (UNDP) Human Development Reports (HDR) which have been running annually since 1990.

Many countries, having realized the critical role of ICT in socio-economic development promoted by a technocentric development effort (Hanafizadeh et al., 2019) and mostly guided by a number of international development organizations, have expected ICT to

enable a series of positive effects with respect to human, national and economic development. This has resulted in many countries and international organisations drawing up ostentatious ICT documents and policies which, for various reasons, have found adoption a serious challenge (Dabla, 2004; Brown & Brown, 2008; Stahl, 2008; Baqir et al., 2009). The result therefore has been that the actual outcomes have usually fallen short of these expectations. This has led to discussions about the reasons for this failure, as seen in (Heeks, 2002; Dada, 2006; Hasan, 2016). Despite the well acknowledged importance of policy assessment as a powerful monitoring tool for providing valuable guidance required in further policy making and implementation (Kim et al., 2015), some authors have highlighted a lack of research on evaluating the outcome of ICT policies especially in developing countries (Mansell, 2014; Choi, 2016) and because of this lack there is a limited understanding as to how ICT policies have or have not shaped these outcomes.

Governments, the world over, have clearly understood the need and importance of public sector reform in socio-economic development as well (Oyerinde & Bankole, 2019a). ICT has been touted to have the potential to create public value (Bannister & Connolly, 2014) and as such has been implemented as an enabler of public sector reforms, intended for reinventing governments for improved performance (Gauld et al., 2010; Bannister & Connolly, 2014). Since inception, the primary objectives of public sector reforms have been geared towards innovative and productive ways of bringing about socio-economic development (Mimbi & Bankole, 2016a) which has led to governments defining specific policies that show an emphasis on creating supporting mechanisms for ICT infrastructure utilization (Hinostroza, 2018).

International bodies and researchers have also recognised the importance of ICT in public administration with respect to creating public value. For example, the World Public Sector Report (WPSR) produced by the United Nations emphasises that ICT should be harnessed in public services to achieve socio-economic development (Oyerinde & Bankole, 2019a). Importantly, it emphasises that ICT should be a tool for creating public value (WPSR, 2015). Despite all these efforts, questions arise with respect to whether this increasing use of ICT brings any corresponding value to the public and to the rendering of public service. Whatever the answers to these questions, it is clear that ICT is becoming an ever more common factor in public interactions and public service rendering. In line with this, this research aims to inform both theory and practice on the viability of Learning Analytics in international ICT policy direction directed at creating public value. Consequently, the principal research question asked in this research is: Is any Public Value being created from ICT infrastructure policy formulation and calls with respect to education in the UNDP HDRs?

In this research, a Critical Discourse Analysis (CDA) is carried out on international policies for human and socio-economic development to determine how much if any, public value these policies create. The fundamental hypothesis here is that, little or no public value is created or at the centre of policy calls from these developmental policy directions. This is in line with the prevailing perspective in the ICT4D discourse which posits that there is little, or no impact, being observed from the calls for, and implementation of, increased ICT diffusion in developing economies. This perceived notion is allured to in quite a number of recent studies investigating different aspects of ICT and its impact towards human development as seen in Heeks (2002); Thompson (2004); Oyerinde (2014); Friederici et al. (2017); Oyerinde & Bankole (2020). This is done from a critical theorist's perspective using qualitative content analysis with an aim to contribute to this on-going global discourse. The CDA is operationalized by Habermas' (1984) Theory of Communicative Action (TCA). The TCA is, as a theoretical background, widely applied in Information Systems (IS) research (Klein & Huynh, 2004). The two main directions of its application are: To develop more socially informed theories and methods through the critique of existing research methods and approaches (Lyytinen, 1992); and to use Habermas' discourse theory to inform practice,

which is closely aligned with the critical intention of changing current practices and to emancipate the users of IS (Stahl, 2008). In IS research, this framework can be used in exploring the impacts of ICT on communication and development issues (Ess, 1996; Heng & De Moor, 2003; Stahl, 2008), as well as for defining the field of IS and factors to be considered in progressing IS development processes (Hirschheim & Klein, 2003). The CDA is carried out on the UNDP HDRs from 2010 to 2016.

The rest of the research is organized as follows: section 2 provides the overview of the literature, section 3 discusses the theoretical approach, section 4 provides the research methodology, section 5 provides the analysis, section 6 provides the discussion of findings, section 7 the conclusion and future work.

2 Overview of the Literature

ICT and Public Value

The concept of public value (PV) can be traced back to the inception of the new public service theory. PV has been influential in public services reform initiatives since the mid-nineties. This concept is linked to the seminal work of Moore (1995), the discussion of public value management by Stoker (2006) and the various contributions in Bennington and Moore (2010). Public value refers to value that citizens and their representatives seek in relation to strategic outcomes and experience of public services (Moore, 1995). Public value also refers to the value created by government through services, laws regulation and other actions (Kelly et al., 2002). Kelly et al. (2002) propose a typology of public value as services, outcomes and trust. This typology has been adopted by a number of scholars, for example by Castelnovo and Simonetta (2007) in their examination of public value in Lombardy, by Kearns (2004) in his discussion of public value and e-government and Mimbi (2021) in his inquiry as to ICT creating public value in Africa. Public value focuses on performance evaluation of public organisation in the delivery of services (social outcomes) as desired by the collective (Mimbi & Bankole, 2016b). Brewer et al. (2006) argue that ICT public value creation, as a priority, refers to embracing the information revolution as a means of improving governance and enhancing the democratic process. It therefore focuses on the wider notions of valued public services and efficiency, that call for more accountability of public managers (Blaug et al., 2006). However, for these to be meaningful in the context of ICT, values must therefore be convertible into some behavioural form that ICT has the potential to modify or transform (Bannister & Connolly, 2014). Therefore, ICT is expected to impact on the three dimensions related to public value: duty oriented public value, service oriented public value and socially oriented public value (Bannister & Connolly, 2014; Mimbi & Bankole, 2016b).

ICT and Socio-Economic Development

The promotion of the use of ICT towards attaining social and economic development gained prominence after World War II when seminal works regarding the role and importance of ICT utilization for achieving modernization and socio-economic development began to emerge (Dabla, 2004). Consequently, modernization theory has placed an emphasis on changing people's attitudes and beliefs and on promoting institutional change at the political, economic and social levels, and has advocated the use of information and communication technologies to achieve these aims (Bernstein, 1971; Tipps, 1973; Dabla, 2004). Schmandt et al. (1989) have stated that developing modern economies require a commitment to the development of advanced communication systems and to the building of information services, and technologies that could be used to effectively manage and add value to economic activity and simultaneously increase employment opportunities. Hanna et al. (1995) have viewed information and communication sectors as providing the infrastructure for the whole information economy, facilitating market entry, improving customer service, reducing costs, and increasing productivity. Kenny et al. (2001) have stressed that the promotion of information and communication sectors leads to hitherto disenfranchised people being able to benefit from: health information; distance education dissemination and technical education; better access to

services. To them, being able to participate and to make better informed decisions in the economic realm; having an input in government decisions; and being able to bridge distances to interact with remote communities, markets and government agencies. A number of econometric studies also suggest that there is a positive and significant link between the communications infrastructure, the rate of technology investment, and economic growth (Hardy, 1980; Norton, 1992; Roller & Waverman, 1994; Kraemer & Dedrick, 1994; Zhu, 1996; Canning, 1999). Within this economic framework, emphasis is placed on promoting information technology and communication sectors to expedite connections with global markets, promote economic growth, and facilitate social development.

ICT and the Human Development Index (HDI)

In order to consider different aspects of life when measuring human development, the United Nations Development Program (UNDP) has introduced the Human Development Index (HDI). The HDI is a composite index of socio-economic indicators that reflect three major dimensions of human development: longevity, knowledge and standard of living (Despotis, 2005). The index has been published since 1990 in the UNDP's Human Development Reports (HDRs) (UNDP, 1990). The HDI aims not only to monitor human development, but to encourage countries to take actions that promote it (Ravallion, 2010). This is usually achieved by being a guide for development policy debates and designs (UNDP, 1990). Central to the theory behind the development of the HDI is the concept of national development. Over the last three decades, research into national development has expanded to include certain intervening variables and social factors such as education and some other aspects of human welfare (Desai, 1991; Anand & Ravallion, 1993; Bankole & Mimbi, 2017). Educational attainment is clearly seen as being one of the core indices for measuring a nations HDI (UNDP, 2006; Bankole et al., 2011) and as such has found its way into Learning Analytics (LA) research (Oyerinde & Bankole, 2019b). This has been facilitated on the premises that increased investments in ICT will lead to improvements in productivity and other aspects of development at the organizational and national levels (Samoilenko & Osei-Bryson, 2017) and that ICT infrastructure utilization can greatly increase both average literacy rates and educational attainment levels in developing economies, as ICT facilitates, improve and promote a positive attitude to learning (Oyerinde & Bankole, 2018). However, it is important to note that with regards to ICT for national development, the adoption of ICTs not only has the potential to empower communities and countries but it can also lead to imbalances and inequalities if there is a lack of ICT adoption, access and usage (Bankole, 2015).

ICT and the Global Discourse on Policy Making

Research into the role of global discourse in shaping ICT policies has shown that, in many cases, assumptions embedded in global ICT policy are completely different from the reality in developing countries (Thompson, 2004; Mansell, 2014). According to Avgerou (2010), a group of those who have studied ICT policy in a developmental context consider the nature of the ICT innovation processes as diffusion in the hope of progressive transformation. The predominant assumption is that enhancing diffusion and increasing the adoption rate, will result in a reaping of the oft-assumed benefits of ICT.

Models and frameworks developed in this literature have found their way into assessments of ICT policies in the developing countries (Shin & Kweon, 2011). This is perhaps most clear in the literature aiming at bridging the digital divide, where often the basic assumption is that the beneficial and positive impacts of ICT hinges upon ensuring widespread diffusion and adoption of ICT through designing policies aimed at enhancing technical competency, lowering the cost of access, and stimulating demand (Kumar & Best, 2006; Trkman & Turk, 2009). Consequently, research has highlighted the role of discourse, the language that is used and the role it plays, in shaping policies and practices (Whitley & Hosein, 2005). Explicitly expressing assumptions and interpretations in these policies is important (Yanow, 1996) as particular understandings and approaches have an effect on policy

making, which also shapes the ways of using technology, many of which are often not made explicit in the policy process (Fischer, 2003). While these studies, and more, have generated many insights into the assumptions of the dominant discourse about ICT and its influence on the policies of developing countries, not much attention has been paid to the governmental approach to ICT policy making and the way objectives have been defined. Moreover, these studies stop short of tracing the influence of global discourses on the actual outcomes of ICT policies in developing countries.

Faced with the evidence of the gap between expectations (e.g. achieving economic growth and enhancing services for all) and actual outcomes, some researchers have sought to identify contextual barriers which may militate against achieving desired development outcomes, by rejecting the causal relationship concept between ICT diffusion and outcomes, in favour of a more nuanced understanding of the unique context (Osman & Dawson, 2007; Hayes & Westrup, 2012; Avgerou, 2017; Adu et al., 2018). Although the importance of context is also recognized in some recent publications by the international development institutions, such as the World Bank (Peña-López, 2016), these reports, like many before, often incorporate the main assumptions of diffusion and adoption models and make unwarranted assumptions about the benefits of ICT vis a vis policy implementation and national development (Avgerou, 2008). It is in considering the importance of these documents and reports in shaping the perceptions and expectations of policy makers in the developing countries, and within the context of the ongoing Global Discourse on ICT4D and its resultant effects/impacts on socio-economic development, that this research is carried out to determine how much, if any, public value is created or derived from these policies and their implementation.

3 Theoretical Approach

Research on ICT4D requires the combination of multiple theoretical strands. Central among them are the foundational theories on technology, on context, and on socio-economic development. In addition, ICT4D research draws from middle range theories, which shed light on specific topics of ICT related phenomena in the context of a developing world (Avgerou, 2017). Consequently, this research is founded upon the Theory of Communicative Action (TCA) as developed and postulated by Habermas (1984). The TCA combines multiple concepts: rationality, ideal speech situation, validity claims and the notion of three worlds, which are linked to the social use of language directed to reaching understanding, with a special focus on the justification of the validity claims offered by actors in performing social action through communication.

Habermas has postulated that people communicate to "reach a common understanding and to coordinate actions by reasoned argument, consensus, and cooperation rather than strategic action strictly in pursuit of their own goals" (Habermas, 1984; Bolton, 2005) which is evident when people (speakers) engage in consensual communication. He has gone on further to state that speakers implicitly make four validity claims in every statement, namely truth (veracity), legitimacy (rightness), sincerity (authenticity), and clarity. These claims are often called (i) communication competence (truth, legitimacy, sincerity), and (ii) linguistics competence (clarity), which in their turn are related to the notion of three worlds: the objective world, subjective world and social world (Lyytinen & Hirschheim, 1988; Stahl, 2008). Each of these worlds, which are essential for understanding social action, reflect a specific type of claim. The objective world holds the universal truth, the subjective world contains the internal beliefs of a person, and the social world states desirable actions, i.e. the normative truth.

In this research, the TCA is approached from a Critical Realist's Epistemological perspective based on the principles of Critical Research as proposed by Myers & Klein (2011). They believe that critical research can challenge prevailing assumptions; the critical perspective reminds researchers of the constantly changing potential of humans who need not be confined by their immediate circumstances (Orlikowski & Baroudi, 1991). Orlikowski & Baroudi (1991) classify

research as critical where a critical stance is taken toward taken-for-granted assumptions about organizations and information systems, and where the aim is to critique the status quo "through the exposure of what are believed to be deep-seated, structural contradictions within social systems".

Alvesson & Deetz (2000) suggest that critical research is comprised of three elements. namely insight, critique, and transformative redefinition. Central to this perspective is the belief that, in conducting critical research, it might neither be practical nor desirable to completely separate these three elements from each other; they are all, to some extent, interconnected and present in a critical study. Myers & Klein (2011) have subsequently proposed a set of principles for the conduct of critical field research in information systems. Their principles, however, are concerned solely with the two elements of critique and transformation. This is because the first element of insight is virtually identical to the kind of insight that is provided by interpretive research (Oyerinde, 2019).

4 Research Methodology

The research methodology employed in this study is the Critical Discourse Analysis (CDA). CDA is concerned with understanding and interpreting meaning as it is produced in the social context. CDA allows researchers to establish an association between language and context, by showing that discourse i.e. language use by social actors in specific social contexts (Bankole et al., 2010; Hanafizadeh et al., 2019) is constitutive of social reality and as such, not only has demonstrable effects but also plays an important role in power relations within the society (Chouliaraki & Fairclough, 1999). CDA also provides an integrated notion that allows the construction and communication of a coherent interpretation of reality presented in a text. It is applied when drawing a critical conclusion about texts, the methods of their production and their effects within a certain social context. The method also applies to developing a theoretical understanding of different types of discursive practice (Hasan, 2016).

Here CDA is employed because, as Yanow (1996) has argued, it can clarify the frame of reference that policy makers use by exposing assumptions and interpretations embedded in policies. Furthermore, it can be used to shed light on the social process through which meaning is explained and fixed, thereby becoming naturalized and part of the common sense (Hanafizadeh et al., 2019). In order to justify communicative validity of the policy documents analysed, a modification of the framework developed by Hasan (2016) is used which is based on the framework introduced by Cukier et al. (2004) and presented in table 1. This framework is grounded on Habermas' (1984) four validity claims: truth, legitimacy, sincerity, and clarity, together with the concept of public value represented by accountability, government effectiveness, transparency (freedoms), and rule of law, postulated by Bannister & Connolly (2014) and operationalized by Mimbi & Bankole (2016a).

International Research Journal of Applied Sciences, Engineering and Technology
Vol.7, No.9; September-2021;
ISSN (1573-1405);
p –ISSN 0920-5691
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Table 1: Critical Discourse Analysis Framework

Competence	World	Claim	Key Factors for Justification of Claim	Explanation
Communication	Objective	Truth	Definition & Description; Benefits & Challenges; Ideological Stance; Distortion	Utterance should match the case in reality. The theme should be properly stated, pros and cons discussed, presented from an ideological perspective and void of distortion
	Subjective	Sincerity	Metaphors; Connotative Words	Checks the Intentions of the Speaker Cannot be observed, only inferred. Use of metaphors of connotative words should not be deceptive and present a false situation.
	Social	Legitimacy	Form of Legitimization; Dominant Speaker; Assumptions in ICT	Utterance should be in accordance with socially accepted norms and from a recognized source. Prevalent Assumptions on ICT to be stated and legitimized from practice or validated research.
Linguistics		Clarity	Ambiguity; Unexplained Terms	Utterance should be clear in terms of syntax & Semantics, devoid of ambiguity and all terms used properly defined

Qureshi (2017) has provided a theoretical lens through which researchers can view ICT's with respect to their intended developmental outcomes. This lens helps researchers to focus solely on the particular actors with which their research is concerned and is presented in figure 1. Within the context of this theoretical lens and using the framework presented in table 1, the analysis is done by reading through the policy document several times and picking out claims. All identified claims are noted down in a conventional data sheet, and the evaluations are done and presented through an analytical explanation.

The HDR has been published by the UNDP since 1990 as independent, analytically and empirically grounded discussions of major development issues, trends and policies (UNDP, 2016) and as such is accepted internationally as a valid policy direction document. Therefore, this CDA has been carried out using these validated research discussions.

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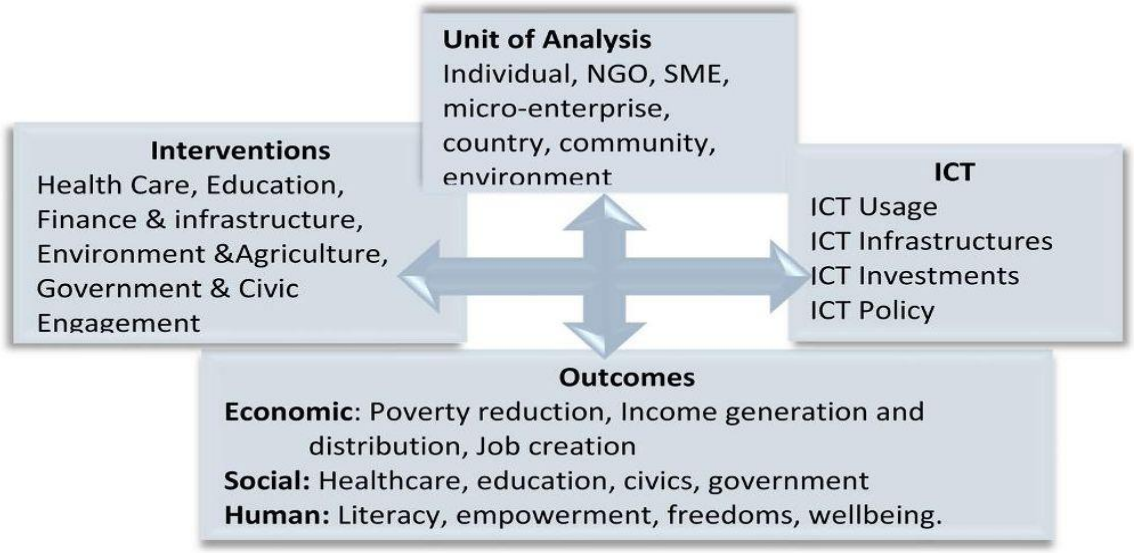

Figure 1: Theoretical Lens for Investigating Development Outcomes – Adapted from Qureshi (2017)

Therefore, in line with the scope and focus of this research and using the theoretical lens as a guide, developmental outcomes of this study are defined in table 2. This is in order to critically investigate whether public value is created from ICT and policy interventions on the educational component of the HDI. Central in this theoretical perspective is the view that investment in ICT and its effective use do matter for the economic development of a country (Mann, 2003). It is however acknowledged that ICT needs to be accompanied by organizational or national restructuring, as the case may be, to deliver productivity gains (Dedrick et al., 2003; Draca et al., 2007) which although evident in policy documents, need to be substantiated. Here the UNDP's Human Development Reports (HDRs) from 2010 to 2016 are analyzed.

Table 2: Research Developmental Outcomes

S/N	Indicator	Index
1	Unit of Analysis	International (Country)
2	ICT	ICT Infrastructure, ICT Policy
3	Outcomes	Social: Education, Government Human: Literacy, Freedoms
4	Interventions	Education, Government & Civic

Analysis

In doing the analysis the research has been carried out using the developmental outcomes explained in Table 2, and the outcomes are presented in Tables 3 and 4. Table 3 focuses on the ICT indicator while Table 4 focuses on the Outcomes and Interventions indicator. The analysis has been carried out on UNDP HDRs from 2010 to 2016. As expected, many ICT developmental themes within the reports were repeated but for the sake of presentation, the most current version of the theme has therefore been selected.

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Table 3: Analysis of ICT Developmental Outcomes

Validity Claim	Accountability	Government Effectivenes	Freedoms
Truth	Vast increases in literacy and educational attainment, aided by the proliferation of and access to ICTS such as mobile telephony and internet access, have strengthened peoples abilities to make informed choices and hold governments accountable.	New Technologies has changed the ways government interact with their citizens increasing reach and efficiency of public service delivery	Human development is also about people's active engagement in shaping development, equity and sustainability, intrinsic aspects of freedoms people have to create value in the lives they lead. People with skills and resources to use tech and create value can thrive in today's digital world.
Legitimacy	94.1% of population in developing countries own mobile phones. 40.1% of this population have access to internet.	Mobile phones used to extend basic social services like health and education to difficult to reach populations	Smartphones and Social media present opportunities for people to express themselves freely.
Sincerity	ICT has allowed civil societies to gather across borders and share ideas. The more a country's telecommunications infrastructure is developed, the more likely the existence of mechanisms for civil society participation in public and political life.	Estimates put the internets contribution to GDP at $4.2t	The dramatic increases in Internet coverage and mobile telephone use have occurred despite structural constraints. Globalization has propelled domestic issues onto the international stage. One expression of this trend is the upsurge of global and transnational civil society: the number of international organizations increased more than fivefold from 1970 to 2010, to an estimated 25,000. New forms of public and civic societies participation especially through social networks with global reach are increasingly important in policy making
Clarity	Internet has enabled sharing of information more than any form of communication has	Technology and social media have mobilized grassroots activism ensuring public social value.	Internet has enabled acts such as crowdfunding which have enabled donors to fund projects that affect civic and social institutions. The exponential spread of ICT along with rising education and literacy rates has provided individuals with new tools for inclusive participation.

In analyzing the HDRs focusing on the ICT indicators as shown in table 2, the documents have been read through using the framework defined in Table 1. Claims validated in the HDRs that have focused on ICT infrastructure and its utilization as well as ICT policy within the theoretical lens employed have been extracted and subjected to the 4 validity claims as explained in Table 1 and subsequently presented in Table 3. The same method has been used for the analysis presented in Table 4 with claims that focused on education/literacy, government, freedoms and civic oriented outcomes and interventions. The indices of Outcomes and Interventions overlap and therefore these findings are combined in Table 4. All claims critically analyzed and presented in the tables using the framework presented in Table 1 have been picked verbatim from the HDRs.

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Table 4: Analysis of Outcomes & Interventions

Validity Claim	Accountability	Government Effectivenes	Freedoms
Truth	Use of these technologies is very high in developed countries—by 2008, 70 percent of people were using the Internet, and phone subscriptions had reached 1.5 per capita—but still low in low HDI countries. However, growth over the past decade has been striking: in low HDI countries Internet use soared more than 4,000 percent, and the share of people with phone subscriptions by close to 3,500 percent. Inexpensive and reliable access to internet is crucial for high quality education. Biggest challenge is the cost. 47% of entire world population uses the internet. Only 25% of people in sub-Saharan Africa are users and 42% of people in Asia & the Pacific and Arab states. 66% of people in the Americas and CIS are users and 79% of people in Europe.	Global literacy rates up to 91% in 2015. Advances in Tech have led to major advances in education and other developmental outcomes. Increased inclusion and adoption of the Internet and web-based data gathering systems have supported the explosion in data and public sector activities and performance in both developed and developing economies This has allowed for a better understanding of the links between inputs, outputs and impacts of public sector activities. Improved information and analysis have informed policy discussions, debates, and decisions about government's priorities albeit the data constraints remain large.	The technological revolution coupled with globalization has transformed the political landscape. The proliferation of cell phones and satellite television, alongside widening access to the Internet, has vastly increased the availability of information and the ability to voice opinions. Voice and Autonomy as parts of freedom of agency and freedom of well being are integral to human development. Modern ICT's offer major opportunites for successful implementations of major future related agendas e.g 2030 Agenda as young people are active users of ICT.
Legitimacy	Improvements and advances in ICT have shown to have a potential to greatly increase quality of education which in turn improves HDI. Many have made gains in access to education but improvement in quality have not kept pace. Therefore, developmental policies must be based on the local context and sound overarching principles. As with education and other aspects of development, numerous problems associated with these go beyond the capacity of individual states and require democratically accountable global institutions	Striving for universal free Wi-Fi may be needed to help bridge digital-divide and make accessibility possible as cost of internet access is still relatively high in many regions. Telecommunication infrastructure and online participation tools are positively correlated	Right to information of social institutions. This requires freedom to form public opinions and call governments to account. ICT's provide new tools to monitor the commitments and results of multilateral institutions. Survey evidence suggests that most people around the world feel free to make choices and are satisfied with this freedom. Reported trends in freedom of choice, available for 66 countries, suggest general improvement over time.
Sincerity	Fundamental contextual factors—most important, the vast increases in literacy and educational attainment in many parts of the world—have strengthened people's ability to make informed choices and hold governments accountable. Holding social institutions publicly and mutually accountable, especially in protecting the rights of excluded segments of the population, requires explicit policy interventions. One major instrument in accomplishing this is the right to information and use of ICT.	Mere availability of services or even access to them is not enough; the effective use of these services is what is of utmost importance and requires affordability and adaptability. Human capital is an asset and differences in educational attainment, one aspect of this asset, prevent poor people from becoming part of the high productivity growth process.	There has been wide ranging democratization and an increase in people's perceived freedom to choose. At the national level we see the spread of formal procedural democracy, and at the subnational level the rise of local participatory processes in different forms—with greater possibilities for accountability. A free press, vibrant civil society and political freedoms guaranteed by a constitution underpin inclusive institutions and human development. The Facebook broadcast of police attacks on pro-democracy demonstrating was instrumental in 2011 Arab spring.
Clarity	Educational attainment is a central mechanism for perpetuating socio-economic stratification across generations. Knowledge expands people's possibilities, promotes creativity and imagination. Progress in education has been substantial and widespread, reflecting improvements in quality and equity of access as a direct result of state involvement via policy direction and public spending.	New technology can give voice to marginalized people, though some contend that such innovations consolidate the power of people who already have some resources. However, universal internet access combined with high quality education could greatly increase opportunities and reduce inequalities everywhere.	A country's preconditions affects which policies are conducive to human development. For example, a regime with strong institutions (measured using a composite index of corruption, rule of law, quality of bureacracy, investment profile, internal conflicts), higher government spending on wages and goods and services, is conducive for faster progress in HDI

Discussion of Findings

The 1990 HDR began with a clear definition of human development as a process of "enlarging people's choices", emphasizing the freedom to be healthy and educated and to enjoy a decent standard of living (UNDP, 1990). This has remained a recurring theme

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throughout all the HDRs published since. However, it has also acknowledged that human development and well-being has gone far beyond these dimensions and now encompasses a much broader range of capabilities, including political freedoms, human rights, inclusions and abilities to live without shame – all components of public value (UNDP, 2010). The concept of human development has three components of capabilities as shown in figure 2. These are related to people's opportunities; process freedoms (affecting people's ability to shape their lives as seen in Table 3); and key principles of justice that shape processes and outcomes across space and time. Human development is also about sustaining these developmental outcomes steadily over fixed periods of time. With freedoms, justice and equity central to the concept of public value, the human development concept is centred around public value creation.

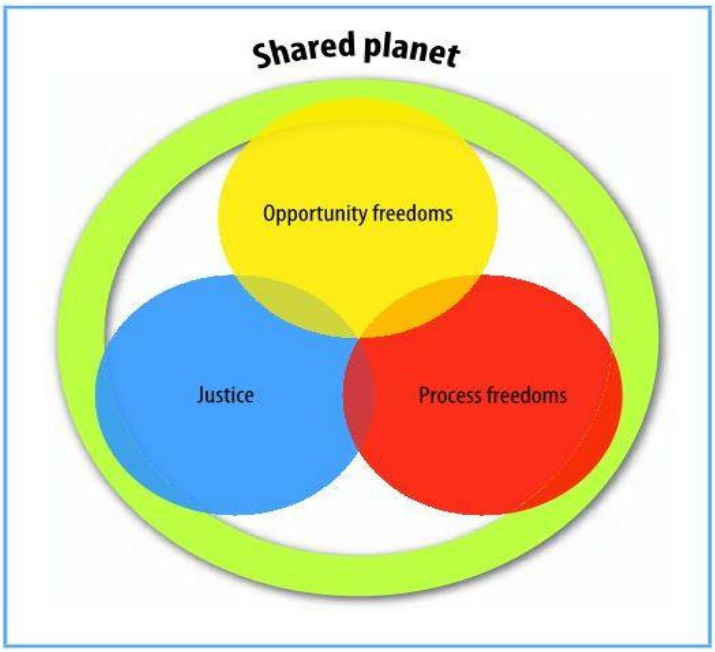

Figure 2: Concept of Human Development – Adapted from UNDP (2010)

The 2016 HDR states that HDI has improved worldwide, although the rate of progress has slowed down since 2010. This reflects important advances, not only in income, as evidenced by a $4.2t contribution to GDP with digital currencies (crypto currencies) making a considerable contribution, but in health and education as well. This is evidenced by the fact that global literacy rates are up to 91% as of 2015 as seen in table 4. Focus has therefore shifted from quantity (access) to quality of education with the aid of improvements and advances in ICT, which are shown to have the potential to greatly increase educational quality. Therefore, educational policies can now be drawn up to focus more on the factors which will affect the quality of education going forward rather than those that affect access to education. The biggest challenge to this is not the availability of the technology itself, but the high cost of access to the technology. The cost of Internet connectivity is relatively high costing more in developing economies than in developed ones and costing the most in the least developed economies, as shown in figure 3. Policies also have to be made to bring the benefits of ICT, especially Internet connectivity, to all. There is therefore a strong call for governments and international institutions alike to make provisions for free universal WI-FI. This is seen from table 4 where only 25% of people in Sub-Saharan Africa are active users of internet connectivity as

International Research Journal of Applied Sciences, Engineering and Technology
Vol.7, No.9; September-2021;
ISSN (1573-1405);
p –ISSN 0920-5691
Impact factor: 4.33

against 42% in Asia, the Pacific and Arab States, 66% in the Americas and CIS, and 79% in Europe.

A My World global survey conducted by the United Nations in support of the 2030 Agenda has assessed developmental issues that matter to most people. With over 9 million responses, good education, better health care and better job opportunities are the top three priorities from 16 available options, with good education being the overall top priority across all surveyed human development groups. This, therefore, further accentuates the relevance of attaining quality education with educational attainment, being a central mechanism required for perpetuating socio-economic stratification across generations. The 2016 HDR further goes on to stress this point by unambiguously stating that universal Internet access combined with high quality education has the potential to greatly increase opportunities and reduce inequalities everywhere.

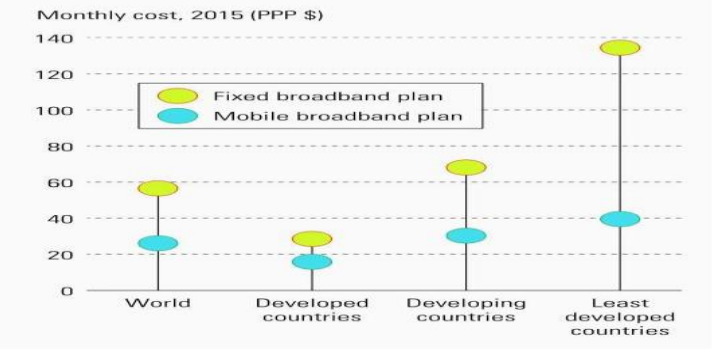

Figure 3: Internet Connectivity Cost, 2015 – Adapted from ITU (2016)

The HDRs also stress that holding social institutions publicly and mutually accountable, especially in protecting the rights of excluded segments of the population, requires explicit policy interventions. One major instrument to accomplish this is the right to information. It has been globally acknowledged that the Internet has done more for the sharing of information than any other form of communication has in history. Examples abound, ranging from how the Internet and social media have helped donors fund projects that affect civic and social interests via crowdfunding, to how a Facebook broadcast of police attacks during pro-democracy demonstrations has been instrumental in the Arab spring of 2011 as seen in Table 4. Activists and civic groups are now able to gather support from millions of people over a broad range of geographic and demographic strata within a short period of time and at limited costs, one example of which is via the signing of online petitions. This has enabled activists to have an impact on public and political life which hitherto would have been extremely difficult if not impossible. However, while pursuing policies that will further provide equal access of technology (Internet), there must be a mechanism to protect people from misinformation (fake news), online violence (cyberbullying), cybersecurity threats and even national security concerns (Ogu et al., 2014).

Consequently, from the above, it is evident and readily apparent that indeed public social value is at the root of these policy calls and directions seen the in UNDP HDRs from 2010 to 2016. The core of the issues discussed and raised, with respect to the theoretical lens employed and the TCA framework implemented in carrying out the CDA, show that public value is central to the themes in the reports. The use of the CDA employed in this manner validates the findings by helping in providing a theoretical backing necessary for taking a critical stance in interrogating a certain narrative within a discourse as this method seeks to question the prevalent views (status quo) within the discussion by means of critically investigating a widely accepted source or contribution to the discourse.

Conclusion and Future Work

The impacts of HDRs over the years have illustrated that policy thinking and direction can be informed by deeper explorations into key dimensions of development. An important element of this is a rich and diverse agenda of research analyses. This research has been able to show that public value is indeed being created and is at the root of policy direction being called for in the 2010 to 2016 HDRs. This can be seen from tables 3 and 4 where critical stances are being taken and presented in the report with regards to the three indices representative of the concept of public value: accountability; government effectiveness; and

freedoms. This shows that there is good evidence of positive outcomes and creation of real public social value (Oyerinde, 2019; Park et al., 2020). This information has been extracted from the report using the theoretical lens for viewing ICT developmental outcomes postulated by Qureshi (2017) and subjecting same to the four validity claims postulated by Habermas (1984).

With the literature of ICT and Public Value awash with research evaluating impact and efficiency (Blaug et al., 2006; Benington & Moore, 2010), this research has also been able to inform theory and practice on the use of CDA for public value assessment. This has been done from a Critical Theorist's perspective using Critical Research. In doing so, this research has been able to contribute to the ongoing global discourse on ICT4D with respect to policy directions of ICT interventions and their resultant impact on socio-economic development and public value creation, using a hitherto unfamiliar interpretivist approach within the e-government literature. This research contributes to the discourse by providing empirical qualitative evidence of public value creation being at the core of a major policy discourse document with respect to ICT infrastructure and its expected developmental outcomes.

A limitation of this research, however, is the scope of the study. An area of future research, to build upon this, would be to carry out a trend analysis of the HDRs to discover the direction that policy calls have taken over the years. Also, another area of future research would be to carry out a CDA of not only HDRs but other policy direction documents and reports, that have been shown to impact policy direction, especially with respect to ICT interventions for socio-economic development, such as WPSR from 2010-2016.

Another limitation of this study is within the discourse itself. Much of the developmental discourse tends to seek uniform policy prescriptions that can be applied across the vast majority of countries, assuming that economic growth is indispensable to achievements in areas such as health and education. It is now widely accepted that the results suggest that this is not the case, largely due to the fact that development processes and possibilities facing developing economies today are quite different from those that the now developed economies once faced (UNDP, 2010). Development therefore is not so much about having a one-size-fits-all solution based on experiences of developed economies, as it is about finding new paths to progress in today's world. Therefore, the shortcomings and limitations of this research and discourse are acknowledged.

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