

RESEARC ARTICLE

Strategic responses to digital transformation of African non-profits: Developing competencies to achieve the social mission

Asabea Shirley Ahwireng-Obeng* and Frederick Ahwireng-Obeng Wits

Business School, University of the Witwatersrand, Johannesburg, South Africa

* Corresponding Author: ladyasabea5@gmail.com

Abstract

Demand for the social services that sub-Saharan African (African) non-profits deliver has escalated since the COVID-19 pandemic, amid rapidly changing global socio-technological shifts towards digitalization. Nonetheless, they have failed to respond effectively and stay competitive since they lack sufficient digitalization competencies that will enable them to transform and improve organisational performance. The purpose of this paper is to fill the gap in the literature for a conceptual model that identifies the competency requirements of African non-profits and propose how to develop them. We collated, evaluated and synthesized literature from peer reviewed international journals and similarly reliable documentary sources to identify 18 core competencies underpinned by human capital theory. We then integrated them with CIMO-logic from design science research as the analytical tool. This resulted in a conceptual process model, design propositions to guide implementation, and fresh insights for researchers to contextualize the competency development process. The paper adds value to human capital theory, and makes actionable recommendations for policymakers, business, practitioners and other stakeholders.

Keywords: Africa; Digital Transformation; Digital Competencies; Nonprofit Organizations; Human Capital; Organisational Performance

JEL classification: H2, 01, C33, 055

1. Introduction

In the current global context of the fourth industrial revolution organizations must work in rapidly shifting socio-technological environments to stay competitive. This requires new human capital capabilities to meet the demands of digital transformation (Kipper, Iepsen, Dal Forno, Frozza, Furstenau, Agnes & Cossul, 2021). Consequently, recent research has directed attention towards identifying the key human competencies for profit-making organizations. However, the literature has largely overlooked the need to address how non-profit organizations may transform digitally to create social innovations. Digital transformation (DT) is a radical departure from conventional means of using technology to change customer experience, operational processes and business models (Gruman, 2016). It is not merely a technological application, but essentially a strategic approach that facilitates innovation by bringing together people, processes and technologies (Spelhaug & Woodman, 2017). Accordingly, a cultural change is inevitable to derive value from DT. For instance, introducing a technological platform compels changing organisational structures, management

processes, business strategies and replacing old with new or refined business models. This ensures that the innovation is consistent with the organisational mission. All this generates complexities and uncertainties requiring collaboration and coordination with other actors which may, in turn, create conflicts that must be managed. This is a task that organizations of all types must face to undertake successful DT (Mattsson & Andersson, 2019). Leadership capabilities are, therefore, essential. Despite these hurdles, implementing DT comes with opportunities for the organization. First, it creates value in markets by expanding the range and variety of offerings to buyers. Second, it reduces the search cost of matching buyers and sellers and provides novel data about unknown customer needs (Afua & Tucci, 2001). Third, it broadens the scope of the organization through coordination and cooperation (Leonardi & Vaast, 2017), and promotes operational and transactional efficiency gains (Lanzolla, Pesce & Tucci, 2020). Finally, DT reinforces the need to review and articulate organisational goals alongside changing task allocation, positions of responsibility and reporting lines in the organization (Galbraith, 2014). To take full advantage of these potential benefits, organizations have strategically fallen on accelerated adoption of DT (Zhao, Liao & Sun, 2020). Particularly, there is a rapid shift to university-on-line learning, e-learning, on-demand delivery services, virtual events and on-line medicine, all of which have become institutionalized.

Paradoxically, the literature is silent on the crucial competencies non-profits require to access the potential benefits of DT. This omission sets back African non-profits as most apply rudimentary digital technologies. Human competencies have recently become an area of interest for researchers because unlike supply-side factors such as expanding internet access and improving internet speed, it is a critical demand-side determinant of organisational performance over which leadership has control (Nemeth, 2017). This leads to the two-fold research question that guides this study: what core competencies must African non-profit organizations develop to transform digitally, enhance performance and facilitate meeting their social mission; how can they acquire these competencies? The literature suggests two well-established theories, the Resource-Based View and Human Capital Theory offering competing conceptual frames for the answer.

The Resource-Based View posits that organizations anchor themselves strategically based on their resources and competences rather than their products and services. Competency, from this perspective, represents a combination of knowledge, skills and technologies which provides opportunities for the organization and are difficult to duplicate (Coates & McDermott, 2002). The competency notion is rooted also in Human Capital Theory which postulates that persons with greater human capital comprising abilities, knowledge, skills and other attributes can achieve superior performance (Martin, McNally & Kay, 2013). This theory provides a more direct and convincing philosophical footing for human competency as discussed in this paper (Kim, 2023; Nemeth, 2017; and Stiles & Kulvisaechana, 2005).

The present study follows recent work by Satar, Alarifi and Alhawsawi (2025) on competency-based digitalization of non-profits in Saudi Arabia, a country with non-profit organisational characteristics broadly like those of their African counterparts. For instance, its non-profits portray inadequate performance management, insufficient funding and inappropriate legalization (Mohamed, 2018). Saudi Arabia is considered a developing country despite its huge oil revenues. In their study, the authors identified 18 core competencies. We extend this finding in two ways. First, we integrate their competency framework with the so-called Context-Intervention-Mechanism-Outcome (CIMO)-logic in Design Science Research to develop a conceptual model. Second, we derive from the model the rationale underlying design propositions aimed at guiding systematic and practical actions to develop digital leadership, personnel/ management and technical competencies. Design Science Research seeks to add value to explanatory research by enhancing its practical relevance (Denyer, Tranfield & Van Aken, 2008), the goal being to solve human problems and improve human conditions by creating new knowledge. The CIMO-logic runs in the following order: Given a difficult context (C), use the intervention (I) to trigger the mechanism (M) embedded in the social

system if you want to achieve the outcome (O). The framework's favourable features include its emphasis on cause-effects relationships in generative mechanisms. Thus, this study broadens the domain of competency in human capital research and lays the groundwork for further studies on non-profits' capabilities to cope with the demands of digital transformation. These competencies are acquirable and merit appropriate interventions for African non-profits to revamp their organisational performance.

The rest of the paper is structured as follows. The next section outlines the status of digitalization in Africa, followed by a review of the theoretical base. The subsequent section lays out the research approach, followed by a discussion of the results. The final section concludes.

2. The State of Digital Transformation in sub-Saharan Africa

By 2020, only 30.04% of Africa's population had access to the internet compared to 66.6% in East Asia, 80.4% in Europe and Central Asia, 73.74% in Latin America and the Caribbean, 73.6% in the Middle East and North Africa, and 38.6% in South Asia (International Telecommunication Union (ITU), 2021). Thus, among the regions of the world Africa, with its 770million population, suffers the most from lacking the opportunity to obtain information, learn, and participate in online discussions and commerce (Ndulu, Ngwenya & Setlhalogile, 2022). However, this situation, varies across the region. For example, for Mauritius, Senegal, Botswana, Nigeria, Namibia, Lesotho, Cabo Verde, South Africa, Ghana, Gambia, Angola, and Gabon, the percentage of populations with access to the internet was above 30 but much lower in other countries including Tanzania. What prevents more people in Africa from using the internet? Empirical studies on the region are few and include Bailey and Nyabola (2021), Khera, Ng, Ogawa and Sahay (2021) and, Pénard, Poussing, Zomo, Yebe and Ella (2012). The consensus, however, is that two enabling factors, Access/Connectivity and User Enablers, explain the situation.

2.1 Access/Connectivity

Connectivity or access has three components: network coverage; mobile handset ownership; and access to electricity. In 2021, individual countries in Africa had an average coverage of over 60% except Burundi, Central African Republic, Chad and the Democratic Republic of Congo (Tryphone, Joseph & Ndanshau, 2023), the mobile phone being the main means of connectivity for most people. In South Africa, about 91% of adults owned phones, 51% being smartphones and 40% standard phones. In Ghana, Senegal, and Nigeria adult ownership of phones was 80%. Almost all African countries had less than 70% access to electricity except Mauritius at 100% compared with South Sudan at 6% (ibid).

2.2 User Enablers

Having established connectivity, two other enablers are necessary for uptake; they are affordability and consumer capability and readiness. The cost of data bundles in Africa has decreased over the years. According to the Alliance for Affordable Internet (2020), the average cost of 1(one) gigabyte (GB) in Africa in 2020, was about USD 7.12 compared with the global average of USD 4.07, Central African Republic being the most expensive at USD 24.59. Others with a low cost of mobile data were Mauritius (USD 0.89), Ghana (USD 1.14), Botswana (USD 1.17) and South Africa (USD 1.14). The cost of handsets is also a barrier, with the average cost in Africa being over 60% of monthly average incomes (GSMA, 2021). Digital literacy is defined as the 'ability to use information and

communication technology, evaluate, create and communicate information using both cognitive and technical skills', (Clark & Visser, 2011, p.38). The literature suggests that the lack of skills is the most cited reason for the non-use of the internet (Schmidt & Stork, 2008). Specifically, low affordability combines with poor user skills to depress demand for internet usage in Africa (United Nations Educational, Scientific and Cultural Organization (UNESCO, 2017). Indeed, poor user digital skills in African populations reflect inadequate human competencies in their non-profit organizations.

3. The Theoretical Base: Digital Competencies as Human Capital

Digital strategy involves using digital resources to produce innovative outcomes (Bharadwaj, El Sawy, Pavlou & Venkatraman, 2013). It requires digital competencies characterizing human interactions with digital technology as human capital for success (Ritala, Baiyere, Hughes & Kraus, 2021). Skills development is a key strategic management tool in a rapidly changing context. Therefore, since digitalization goes beyond the IT unit to involve the entire organisation, success depends on employee skills, capabilities and mind-set (Zimmer, Baiyere & Salmela, 2020). The degree of success hinges on the type of organisation, digital maturity and problems ranging from cultural, human and strategic needs (McKendrick, 2017). Considering that the role of non-profits as drivers of social innovation has expanded globally in recent years (Blanco-Ariza, Messino-Soza, Vázquez-García & Melamed-Varela, 2019), they must transform their comparative advantage into a competitive advantage. To illustrate, COVID-19 stretched African non-profits to respond to the rising demand for their social services by undergoing rapid, but limited transformation of their organisational models. To the extent that this demonstrates their inherent capability, it is imperative to overhaul, remodel and refurbish them to sustain in the long run. Indeed, the literature has introduced several concepts to describe various on-going responses. Corporatisation, for instance, represents efforts to overcome barriers to good governance in non-profits (Alexander & Waiver, 1998), and commercialization refers to them relying increasingly on revenues for profits (Goddeeris & Weisbrod, 1998). Another concept is entrepreneurial orientation symbolising the need for risk-taking, productivity and more extensive innovation (Zafar, Wenyan, Bait Ali Sulaiman, Siddiqui & Qalati, 2022). More recently, digitalization is fast becoming an avenue for non-profits to become more competitive and accelerate the speed of their response and social impact (Maç, Turan, Okutan & Metin, 2020). Other tests confronting non-profits include overcoming the barriers to form alliances and access digital technologies. Lastly, entrepreneurial competencies have become paramount for their success, an area of study for the literature to explore fully (Berardi & Valentinetti, 2023).

Concerning the need to map out pivotal competencies for African non-profits as a central response of this paper, Türk (2023), emphasizes strategic planning, organisational culture, and the use of people as essential determinants of DT success. Other salient factors are overcoming the fear of change, and psychological readiness for change. Recent studies identify areas of digitalization that require the entrepreneurial mind-set at the organisational and employee levels, the argument being that digitalization is an entrepreneurial activity (Satar & Natasha, 2019), regarding thinking, attitudes, and behaviours (Blanco-Ariza et al, 2019). According to Hernandez-de-Menendez, Morales-Menendez, Escobar & McGovern (2020), cultural and inter-cultural skills, life-long learning, problem-solving, and inter-disciplinary thinking, among others, are relevant determinants. In the study by Satar et al. (2025), that charts core competencies of non-profits in Saudi Arabia, the authors combined their review of existing literature with a two-round Delphi study. A summary of their findings appears in Table 1. Their rigorous research approach strengthens the validity and reliability of the findings.

4. Research Approach

4.1 Data Collection

We found the literature on the phenomenon of interest rather fragmented. Therefore, we decided to use multiple databases instead of individual journals to identify past studies. The databases chosen

Table 1. Theoretical Framework: Competencies as Mechanisms of Change Using the CIMO -Logic.

Context (C)	Interventions (I)	Competencies as Mechanisms of Change (M)	Outcomes (O)
Areas of Competence			
Digital Leadership	Mediating to enhance the ability to: • of nonprofit leaders to provide guidance, encouragement and support DT by seeking out and becoming proficient in relevant digital technologies for nonprofit work. • to develop and implement strategies and plans for taking advantage of new services, procedures and models in nonprofit work. • to take risks and make digital technology investments. • create and maintain a culture that promotes learning and flexibility in using digital technologies leading to the growth of digital capabilities	Change management; digital planning; risk-taking; and learning cultures.	Strategic Innovation
Personnel and Organisational Competencies	Mediating to enhance the ability to: • seek information and engage in tasks for mastering digital technologies and obtaining intended benefits. • share knowledge, ideas and experiences regarding the use of digital technologies. • manage varied work environments and shift customer perspectives on digital transition. • use language in writing and speaking to craft experiences for donors, volunteers, employees and other stakeholders. • consider multiple perspectives on digital technologies and devote time, resources and efforts to fixing digital transformation challenges. • digitally exchange information and ideas, build connections and gain support for nonprofits' objectives and mission. • cooperate with others, communicate effectively, resolve conflicts and contribute to digitization goals of nonprofits.	Motivation to learn; ability to transfer knowledge; inter-cultural skills; language skills; interdisciplinary thinking; commitment; networking skills; problem solving; ability to work in teams.	Strategic Innovation
Technical Competencies	Mediating to enhance the ability to: • understand how digital technologies, processes and other elements of digitalization work and identify ways of improving them. • develop and apply a particular area of digital technology successfully. • use computers, hardware and software, networks and the internet. • work with large and complex digital data to generate insights and solutions. • use digital platforms for nonprofit brand building and credibility.	Process understanding and system thinking; technological competence; ICT skills; data science and analytical skills; online marketing.	Strategic Innovation

Source: Adapted from Satar et al (2025)

were ABI Inform; ProQuest Direct; EBSCOhost; Elsevier; Science Direct; Emerald Library; Google Scholar; IEEE XPLORE; JSTOR; Springer Verlag; LINK and Wiley Inter-science. Accessibility to, and the contents of these databases conditioned our selection. During the search, we sought for titles dating between 2008 and 2024, long enough to account for studies undertaken after the financial crisis in 2008 and the COVID-19 pandemic in 2020 that created unexpected uncertainties for non-profits. We used the following words in various combinations: digital transformation/digitalization; non-profits/voluntary sector/third sector/NGOs/digital competencies/Africa/organisational performance. When we observed that we had not identified enough material at this stage of the study, we decided to focus on the following seven leading international non-profit/third sector/voluntary sector journals: International Journal of Non-Profits and Voluntary Sector Marketing; Non-Profit and Voluntary Sector Quarterly; Non-Profit Management and Leadership; Non-Profit Policy Forum; Third-Sector Review; and VOLUNTAS: International Journal of Voluntary and Non-Profit Organizations. At this stage of the process, there were 203 articles found. Many were, however, rejected either because we found no access to the full text, or they did not meet our initial criteria. We employed qualitative thematic analysis on the available data.

4.2 The CIMO-logic as an Analytical Tool

Design Science Research is a research paradigm for constructing innovative artefacts (Hevner & Chatterjee, 2010) in the form of methods, models, frameworks, designs, theories, principles, algorithms and guidelines (Hevner, March, Park & Ram, 2004; Vaishnavi & Kuechler, 2004). It focuses on resolving unsolved problems in organisations by evaluating these artefacts as means of contributing to creating new knowledge (Hevner & Chatterjee, 2010, Hevner, et al., 2004). Denyer, et al. (2008) devised the CIMO-logic to help develop more rigorous design propositions and promote

understanding between academics and practitioners. Researchers use the model successfully in various organisational and social settings provided they define the components clearly. Another key advantage of the model is that it indicates what to do, in which situations to produce the desired effects, and provides understanding of why it happens (van Aken, 2013; Hevner & Chatterjee, 2010). We define components of the logical framework below.

Context (C) refers to internal and external factors that influence actors' behaviour. An Intervention (I) is a purposeful action or measure (product, process, service, or activity) that the designer or the researcher formulates to solve the design problem or need. Mechanism (M) is that which the intervention invokes by indicating why the process produces a certain outcome. It may be an explanation of the reasons that actors apply to choose their response to the intervention in a certain context and the ability or resources to put the intervention into action. Outcome (O) is the result of the intervention (Costa, Soares & Sousa, 2018). We now discuss, in detail, the role of competencies as mechanisms of change, the conceptual meaning of the model and the design propositions stemming from it.

5. Discussion

Table 1 shows interventions, competency mechanisms and organisational performance outcomes that contribute to meeting non-profits' social mission. It highlights, in italics, various forms of competencies as generative mechanisms of change. In Figure 1, we apply the CIMO-logic to depict relationships among the variables from which we derive design propositions to guide implementation.

5.1 *Competencies as Mechanisms of Change*

The three functional categories of competencies in the fourth column of Table 1 labelled M, indicate dimensions of desired cognitive and behavioural make-up of leaders, managers and employees that interventions must invoke and orient towards DT (Ritala et al., 2021; Organization for Economic Co-operation and Development (OECD), 2016). Not all these competencies are exclusive to their specified categories. Contrarily, some are common to all three categories reflecting the need for entrepreneurship, the motivation to learn, solve problems, take risks, and work in teams. In essence, the competencies correlate strongly among themselves, although the literature is yet to allocate weights and develop corresponding indicators. In its present form, however, the framework is sufficiently useful to non-profits at various stages of maturity across the African region for designing educational and training programmes to meet their competency needs.

5.2 *Conceptual Meaning of the Model (Figure 1)*

We now explore the conceptual interpretation of the model outlined in Figure 1, with reference to the four variables: Intervention (I); Mechanism (M); Outcome (O); and Context (C). The Is differ from category to category, and redefining or changing any or a combination of them changes their relationships with all other variables. Specifically, the changes destabilize the model necessitating redefining all other variables (Whetten, 1989). Similarly, changes in M and O alter their relationships with other variables. Again, the philosophical underpinnings of the model which explain the rationale for the change in human behaviour following the trigger, may also differ with contexts. Ultimately, the effects of changing or refining existing variables on the causal map of the model alter, deepen and broaden scholars' understanding of the competency development process. For example, if to our knowledge intervention Ia has the best fit with mechanism Ma, changing or refining Ia to In or keeping Ia but changing Ma to Mn to give the same outcome changes the causal map and hence alters our understanding of the phenomenon. Similarly, making qualitative changes to the boundary conditions consisting of people, place and time requires reviewing the socio-psychological and economic assumptions of the model to preserve its internal consistency. For instance, contextual differences in institutional and cultural practices, norms and beliefs, may produce differences in

teaching and learning which affect learners' motivation to change and the change processes (Kezar & Eckel, 2002). All this brings fresh understanding of the phenomenon for theory advancement. Furthermore, it might change research practice and imply changes in public policy, and management practice. This discussion demonstrates how researchers and other stakeholders may use the conceptual model to advance new knowledge.

5.3 Design Propositions for Developing Competencies (Figure 1)

In applying the CIMO-logic (Figure 1) to depict the competency development process, we distinguish between the three dimensions of competency.

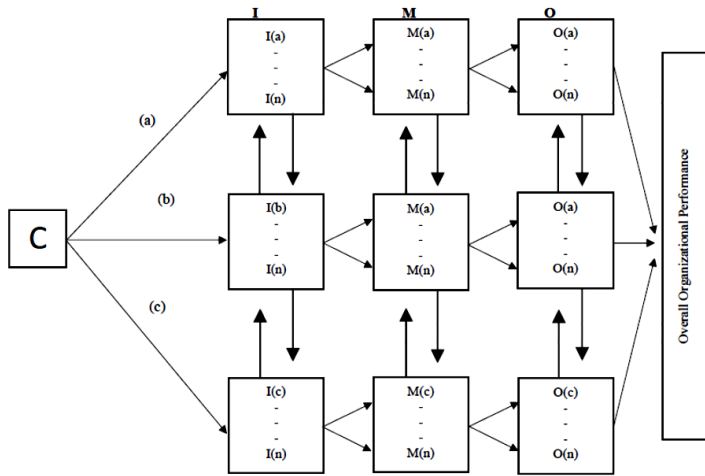


Figure 1. A conceptual Framework of the CIMO- logic

Adapted from Costa, Soares and DeSousa (2018)

Key: I – Intervention; M – Mechanism; O – Outcome; (a) – Digital Leadership Competencies; (b) – Personnel and Organisational Competencies; (c) – Technical Competencies

a) Digital Leadership Competencies

Developing packages of educational and training programmes that facilitate digital drive, adaptiveness and resilience, and cultivate a digital culture, relevant skills and competitive intelligence (Ia—In), may trigger and accelerate the processes of change management, strategic digital planning, risk management and learning culture (Ma—Mn). All this promotes operational effectiveness and productivity, a more positive organisational culture (Oa—On), and consequently contributes to meeting the organization's social mission (O).

b) Personnel and Organisational Competencies

Introducing packages of educational and training programmes for stimulating inter-personal skills, proactiveness, idea generation and opportunity evaluation among similar competencies (Ib—In), may trigger and facilitate the processes of motivation to learn, ability to transfer knowledge, inter-cultural and knowledge skills, inter-disciplinary thinking, networking skills, problem solving and the ability to work in teams (Mb—Mn). All this leads to mastering the digital transition, shifting customer perspectives and crafting donor experiences (Ob—On), eventually contributing directly to attaining the organisation's social mission (O).

c) Technical Competence

Including packages of educational and training programmes as part of the organisation's human resources development, offers the opportunity to understand, develop and apply digital technology use, computer software, hardware and complex data use, to generate insights and solutions for brand-building and credibility enhancements (Ic—In). Taken together, they may trigger and facilitate the processes of understanding system thinking, capturing information and communication technology skills, and acquiring data science knowledge, analytical skills, and on-line management (Mc—Mn). All this may reduce costs, improve resource use and enhance operational efficiency and effectiveness (Oc—On), thus contributing to achieving the organisation's social mission (O).

6. Conclusion

We have argued in this paper that considering the fast-changing socio-technological shifts in the global economy, African non-profits can withstand the competitive environments to meet the expanding demand for their social services only if they undergo successful digital transformation. Nevertheless, digitalization success depends on developing human competencies over which the organisation has a great deal of control. Therefore, African non-profits must actively seek ways of meeting their competency requirements including implementing the design propositions of this paper. This thesis is warranted by the logics and evidence of Human Capital Theory and Design Science Research. The purpose of the paper is to develop a conceptual model together with a design proposition that describes how to acquire identifiable competencies, explain why the process works and predict the outcomes. This knowledge is missing from contemporary literature on non-profits.

The paper makes several contributions to the academic literature. First, while the conceptual model fills a knowledge gap by expanding the scope and depth of Human Capital Theory, it offers a design proposition to guide actions for developing digital competencies in African non-profit organisations. Second, it contributes to research practice by advocating that identifying mechanisms of change from the social systems, structures, norms and practices of a given context yields better results than importing them from elsewhere. Third, integrating a well-tested theory and an accomplished research paradigm adds considerable weight to the soundness and credibility of the conceptual model. Fourth, in developing the model, the paper has considered essential building blocks for advancing theory. Thus, this is a thorough attempt at laying the foundation for theory development (Whetten, 1989). Fifth, the paper's contribution is interesting considering that it generates fresh insights into the process of developing competencies in non-profits. Sixth, the topic is timely following Vision 2030's efforts to engender major improvements in the internal structures and capabilities of non-profit organisations. By explicitly explaining the competency development process, the paper elaborates on how African non-profits can improve their performance and contribute towards achieving the Sustainable Development Goals.

There are implications for the practitioner. First, the model assumes that congenial conditions exist for interventions to induce mechanisms of change. This may not always be the case. Therefore, Human Resource Departments must draw on lessons learned from educational institutions, business and government as well as Digital Platforms about pre-requisites for successful implementation outcomes. Second, the mechanisms of change cannot be taken for granted as being consistent with selected interventions, and the outcomes must be discernible. It is therefore important for Human Resource Departments to determine not only how the training programmes have altered employees' views about themselves and the world around them, but also, monitor employees' activities and offer personal interventions whenever possible. Third, competency development programmes must be hands-on rather than theoretical. Finally, training schedules must distinguish between specific and general competencies to avoid untargeted outcomes. Additionally, we offer recommendations for policymakers, business and individual stakeholders on the supply side of competency development at the national level.

6.1 Recommendations

Policymakers must: expand internet access and improve internet speed focusing on underserved areas including the rural sectors; promote digital literacy by developing and implementing digital literacy programmes for citizens of all age groups; support digital innovation by developing digital technologies and services through tax incentives and similar financial support programmes; and create a favourable regulatory environment conducive to digital transformation. Businesses have taken the initiative to embrace DT in their normal operations. However, they must extend these activities to non-profits as part of their Corporate Social Responsibility (CSR) programmes. Other Stakeholders such as Educational Institutions can foster DT by integrating it in their curricula, and training students in digitalization skills. They must encourage individuals to learn and use digital technology in their daily lives. Lastly, African non-profits must collaborate among themselves to seek support from international non-profits engaged in large-scale capacity development programmes. Concurrently, they must forge alliances with policymakers, business and other stakeholders in overcoming barriers to DT and reaping the benefits of a digital economy. Similarly, this study has limitations on which future studies must focus and address.

6.2 Limitations and Avenues for Further Research

To validate the theoretical and practical contributions of this paper, researchers must test them empirically in multiple contexts using large samples and rigorous design techniques. The goal is to review the list of competencies, redefine components of the model, and implement the proposition using appropriate assessment tools. Considering that African non-profits are heterogeneous entities at varying states of digital maturity, researchers must take pains to select competencies to match an organization's characteristics. In this way, they can evolve competency development models customized to promote the digitalization of a wide range of non-profits.

In conclusion, the dawn of COVID-19 was widely expected to mark a downturn in the sustainability of African non-profits. The pessimism was based on COVID's predictable worsening effect on the flow of funding and other resources on which most non-profits depend to pursue their social mission. We believe, however, that the competency-based DT we have presented in this paper is a bold intervention with the potential to catalyse change and revitalize the entire African non-profits sector if implemented effectively.

Biography notes

Asabea Shirley Ahwireng-Obeng, PhD, is an academic and consultant with keen research interest in Financial Economics, Institutions, Investments as well as Philanthropy in emerging economies. She has consulted widely in the broader fields of Economic and Financial Development for many international organisations. She also teaches and supervises post-graduate students locally and internationally.

Frederick Ahwireng-Obeng, BSc, PhD, is an Emeritus Professor at Wits Business School, University of the Witwatersrand. He holds senior positions in several professional bodies, is a board member of the International African Institute based at the University of London and has consulted widely for organisations such as the World Bank and the International Labour Organisation. He also serves as a specialist reviewer for several international academic journals.

References

- Afua, A., & Tucci, C. (Eds.). (2001). *Internet Business Models and Strategies* (International Editions ed.). McGraw-Hill, New York.
- Alexander, J. A., & Weiner, B. J. (1998). The adoption of the corporate governance model by non-profit organizations. *Nonprofit Management and Leadership*, 8(3), pp. 223–242.
- Alliance for Affordable Internet. (2020). Meaningful connectivity: A new standard to raise the bar for Internet access. Available at: <https://a4ai.org/meaningful-connectivity/> Accessed on October 1, 2024.
- Bailey L.E. and Nyabola, N. (2021) Digital equity as an enabling platform for equality and inclusion. Pathfinders for Peaceful, Just, and Inclusive Societies/NYU Center on International Cooperation; June 2021. Available at <https://cic.nyu.edu/resources/digital>. Accessed on: October 2024.
- Berardi, L., & Valentinetti, D. (2023). Digitalization of social impact for social economy organizations. *Canadian Journal of Nonprofit and Social Economy Research*, 13(2), pp.114–120.
- Bharadwaj, A., El Sawy, O.A., Pavlou, P.A. and Venkatraman, N.V. (2013). Digital business strategy: toward a next generation of insights. *MIS quarterly*, 37(2), pp.471–482.
- Blanco-Ariza, A. B., Messino-Soza, A., Vázquez-García, A. W. and Melamed-Varela, E. (2019). Social innovation in the non-profit organization framework: A review. *Social Sciences*, 8(8), pp. 236–250.
- Clark, L. & Visser, M. (2011). Digital Literacy Takes Centre Stage. *Library Technology Reports*, 47(6), pp. 38–42. Coates, T.T. and McDermott, C.M. (2002). An exploratory analysis of new competencies: a resource-based view perspective. *Journal of Operations Management*, 20(5), pp.435–450.
- Costa, E., Soares, A. L. Sousa, J. (2018). Exploring the CIMO-Logic in the Design of Collaborative Networks Mediated by Digital Platforms. 19th Working Conference on Virtual Enterprises (PRO-VE), Sep, Cardiff, United Kingdom. pp. 266–277, 10.1007/978-3-319-99127-6_23. *hal-02191162*.
- Denyer, D., Tranfield, D. and Van Aken, J.E. (2008). Developing design propositions through research synthesis. *Organization studies*, 29(3), pp.393–413.
- Galbraith, J.R. (2014). *Designing organizations: Strategy, structure, and process at the business unit and enterprise levels*. John Wiley & Sons, New Jersey.
- Goddeeris, J. H., & Weisbrod, B. A. (1998). Conversion from non-profit to for-profit legal status: Why does it happen and should anyone care? *Journal of Policy Analysis and Management: The Journal of the Association for Public Policy Analysis and Management*, 17(2), pp. 215–233.
- Gruman, G. (2016). What digital transformation really means. *InfoWorld*, 18(1), pp.1–3.
- GSMA (2021). *The State of Mobile Internet Connectivity Report 2021*. Connected Society programme. Retrieved from: <https://www.gsma.com/r/somic-2021/> Accessed on 28 May 2024.
- Hernandez-de-Menendez, M., Morales-Menendez, R., Escobar, C. A., & McGovern, M. (2020). Competencies for industry 4.0. *International Journal on Interactive Design and Manufacturing (IJIDeM)*, 2020(14), pp.1511–1524.
- Hevner, A. and Chatterjee, S. (2010). *Design research in information systems: theory and practice*. Berlin, Springer Science & Business Media.
- Hevner, A., March, S., Park, J. and Ram, S. (2004). Design science in information systems research. *MIS Quarterly*, 28(1), pp. 75–105.

International Telecommunication Union (ITU). (2021). *Digital Trends in Africa 2021*. Geneva, Switzerland: ITU.

Khera, P., Ng, S., Ogawa, S. and Sahay, R. (2021). *Is Digital Financial Inclusion Unlocking Growth?* IMF Working Paper, WP/21/167, June.

Kim, D.H. (2023). The mediation effect of human capital on the relationship between senior entrepreneurial competency and entrepreneurial performance using mediation model. *Global Business & Finance Review (GBFR)*, 28(7), pp.138-154.

Kipper, L.M., Iepsen, S., Dal Forno, A.J., Frozza, R., Furstenau, L., Agnes, J. and Cossul, D. (2021). Scientific mapping to identify competencies required by industry 4.0. *Technology in Society*, 64, pp.101454.

Lanzolla, G., Pesce, D. and Tucci, C.L. (2020). The digital transformation of search and recombination in the innovation function: Tensions and an integrative framework. *Journal of Product Innovation Management*, 0(0), pp.1-24.

Leonardi, P.M. and Vaast, E. (2017). Social media and their affordances for organizing: A review and agenda for research. *Academy of Management Annals*, 11(1), pp.150-188

Maç, S. D., Turan, S., A., Okutan, S. and Metin, O. (2020). The transition from philanthropy to corporate social responsibility (CSR) in developing countries : An analysis of award-winning CSR projects in Turkey. *Is Ahlakı Dergisi*, 13(2), pp.146-170.

Martin, B. C., McNally, J. J. and Kay, M. J. (2013). Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes. *Journal of Business Venturing*, 28(2), pp.211-224.

Mattsson, L.G. and Andersson, P. (2019). Private-public interaction in public service innovation processes-business model challenges for a start-up EdTech firm. *Journal of Business & Industrial Marketing*, 34(5), pp.1106-1118.

McKendrick, J. (2017). The 5 traits of digitally advanced companies. Eris,im. Available at: <https://www.forbes.com/sites/joemckendrick/2017/07/14/the-5-traits-of-digitally>

Mohamed, H. (2018). NPOs in Saudi Arabia: Reforming to Achieve the Kingdom Vision-2030 Goals. *Research on Humanities and Social Sciences*, 8(8), pp. 38-44.

Ndulu, B., Ngwenya, N.X. and Setlhalogile, M. (2022). The digital divide in South Africa: Insights from the covid-19experience and beyond. In *The Future of the South African Political Economy Post-COVID 19* (pp. 273-295). Cham: Springer International Publishing.

Nemeth, J. (2017). Human capital theory in the framework of organization theory. *Strategic Management*, 22(3), pp. 29-35.

Organization for Economic Co-operation and Development (OECD). (2016). *Skills for a digital world*. OECD. Available at: <https://www.oecd.org/els/emp/Skills-for-%20a-Digital-World.pdf>. Accessed on 18 October 2024.

Pénard, T., Poussing, N., Zomo Yebe, G. and Ella, N. (2012). Comparing the determinants of internet and cell phone use in Africa: Evidence from Gabon. *Communications & Strategies*, 2(86), pp. 65-83.

- Ritala, P., Baiyere, A., Hughes, M. and Kraus, S. (2021). Digital strategy implementation: The role of individual entrepreneurial orientation and relational capital. *Technological Forecasting and Social Change*, 171(120961), pp.1-15.
- Satar, M.S. and Natasha, S. (2019). Individual social entrepreneurship orientation: towards development of a measurement scale. *Asia Pacific Journal of Innovation and Entrepreneurship*, 13(1), pp.49-72.
- Satar, M.S., Alarifi, G. and Alhawsawi, M.S. (2025). Digitalization and non-profits: Competency requirements in non-profit sector of Saudi Arabia. *Sustainable Technology and Entrepreneurship*, 4(1), pp.100083- 100094.
- Schmidt, J. P. & Stork, C. (2008). e-Skills. Towards Evidence-based ICT Policy and Regulation Policy Paper Series, 1(3), pp. 1-19.
- Spelhaug, J. and Woodman, L. (2017). The New Imperative of Nonprofit Digital Transformation. A strategic approach for achieving exponential impact through people, process, and technology. Microsoft Corporation, NetHope. Available: <https://cdn2.hubspot.net/hubfs/575821/>
- Stiles, P. and Kulvisaechana, S. (2003). Human capital and performance: A Literature Review. DTI.
- Tryphone, K., Joseph, C., and Ndanshau, M.O.A. (2023). Determinants of Digital Transformation in Sub-Saharan Africa. *African Journal of Economic Review*, 11(4), pp.34 -48.
- Türk, A. (2023). Digital leadership role in developing business strategy suitable for digital transformation. *Frontiers in Psychology*, 13(1066180), pp. 1-11.
- United Nations Educational, Scientific and Cultural Organization (UNESCO). (2023). UNESCO Recommendation on Open Science. United Nations Educational, Scientific and Cultural Organization (UNESCO). Available at: <http://www.unesco.org/new/en/communication-and-information/portals-and-platforms/goap/>. Accessed on 18 October 2024.
- Vaishnavi, V. and Kuechler, W. (2004). Design Research in Information Systems, Available at: <http://www.isworld.org/Researchdesign/drisIsworld.htm>. Accessed on 18 October 2024.
- Van Aken, J.E. (2013). Design science: valid knowledge for socio-technical system design. In *Design Science: Perspectives from Europe: European Design Science Symposium, EDSS 2012*, Leixlip, Ireland, December 6, 2012, Revised Selected Papers 3 (pp. 1-13). Springer International Publishing.
- Whetten, D.A. (1989). What constitutes a theoretical contribution? *Academy of MANAGEMENT REVIEW*, 14(4), pp.490-495.
- Zafar, Z., Wenyuan, L., Bait Ali Sulaiman, M.A., Siddiqui, K.A. and Qalati, S.A. (2022). Social entrepreneurship orientation and enterprise fortune: An intermediary role of social performance. *Frontiers in Psychology*, 12(755080), pp. 1-17.
- Zhao, M., Liao, H.T. and Sun, S.P. (2020). An education literature review on digitization, digitalization, datafication, and digital transformation. In *6th International Conference on Humanities and Social Science Research (ICHSSR 2020)* (pp. 302-306). Atlantis Press.
- Zimmer, M.P., Baiyere, A. and Salmela, H. (2020). Digital Workplace Transformation: The Importance of Deinstitutionalising the Taken for Granted. In *Proceedings of the 28th European Conference on Information Systems (ECIS): A Virtual AIS Conference* (p. 112). Association for Information Systems. AIS Electronic Library (AISeL).