




African Journal of Information and Knowledge Management (AJIKM)

Revitalising University Presses in Kenya through Digital Technologies

Florence Namarome Weng'ua, Tom Kwanya and Ashah Owano



Revitalising University Presses in Kenya through Digital Technologies

 Florence Namarome Weng'ua,  Tom Kwanya and  Ashah Owano
The Technical University of Kenya

Article History

Received 19th August 2024

Received in Revised Form 16th September 2024

Accepted 21st October 2024



How to cite APA format:

Weng'ua, F., Kwanya, T., & Owano, A. (2024). Revitalising University Presses in Kenya through Digital Technologies. *African Journal of Information and Knowledge Management*, 3(2), 56–71. <https://doi.org/10.47604/ajikm.3011>

Abstract

Purpose: This study explores the extent to which university presses in Kenya have adopted digital publishing technologies to enhance competitiveness and sustainability, highlighting the associated merits and demerits.

Methodology: The study employed a convergent mixed-methods approach with a survey research design. Study participants were selected through a census of 43 university press staff drawn from seven university presses in Kenya. Data was collected using questionnaires and interview schedules.

Findings: Study findings reveal that most university presses in Kenya still use traditional publishing technologies, and their publications are in print format. The benefits of using digital technologies include flexibility, cost-effectiveness, multitasking, accessibility, easy sharing of publications and high-quantity production. The study identified initial investment and maintenance costs, stiff competition, changing demand, unskilled personnel, and piracy as the significant challenges faced by university presses in Kenya in digital publishing.

Unique Contribution to Theory, Practice and Policy: The authors recommend increased funding for university presses, staff training on digital technologies in publishing, use of official copyright notices by publishers, digital watermarks and acquisition of Digital Rights Management (DRM) software to fight online piracy.

Keywords: *Offset Technology, Computer-To-Print, Technology Acceptance Model, Digital Rights Management, Disruptive Technology*

JEL Codes of Classification: *033, L86, Z11*

©2024 by the Authors. This Article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license

(<http://creativecommons.org/licenses/by/4.0/>)

INTRODUCTION

Scholarly communication involves creating and sharing research results widely from universities or institutions of higher learning to the universal scholarly community (Das, 2015). The Association of American University (2019) describes scholarly publishing as “ a small field in the industry that distributes academic research and scholarship” (p. 196). University presses are at the forefront of scholarly communication, considering their vital role in publishing research output. Presses nurture researchers and cultivate research communities by presenting a forum for advancing academic fields (Taylor & Jensen, 2018). By publishing scholarly work, researchers share their work and can access other researchers' ideas in their respective fields of study (Kwanya, 2020). This helps them to reshape and shed light on the grey areas within their research.

Researchers are the primary sources of materials published in scholarly communication channels. Notably, researchers are predominantly found within universities either as students, lecturers, or research associates, making university presses the most accessible publishing channel to them. As an extension of their parent institutions, university presses support scholarly networks through knowledge generation and dissemination (Association of University Presses, 2019). Clare (2014) argued that academic publishing has a long history dating back to 1478 when Oxford University Press used Guttenberg' s movable-type press print to publish a commentary on the Apostle' s Creed. This publication metamorphosed into *Philosophical Transactions*, which is reputed to be the oldest continuous academic journal.

According to Clare (2014), academic publishing has been in a crisis for some time now. This is mainly because university presses depend on their parent institutions for subsidies since they are not oriented toward profit-making. Many universities have lately fallen into financial challenges that have affected the presses they host. Therefore, many presses have suffered budget cuts just like their hosting universities. Consequently, there has been a trend to either downsize university presses or close them altogether. For instance, the University of Missouri Press was temporarily closed in 2013 after 54 years of operation, heralding hard times for many. It took public outcry and lobbying to reopen it under a different management board and operational structure. Many university presses have suffered the same fate, with some not being lucky to reopen. Given the current financial crunch many universities struggle with, it is unlikely that the situation will improve for university presses. To survive, they must reinvent themselves regarding business model, operational structure, and technological orientation.

Digital technology is disruptive and has forced industries, including the publishing sector, to change with its growth and development. Digital technologies have transformed how scholars communicate, what they know, and how they know (Sherman, 2014). Globally, publishers have embraced digital publishing technologies such as electronic and electronic publishing formats. Henry (2018) points out that technology leads to new and fundamental knowledge by bringing content on new platforms for readers worldwide. Pandemics such as COVID-19 escalated the situation further by creating a need for electronic access to information and limited contact with hard-copy information resources (Miller & Tsai, 2020). Despite the growing ubiquity of digital publications, several researchers still prefer hard-copy materials (Baitz & On, 2020). This creates a dilemma for publishers who seemingly have to balance digital and physical publications as the new information universe becomes more complex (Kwanya, 2018). This, coupled with the increased scrutiny of university presses, forces them to adapt to the evolving trends in the publishing industry exemplified by digital technologies.

This adaptation is essential for the presses to compete effectively with other publishers and to meet their target audience's diverse and dynamic needs, which has adopted new information-seeking behaviour characterised by scanning, scheming and infobesity (Awuor et al., 2019). It is no longer about university presses being accessible but also about their ability to produce quality publications fast, in widely accepted formats and at affordable prices. Their hope lies in new technologies. According to Khera (2018), electronic publishing costs are low; publications can be packaged and distributed in multiple formats, and the publication period is shorter than that of conventional publishing methods. This study assesses the potential of digital technologies to revitalise university presses in Kenya.

Context of Study

In Kenya, university press publishing has existed for the last thirty years. According to Kogos (2011), university press publishing is not well developed in Kenya as most people are unaware of the existence of university presses and their importance in disseminating knowledge. University presses should be effective agents in disseminating research results and knowledge transmission. Knowledge creation and dissemination are the core business of universities worldwide. The University of Nairobi Press was the first to be initiated in 1984, and later, Moi University Press was established in 1989.

Wafula et al. (2019) noted that out of the 49 accredited institutions of higher learning in Kenya, only 5(10.2%) have university presses. These are Moi University Press, Strathmore University Press, Egerton University Press, Kenyatta University Printing Press and Catholic University of Eastern Africa (CUEA) Publishing and Printing Press.

Public universities with university presses include Moi University, Egerton University, and Kenyatta University. However, other public universities have print production units, such as Jomo Kenyatta University of Agriculture and Technology, Cooperative University, and Multi Media University.

Moi University Press was established in 1989 for electronic publishing. Moi University Press (MUP) publishes scholarly knowledge and information to advance research and scholarship. It has a publishing board. It has no printing press of its own. Printing services are outsourced from printers in Nairobi, while editorial, typesetting, layout and design are done in-house. Egerton University Press (EUP) was set up in 1989. It has a fully functional printing press managed by the Educational Materials Centre (EMC) under the Deputy Vice Chancellor of Academics and Research. It produces textbooks, research publications, journals, Newsletters, examination booklets and brochures (EUP, 2014).

Kenyatta University Printing Press (KUPP) was established in 2011 as an income-generating unit at Kenyatta University. The press has two distinct divisions; one is responsible for designing, developing and marketing books, journals, magazines and reports from manuscript to final product, while the printing division produces physical printed products (KUPP, 2013). It has both a publishing board and an editorial board. However, the editors are outsourced from outside sources in specific subject areas. The press produces journals, conference proceedings, textbooks and internal documents such as graduation booklets, brochures and magazines, among other printed products.

JKUAT Printing and Publishing unit was established in 1982. It has a functional printing unit and an editorial board. Their services include printing books, journals, conference proceedings, training manuals, photocopying, and general stationeries. In addition, the press offers

publishing, designing, binding, and laminating services to clients inside and outside the university community.

Multimedia University has a fully operational printing press that provides printing services to the university community and external clients. It is equipped with a wide range of machinery. The press produces brochures, envelopes, notebooks, internal memo pads, file folders, and writing materials and does binding and book repair work. It produces more general work than scholarly materials; therefore, it is not a university press but a print production unit.

Cooperative University of Kenya (CUK) has a print production unit under the Deputy Vice-Chancellor, Finance Planning and Development. It provides printing and photocopying services to the university community. The Unit produces examination booklets and stationery, among others. The university publishes the African Journal of Cooperative Development and Technology annually, with the first volume launched in 2016. In addition, the university had proposed the Cooperative University of Kenya Journal of Social Sciences, Business and Technology, which was to be launched in 2020. The university has published four (4) African Journal of Development and Technology volumes. It has an editorial board (all members drawn from the university) that provides editorial services and a three-member advisory board, and printing services for the journals are outsourced (CUK, 2020).

Catholic University of Eastern Africa (CUEA) is Kenya's only private university with a university press. CUEA Press was established in 1984 as the university's publishing division. It publishes educational textbooks for the higher education sector in Kenya and the whole Eastern African region. CUEA Press also publishes four (4) peer-reviewed journals. Its crucial function or responsibility is to promote quality teaching, research, and service to the community by offering publishing and printing services (CUEA Press, 2019).

Daystar University has a publication unit under the Centre of Research Publications and Consultancy, established in 1992. The Centre publishes *Perspectives* journal twice yearly, edits manuscripts and publishes books for its staff and faculty members. The goal of the Centre is to create, preserve and share knowledge for teaching and development purposes; encourage proposal writing; assist faculty and students in carrying out research and disseminating research findings; and facilitate faculty publications in different formats. The publication unit edits and publishes scholarly works, hosts local and international journals, plans and implements academic conventions and publishes conference proceedings. Additionally, it disseminates the results of research findings and facilitates the publication of monographs.

University presses in Kenya are crucial for disseminating academic knowledge and promoting scholarly communication but face remarkable challenges, such as inadequate funding, stiff competition, unskilled personnel and poor access to global distribution networks. University presses often specialize in specific fields, contributing to the advancement of knowledge in those areas. They produce scholarly works that undergo rigorous peer review, ensuring high-quality research and scholarship. In addition, presses disseminate research findings to a wider audience, making scholarly work accessible not just to academics, but also to students, practitioners, and the public. The rise of digital technologies offers potential for improvement, yet many presses struggle to integrate these tools effectively due to resource and expertise limitations.

Rationale of the Study

University academic staff are expected to undertake research and publish their findings. They must respond appropriately to the clarion call to publish or perish. Indeed, their tenure and

promotion depend on their publication profile (Kwanya, 2020). Postgraduate students are also expected to publish before they can graduate. Doctoral students must publish two journal articles, while Master's need to produce at least one journal article before being processed for graduation (Mukhwana & Too, 2017; Weng'ua et al., 2017). University presses are ideally positioned to support and disseminate research from scholars and students. In Kenya, most university presses struggle to remain afloat and are vulnerable to changes in their social, economic and technological environment. They are not delivering on their corporate mandates and national expectations.

The thesis of this paper is that technology can significantly reduce operation costs while increasing the university press's market footprint. However, the extent to which university presses in Kenya have adopted digital publishing technologies remains unclear. This is even though digital technologies have significantly transformed scholarly communication in recent years, altering how research is disseminated, accessed, and engaged globally. The situation implies that university presses in Kenya encounter considerable challenges in incorporating digital technologies into their operations. This study explores the extent to which university presses in Kenya have adopted digital publishing technologies to remain competitive and sustainable. It specifically explores the technologies used by university presses in Kenya and the benefits of using new technologies in publishing. It also identifies challenges faced by university presses in Kenya regarding digital publishing and makes recommendations for improvement.

LITERATURE REVIEW

The digital age complicates and threatens the traditional mission of university presses. More than ever, technological advancements have significantly disrupted the publishing industry in different ways (Henry, 2018; McNamee, 2019; Mudditt, 2016). According to Henry (2018), technology is transforming the way knowledge is shared by making content accessible around the world through new platforms. Scholars are increasingly favouring the web due to its extensive opportunities, which are altering how they publish, distribute, and interact with readers. Association of University Presses [AUP] (2019) noted that university presses play a leading role in experimenting with and developing new platforms for delivering and engaging with scholarship products.

University presses in Kenya face challenges in adopting electronic publishing technologies and engaging in print publications (Wafula et al., 2019). Despite traditional publishing technologies being used predominantly, university presses in Kenya, just like university presses across the globe, are increasingly adopting digital publishing technologies. This shift is attributed to the need to keep up with global trends while increasing the accessibility of publications at reduced costs. Funding, technical expertise and specific user needs further influence the adoption of digital publishing technologies in university presses. The technological landscape of university presses in Kenya is more of a hybrid since it is a fusion of traditional and new publishing technologies. Offset printing technology, known for its high-quality output and large-volume production, has captivated most university presses in Kenya. These presses hesitate to abandon this technology despite its long-standing use (Mathur & Singh, 2014). On the other hand, electronic publishing, a digital publishing technology, is appealing to the university presses as it comes with increased interactivity, reduced production costs and global outreach (Cope & Phillips, 2014). A hybrid technological landscape enables university presses to leverage the two technologies to enhance efficiency and impact in scholarly publishing. The merits of

traditional technologies can easily cancel out the disadvantages of modern publishing technologies and vice versa.

Digital technologies have dramatically changed the landscape of scholarly communication. Academic journals receive free content, and academics and researchers perform tasks such as writing, editing, and reviewing, often funded indirectly by their institutions. Support activities like typesetting, proofreading, and publishing require minimal material investment (Peters et al., 2021). Digital publishing technologies come packed with benefits like increased accessibility, reduced production costs, quick updates and revisions, reader engagement through multimedia content and reduced environmental impact due to reduced need for paper. While the benefits of modern publishing technologies are clear, their challenges cannot be ignored, as these challenges directly impact their adoption (Luescher & Van Schalkwyk, 2018). According to Yusuf et al. (2022), financial constraints, lack of qualified personnel, inadequate data management, and data security are among the challenges facing the adoption of digital technologies. Digital piracy also poses a significant challenge, making it difficult to control the unauthorised distribution of scholarly work. Tracking down those responsible for such distribution is complicated, as they often conceal their identities behind their computers (Ifeduba, 2022). Piracy complicates the management of revenue models, as publishers grapple with choosing between subscriptions or ads, while pirates offer the same content at lower prices (Poquiz, 2023). Furthermore, as with many digital technologies, compatibility issues are a significant concern with digital publishing technologies. Ensuring that content is compatible across various devices and platforms is also challenging.

Kellog (2012) discusses the issues surrounding the attempted closure of the University Missouri University Press after 54 years of operation and the publishing of more than 2,000 titles. It took a public outcry to save the press, but it was placed under a board whose terms of reference were to model its operation in the digital age. Clare (2014) reported that 95% of the 130 American Association of University Presses members required subsidies from their parent institutions. These incidents provide valuable lessons for university presses to embrace technology to survive (Rayner, 2019). University presses, as libraries, must follow their clients to the digital spaces rather than attempt to stay in the brick-and-mortar spaces (Kwanya et al., 2014).

Whereas existing research evidence indicates the global scholarly communication industry is moving steadily towards digital publishing, Kenyan university presses seem stuck in time with obvious results. Many researchers do not access scholarly publishing channels easily, while university presses remain underutilised and moribund. Studies by (Henry, 2018; McNamee, 2019; Mudditt, 2016) addressed digital transformations, technological innovations in publishing and the opportunities afforded by new technologies. However, diversity of the calibre of readers and authors, the value publishers can provide, transition to digital publishing technologies and keeping up with new technology has not been addressed. This paper investigates how to harness the promise of digital technologies for scholarly publishing by university presses in Kenya.

Theoretical Framework

The Technology Acceptance Model (TAM), developed by Davis (1989) and revised by Heijden (2004), underpinned this study. The model explains users' behaviour across various end-user computing technologies and user populations (Davis, 1989). In addition, it explains possible consumer behaviour in terms of adoption, use, and acceptance patterns of new technologies

and innovations. Heijden (2004) found a positive relationship between ease of use and enjoyment and between enjoyment and intention to use.

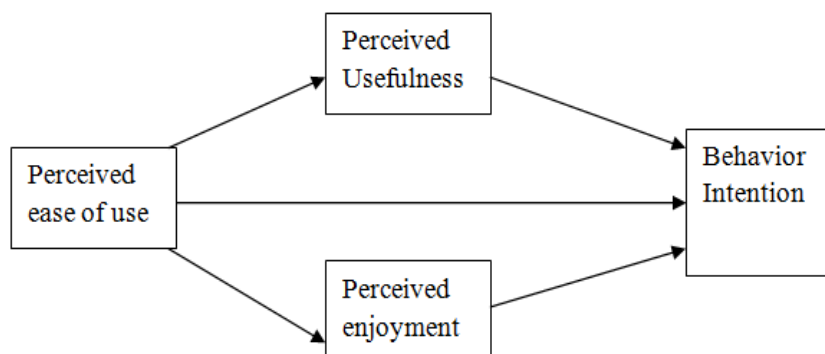


Figure 1: Revised Technology Acceptance Model

Source: Van der Heijden (2004)

The model describes the factors that influence users' decisions about how and when to use new technologies, such as Perceived Usefulness (PU), Perceived Ease-of-Use (PEOU) and Perceived Enjoyment (PE) as direct impact factors on Behaviour Intention (BI). PU is the degree to which a person believes that using a particular system would enhance his or her job performance, and PEOU is the degree to which a person believes that using a particular system would be free from effort (Davis, 1989). If university presses perceive that a particular technology can enhance their work performance or help them complete a task with less effort, they are likelier to use the technology (Davis, 1989; Davis et al., 1989; Venkatesh & Davis, 2000). PE is the degree to which a person thinks using a particular system will be enjoyable. Warshaw and Davis (1985) define Behaviour Intention as the degree to which a person has formulated conscious plans to perform or not perform some specified future behaviour. Usability is the extent to which products, technology, systems or equipment can be used to achieve goals with effectiveness, efficiency and satisfaction.

This study identified PU, PEOU, and PE as key factors influencing the intention to adopt new publishing technologies and explored the technologies employed by university presses in Kenya. From the user perspective, university presses are more likely to adopt technologies that are easy to use, enjoyable, and effectively meet their goals. The TAM was instrumental in addressing questions about technology adoption by highlighting how perceived usefulness, ease of use, and enjoyment impact adoption decisions. For instance, comparing electronic publishing with traditional print methods, TAM helps assess which technologies are more likely to be embraced, aiding in the strategic repositioning of university presses.

METHODOLOGY

This study employed a mixed-methods research approach and a survey research design. It combined qualitative and quantitative research approaches to gather and analyse data obtained from university press staff on adopting digital publishing technology. Data collected on publishing technologies in use and staff experiences and attitudes towards these technologies provided a detailed overview of how modern publishing technologies are being integrated into the traditional publishing landscape. This study utilised interviews and questionnaires to collect measurable primary data and contextual insights.

All the universities with university presses and print production units were selected. Seven private and public universities were purposively selected for the study. They comprised Moi University (MU), Kenyatta University (KU), Jomo Kenyatta University of Agriculture and Technology (JKUAT), Egerton University (EU), Multi Media University (MMU), Catholic University of Eastern Africa (CUEA) and Cooperative University of Kenya (CUK). The target population comprised all the staff of the seven university presses, totalling 43 selected through a census. Quantitative data from questionnaires was analysed using Statistical Package for Social Sciences, while data from interviews was analysed thematically using N-vivo management software.

FINDINGS

The study's findings are presented and discussed in this section based on the research objectives.

Publishing Technologies Used by University Presses in Kenya

The researchers sought to establish the publishing technologies used by university presses in Kenya from university press staff and managers. Analysed data indicates that most university presses in this study have favourably adopted digital and conventional technologies.

Table 1: Publishing Technologies Used by University Presses (n=36)

	Use of Digital Technologies		Use of Conventional Technologies		No Response	
	No of Respondents	%	No of Respondents	%	No of Non-Respondents	%
JKUAT	3	8.3	2	5.5	2	5.5
KU	7	19.4	6	17	1	2.7
MMU	4	11	4	11	0	0
EU	2	5.5	4	11	2	5.5
MU	2	5.5	2	5.5	0	0
CUEA	0	0	2	5.5	1	2.7
CUK	2	5.5	0	0	0	0
Total	20	56	20	56	6	17

Data in Table 1 indicates that 20 university press staff members (56%) reported that their presses utilise both electronic publishing and traditional printing methods. Additionally, the data shows that six university presses employ a combination of digital and conventional publishing technologies. In contrast, one press (CUK) relies solely on digital technologies, while another (CUEA) exclusively employs conventional publishing methods. These findings demonstrate a mostly hybrid technological landscape across university presses in Kenya.

When asked about publishing technologies they use, some of the press managers' verbatim responses were recorded as follows:

Our press uses desktop publishing technology, specifically Adobe In-Design. We used to use Adobe PageMaker, but we stopped (UPM 05).

We use both lithographic and Computer-to-Print technologies (UPM 03).

Our main technologies are computer-to-press and offset printing (UPM 04).

Our press uses lithographic printing technology at most (UPM 02).

We have used offset printing as our main technology since the 1990s (UPM 06).

The results reveal that university presses in Kenya utilise digital and traditional publishing technologies. Digital methods include electronic publishing via CDs and PDFs, desktop publishing, and computer-to-press systems. Traditional methods involve lithographic and offset printing. This indicates that Kenyan university presses have not fully embraced digital publishing. They miss out on the benefits of adopting digital technologies, which include easier discovery, access, sharing, and storage of publications.

Publishing technologies significantly impact publications' creation, production, dissemination, and consumption. Technology is integral throughout publishing, encompassing research, manuscript development, publishing, promotion, and audience engagement. University presses must continuously improve their technology and equipment to stay competitive. In Kenya, the choice of publishing technologies has slightly influenced the performance of university presses. Henry (2018) advocates for university presses to adopt technologies that recognise the diversity of authors, readers, and reviewers. Technological advancements have transformed the publishing process, impacting content creation, review, publication, sharing, and distribution. University presses must embrace modern publishing technologies to revitalise scholarly communication effectively. Sticking with outdated methods hinders organisational growth. The study sought out why the presses used the publishing technologies they indicated. Table 2 presents some of the reasons they gave.

Table 2: Reasons for the Use of the Technologies (Multiple Respondents)

Technology	No of Respondents	%	Why the technology
Use of Digital Technologies	20	56	<ul style="list-style-type: none"> ▪ They are cost-effective ▪ They are easy to use, ▪ It requires less workforce ▪ There is improved quality and quantity ▪ It is time-saving ▪ Publications reach a wide audience
Use of Conventional Technologies	20	56	<ul style="list-style-type: none"> ▪ It is the main technology available ▪ Quality production of publications ▪ Mass production ▪ Skilled personnel in conventional technology ▪ High cost of acquiring new state-of-the-art equipment ▪ Inadequate trained personnel in digital technologies ▪ High maintenance cost of digital equipment
No Response	6	17	

Analysed data in Table 2 shows the distribution of responses from 20 university press staff who revealed that electronic publishing technologies are favoured for their cost-effectiveness, ease of use, lower labour requirements, improved quality and quantity, time efficiency, and broader reach. Conversely, 20 respondents preferred conventional technologies. They cited high costs for new equipment, lack of trained personnel and expensive maintenance as major drawbacks of digital technologies. However, they valued conventional methods for their high-quality printing and mass production capabilities.

The study further revealed that electronic publishing technologies were used because they are cost-effective, easy to use, require less workforce, improve quality and quantity, are time-saving, and publications reach a wide audience. The findings agree with those of Khera (2018) and Mokoginda (2018) that electronic publishing cuts costs and has shorter publication times; publications can be repackaged and distributed in different formats to reach a wide audience. Some university presses had not adopted digital printing technologies due to the high cost of new equipment, insufficiently trained personnel, and high maintenance expenses. The findings align with those of Luescher and Van Schalkwyk (2018), who state that publishers are not taking advantage of the digital technologies available to them.

Publishing Technologies Preferred by University Presses in Kenya

Regarding the publishing technologies preferred by the university presses, findings established that conventional technologies are the most preferred. Four managers expressed a preference for conventional technologies, while three indicated a preference for digital publishing technologies. Some of the university press managers said:

We prefer computer-to-print technology because we are sure of the quality of publications, the efficiency level is good, there is less waste production, and profit is maximised. The production speed is high, though colour registration may be poor for colour work (UPM 03).

Offset technology is the most preferred because it is relatively cheap and has good quality compared to digital technologies. If the quantity is minimal, we use computer-to-press technology, but for mass production, the offset is the best (UPM 04).

Our press prefers lithographic printing technology because the machines are available and the publishing process is easily understood. We are not using digital technologies because we lack skilled personnel in digital publishing, though we have digital equipment. Also, most of our clients want their publications in print format (UPM 02).

We have been using traditional printing, specifically offset, as our main technology since the 1990s, and it is still the most preferred. It is just a tradition for the press, but we face new challenges. Due to the challenges of Corona and globalisation, we are forced to look for other technologies (UPM 06).

The study found that university presses in Kenya predominantly use offset printing technology due to its benefits, such as suitability for mass production, cost-effectiveness, and superior print quality compared to digital methods. However, conventional printing restricts content to print format, limiting accessibility. Embracing new digital publishing technologies is crucial for enhancing content, making it visible, accessible and shareable. The findings corroborate those of Sunderaraj and Mareeswaran (2017), who state that offset printing is the most widely used technique. One case study indicated that offset printing had been used out of tradition, but globalisation and the challenges posed by COVID-19 have prompted a search for alternative

technologies. This indicates that university presses in Kenya are open to technological changes and are actively seeking to adopt the latest advancements. The findings concur with Watkinson (2021), who stated that COVID-19 affected the university's adoption of digital technologies.

The study findings revealed that the university presses and their clients preferred the same technologies, as confirmed by six press managers. Notably, most university press clients were not academic staff, who typically publish with external publishers. Therefore, the clients who preferred the presses' chosen technologies most likely came from other sectors.

In contrast, a respondent from one of the case studies noted that while some clients preferred the technology used by the press, others preferred digital technologies. Although most clients align with the press's preferred technologies, the study revealed that globalisation is shifting towards digital technologies over conventional ones. This shift signifies a broader change in the entire publishing process. Findings suggest the need for university presses in Kenya to prioritise the preferred publishing technologies of their primary clients. This university's academic staff is best positioned to determine the technologies effectively conveying their message (Peters et al., 2021).

On publication formats, the study found that all seven university presses use print format, six employ PDFs, and six also utilise Compact Discs. None of the university presses utilise electronic books and journals, databases, Hyper Text Mark-up Language publication formats, or any other formats, as shown in Table 3.

Table 3: Distribution of Publication Formats by University Presses (N=36)

	Print		E-Books and Journals		PDF		Databases		Compact Discs		Hyper Text Mark-up	
	No of Respondents	%	No of Respondents	%	No of Respondents	%	No of Respondents	%	No of Respondents	%	No of Respondents	%
JKUAT	4	11	0	0	4	11	0	0	4	11	0	0
KU	9	25	0	0	4	11	0	0	3	8.3	0	0
MMU	5	13.8	0	0	3	8.3	0	0	2	5.5	0	0
EU	4	11	0	0	0	0	0	0	1	2.7	0	0
MU	2	5.5	0	0	2	5.5	0	0	2	5.5	0	0
CUEA	2	5.5	0	0	2	5.5	0	0	0	0	0	0
CUK	2	5.5	0	0	2	5.5	0	0	1	2.7	0	0
Total	28	78	0	0	17	47	0	0	13	36	0	0

Data in Table 3 shows that 28 respondents (78%) use print formats, with distribution across institutions as follows: 4 (11%) from JKUAT, 9 (25%) from KU, 5 (13.8%) from MMU, 4 (11%) from EU and 2 (5.5%) each from MU, CUEA, and CUK. Additionally, 17 respondents (47%) use PDFs, including 4 (11%) each from JKUAT and KU, 3 (8.3%) from MMU, and 2 (5.5%) each from MU, CUEA, and CUK. Furthermore, 13 respondents (36%) use Compact Discs, with 4 (11%) from JKUAT, 3 (8.3%) from KU, 2 (5.5%) each from MMU and MU, and 1 (2.7%) each from EU and CUK.

The findings indicate that print format is the most commonly used publication format among university presses in Kenya. The findings agree with the report of the Joint Information Systems Committee (2021) that the print format is still a gold standard for books. However, digital files such as PDFs can be used for print runs or to produce copies on demand. On the contrary, the findings disagree with those of McNamee (2019), who suggested using machine-readable formats for real-time updating and discoverability. Relying on print formats for publication may limit the dissemination of research findings, restricting their reach and making accessibility and sharing more difficult. Since research is incomplete until the findings are widely disseminated, university presses in Kenya should adopt technologies that facilitate broader and easier dissemination of research results.

Implications of the Study

The findings of this research are essential to university presses and other stakeholders in the academic publishing sector. These results highlight the current state of printing technologies in university presses and underscore the need for research into improving and managing digital publishing technologies. The goal is to maximise their benefits, minimise drawbacks, and foster greater acceptance. This research introduces the idea of a hybrid technological landscape for university presses and other publishers that solely rely on traditional technology. By recognising that combining traditional and digital publishing technologies can offset the challenges of each while leveraging their respective advantages, academic publishers may become more receptive to adopting modern technologies. Notably, researchers will be motivated to conduct more studies due to the availability of various formats. Print books cater for readers whose preferences lean towards physical copies, while digital formats provide access to information for scholars in diverse geographical locations. Universities face the challenge of investing more funds into their presses to enhance their impact on the scholarly community. This increased investment can, in turn, elevate the universities' global recognition. The findings can provide workable solutions to operational and planning challenges facing university presses in Kenya by helping the managers to identify the elements that need special attention in order to improve. Findings of the study have the potential to inform university presses on utilisation of digital publishing technologies to maximise visibility and accessibility in order to promote scholarly communication in Kenya.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study demonstrated the significant role of university presses in scholarly communication while emphasising the impact of technology on the academic publishing industry. Generally, university presses tend to favour conventional publishing technologies over digital ones. This preference is primarily due to the long-standing establishment and reliability of traditional publishing methods. For digital publishing to gain comparable traction, it should evolve rapidly. Most university presses have yet to integrate digital technologies fully. However, there is optimism for greater acceptance if these technologies continue their steady growth observed in recent years. Additionally, this research compares both technologies, acknowledging their respective advantages and disadvantages. The hybrid approach adopted by university presses offers modern publishing an opportunity to grow, as it has the potential to expand the global audience and accelerate publication speeds. Digital infrastructure equips university presses to compete fairly in the dynamic academic publishing sphere. More than just gaining a competitive advantage, wider dissemination of publications and improved quality will immensely enrich the knowledge pool, leaving the university presses' footprints on the map of scholarly publishing globally.

Recommendations

University presses in Kenya primarily rely on traditional offset printing technologies. Although these presses favour conventional methods, there is variation in client preferences, with some preferring print formats and others opting for digital formats. Traditional publishing technologies limit access and sharing, while digital technologies offer enhanced accessibility, broader reach, and cost savings. To meet evolving client preferences and improve the accessibility, visibility, and dissemination of scholarly publications, the study recommends that university presses in Kenya prioritise adopting digital publishing technologies. The new

publishing technologies require financial investment, skilled personnel, training programs, and strategic planning. This study makes the following recommendations:

- a) **Invest in cost-effective solutions:** University presses in Kenya should prioritise adopting open-access platforms and other affordable digital publishing tools. Additionally, they should leverage existing infrastructure to minimise initial costs.
- b) **Strategic resource allocation:** They should allocate resources efficiently to support digital technology integration and focus on areas that significantly impact accessibility and reach.
- c) **Seek external funding:** Presses should actively pursue grants, subsidies, and other external funding opportunities dedicated to digital transformation in publishing.
- d) **Explore partnerships:** University presses should collaborate with digital service providers, tech companies, and other institutions to gain access to advanced tools and expertise. Furthermore, they should form alliances with organisations supporting the implementation and maintenance of digital technologies.
- e) **Implement gradual transitions:** The presses should adopt a phased approach to transitioning from traditional to digital formats, allowing for adjustments and minimising disruptions.
- f) **Enhance training programmes:** University presses should develop and provide training programs to up-skill existing staff in digital publishing technologies. Training programs should be developed to equip staff with operating software, content management, digital rights management, and online dissemination skills. They should also ensure that personnel are well-equipped to manage and maintain new systems effectively.
- g) **Strategic planning:** Presses should develop comprehensive plans for integrating digital technologies with current workflows and continuously evaluate and refine strategies to ensure alignment with evolving technological advancements and reader preferences.
- h) **Copyright protection:** University presses are encouraged to implement robust Digital Rights Management (DRM) systems and anti-piracy measures to secure digital content through restricted access and use, allowing only authorised users to access and distribute the materials. Encryption keys and watermarks protect access, preventing unauthorised copying and sharing of publications.

University presses in Kenya can transition to new digital platforms by strategically allocating resources, actively seeking external funding opportunities, and exploring collaborative initiatives with other institutions or organisations. By implementing the above recommendations, university presses in Kenya can enhance their relevance and accomplish their key responsibility of promoting scholarly communication and knowledge diffusion in the country and beyond.

REFERENCES

- Association of American University Presses. (2019). The value of university presses. Retrieved March 26 2020, from <http://www.aaupnet.org/about-aaup/about-university-presses/the-value-of-universitypresses>
- Association of University Presses. (2019). *The value of university presses*. Retrieved March 28 2020, from <https://www.aupresses.org>
- Awuor, A. S., Kwanya, T., & Nyambok, G. A. (2019). The influence of infobesity on the information seeking behaviour of undergraduate students in Tangaza University College. *KLISC Journal of Information Science & Knowledge Management*, 1(1), 1-10.
- Baitz, I., & On, D. (2020). COVID-19 impacts post-secondary students learning preferences on different mediums with nonfiction textbooks.
- Clare, J. (2014). University presses in the digital age: How Pace University Press and other university presses can survive and thrive. *Publishing Research Quarterly*, 30(2), 195-211.
- Cope, B., & Phillips, A. (2014). The future of scholarly publishing: Open access and the economics of digital publishing. *African Minds*.
- CUEA Press. (2019). *About- Services offered by CUEA Press*. Retrieved May 10 2019, from <https://www.cuea.edu>
- Das, A. K. (2015). *Scholarly communication* (Vol. 1). UNESCO Publishing.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, pp. 319-340.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982-1003.
- Egerton University Press. (2014). Retrieved July 10 2019, from <http://www.egertonac.ke/index.php/eu.press.html>.
- Heijden, H. (2004). User acceptance of hedonic information systems. *MIS Quarterly*, 28(4), 695-704.
- Henry, C. (2018). *Ecosystem of university presses*. Princeton University Press. Retrieved March 15 2020 from <https://www.blog.press.princeton.edu>
- Ifeduba, E. C. (2022). Predictors of e-publishing adoption in environments of uncertainty. *Global Knowledge, Memory and Communication*, 71(3), 174-189.
- Joint Information Systems Committee. (2021). *New University Press Toolkit*. Retrieved February 14 2024, from <https://www.jisc.ac.uk/guides/new-university-press-toolkit>
- Kellogg, C. (2012). University of Missouri Press to close after 54 years. *Los Angeles Times*, p. 24.
- Kenyatta University Printing Press. (2013). Retrieved July 4 2019 from <http://www.ku.ac.ke/dreged/index-.php/ku.printingpress>
- Khera, R. (2018). *The benefits of E-Publishing*. Retrieved May 10 2020, from <https://www.morebusiness.com/benefits-e-publishing>.

- Kogos, A. (2011). *University presses and provision of learning materials for institutions of higher learning: a case study of University of Nairobi Press, Kenya*. MPhil Thesis, Moi University. Retrieved July 10 2019 from <https://www.mu.ac.ke>
- Kwanya, T. (2018). Information seeking behaviour in digital library contexts. In *Library Science and Administration: Concepts, Methodologies, Tools, and Applications* (pp. 1384-1408). IGI Global.
- Kwanya, T. (2020). Publishing and perishing? Publishing patterns of information science academics in Kenya. *Information Development*, 36(1), 5– 15.
- Kwanya, T., Stilwell, C., & Underwood, P. (2014). *Library 3.0: Intelligent libraries and apomediation*. Elsevier.
- Luescher, T. M., & Van Schalkwyk, F. (2018). African university presses and the institutional logic of the knowledge commons. *Learned Publishing*, 31, 288-298.
- Mathur, S., & Singh, V. (2014). Print quality comparison of sheet-fed offset and digital printing. *International Journal of Science, Engineering and Computer Technology*, 4(3/4), 91-93.
- McNamee, M. (2019). Keeping an eye on the horizon: Miles McNamee serves up some takeaways from HighWire's digital disruption seminar. *Research Information*, (103), pp. 34-35.
- Miller, R. C., & Tsai, C. J. (2020). Scholarly publishing in the wake of COVID-19. *International Journal of Radiation Oncology* Biology* Physics*, 108(2), 491-495.
- Mokoginda, C. (2018). *Advantages of digital publishing. Why should you go digital?* Retrieved May 10 2020 from <https://www.magloft.com/blog/advantages-of-digital-publishing>
- Mudditt, A. (2016). The past, present, and future of American university presses: A view from the left coast. *Learned Publishing*, p. 29.
- Mukhwana, E. J., & Too, J. K. (2017, March). Chapter six invited address policies to support quality university postgraduate research training. In *Science Research and Education in Africa: Proceedings of a Conference on Science Advancement* (p. 39). Cambridge Scholars Publishing.
- Peters, M. A., Jandrić, P., Irwin, R., Locke, K., Devine, N., Heraud, R., & Benade, L. (2021). Towards a philosophy of academic publishing. In: *The methodology and philosophy of collective writing* (pp. 3– 37). Routledge.
- Poquiz, J. L. (2023). Measuring the Value of Digital Piracy. *Economic Statistics Centre of Excellence*, (1).
- Sherman, S. (2014). University Presses under Fire: How the Internet and Slashed Budgets have Endangered one of Higher Education's Most Important Institutions. *The Nation*.
- Sunderaraj, R., & Mareeswaran, K. (2017). A study on HRM practices of employees in the printing industry in Sivakasi. *International Journal of Engineering Science*, p. 4271.
- Taylor, M., & Jensen, K. S. (2018). Engaging and supporting a university press scholarly community. *Publications*, 6(2), 13.

- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186– 204.
- Wafula, M., Musakali, J., & Muliaro, J. (2019). The extent of adoption of e-publishing by university presses in Kenya. *Electronic Publishing*, (Short Papers).
- Warshaw, P. R., & Davis, F. D. (1985). Disentangling behavioral intention and behavioral expectation. *Journal of Experimental Social Psychology*, 21(3), 213– 228.
- Watkinson, C. (2021). *University Presses and the impact of COVID-19*. Retrieved February 15 2024, from <https://deepblue.lib.umich.edu/bitstream/handle/2027.42/166290/leap1352am.pdf>
- Weng'ua, F. N., Rotich, D. C., & Kogos, E. J. (2017). The role of Kenyan universities in promoting research and scholarly publishing. *South African Journal of Libraries and Information Science*, 83(2), 23-29.
- Yusuf, S. O., Musa, M. A., Diugwi, I. A., Adindu, C. C., & Afeez, B. (2022). A Systematic literature review approach on the role of digitalisation in construction infrastructure and sustainable city development in developing countries ZEMCH Network, United Arab Emirates University.