Will Emerging Technologies Driven by the 4IR Influence the Nature of Philanthropy in Africa?

Abstract

Emerging technologies driven by the Fourth Industrial Revolution (4IR) have the potential to influence the nature of philanthropic activities, and approaches, in Africa. The 4IR has an impact on a range of transformative technologies such as Artificial Intelligence (AI), Virtual, Augmented, and Mixed Reality (VR, AR, MR), Blockchain applications, Internet of Things (IoT) applications, and Advanced Big Data Analytics.

African culture is socialistic in nature. This is evidenced by how Africans support and interact with their families, neighbours, and visitors. However, when it comes to philanthropic activities they lag behind. The assumption while conducting this study is that there are many potential philanthropists in a position to participate in programmes and projects at regional, national, and global levels. What is to be addressed is why philanthropic activities at the three levels within Africa are very low. The study focuses on 4IR as one of the means through which these issue can be addressed.

There is compelling evidence that any of these emerging technologies, or indeed a combination of them, can enhance philanthropy through; Data-Driven Decision Making, Developing Innovative Funding Mechanisms, Collaboration and Networking in philanthropy across Africa, Increased Access, Measurable Impact, Improved Efficiency, Scalability of Philanthropic initiatives, and Sustainability of Philanthropic initiatives.

These emerging technologies offer significant opportunities for Philanthropy across the African continent , challenges such as; internet access, the current digital divide, data privacy regulations, and ethical considerations need to be addressed to ensure inclusive and responsible deployment of these technologies in the philanthropy and social investment sector.

The effective adoption and adaptation of these technologies in the African context would require; broad ranging strategic technology and financial partnerships, capacity building, and policy frameworks to leverage their full potential. This could improve the Monitoring, Evaluation, Research, and Learning (MERL) capacity to the benefit of Philanthropy.

Keywords

Philanthropy, Fourth Industrial Revolution (4IR), Impact, Sustainability, Africa

Authors:

Ooro, P.E.O.[1], Ndwiga, K.[2], M'Raiji, J. K.[3]

[1] DaySeven Group, South Africa
[2] First Advantage Investments, Kenya
[3] Masinde Muliro University of Science & Technology, Kenya

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1. Introduction

Philanthropy is a key component of any community. According to (Mogotsi et al., 2023) this is more so when it comes to less developed country. Such countries experience high level of income inequalities, which calls for support of the less privileged by the economic endowed members of the society. Reaching out to, motivating to give, and communicating with these potential donors has continued to be a challenge. This article explores how fourth industrial revolution (4IR) could be utilised to reach out to potential donors and sponsors of philanthropic activities in Africa.

There is evidence, although limited, that philanthropic activities can be enhanced by emerging technologies. According to (King, 2023), it has been argued that any of the emerging technologies, or indeed a combination of them, can enhance philanthropy through; Data-Driven Decision Making, Developing Innovative Funding Mechanisms, Collaboration and Networking in philanthropy across Africa. (Musari, 2022) further notes that increased Access, Measurable Impact, Improved Efficiency, Scalability of Philanthropic initiatives, and Sustainability of Philanthropic initiatives. The issue of emerging technology therefore requires serious consideration, hence the purpose of this study.

The study is qualitative in nature due to the limited availability of quantitative data on digital philanthropy trends in Africa, and the current and future impacts of 4IR. As such, the study made use of secondary data gathered through review of existing literature on the impact of emerging technologies on philanthropy.

2. Problem Statement

African culture is socialistic in nature. As observed by (King, 2023) this is evidenced by how Africans support and interact with their families, neighbours, and visitors. However, when it comes to large scale philanthropic activities they lag behind.

The assumption while conducting this study is that there are many potential philanthropists in a position to participate in programmes and projects at regional, national, and global levels. What is to be addressed is why philanthropic activities at the three levels within Africa are very low, and how emerging technologies can be used to drive philanthropic activities in Africa. The study focuses on 4IR as one of the means through which this issue can be addressed.

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3. Rationale, Scope, Objectives, Deliverables, and Expected Outcomes

3.1 Rationale

African continent continues to face many challenges that are typically addressed through philanthropic initiatives. These challenges as noted by (Mogotsi et al., 2023) impact negatively on the sustainable development of a majority of countries in the continent. Some of the key challenges faced by African countries include; inadequate or no access to proper healthcare, hunger, education, climate change, and natural disasters (IEEE Foundation, 2022). As a result, Africa continues to rely on help from other parts of the world. As noted by (King, 2023), it is imperative for Africans to find local solutions to local problems. This can only materialise if philanthropic activities are managed using local resources. One of these local resources is harnessing the data that resides within communities and using it to make data driven philanthropic decisions.

3.2 Scope

The focus of the study is on philanthropy within Africa. There are many ways through which, philanthropic activities and proceeds thereof can be enhanced using emerging technologies. However, for the purposes of this study, focus will be limited to how philanthropic activities in African can capitalise on 4IR to promote sustainable development. In addition, the study will be limited to Sub-Saharan Africa. To promote regional representation in the study, three countries namely; South Africa, Kenya, and Senegal were purposely selected. The study was also limited to review of literature and hence relied fully on secondary data.

3.3 Objectives

To derive maximum benefits from this study, a primary objective supported by secondary/specific objectives were formulated. At the primary level, the study aimed to identify how philanthropic activities can be supported using emerging technologies in and local resources in Africa. The secondary/specific objectives were to:

1. explore influence of 4IR on global philanthropy/philanthropic trends;
2. evaluate state of philanthropy in Africa;
3. conduct a comparative analysis between global and African trends;
4. identify key/thematic philanthropic areas in Africa and how they could benefit from 4IR; and;
5. formulate a framework to assist philanthropy in Africa to capitalise in the emerging technologies as encapsulated in the term 4IR.

3.4 Expected Outcomes

The expected outcome of this study can be divided into two parts. The first, and short term, outcome is formulation and presentation of a framework to guide harnessing of 4IR for philanthropy activities throughout the philanthropic value chain in Africa.

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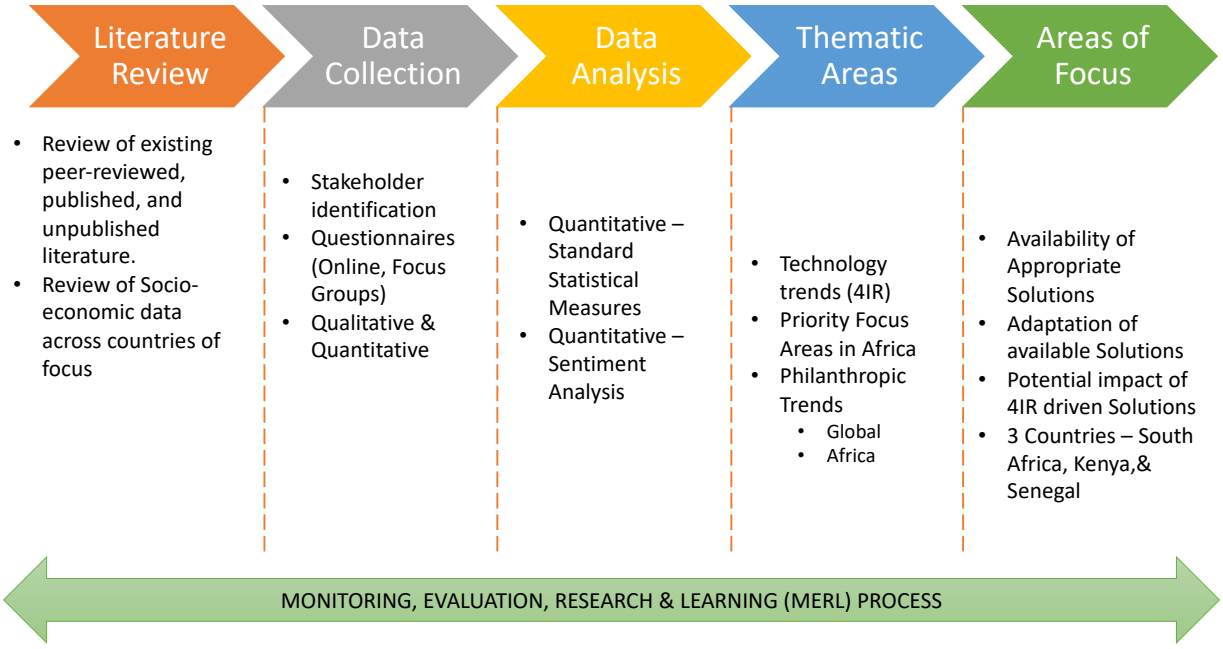
The second is widely sharing research outcomes with actors in the philanthropic space to drive adaptation of emerging technologies that will enable them to effectively access resources, and efficiently use these, for philanthropic work within the continent driven by emerging technologies.

4. Approach and Methodology

4.1 Approach

This paper builds on research conducted across five (5) countries in Sub-Saharan Africa; South Africa, Kenya, Cameroon, DRC, and Senegal. The research reviewed philanthropic and giving trends globally, and across the identified countries. The initial research was based on the approach in figure 1, and this guided the preparation of this paper.

Figure 1: Research Approach



4.2 Methodology

The study made use of secondary data gathered through a detailed literature review and as such is qualitative in nature. A data gathering guide was used to ensure that all the relevant information required to address the stated research objectives was available. Focus was narrowed to SSA and in particular the following countries South Africa, Kenya, and Senegal.

There was limited time and resources within which, to implement the study. This being the case then, the study was limited to gathering data from secondary sources. In addition, only three countries namely, South Africa, Kenya and Senegal participated in the study. The countries were purposively selected to ensure that there was regional balance and representation.

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As mentioned earlier on, qualitative data was gathered from primary sources. For ease of analysis, the gathered information was summarised, patterns identified, and thematic areas established. From these patterns and thematic areas, conclusions were derived, and recommendations made.

No pilot testing took place. This was mainly due to limited time and other resources. To address the issue of validity and reliability, the research design and data gathering guide was subjected to face content validation with a few sector professions. They gave their feedback, and their suggestions were taken into consideration before commencing on the final study.

5. Literature Review

Introduction

In the literature review, information was sourced from multiple sources such as; grey and peer reviewed papers, conference proceeding reports, and other documents all that focus on fundraising, philanthropy, emerging technologies, and related business models both in Africa and globally.

The purpose of the literature review was to develop an understanding of how philanthropy can benefit from the various emerging technologies and possibly identify potential business models that could be interrogated and reviewed. As such, the literature review process provided a broad base of information including; globally accepted best practices, current and future fundraising trends, and the role of digital resilience in the fundraising and philanthropy sectors (Yokoi, 2021).

Philanthropic activities are not profit making and, in most cases, do not have commercially viable outputs to show, thus they rely on goodwill in order to drive systemic change through the various programmes that they run (Omura & Forster, 2014).

Previous research and published literature indicate that these emerging technologies can offer significant opportunities for Philanthropy (Swati et al., 2022). Within the African context, challenges such as; internet access, the current digital divide, data privacy regulations, and ethical considerations need to be addressed to ensure inclusive and responsible deployment of these technologies in the philanthropy and social investment sector (Chopra & Narayana, 2013).

The literature reviewed also indicates that Data and data driven decisions are becoming increasingly important. This can also be seen in the trends within the philanthropy sector (Dorothy A. Johnson Center for Philanthropy, 2021). The correct capturing, storing, management, utilisation, and archiving of data is critical in getting the most value out of your data. This has also become increasingly important with the advent of the POPI Act globally and requires appropriate systems and solutions (Melles et al., 2015).

PESTEL Analysis

The contextual background analysis was one of the key processes that was undertaken as part of the research. This was done in the form of a desktop review of both quantitative and qualitative data available on Sub-Saharan Africa (SSA) with a focus on the target countries; South Africa, Kenya, and Senegal. The key purpose of this was to create an understanding of the

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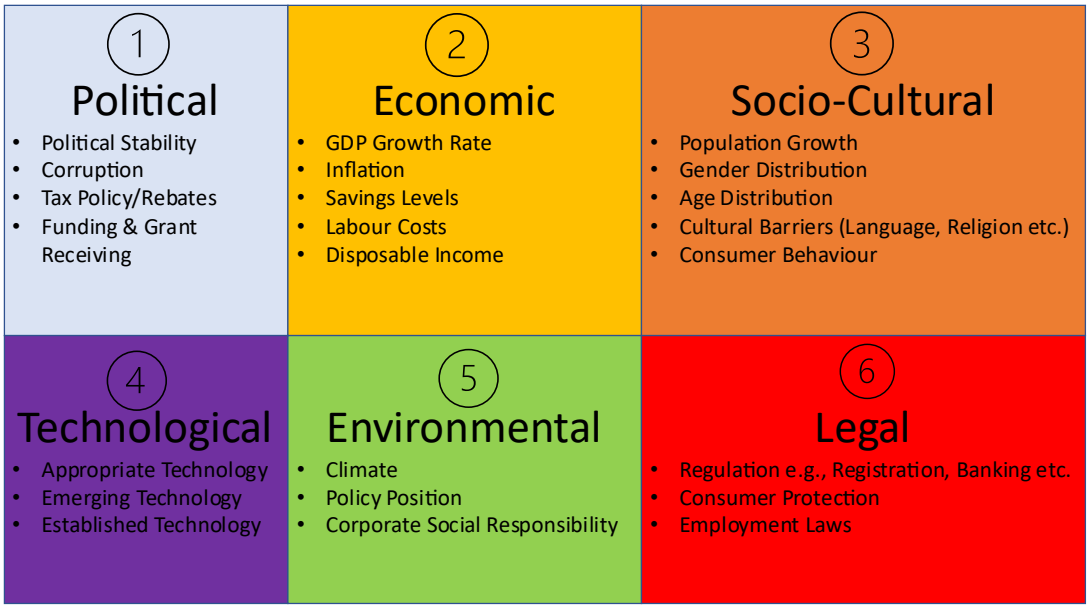
contextual background within which emerging technologies could be applied for philanthropic activities.

The PESTEL Framework was used as the basis to understand the contextual background. The aim of the PESTEL[4] Framework is to conduct an external environment analysis through the investigation of the following factors; Political, Economic, Socio-cultural, Technological, Environmental, and Legislative. Figure 2 provides a high-level view of some aspects that wer considered within each factor.

Figure 2: PESTEL Analysis Aspects



The focus of this research was the technological aspect, although data was collected on other aspects, and the benchmark used was access to the internet, this is shown in table 1.

COUNTRY	**South Africa**	**Kenya**	**Senegal**
Access to internet and usage, fixed line and cell phone usage and access - Internet Penetration[5]	57.5%	85.2%	56.7%

Table 1: Internet Access

A case in point was the increase in mobile money transactions during the COVID-19. Mobile money transactions reached nearly $ 500 billion across Sub-Saharan Africa (Shapshak, 2021). This alone is a clear indicator that prior to the pandemic, mobile money was already the most appropriate transactional platform. Registered mobile money accounts in Africa grew 12% to 562 million in 2020, while monthly active accounts were 161 million, an 18% increase (during

[4] https://pestleanalysis.com/pestle-analysis-for-charities/
[5] https://www.statista.com/statistics/1124283/internet-penetration-in-africa-by-country/

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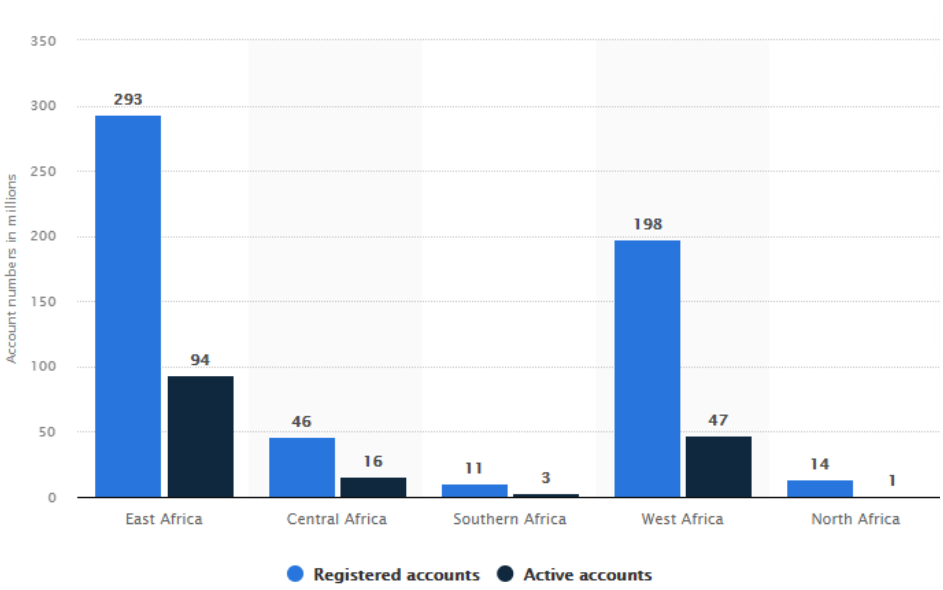
COVID alone). Total transactions hit 27.5 billion (up 15%) valued at $495 billion (up 23%). SSA has 171 active mobile money services. Figure 3 shows the number of mobile money accounts in Africa by region in 2020.

Figure 3: Mobile money accounts in Africa by region 2020 (in millions)



Post the pandemic, numerous actors across Africa have continued to use mobile money as a payment channel of choice. (Pepin et al., 2023) conducted a survey on the use of mobile applications for charitable acts that is being driven by the increasing access to internet. The findings showed that there is a need to develop mobile applications that can help donors and recipients.

The effective adoption and adaptation of these technologies in the African context would require; broad ranging strategic technology and financial partnerships, capacity building, and policy frameworks to leverage their full potential (Pasic et al., 2020). This could furthermore improve the Monitoring, Evaluation, Research, and Learning (MERL) capacity to the benefit of Philanthropy.

Finally, it has become more apparent that the use of digital technologies is rapidly becoming a key aspect for all businesses globally and as such should be an area of development for the philanthropy and social investment sectors (Nonprofit Tech for Good, n.d.).

Philanthropic and Technology Trends

Technology has become a key factor in philanthropy. This is more so since advent of COVID 19. (Fidelity Charitable, 2023) in article identified several trends that have emerged and continue to have a significant impact on philanthropic activities. The article commenced by citing increased use of social media as being one of the key changes. This has resulted in increased use of mobile devices as means identifying opportunities, interacting, and making actual donations. Increased direct giving online. Increase in reliance on virtual tools, which has trickled

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down to philanthropy. Increased access to potential donor recipients potential philanthropists. Finally, healthy interaction and collaboration among key donors and recipients.

Level of use of technology in philanthropy is to a large extent affected by the respective country's legal framework among other country specific characteristics. A few insights about this observation are contained in the (Community Tool Box, 2023) article. The article cited that in comparison to Kenya and Senegal, the economic characteristics and legal framework were supportive of philanthropy. For instance, in South Africa, the banking laws allows deduction of donations through bank stop order, which is not the case in Kenya and Senegal. In addition, in South Africa a potential donor can be recruited and signed up through telephone and internet, which is not the case in Kenya and Senegal. These characteristics have impacted negatively on philanthropy in Kenya and Senegal.

It is therefore critical to understand the social structure of Africa in order to determine the potential for emerging technologies to be effective tools. According to (Statista Research Department, 2023) Africa is projected to have a population of 2.5 billion by 2050 with approximately 72% of them being youth between the ages of 18 and 35.

COUNTRY	**South Africa**	**Kenya**	**Senegal**
Population ('000)[6]	59, 309	53, 771	16, 744
Socio-cultural dynamics e.g., Culture, Language, Religion etc.	Language – English (plus 10 other official) Predominant Religion - Christianity	Language - English, Swahili Predominant Religion - Christianity	Language - French Predominant Religion - Islam
Age structure [7]	15-24 years: 16.8% 25-54 years: 42.37% Median age - 27	15-24 years: 20.45% 25-54 years: 33.75% Median age – 20	15-24 years: 20.35% 25-54 years: 31.95% Median age – 19
Gender distribution	0.98 male/female	1 male/ female	0.94 male/female
Urban population	67.8%	28.5%	48.6%
Rate of urbanisation	1.7%	4.1%	3.59%

Table 2: Country Summary Statistics

There is evidence from countries such as China (Li et al., 2018) where blockchain technology is already being applied to philanthropy to maximise social welfare. Furthermore, ongoing research as indicated by (Hu & Li, 2020) on how blockchain technology can be used to manage charity based systems. There is therefore an opportunity to build on this research and identify appropriate solutions and systems that can work for philanthropy in Africa. This is further evidenced by (Jayasinghe et al., 2018) who focused on philanthropy on the blockchain including the potential to use Artificial Intelligence (AI) for philanthropy and social investment. According to (Singh et al., 2023) there is a potential role of blockchain, as one of the emerging technologies, in philanthropy and should be an area of additional exploration.

Given the increased diversity of philanthropic actors and initiatives within Africa has led to increased inclusivity as the more philanthropic activities become driven by Africans for Africa (The New Humanitarian, 2014). This development thus necessitates better systems and solutions to manage the growth effectively and to increase accountability within philanthropic activities. Emerging technologies can greatly support this growth, and this can be achieved through collaboration with exiting technology partners (Sweetkind-Singer, 2013).

[6] https://statista.com/statistics/1121246/population-in-africa-by-country/
[7] https://www.cia.gov/the-world-factbook/countries/south-africa/#people-and-society

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Key Thematic Areas

Africa receives funds in form of donations from within and without the continent. These funds are mainly tied to specific projects. As noted by (Osili, 2022) apart from cases of emergencies. Most of the donor funds in the recent past has been tied to projects dealing with environment (food security, nutrition, green, circular, and blue economy), health, civic education, human rights, sustainable development, and capacity building.

6. Findings, Conclusions, and Recommendations

6.1 Findings

6.1.1 Summary

Some of the key findings of the study were as follows:

1. The adaptation of technology within the philanthropy and social investment sector is progressing globally.
2. Philanthropic activities in Africa need to adopt appropriate emerging technologies suitable for the context.
3. Donor engagement, acquisition, and management can be enhanced using appropriate solutions and systems
4. Big data analysis can provide better insights at a granular level for philanthropic activities. This is critical to making data driven decisions.
5. Implementation of technology may at times be costly at the onset, the long term benefits though outweigh the initial costs. As such, it is critical to assess technology solutions in terms of their appropriateness and lifetime cost.
6. Increased collaboration within the African context can drive the socialisation of emerging technologies.

6.1.2 Key Thematic Areas

The findings of the study Identified several key thematic areas. These key thematic areas are the major beneficiary of donor funds in Africa. The areas include; environment (food security, nutrition, green, circular, and blue economy), health, civic education, human rights, sustainable development, and capacity building.

6.1.3 Proposed Framework towards adopting 4IR

After review of global trends and the three countries representing Africa namely; South Africa, Senegal, and Kenya. It became very evident that unique country specific characteristics need to be explored and understood before deciding on how to apply technology in philanthropy (Imouokhomo & Obisesan, 2022). The key issues that were found to impact on use of technology in philanthropy were explored/investigated using PESTEL. Once the political, economic, social, technological, environmental, and legal frameworks/characteristics are understood, then the philanthropists and beneficiaries will have a better idea of how to incorporate technology in philanthropy.

6.2 Conclusions

Evidence from the COVID-19 pandemic suggests that an increased adaptation in the use of digital solutions and systems is critical for philanthropy. As such, technology has proven to be a key enabler for philanthropy and it's adaptation is going to be critical.

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Big data analytics, AI, and Blockchain are increasingly becoming topical in philanthropy and can provide solutions for Africa given the nature, and extent, of data that exists within communities.

It is also to be noted that, in the recent past with exception of emergencies and disasters, donor funds are tied to certain common projects. These include; environment, health, human rights, sustainable development, civic education, and capacity building.

Finally, the individual country characteristics as captured by PESTEL do play a significant role in the determination of the success of use of technology in philanthropy.

6.3 Recommendations

Findings and conclusions derived from this study led to a few recommendations. The first recommendation states that philanthropic organisations when creating frameworks to align various aspects of their organisations should ensure that they are supportive of technological advancement. When exploring the type of technology to support philanthropy amongst other activities, a thorough PESTEL analysis should be conducted. This will enable organisations to determine the appropriateness of the employed strategy. Finally, the technology chosen should be appropriate for a certain thematic area and philanthropic activity preferences.

Another recommendation focuses on future research potential. An observation was made that the current study relied on desktop research. Future research should be conducted, and this will gather quantitative, primary data to complement the secondary data provided in this paper.

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