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Gender, Age and Staff Preparedness to Adopt Internet Tools for Research Sharing During Covid-19 in African Varsities

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Abstract

This study assessed the partial as well as the collaborative impact of age and gender on academic staff preparedness to adopt Internet tools for research sharing in African universities during Covid-19. Although evidence abounds in the literature on gender and age as they affect relatively, scholars' utilisation of digital tools for research communication, such studies did not examine scholars' preparedness to adopt from a broad perspective of Africa. This study was conducted based on the argument that the preparedness of scholars may affect their future interest to utilize digital tools for research sharing. A quantitative method, based on the descriptive survey research design, was adopted to provide answers to four prevailing research questions. The examination focused on a populace of 8,591 staff in African universities, nonetheless, information was gathered from 1,977 of them, who deliberately took part from 24 African nations. A validated electronic rating scale, which was mailed/posted to targeted participants, was used as the instrument for data collection. Gender and age significantly affected academic staff preparedness to adopt Internet tools for research sharing partially and interactively in African Universities during Covid-19. Female staff were more prepared than males to adopt internet tools for research sharing during the pandemic. Older lecturers reported a higher rate of preparedness than their younger colleagues to adopt Internet tools for research sharing during Covid-19. In light of these proofs, ramifications and proposals for future exploration are discussed.

Keywords: Africa, Age, Covid-19, Gender, Internet tools, Research sharing.

Introduction

Coronavirus disease (COVID-19) is a fatal virus illness caused by the "severe acute respiratory syndrome 2" (hereafter SARS-CoV-2). The coronavirus is a microscopic pathogen that infects both animals and humans. Many virus-infected individuals may have mild to severe respiratory disease and recover without the need for specific treatment. When an infected individual coughs or sneezes, the virus spreads via saliva droplets or nasal discharge (WHO, 2020). As a result, it is essential that each person exercise social distance, basic cleanliness, and

respiratory courtesy such as coughing into a flexed elbow (Owan, Akah et al., 2021). Coronaviruses belong to the order *Nidovirales*, sub-order *Cornidovirineae* and family *Coronaviridae.* With more than 200 million verified cases and more than 4.26 million confirmed deaths globally as of August 5th, 2021, COVID-19 is considered one of the deadliest pandemics in history. African Center for Disease Control (Africa CDC, 2021a) states that there was a total of 5,235,282 confirmed cases, 138,192 fatalities, 4,643,825 recoveries, and 51,050,389 tests performed throughout the continent in the year 2020.

As of August 4th 2021, the Africa CDC reported that there are 6,857,642 total confirmed cases, 173,836 deaths, 6,004,395 recoveries and 60,400,145 test conducted in Africa. It was further reported that the total confirmed cases by region are 3.3million, 2million, 809.6 thousand, 540.7 thousand and 206 thousand for Southern, Northern, Eastern, Western and central regions of Africa respectively (Africa CDC, 2021b). Available regional data from the same source, as of August 4th 2021, indicates that Southern, Northern, Eastern, Western and Central African regions have recorded a total number of 90.8 thousand, 55.7 thousand, 17.2 thousand, 7 thousand and 3.2 thousand deaths respectively. However, it was indicated that the total number of recoveries in Southern, Northern, Eastern, Western and Northern Africa regions are 2.9 million, 1.7 million, 720.6 thousand, 493.6 thousand and 178 thousand respectively (Africa CDC, 2021b).

Going by these data, it can be stated that the Covid-19 pandemic has presented a challenge in the way individuals and institutions go about their routine businesses. Consequently, there is a growing need for adjustments among individuals and organizations on the most effective conduct to mitigate the spread of the virus. It can be recalled that the pandemic brought to a close, almost every sector of the world's economy, an experience that cannot be forgotten in a hurry. The pandemic questioned the state of economies in terms of available infrastructure, with additional responsibilities imposed on healthcare workers and researchers attempting to provide solutions. Prior to the Covid-19 experience, the Internet had played a key role in the way awareness can be created and information disseminated to society and stakeholders (Owan, Asuquo et al. 2021). The nearly ubiquitous use of smartphones and the exponential development of open social media have combined to overload knowledge delivery in a rhythm and scale unprecedented only a few years earlier (Deeken et al., 2020).

Social networking involves internet-hosted digital and electronic channels that facilitate the production, dissemination and curation of measured and archived contents (Cabrera, Vartabedian et al., 2017). Most of the contents are created and freely accessible by users (Boyd & Ellison, 2007), allowing for the production and sharing of information in various ways in either explicit groups (e.g., forums) or tacit communities. However, this new area carries with it several obstacles, such as the assessment of the accuracy and appropriateness of the material, the assessment of the effect on the academia and the general public, combined with the development of a reward scheme for scholars participating in this novel initiative (Cabrera, Roy et al., 2017). To ensure effectiveness in educational research there must be facilities in place to disseminate research results (Bassey & Owan, 2018).

Over the past decade, emerging fields such as quality management, computer science and invention have arisen, redefining the complexity and essence of scholarly practice. These developments have affected the way researches are conducted and disseminated, as well as collaboration, funding, appraisal and tenure decisions. Although there has been a gradual shift in

the way research results are communicated prior to the pandemic, the Covid-19 experience created further, a need for researchers, scientists and academics to think about the way research is communicated. This is true, at a time where physical travels were discouraged, schools and public event centres closed, and where they need to maintain good sanitary practices and social distancing practices were encouraged. Hence, the need to switch to electronic media became the last resort for communication and information exchange among loved ones, well-wishers and co-workers.

Adopting digital tools in sharing the results of intellectual property has since been embraced by many scholars (Bik & Goldstein 2013; Bougioukas et al., 2020; Duffy, 2000; Siedlok et al., 2020; Jarreau, 2015; Yammine et al., 2018; Zientek et al., 2018). The role of internet tools for wider circulation of research results, visibility of scholars, speedy sharing of files, as well as, the uploading and downloading of scholarly works, in the present age, cannot be overemphasized. Furthermore, there is a great opportunity for multimedia technologies to improve researchers and universities' exposure, reputation, positioning and public value (Anenene et al, 2017).

Digital tools are simply internet-based information sources that are specifically used to gather and share completed academic works across various disciplines. The Internet facilitates users' sharing of, access to, storing and gathering of information through digital or electronic sources at all times in the case of the open-access model. Liberated admittance to data on the Web encourages individuals to transfer, download and trade academic data with no obstacle if they have access to the Internet (Vrana, 2010). Some scholarly materials are usually paywalled while others require institutional access and/or subscription to gain access to archived/indexed materials. However, many internet tools for research sharing, especially repositories and preprint servers are freely accessible. During the Covid-19 experience, many conferences and other scholarly meetings were switched to electronic platforms as a means of ensuring social distancing and curtailing the spread of the virus. The effective use of digital platforms for such academic purposes may depend on the preparedness of scholars to adopt or utilize internet tools. It is very important to understand how much scholars are willing to utilize internet tools for research communication, especially from the perspective of developing African nations. This is because, the level of their preparedness may influence the level of their adoption, which may, in turn, affect their research dissemination practices.

Internet tools that can be used for research sharing are so numerous. Some scholars listed ResearchGate, Google Scholar, Academia.edu, ZOOM videoconferencing, Telegram, ORCID, Facebook, LinkedIn, Mendeley, E-mail, YouTube videos, Institutional repositories, BePress, Twitter, Publons, SSRN, pre-print servers, Blogs, Calameo and PhilPapers as some of the internet channels through which scholarly materials can be communicated (Owan, Asuquo et al, 2021). Evidence abounds in the literature indicating that digital repositories enhance knowledge and promotes the visibility of scholars and the presence of scholarly materials (Saini, 2018). Despite the importance of digital repositories in the academic community, its adaptation has been reported as being discouraging. For example, a study showed the poor use of free source institutional libraries by academic personnel (Kodua-Ntim, 2020).

Studies have described insufficient campaigning, ICT accessibility, facilities, finances, power supplies, lack of technical capabilities, institutional repository regulation, lack of resources, organizational culture and politics, and patent problems as most of the troubles for the low level in the adoption of open access university libraries by academic personnel (Kodua-Ntim, 2020;

Owan, Asuquo et al, 2021). A study showed that faculty members' decision to use institutional archives was determined by their standards of success, social impact and aversion to changes (Ammarukleart, 2017). Other considerations that may affect the acceptance of digital repositories include recognition, usefulness and ease of use, as well as the availability of funds (Anenene et al, 2017). The research of Owan, Akah et al (2021) also proved the professional attributes of scholars can affect the degree of readiness to utilize web-based channels for research distribution; with factors such as length of service, educational qualification, rank and areas of research interest playing crucial roles.

In terms of sex and the adoption of digital libraries, a study showed that female postgraduate students were better users than their male counterparts and that there is no correlation between gender and adoption of institutional repositories (Nunda & Elia, 2019). This finding is contrary to the results of Al-Ansari (2006), which showed that males are more than females using the Internet. In another research, it was found that the gender of the respondents did not have any significant effect on the accessibility and use of electronic resources (Ani et al, 2015). Moreover, the exploration of Eiriemiokhale (2019) didn't demonstrate any critical distinction between the mean rating of male and female teachers on the utilization of electronic information bases. Although these studies are relevant to the present research, it was not shown what the internet was specifically used for by respondents. This shows the ongoing debate among scholars on gender and the utilization of electronic tools for different purposes.

Specifically for research dissemination, there seems to also be a variation in the practices of scholars based on gender. For example, a study found in terms of publications, that the productivity of male researchers was stronger than their female counterparts concerning online citations, yet the thing that matters was not measurably huge (van den Besselaar, & Sandström, 2016). In a report, approximately 53 per cent of the published research were presented by male academic staff in digital archives with a mean presentation of about nine research outputs, while 47 per cent of the research output was submitted by females with a mean of seven research results (Onyebinama et al, 2020). This result indicated a high propensity for the adoption of digital repositories on the part of male academic staff than their female counterparts.

Age is another crucial demographic factor that may affect the preparedness of scholars to adopt digital tools for research sharing. This is because seasoned and early career researchers are usually of varying age and could respond differently to modern trends in ICT. The result of an empirical study indicated that age impacted significantly the extent of research diversification; Young research scholars were more inclined than their older counterparts to diversify their research practices (Abramo et al, 2018). Other scholars' study recently revealed that the age of academic staff is a major factor influencing the use of ICT for research, instructional, and record-keeping purposes; younger lecturers displayed a higher rate of ICT resource utilization than older lecturers (Odigwe & Owan, 2020). Some research has concluded that age is a major indicator of the use of ICT by lecturers in higher learning institutions (Albion, et al., 2011; Dei, 2018; Lubis et al., 2017), although others have argued that age does not strongly influence ICT use (Alba & Trani, 2018; Amua-sekyi & Asare, 2016; Etim, 2019; Mazoya et al, 2015; Unegbu et al., 2015).

The literature indicates that age is commonly considered with respect to ICT use, but not preparedness to use internet tools. There are serious ongoing discussions on age and ICT utilization, with strong arguments put forth by proponents and opponents, with some fence-sitters

offering other views, without yet a winner. This has warranted further studies in related areas of age and ICT use. Age was considered in this study as an answer to this call, to justify inconclusive claims in the literature from an African viewpoint with new proofs. This study draws on this gap and seeks to contribute to the debate by examining the preparedness of academic staff in African Universities to adopt internet tools for research sharing based on gender and age differences. This is especially important in the era of the Covid-19 pandemic to enable policymakers to decide on which category of staff to offer specific sensitization, training and support. This is in view of the fact that the fight against Covid-19 should be inclusive, with individuals, agencies, researchers, health workers, politicians and so on, taking responsibilities to ensure a safe and healthy environment.

The present study was conducted with the intention that the age and gender of members of academic staff may influence their preparedness to adopt digital tools for research sharing in this critical era. Although evidence abounds in the literature on gender and age as they affect scholars' utilisation of digital tools for research communication, such studies were not conducted to cover scholars in African Universities broadly and not during the Covid-19 pandemic. Besides, the preparedness of academic staff to adopt digital tools for research communication was not the main focus of past studies, but utilization. To the awareness of the researchers, this research appears to be the first study to investigate the interactive impact of age and sex on staff readiness to embrace digital instruments to share research among African universities' scholars during the pandemic. This study is quite important and will make a unique contribution to the literature, because the preparedness of scholars may affect their interest to utilize digital tools for research sharing in higher education in the future. Therefore, this study was specifically designed to provide answers to the questions:

i. what is the main effect of age on staff preparedness to adopt internet tools for research sharing in African universities in the Covid-19 era?
ii. what is the main effect of gender on the preparedness of academic to adopt internet tools for research sharing in African universities in the era of Covid-19?
iii. what is the interactive effect outlook of age and gender on staff preparedness to adopt internet tools for research sharing in African universities in the era of Covid-19?
iv. what are the age differences in staff preparedness to adopt internet tools for research sharing among African universities' scholars in the Covid-19 era?

Materials and methods

For this research, the quantitative approach was adopted with an emphasis on the descriptive survey design. The study targeted a population of 8,591 staff in African universities. Data from a sample of 1,977 university staff, distributed across 24 African countries were however collected. The respondents were 68.13% males (N = 1347) and 31.87% females (N = 630). A total of 180, 450, 627, 360, and 360 respondents representing 9.10%, 22.76%, 31.71%, 18.21% and 18.21%, were between 20 and 29 years, 30 and 39 years, 40 and 49 years, 50 and 59 years, and 60 years or above respectively. In terms of educational qualification, 4.55% of the respondents (N = 90) were first degree holders; 31.87% (N = 630) were master's degree holders; while 63.58% (N = 1,257) were doctorate holders. For rank, 9.10% of the respondents (N = 180) were graduate

assistants, 13.66% (N = 270) were assistant lecturers; 22.76% (N = 450) were grade II lecturers, 9.10% (N = 180) were grade I lecturers, 18.21% (N = 360) were senior lecturers, 18.06% (N = 357) were associate professors/readers, while 9.10% (N = 180) were full professors.

In terms of respondents' country of residence, 0.30% were residents of Algeria (N = 6); 0.86% were residents of Benin Republic (N = 17); 0.76% were residents of Botswana (N = 15); while 1.21%, 0.46%, 0.71%, 2.73%, 2.93%, 0.56% and 0.91% were residents of Cameroon (N = 24), Egypt (N = 9), the Gambia (N = 14), Ghana (N = 54), Kenya (N = 58), Lesotho (N = 11) and Liberia (N = 18) respectively. Also, 0.71% were residents of Mauritius (N = 14); 0.76% were residents of Namibia (N = 15); while 1.62%, 0.81%, 0.40%, 0.86%, 0.46% and 1.42% were residents of Niger Republic (N = 32), Rwanda (N = 16), Senegal (N = 8), Seychelles (N = 17), Sierra Leone (N = 9) and South Africa (N = 28) respectively. Furthermore, 0.71%, 0.71%, 0.91%, 1.11%, 4.25% and 73.90% were residents of Sudan (N = 14), Tanzania (N = 13), Uganda (N = 18), Zambia (N = 22), Zimbabwe (N = 84) and Nigeria (N = 1461) accordingly.

Data were collected using an electronic questionnaire which comprised of a demographic section – section A and a five-point Likert scale with 20 items in section B (measuring staff willingness to adopt 20 specific digital platforms for research dissemination in the Covid-19 era). The instrument was vetted by three experts of educational technology and two psychometrists in the Faculty of Education, University of Calabar, Nigeria for face and content validity. A reliability test was performed on the instrument using Cronbach Alpha after a pilot study was conducted on 50 university lecturers in three public universities in Nigeria. An alpha reliability coefficient of .875 indicated that the instrument was internally consistent for measurement purposes.

The electronic questionnaire was mailed to the targeted respondents and posted on the Association of African Universities forum on Telegram as well as institutional WhatsApp groups of academic staff in different universities. The snowball approach was further used by the researchers to get to other respondents who could not be reached using their colleagues who have participated. Respondents were expected to indicate the extent of their willingness to adopt each of the 20 listed digital platforms for research sharing in the Covid-19 era. The responses from the participants to the instrument were automatically coded using Google Analytic tools and downloaded to a personal computer (PC), upon completion of the exercise. The downloaded data was cleaned and carefully prepared for descriptive and inferential statistics to be applied. Mean, standard deviation and two-way analysis of variance were all employed in the analysis of data and the test of the null hypotheses formulated.

Results

The results of this study (presented in Table 1) indicates that gender has a significant main effect on academic staff preparedness to adopt internet tools for research sharing in African universities during the Covid-19 pandemic {F (1, 1967) = 5.505, partial η^2 = .003, p = .019}. Female academic staff generally demonstrated a higher rate of preparedness to adopt internet tools for research sharing during the Covid-19 pandemic. Gender accounted for 0.3% of the total variance in staff preparedness to adopt internet tools for research sharing, with the remaining 99.7% attributable to other variables. For age (in Table 1), a statistically significant main effect

was found on staff preparedness to adopt internet tools for research sharing in African universities during the Covid-19 pandemic {F (4, 1967) = 115.402, p = .000, partial η^2 = .190}. The effect size for age was a strong factor that explained 19% of the total variance in staff preparedness to adopt electronic tools for research sharing in African universities in the era of the Covid-19 pandemic. In terms of the interaction between age and gender, the results of the analysis presented in Table 1, indicates a significant interactive effect on staff preparedness to adopt digital tools for research sharing in African universities in the Covid-19 era {F (4, 1967) = 123.094, p = .000, η^2 = .200). Both variables (age and gender) jointly had a strong effect size, which explained 20% of the total variance in staff preparedness to adopt internet tools for research sharing.

Table 1: Main and interactive effects of age and gender on staff preparedness to adopt internet tools for research sharing in African universities during Covid-19 pandemic

Source	Type III SS	Df	MS	F	Sig.	Partial η^2
Corrected Model	421640.740[a]	9	46848.971	95.229	.000	.303
Intercept	5607427.776	1	5607427.776	11398.136	.000	.853
Gender	2708.139	1	2708.139	5.505	.019	.003
Age	227092.372	4	56773.093	115.402	.000	.190
Gender * Age	242229.555	4	60557.389	123.094	.000	.200
Error	967685.436	1967	491.960			
Total	8644347.000	1977				
Corrected Total	1389326.176	1976				

a. R Squared = .303 (Adjusted R Squared = .300)

In terms of the age differences in staff preparedness to adopt internet tools for research sharing during the Covid-19 pandemic, the Tukey Test of Honest Significant Difference (HSD) of pairwise comparison (Table 2) indicated that staff between 20 and 29 years differed from those with age between 30 and 39 years, 40 and 49 years, 50 and 59 years, and those 60 years and above, in their willingness to adopt Internet tools for research sharing, with a mean difference of 1.70, -4.92, 21.25, and -4.25 respectively. However, the significant mean difference was between the age categories of 20 to 29 years and 50 to 59 years, with staff in the former age category indicating a higher preparedness to adopt Internet tools. The comparison of staff preparedness between those in the 30 to 39 years age category and those in the 40 to 49 years, 50 to 59 years, as well as, those in the 60 years and above category revealed a mean difference of -6.62, 19.55, and -5.95 respectively, with all the mean differences being statistically significant. The result also showed that the mean difference in the preparedness to adopt Internet tools for research sharing between staff in the 40 to 49 years and those in the 50 to 59 years and 60 years plus category was 26.17 and 0.67 respectively. The comparison between staff in the 40 to 49 years and those in the 50 to 59 years category was significant. Lastly, the mean difference between staff in the 50 to 59 years and those in the 60 years or above, in terms of their willingness to adopt internet tools for research sharing, was statistically significant.

Table 2: Tukey HSD Test of Pairwise Multiple Comparison of the age differences in the mean of staff preparedness to adopt Internet tools for research sharing during Covid-19 pandemic

(I) Age	(J) Age	Mean Diff (I-J)	SE	Sig.	95% CI (Lower, Upper)
20 – 29 years	30 – 39 years	1.70	1.956	.908	(-3.64, 7.04)
	40 – 49 years	-4.92	1.876	.066	(-10.04, .20)
	50 – 59 years	21.25*	2.025	.000	(15.72, 26.78)
	60 years and above	-4.25	2.025	.221	(-9.78, 1.28)
30 – 39 years	40 – 49 years	-6.62*	1.370	.000	(-10.36, -2.88)
	50 – 59 years	19.55*	1.568	.000	(15.27, 23.83)
	60 years and above	-5.95*	1.568	.001	(-10.23, -1.67)
40 – 49 years	50 – 59 years	26.17*	1.467	.000	(22.17, 30.18)
	60 years and above	.67	1.467	.991	(-3.33, 4.68)
50 – 59 years	60 years and above	-25.50*	1.653	.000	(-30.01, -20.99)

Based on observed means.
The error term is Mean Square (Error) = 491.960.
*. At the .05 level, the mean difference is considerable.

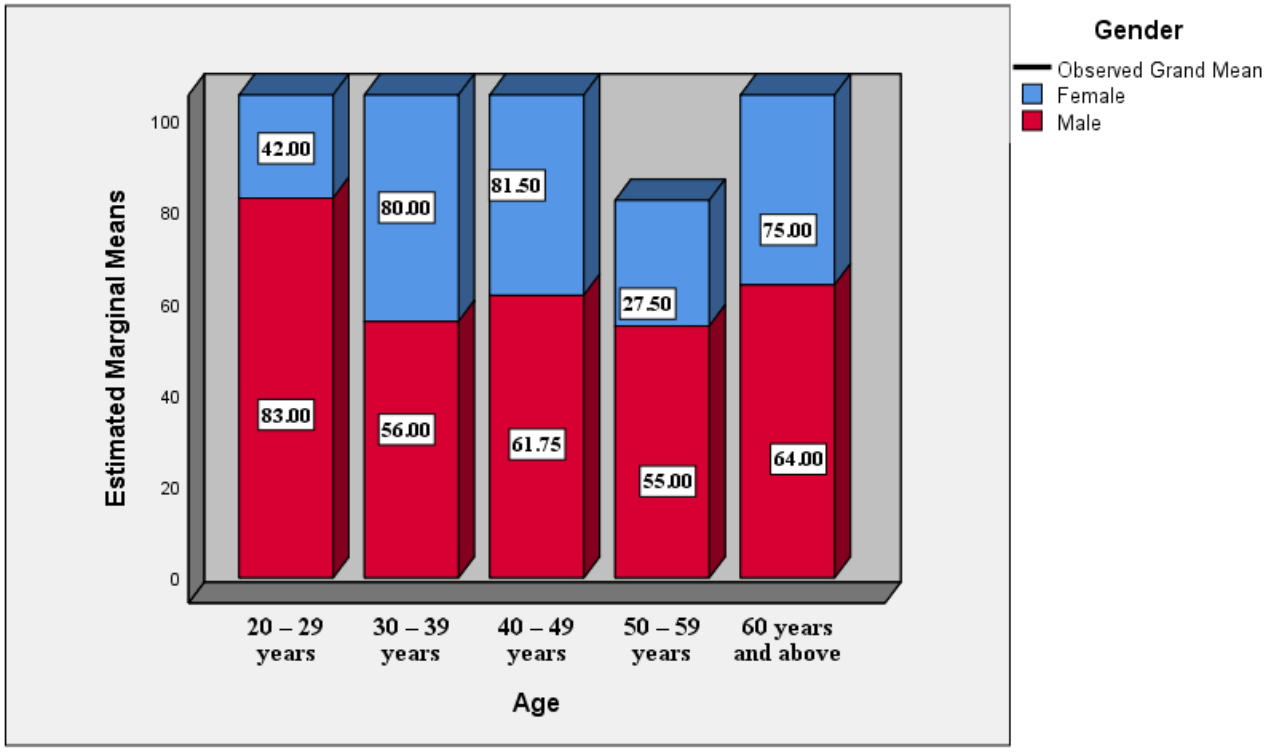

Fig. 1: Extent of staff preparedness to adopt internet tools for research sharing during the Covid-19 pandemic based on age by gender

The age by gender analysis (Presented in Fig 1) indicates within the 20-29 years and 50-59 years categories, that male academic staff in African universities had higher rates of preparedness to adopt Internet tools for research sharing than females. However, within the age categories of 30-39, 40-49, as well as, 60 years plus, female academic staff in African universities reported higher levels of preparedness to adopt Internet tools for research sharing than their male counterparts. Using the grand mean value of ($\bar{X} = 60.00$) as the criterion, it was inferred that male academic staff reported a low extent of preparedness in the 30-39 years as well as 50-59 years respectively; while in the 20-29 years, 40-49years, as well as 60 years and above categories, a high extent of preparedness was recorded. It was also indicated that female academic staff reported a low extent of preparedness in the 20-29 years, as well as, 50-59 years categories; while a high extent of preparedness was recorded in the 30-39 years, 40-49 years, as well as 60 years and above categories.

Discussion

This study showed that age affected staff preparedness to adopt internet tools for research sharing in African universities during Covid-19. This finding is attributed to the significant variations in staff willingness to adopt Internet resources for research sharing among staff within different age classes. For example, lecturers within the age category of 40 to 49 years, irrespective of their gender, reported the highest level of preparedness to adopt internet tools for research sharing, followed by those in the 60 years and above category. This finding agrees with the result of a study that indicated that age impacted significantly the extent of research diversification among scholars (Abramo et al, 2018; Albion et al., 2011; Dei, 2018; Lubis et al., 2017). The result of the present study implies that older lecturers are more interested in adopting digital tools for research dissemination than younger academics during the Covid-19 pandemic. An explanation for this may be due to the perceived and known variation in the use of ICT resources for various purposes between younger and older lecturers. Existing literature on age and ICT utilization indicates that younger lecturers are using ICT tools more than their older counterparts (Abramo et al, 2018; Lubis et al., 2017; Odigwe & Owan, 2020). Older academic staff may have been informed by their poor utilization of ICT recorded in past studies and are consequently more prepared to adopt ICT-related tools to advance their careers. Besides the Covid-19 experience, which scared almost everyone, may also be the reason for this finding. Younger academics may have reported a lower rate of readiness in adopting Internet tools for research sharing during the Covid-19 pandemic because they are widely known to be the 'technology age' that are currently using both simple and sophisticated ICT gadgets. Thus, a person cannot be prepared to adopt what s/he is currently using, hence the finding of this study. However, this finding opposes the results of other studies (Alba & Trani, 2018; Amua-sekyi & Asare, 2016; Etim, 2019; Mazoya et al, 2015; Unegbu et al., 2015) which found age as a non-significant factor affecting the use of ICT by teachers. Since the present study's focus was during the Covid-19 pandemic, it does sound surprising, as variations may have been due to the different era where these studies were conducted.

This study revealed gender as a significant factor affecting staff willingness to adopt Internet tools for research dissemination in African Universities during the Covid-19 pandemic. This finding is so because female lecturers reported a higher level of preparedness to adopt internet platforms for research sharing than their male counterparts. The high rate of preparedness among female lecturers of various age groups may be attributed to their increased interest and motivation

to utilize ICT tools. Previous studies have shown that female academic staff are backward, vis-à-vis their male counterparts, in the use of ICT for teaching, records management and research purposes in higher education (Bamidele & Adekanmbi, 2019; van den Besselaar & Sandström, 2016; Odigwe & Owan, 2020; Onyebinama et al, 2020). In line with this backwardness, these studies recommended that female teachers should make effort to utilize ICT tools for different purposes. These recommendations may have been one of the reasons why female preparedness to adopt internet tools for research sharing has risen during the Covid-19 era. In the Covid-19 era, especially during the lockdown, many busy female academics who usually engage in numerous chores appeared to have been relatively stable due to the 'stay at home' protocol. The rate of preparedness among female academic staff, by implication, tells us that in the future, higher rates of ICT utilization may be recorded for female than in the past. This position is consistent with the conclusions of a recent finding which demonstrated that female postgraduate students used institutional repositories far beyond their male equivalents (Nunda & Elia, 2019). Thus, the utilization rate of ICT tools among females is growing gradually.

The study also discovered that age and gender had an interactive effect on academic staff preparedness to adopt internet tools for research sharing in African universities during the Covid-19 pandemic. Although gender and age were both significant factors in the model, the effect size for gender was small. The effect size for age was sixty-three times stronger than that of gender in explaining the variance in staff preparedness to adopt internet platforms for research sharing among African universities' scholars during the Covid-19 era. This implies that, when they are taken differently, age is a stronger predictor of staff preparedness to adopt internet tools for research sharing than gender during the Covid-19 era. This finding may be attributed to staff interest levels, which seem to be more likely influenced by their age than gender. The interest of younger and older people differs and could affect their decisions to do certain things and also, by being a male or female, there are certain natural gender-based responsibilities in society that shapes people's interest from childhood to adulthood.

The design of this study did not allow the researchers to study the trend of staff preparedness to adopt internet tools for research sharing based on age by gender during the Covid-19 pandemic. This study only showed the age by gender variation in staff preparedness to adopt internet tools for research sharing, but could not predict the age at which the preparedness of male and female staff respectively, to adopt Internet tool for research sharing, is expected to rise or drop. This can only be possible through the use of stationary times series data in longitudinal studies. Thus, it is recommended that future studies consider the use of a longitudinal approach to follow a cohort of male and female staff to study their preparedness to adopt Internet tools at different age period. Another limitation of this study is that only 24 out of 54 African countries participated, leaving 30 countries behind. It is recommended that a future cross-country study be carried out on at least, 70% of the countries in the continent, with a representative sample selected from each participating country. Doing this will also allow for inter-country comparison, to identify countries with low and high rates of staff preparedness to adopt Internet resources for research sharing in African universities beyond the Covid-19 era.

Declaration

The authors declare that this is an original research study carried out by the authors.

Availability of data: The authors declare that the data of this study were obtained from primary sources through a survey (administration of questionnaires). The data used or analysed during the current study are available from the corresponding author on reasonable request.

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