

Article

The Nexus between Information Communication Technology and Human Rights in Southern Africa

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Abstract: The study sought to empirically test the contribution of information and communication technology (ICT) to the advancement of human rights, drawing on the fact that safeguarding human rights through the use of ICT is a field of increasing interest to academics and those working towards the advancement of human rights and development practitioners. The literature on ICT and human rights holds the view that ICT can play a significant role in the advancement of human rights. ICT has become an essential instrument for realising human rights, and ensuring its accessibility must be a primary concern for all governments. However, despite the increase in ICT usage, the southern African region has been marred by atrocities and human rights violations. Many southern African governments regularly impose restrictions on human rights defenders, journalists, and rights activists, often to suit political goals. The use of ICT has extensive effects on the human rights agenda and forms an important tool in its endeavours to gather, analyse, and spread information and advocate for fitting remedies in response to human rights infringements. It is against this background that this study sought to examine the contribution of ICT to the advancement of human rights. The study was quantitative in nature, using panel data to estimate its model. The findings reveal a weak positive relationship between ICT and the advancement of human rights. The study recommends that governments and civil society encourage the use of ICT functionality in ways that advance human rights.

Keywords: human rights; human rights defenders; citizen surveillance; ICT; digital authoritarianism



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1. Introduction

According to the International Telecommunication Union [1], the safeguarding of human rights through the use of information and communication technology (ICT) has become a field of increasing interest to academics and those working towards the advancement of human rights and development practitioners. The literature on ICT and human rights holds the view that ICT can play a significant role in the advancement of human rights [2]. ICT has become an essential instrument for realising human rights, and ensuring its accessibility must be a primary concern for all governments [3]. Information obtained and captured through ICT can be used to help in investigations. People currently move around with mobile phones equipped with video cameras, which has increased the probability of the documentation of human rights violations by civilian onlookers [4]. Victims' groups can share videos and photos of abuses on online platforms, such as Facebook, Twitter, YouTube, and several others, in order to promote awareness about human rights abuses [5].

ICT can considerably increase citizens' access to a variety of resources—such as information and basic services—that are vital to the attainment of human rights [6]. The use of ICT has extensive effects on the human rights agenda and forms an important tool in its endeavours to gather, analyse, and spread information and advocate for fitting remedies in response to human rights infringements. ICT can play an important role in developing issue networks, which pressure governments and others to act. Today's information age makes it possible to have access to a tailor-made mosaic, consisting of, as

Sucharipa [7] illustrated, websites of different national and international news agencies on one's computer. It also enables being electronically connected with colleagues all over the world, thus ensuring that people have the ability to quickly gather important information and seamlessly distribute that information remotely in real time. Salazar [8] concluded that the invention of the Internet, social media, and other means of communication has allowed today's population to inform itself about the world significantly faster than before.

Global Partners Digital [9] stated that the swift progression of ICT and associated technological communications over the past two decades has remarkably reshaped communication practices across the globe. This has had notable effects on human rights. Better access to ICT tools, such as social media platforms, has allowed human rights defenders and activists to organise and disseminate their information and messages faster and to a wider audience [10]. Metzl [11] previously noted that precise and opportune information is an essential tool and an indispensable prerequisite for successful responsive action and the furtherance of human rights. Human rights defenders and activists use information to create awareness about human rights infringements and garner support for various causes, translating that concern and support into activities designed to advance human rights and forestall their potential infringements. The information imparted by human rights defenders and activists also plays an important role in developing a common concern and creating political pressure for action in response to a certain situation. Horner, Hawtin, and Puddephatt [12] stated that ICT successfully democratises communication, empowering people across the globe to interconnect directly with one another in the public domain. Selian [13] argued that ICT may expedite the mobilising operations of human rights defenders by offering platforms that can attract immediate and widespread international attention.

It must be noted that ICT does not always lead to positive outcomes. Bau [14] and Bahia and Gaura [15] noted that while the introduction of ICT techniques can improve political action and participation among citizens, it also opens up opportunities for repression and surveillance from the state. The problem occurs when governments use ICT unlawfully. Common abuses by governments in the ICT field include the abuse of lawful intercept systems, mobile network and Internet shutdowns, government censorship, the misuse of operator network information for surveillance, or the forced dissemination of politically motivated messages via operators' networks [16,17]. Horner, Hawtin, and Puddephatt [12], Global Partners Digital [9], McPherson [18], and Pind [19] noted that, as well as unleashing vast opportunities for promoting and safeguarding human rights, ICT can also bring negative outcomes. These include threats to human rights, such as network shutdowns and unlawful intercept mechanisms. The same human rights that are enabled and transformed through digital connectivity could be violated if technology is misused [20]. Piccone [5] noted that network shutdowns and other Internet restraints by governments are prevalent and that these blackouts specifically threaten human rights.

According to Piccone [5] recent years have seen a continuing deterioration of human rights online, notwithstanding well-defined declarations from the United Nations General Assembly and the Human Rights Council that offline rights founded under international human rights law are also protected online. The southern African region is no exception to this, and is marred by atrocities and human rights violations [21]. Many southern African governments regularly impose new restrictions on opponents, human rights defenders, journalists, and rights activists, often to suit political goals. According to Amnesty International [22] and Mhaka [23], southern African governments persist in repressing opposition forces, with opposition political party followers, trade union advocates, and human rights defenders increasingly besieged by the law enforcement forces. SADC also urged Member States to take proactive measures to mitigate external interference, the impact of fake news, and the abuse of social media, especially in electoral processes [24]. Mhaka [23] noted that the aim of SADC's statement is not to protect Africans from foreign disinformation campaigns and fake news, but to ensure that self-serving narratives and political agendas promoted by local governments remain unchallenged. Human rights defenders face arbitrary arrests and detention on false charges, routine torture, and other forms of ill treatment.

This shows that southern African governments are rolling back decades of human rights progress. It is against this background that this study seeks to examine the contribution of ICT to the advancement of human rights in the Southern African Development Community (SADC) region.

2. Review of the Digital Disruption of Human Rights in Selected SADC States

Over the past two decades, Africa has had the fastest growth in Internet usage and connectivity in the world, and it is home to a young and energetic population. The number of Internet users in Africa has increased more than 116-fold, from 4.5 to 523 million, while that in the rest of the world has not even doubled [25]. This demonstrates that a large number of individuals in Africa use mobile technology. Many people are becoming more connected because of the increased usage of mobile technologies and the Internet. This increased connection has changed how citizens participate in civic life and how governments respond to their citizens. One of the concerning government responses to digital life has been Internet shutdowns and arbitrary arrests. Table 1 shows some of the cases where the government has intervened to quell protests that started online.

Table 1. Digital disruption of human rights in selected SADC states.

Country	Year	Name of Protest	Specifics of the Online-Triggered Protests
Tunisia, Egypt, Morocco, Djibouti, Algeria, and Libya	2011	Arab Spring	The use of social media for the purpose of civil resistance is largely associated with the famous “Arab Spring” of 2011, which plagued countries such as Tunisia, Egypt, Libya, Morocco, and Algeria. The Arab Spring was a loosely connected series of uprisings that culminated in political changes in countries such as Tunisia, Egypt, and Libya. However, not all of the revolutions were successful, at least not in terms of increasing democracy and cultural freedom.
South Africa	2015 and 2017	#ZumaMustFall	The Twitter hashtag has since been taken on, shared, interpreted, and adopted by individuals and diverse interest groups protesting government corruption with Zuma at the helm.
South Africa		#FeesMustFall	Allied workers and students criticising the high cost of education and pay for staff.
Zimbabwe	2016	#ThisFlag and #Tajamuka/sesijikile	This involved two different campaigns pulling together the youth wings of opposition parties and non-governmental organisations (NGOs) calling for Mugabe to step down, and promoting continued citizen resistance. In July 2016, over 300 protesters were arrested, and the leaders of #ThisFlag and #Tajamuka were arrested and subsequently released.
Zimbabwe	2019	Fuel protests	Zimbabwe’s Internet access was shut down (the connectivity disruptions lasted for approximately one week) on 15 January 2019 following public protests against a 150% increase in fuel prices. Government authorities deployed soldiers to disperse protesters, and this resulted in the deaths of more than 12 citizens and the hospitalisation of hundreds of protesters.
DRC	2019	Elections	From 31 December 2018 to 6 January 2019, during the election count, Internet users in the Democratic Republic of Congo were again shut off from the Internet and mobile and fixed-line connections.
Eswatini	2022	Prodemocracy protests	Amidst ongoing pro-democracy protests in the southern African kingdom nation of Eswatini, the government shut down the Internet.

Table 1 presents cases of online-triggered protests that have occurred in the SADC region and some parts of Africa. One that is worth mentioning is the Arab Spring (the Arab Spring was a series of pro-democracy uprisings that enveloped several largely Muslim countries, including Tunisia, Morocco, Syria, Libya, Egypt, and Bahrain. The events in these nations generally began in the spring of 2011, which led to the name). Many activists used Facebook and Twitter to organise and promote their demands during the early days of the Arab revolutions. Social media helped Tunisia, Algeria, Morocco, and Egypt spread their message to the West and overthrow their dictators by organising protests and rallies [26,27]. The experience of democratic movements in several Arab countries (Tunisia, Libya, Egypt, and Syria) shows how using ICT during times of social protest and unrest can be a significant force for organisation and mobilisation. The Arab Spring has been credited for promoting the emergence of social media-driven political activism in sub-Saharan Africa in recent years [28]. Young Africans, in particular, are capitalising on new technologies to launch startups and find solutions to the continent's problems. However, governments (as shown in Table 1) have responded by shutting down the Internet and arresting citizens. Internet shutdowns, especially during elections and public protests and demonstrations, are becoming commonplace. Surveillance by the government in digital and private areas is increasing, limiting civic spaces for engagement and critical thought while also weakening the enabling environment for such interactions. There has been an increase in digital rights violations in a number of SADC countries, including arrests and the intimidation of online users, Internet blockages, and a proliferation of laws and regulations undermining the region's ability to use technology to drive socioeconomic and political development [29].

When the aforementioned information is considered, it is clear that SADC nations are not utilising the 4th Industrial Revolution. Industry 4.0 should be perceived as a great opportunity due to its new technologies [30]. The main technological advancements connected to the 4IR have great promise for advancing humankind and raising the standard of living. However, in the SADC region, these technologies have both advantages and disadvantages, particularly in regard to the enjoyment and realisation of fundamental human rights and freedoms [31]. While the 4IR has grown to be a crucial instrument for mobilising and advocating for human rights, governments frequently employ these same techniques to repress and monitor advocates, breaching their right to freedom of expression and assembly. Sibanda [32] claims that most service delivery in various socioeconomic sectors struggle with aspects of transparency, human rights, and accountability; adopting AI and 4IR technologies, especially in algorithms and informatics, can assist in expediting some of these challenges. Sibanda [33] further maintains that if SADC countries want to take a human rights-based approach to regulating 4IR technologies, policy formulation must be inclusive and transformative.

3. Literature Review

The literature on ICT and human rights seems to reveal a complex relationship between human rights, national security, and ICT [16]. On the one hand, ICT leads to connectivity and emancipation and contributes to more open and secure communities; on the other hand, ICT use can result in harassment, intimidation, oppression, and human rights infringements. The effects of ICT on human rights are explored in the following subsections.

3.1. Positive Effects of ICT

Throughout history, new ICT has represented opportunities for expression as well as vehicles for control. The printing press, telegraph, telephone, photocopier, television, and Internet are all powerful forces to spread ideas and represent technologies of control. The use of information technologies to spread ideas is currently new, but conflict over the dissemination of ideas has been a part of human nature and can be traced back centuries, if not millennia. Salazar [8] noted that the invention of the Internet, social media, and other means of communication has allowed today's population to inform itself about the world significantly faster than before. This, in turn, has led to an increase in the overall

proximity amongst individuals, which has made it possible, or at least more likely, for them to support and feel a close relation to certain causes. Amongst these causes are the ones linked to human rights issues. ICT has allowed people to comprehensively understand their human rights, from their freedom of expression and assembly to their socioeconomic rights that facilitate, for example, better financial inclusion and improved access to basic socioeconomic development resources, such as health and education [16]. Morrison [33] stated that ICT has enabled access to human rights, and Bloomer [10] noted that ICT tools, such as artificial intelligence, can greatly increase the availability and quality of data upon which one can make informed decisions for the benefit of society. The supporters of these technologies believe that they will unleash new opportunities, increase efficiency, and help maximise human potential.

Global Partners Digital [9] argued that ICT has several significant implications for human rights. Firstly, ICT provides new ways to better realise human rights. This is especially true of the right to the freedom of expression. Secondly, communication technologies have offered human rights defenders new techniques for safeguarding human rights. Internet access by means of mobile phones offers citizens the means to communicate rights infringements more quickly to global audiences; social media brings together human rights defenders across the world to improve cooperation and information sharing; and censorship circumvention tools permit people to evade efforts to observe and regulate communication and information flows [9].

Horner, Hawtin, and Puddephatt [12] stated that ICT has successfully democratised communication, enabling people across the world to connect directly with each other in the public domain without having to go through communication caretakers, such as the conventional media. Selian [13] argued that ICT plays a clear contributory role, not only in terms of disseminating “the word” about human rights encroachments and safeguarding through communication networks between human rights defenders, civil society, and citizens, but also in terms of articulating what “the word” is and establishing how actual world events can be communicated to the realm of current and accessible information and data. New ICTs have served as vehicles for both expression and control throughout history. As mentioned earlier, printing presses, telegraphs, telephones, photocopiers, television, and the Internet are all strong tools for disseminating ideas and represent control technologies. The use of digital technologies to transmit ideas is relatively new, but conflicts over the propagation of ideas have existed for decades, if not millennia [34].

Labelle [35] detailed how, with support from UNESCO, ICT techniques, such as the Internet and community radios, in Sri Lanka have been brought together to ensure that radio broadcasts reach a much wider audience. The merging of the Internet and community radios in Sri Lankan society has made the radio a middleware technology for people without access to ICT. Information technology systems can allow information to be both collected and disseminated faster and more cheaply than before, foster links between local human rights groups or between local and international groups, and allow local groups to become less dependent on international NGOs for accessing information relevant to their work [11]. People can now completely sidestep the conventional media, receiving information and views directly from their peers across the world rather than depending on third-party journalism by media organisations [12]. Piccone [5] noted that recent technological advances have also helped shed light on human rights abuses committed across the world. Victims’ groups can share videos and photos of abuses on online platforms, such as Facebook, Twitter, YouTube, and several others, to create awareness about human rights abuses [5]. While eyewitness testimonies have long been a keystone of human rights information gathering, they have usually been collected by professionals only. ICT, which allows people to share such information on the Internet, therefore has immense potential to stimulate pluralism and accountability in human rights work [4].

Gluhbegovic et al. [36] concurred and stated that ICT allows netizens to bypass the mainstream media and publish, distribute, and provide information on events or situations that are not given sufficient attention or that are presented in a particular light by the

mainstream media, governments, or other powerful actors. During the Arab Spring, social media spread a wave of pro-democracy messages over North Africa and the Middle East, helping build hope for the success of political uprisings. During the week before the Egyptian president Hosni Mubarak's resignation, for example, the total rate of tweets from Egypt—and around the world—about political change in that country ballooned from 2300 to 230,000 a day [37]. The amount of content produced online by opposition groups, on Facebook and political blogs, increased dramatically. Ironically, government efforts to suppress social media may have incited more public activism, especially in Egypt. People, mostly middle-class Egyptians, who were isolated by efforts to shut down the Internet may have taken to the streets when they could no longer follow the unrest through social media [38].

3.2. Negative Effects of ICT

Although many activists and scholars believe that ICT can play a significant role in the advancement of human rights, it should be noted that, at times, ICT may result in threats to these rights [18,39]. Metzl [11] noted that if ICT can be used as a tool for the suppressed, it can also be easily utilised by the oppressor. The amount of publicly available information on every aspect of a person's life, from commercial activities to medical treatment or associations and memberships, can become a notably powerful tool that governments, businesses, and individuals can exploit at the expense of individual rights and privacy. Burt [40] lamented how ICT can easily usher in many technological breakthroughs, but, at the same time, causes disasters if not handled expeditiously. Citing the Wikileaks phenomenon, he also forecast how the event will forever affect the relationship between "diplomacy and the internet," arguing that "a fast decision is not necessarily the best decision", thus calling for secure use of the service. McPherson [18] noted that the same channels of digital technology that allow human rights activists to signal their networks that they are facing impending danger—namely, geolocation and networked communications—make it simpler for those pursuing human rights defenders to recognise, surveil, and intimidate them.

Horner, Hawtin, and Puddephatt [12] noted that ICT has also released new challenges for and threats to human rights. Oppressive governments erode the liberties and prospects that ICT presents for humanity through their efforts to retain power. Filho [39] concurred and stated that repressive governments have sought the accumulation and exercise of power to the detriment of the citizenry, with a form of totalitarianism that takes the form of digital or bureaucratic dictatorship. According to Ericsson [16], as ICT products and services, and the network of organisations that provide these, take on an increasingly important role in society, stakeholder awareness surrounding the possible risks that the misuse of ICT poses to human rights is also growing. McPherson [18] stated that the human rights community is often at a disadvantage versus states in the technological "arms race", which requires resources such as time, money, and expertise. Furthermore, states have a distinct source of leverage over technology companies in that they can threaten to ban their websites; this leverage may compel companies to hand over user information.

ICT can also be used by the general populace in unproductive ways. People can use ICT to share information that does not necessarily reflect the truth. This has been referred to as disinformation, which is misleading information that is intended to be misleading [41]. It can, thus, be stated that disinformation is information meant to deliberately mislead. While social media platforms have the capability to expand the world in innovative and exhilarating ways, they are also channels for damaging information behaviours [42]. Social media platforms have also been instrumental in the spread of fake news, with the intent to cause fear and panic among citizens [43]. Bradshaw and Howard [44] discovered the existence of organised social media manipulation campaigns, which were characterised by misinformation, in 48 countries. In Zimbabwe, false news has become more common in recent years, with a spike in false information spread on social media during the late-2017 military intervention that resulted in Robert Mugabe's resignation and during the

July 2018 election season [45]. Despite seeming progressive on the surface, social media regulations in Africa are not fighting hate speech and disinformation.

The establishment and cultivation of deceptive information can weaken certain aspects of society, shifting economic and political power in ways that can have negative effects [46]. As Baccarella et al. [47] suggested, ICT, through the use of social media, has a “dark side”. This “dark side” might be compelling regional bodies, such as SADC, to urge their member states to “take pro-active measures to mitigate external interference, the impact of fake news and the abuse of social media, especially in electoral processes” [24]. Instead of promulgating laws that are consonant with the Necessary and Proportionate Principles, as articulated by Access Now, Privacy International (PI), the Electronic Frontier Foundation (EFF), and the Association of Progressive Communications (APC), some SADC countries have brazenly created legal frameworks that violate people’s inalienable human rights as enshrined in their national constitutions [29]. Many countries in the SADC area are taking steps to stifle Internet access and affordability, limiting the power of digital technologies to catalyse free expression and civic involvement and stimulate innovation.

SADC countries such as Angola, Tanzania, Uganda, Malawi, Swaziland, and Zambia have already introduced harsh laws that regulate “social media abuse”. To counter the social media-induced threats, most nations have resorted to strict regulatory frameworks that criminalise and penalise some of the social media actions that are viewed as threats to national security [48]. While the regulations promulgated in these countries appear essential and even reasonably progressive on the surface, they contain problematic clauses aligned to dubious “national security” imperatives [23,49].

3.3. Digital Authoritarianism

Yayboke [50] defined digital authoritarianism as the use of the Internet and related digital technologies by leaders with authoritarian tendencies to decrease trust in public institutions, increase social and political control, and/or undermine civil liberties. Polyakova and Meserole [51] and Coleman [17] argued that digital authoritarianism is the use of information technology by authoritarian regimes to surveil, repress, and manipulate domestic and foreign populations. The freedom of movement, the right to speak freely and express political opposition, and the right to personal privacy, both online and offline, are all under threat. Digital authoritarianism is undermining what has come to be known as digital democracy—in which Internet platforms increase citizen participation in public life—to the point where it has been frequently described as reshaping the power balance between democracies and autocracies [52]. It takes many forms, such as online harassment, the dissemination of fake news, cyber-attacks, Internet shutdowns, and targeted surveillance through social media, artificial intelligence (AI), and facial recognition software. With digital authoritarianism, the flow of information is increasingly governed at the national level, limiting the competition of ideas and diminishing the rights of individuals who operate openly and must respect the rules, while benefitting those who already flout the law with minimal repercussions [50].

Coleman [17] argued that blocking Internet access, banning material, filling the information sphere with disinformation, and co-opting social media and other online platforms are all examples of digital authoritarianism. Digital authoritarianism is being touted as a way for governments to use technology to control their populace, inverting the Internet’s role as a tool for promoting human liberty. Citizens should be able to make their own social, economic, and political decisions without fear of coercion or concealed influence in their use of technology. The Internet has evolved into a modern public sphere, and social media and search engines wield immense power while also bearing a significant duty to ensure that their platforms serve the public good. Citizens will be denied a venue to communicate common ideals, debate policy problems, and peacefully settle intrasocietal disagreements if anti-democratic groups successfully dominate the Internet [53]. The ever-evolving technologies and practices of digital authoritarianism have advanced authoritarian nations’ goals while undermining human rights and democratic norms during the past decade [50].

Bahia and Gaura [15] claimed that authoritarian regimes such as China are classic examples of states that control the Internet to advance their goals. This is accomplished by facilitating “authoritarian deliberation”, which employs technology for monitoring and control. China is currently exporting its technology to SADC countries such as Zimbabwe. Polyakova and Meserole [51] claimed that in southern Africa, both Zimbabwe and Angola have signed partnerships with Chinese companies to provide AI for their ruling regimes, all under the auspices of the Belt and Road Initiative. Huawei technicians helping Ugandan and Zambian forces spy on political opponents is commonly cited as an example of how African regimes may use Chinese-exported surveillance technology for nefarious purposes [52]. Some politicians feel that free Internet access to information, including political content, will breed opposition. Many nations in southern Africa have passed legislation permitting governments to restrict access to the Internet if they suspect that it is being used to drum up opposition [54]. In Africa, social media platforms such as Twitter, Facebook, and WhatsApp have increasingly become a stage where governmental authority and networked dissidents clash. Bhalla [55] concluded that digital authoritarianism poses a threat to basic freedoms and rights in many African countries, ranging from Internet shutdowns and online surveillance to social media fees and arrests for anti-government posts. Shutting down the Internet not only deprives citizens of their democratic and constitutional rights to protest, but also establishes a new form of authoritarian government. Citizens’ efforts to deliver past campaign messages; educate supporters on where and how to vote; and report acts of violence, intimidation, and voting irregularities on social media may be hampered by Internet outages.

4. Materials and Methods

The study was quantitative in nature and used secondary data. In order to examine the link between ICT and the advancement of human rights, econometric analysis was carried out to examine whether a quantitatively based statistical relationship exists between ICT and human rights across 15 SADC countries. The data were sourced from the Economist Intelligence and the World Bank; panel data covering the period between 2000 and 2019 was used in the study. The criterion for choosing this study period is the consistent availability of data for the period from 2000 to 2019.

4.1. Model Specification

The study modified Selian’s [13] model and developed the following model, as given in Equation (1):

$$CV = f(ICT, PP, HDI, EP, FG) \quad (1)$$

where CV is civil liberties (a proxy for human rights), ICT is information communication technology (measured by the number of people using the Internet), PP is political participation, HDI is economic development, EP is the electoral process and pluralism, and FG represents the efficient functioning of government. The model can be expressed in its linear form as in Equation (2):

$$CV_{it} = \beta_0 + \beta_1 ICT_{it} + \beta_2 PP_{it} + \beta_3 HDI_{it} + \beta_4 EP_{it} + \beta_5 FG_{it} + \varepsilon_{it}, \quad (2)$$

where ε_{it} is the error term. The descriptions of the variables presented in Equation (1) are included in Table 2.

Table 2. Summary of variable descriptions.

Variable	Description and Unit of Measurement	Source
EP	Electoral participation and pluralism	Economist Intelligence
FG	Efficient functioning of government	Economist Intelligence
PP	Political participation	Economist Intelligence
HDI	Human Development Index	World Bank
ICT	Number of people using the Internet	World Bank
CV	Civil liberties	Economist Intelligence

4.2. Estimation Techniques

The study follows the panel cointegration approach used by Kirikkaleli et al. (2018), who followed a three-step procedure while conducting a panel cointegration study. The first step is to test for unit roots, the second involves panel cointegration testing, and the third involves estimating long-run elasticities.

4.2.1. Unit Root

To test the panel cointegration among the variables, the first step is to examine the unit root properties of the data because the variables must be integrated of the same order. The Levin–Lin–Chu [56] and the Im–Pesaran–Shin [57] tests were used to identify the order of integration of the variables.

4.2.2. Cointegration

After revealing the order of integration levels of the variables, possible cointegration among the variables should be tested. Applying cointegration tests aims to investigate the long-run equilibrium relationship among the variables. The Kao and Fisher tests were applied to test the cointegration among the variables. The Kao test follows the same basic approach as the Pedroni tests, but specifies cross-section-specific intercepts and homogeneous coefficients on the first-stage regressors. Fisher [58] derived a combined test that uses the results of the individual independent tests. Maddala and Wu [59] used Fisher's result to propose an alternative approach to testing for cointegration in panel data by combining tests from individual cross-sections to obtain a t-test statistic for the full panel.

4.2.3. Estimating Long-Run Elasticities: Fully Modified Ordinary Least Squares (FMOLS) and Dynamic Ordinary Least Squares (DOLS)

After confirming the long-run equilibrium relationship between the variables with the cointegration test, long-run coefficients are estimated by the fully modified ordinary least squares (FMOLS) and dynamic ordinary least squares (DOLS) estimation techniques. Christopoulos and Tsionas [60] forwarded three reasons why it is better to apply FMOLS in a cointegrated panel, stating that it (a) allows consistency of the long-run relation with the short-run adjustment, (b) deals with the endogeneity of regressors problem, and (c) respects the time-series properties of the data in that integration and cointegration properties are explicitly taken into account. The regression equation is given as in Equation (3):

$$Y_{i,t} = \alpha_i + \beta x_{i,t} + \mu_{i,t} \text{ and } x_{i,t} = x_{i,t-1} + v_{i,t}, \quad (3)$$

where α_i allows for the country-specific fixed effects, and β is a cointegrating vector if $Y_{i,t}$ is integrated of order 1. At the same time, the vector error process $\varepsilon_{i,t} = (\mu_{i,t}, v_{i,t})$. On the other hand, the DOLS adjusts the errors by augmenting the static regression with leads,

lags, and contemporaneous values of the regressor in first differences [61]. The regression equation is given as in Equation (4):

$$y_{it} = x_{it} + \beta' X_{it} + \sum_{j=-q}^q c_{ij} \Delta x_{i,t+j} + \varepsilon_{it}, \quad (4)$$

where X_{it} is a vector of the explanatory variables; β , the estimated long-run impact; q , the number of leads and lags of the first-differenced data; and c_{ij} , the associated parameters. Acharya and León-González [62] noted that DOLS addresses the issues of endogeneity and residual serial correlation in the regression specification and gives consistent and unbiased estimates. Endogeneity bias and serial correlations are corrected by FMOLS and DOLS techniques, and, thus, these estimators allow for standard normal inference [63].

5. Results

5.1. Preliminary Statistics

The study performed two unit root tests: the Levin–Lin–Chu and the Im–Pesaran–Shin tests. The results are displayed in Table 3.

Table 3. Unit root tests.

Variable	Levin, Lin, and Chu		Im, Pesaran, and Shin W-Stat	
	Stat.	Prob.	Stat.	Prob.
EP	−1.1672	0.4532	−0.1725	0.5235
FG	−3.6172	0.0212 *	4.3183	0.0000 *
HDI	−1.1041	0.3671	−0.7236	0.8672
ICT	5.2389	0.0000 *	−5.3921	0.0001 *
PP	4.7245	0.0001 *	−3.9823	0.0000 *
CV	−1.0238	0.5628	0.8293	0.7192

* This denotes that the variable was stationary at levels.

The results from the unit root tests show that three variables were stationary at levels and three variables had unit root at levels. FG, ICT, and PP were stationary at levels. EP, HDI, and CV became stationary after being differenced once. These results were found in both the Levin–Lin–Chu and the Im–Pesaran–Shin tests. The fact that some variables had unit root levels prompted the study to test for cointegration. This was carried out using the Kao and Fisher cointegration tests, the results of which are shown in Tables 4 and 5.

Table 4. Kao residual cointegration test.

ADF	<i>t</i> -Statistic	Prob.
	−9.731	0.0241

Table 5. Fisher cointegration test.

Hypothesised No. of CEs	Fisher Statistic (from Trace Test)	Prob.	Fisher Statistic (from Max-Eigen Test)	Prob.
None	0.000	1.0000	0.000	1.000
At most 1	223.1	0.0000	201.2	0.000
At most 2	21.6	0.2976	18.34	0.8452

The Kao cointegration test shows that cointegration exists amongst the variables. This is shown by the *p*-value (0.0241), which is lower than 0.05, indicating that the null

hypothesis of no cointegration could not be accepted. The results of the Fisher test also showed that cointegration is present, as displayed in Table 5.

As shown in Table 5, the Fisher test found the existence of one cointegration relationship. In other words, it showed that cointegration is present amongst the variables. This is in tandem with the Kao test results. Thus, given that the two tests (Fisher and Kao) suggest panel cointegration in most cases, it is safe to state that there is cointegration amongst the variables. After the detection of cointegration by the Kao and Fisher tests, the subsequent step was to estimate the long-run elasticities, which was carried out using FMOLS and DOLS.

5.2. Presentation and Discussion of Results

The FMOLS and DOLS panel techniques were performed, with Tables 6 and 7 presenting the regression results.

Table 6. FMOLS.

Variable	Coefficient	Std Error	t-Statistic	Prob.
EP	0.358526	0.190489	1.8821	0.0623
FG	0.5704	0.14009	4.07162	0.0001
HDI	0.1637	0.0408	4.012400	0.0001
ICT	0.043185	0.01666	2.5911	0.0116
PP	0.23234	0.11198	2.0747	0.0431

Table 7. DOLS.

Variable	Coefficient	Std Error	t-Statistic	Prob.
EP	0.3776	0.0867	4.3520	0.0001
FG	0.3735	0.1798	2.0764	0.0429
HDI	4.2048	0.8003	5.2536	0.0000
ICT	0.0191	0.0052	3.6668	0.0005
PP	−0.0707	0.0907	−0.7787	0.4397

The results from the two estimation techniques (FMOLS and DOLS) are similar. However, the study primarily used the findings from the DOLS approach because it is a superior technique in the estimation of long-run coefficients for small samples compared to alternative techniques, as it is based on Monte Carlo simulations [64]. Subsequently, the results from the DOLS method are discussed.

The results show that the electoral process and pluralism (EP) have a positive relationship with human rights (CV). This is a rather reasonable outcome. The right and ability to vote and stand for election are at the core of democratic governments based on the will of the people. Indisputable elections are, therefore, an essential and fundamental element of an environment that safeguards and encourages human rights [65]. From this assertion, one can infer that free and fair elections are not possible if the rights of people are violated. In the absence of proper electoral incentives, both incumbent politicians and opposition leaders may strategically choose to ignore poor human rights practices [66]. The freedom to vote and stand for election and the freedoms of association and assembly are the major political expressions of such participation. These rights form the bases for any representative, democratic process and active civil society and ensure that public affairs are truly public. The right to participate in government is also intricately linked with other rights, such as the right to education and the right to freedom of conscience and religion.

In addition, the results reveal a positive relationship between the efficient functioning of government (FG) and human rights (CV). This is a reasonable outcome because, without

good governance, human rights cannot be appreciated and safeguarded in a justifiable manner. Empirical literature supports this finding. For instance, Kaufmann [67] claimed that it is evident that human rights and governance may be linked to each other. The OHCHR [68] noted that good governance is the practice where public establishments handle public matters, administer public resources, and guarantee the apprehension of human rights in a way that is fundamentally free of exploitation and dishonesty and with due regard for the rule of law. Kaufmann [67] maintained that governance is a fundamental intermediating connection between political/civil rights matters and socioeconomic/development matters and an important factor in determining development outcomes.

Further, a positive relationship between economic development (HDI) and human rights (CV) exists. This is consistent with the empirical literature. For instance, Cole [69] argued that research shows that the effect of economic development on human rights conditions is positive. Cole [69] further stated that economic growth stimulates diffuse social and political changes that improve human rights conditions. McKay and Vizard [70] argued that when rights are not protected, it is more likely that population groups will be marginalised and excluded from the benefits of growth. This will lead to a positive relationship between the advancement of human rights and economic development.

There is also a weak but positive relationship between ICT and human rights. The results are consistent with the empirical literature. For instance, Morrison [33] stated that ICT has enabled access to human rights. Furthermore, Coccoli [3] claimed that ICT has become an essential instrument for appreciating a range of human rights, fighting inequality, and accelerating development and human progress, and that ensuring universal access to ICT should be a priority for all states. However, the relationship between ICT and human rights is very weak. This may support the idea that Africa has been unable to capitalise on ICT as a tool for enhancing livelihoods and creating new business opportunities, and cross-border linkages within the continent and with global markets have been constrained [71].

Finally, the results reveal a negative insignificant relationship between political participation (PP) and human rights. This is surprising, because political participation should promote the advancement of human rights. Political and public participation rights play a crucial role in the promotion of democratic governance, the rule of law, social inclusion, economic development, and the advancement of all human rights. Peter [72] concurred and stated that human rights will fail to secure political legitimacy if the right to political participation is excluded from the set of basic rights. Furthermore, Wiker [73] argued that political participation itself secures human rights. However, the results seem to be in tandem with the situation in the SADC region. Muchena cited in ENCA [74] stated that the SADC region has witnessed the widespread punishment of dissenting voices and politically motivated attacks on peaceful protests as well as growing inequalities and precarious access to social and economic rights. This may justify why a negative relationship between human rights and political participation exists. Nonetheless, this relationship is not significant.

6. Limitations and Areas for Further Research

This study is not without limitations. The availability of quantitative data continues to be a major challenge. Data were unavailable for certain variables. The dataset used is country-level panel annual data. Future studies must use micro-level data. Studies that use primary micro-level data might explain why human rights abuses have remained extremely high in developing regions such as SADC, despite trends showing that ICT use in these regions is increasing. Furthermore, studies of this nature should be conducted in other regions such as China and Russia, since these countries have been identified by the literature as suppliers of repressive technology. Notwithstanding the above concerns, this study made an original contribution to the literature as it has displayed the negative role played by ICT when it is used by governments. Conventional wisdom suggests that ICT has the power to free citizens from human rights abuse. However, this study found that the choice that governments make will often determine the difference.

7. Conclusions

The study sought to empirically test the contribution of ICT to the advancement of human rights, drawing on the fact that the safeguarding of human rights through the use of ICT is a field of increasing interest to academics and those working towards the advancement of human rights and development practitioners. The literature on ICT and human rights holds the view that ICT can play a significant role in the advancement of human rights. ICT has become an essential instrument for realizing human rights, and ensuring its accessibility must be a prime concern for all governments. However, despite the increase in the use of ICT, the southern African region is marred by atrocities and human rights violations. Many southern African governments regularly impose restrictions on opponents, human rights defenders, journalists, and rights activists, often to suit political goals. The findings reveal a weak positive relationship between ICT and the advancement of human rights.

This study has important implications for policymakers. After conducting the study, it was possible to verify that the use of ICT is a double-edged sword, bringing both benefits and drawbacks. How to prevent the use of ICT to violate human rights is a critical problem for policymakers and human rights advocates. Policy makers in the human rights field must concentrate on how technology is being used, starting with the defence of civil liberties and human rights advocates. The study recommends that the government and civil society encourage the use of ICT functionality in ways that advance human rights. The weak relationship between ICT and human rights may suggest that Africa has been unable to capitalise on ICT as a tool for enhancing the advancement of human rights. Furthermore, it may suggest that ICT service penetration and use have not yet improved. There is, therefore, a need to promote compulsory ICT and human rights education in schools to institutionalise the human rights discourse. Furthermore, creating a conducive environment that allows citizens to access and use ICT services easily is necessary. Both the government and private sector can work together to ensure that ICT infrastructure is easily available, affordable, and accessible to the people; this can be done by setting up public Wi-Fi hotspots and providing free Internet in public libraries.

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