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Factors affecting the use of social media in the learning process

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Background: The study was established based on the inherent challenges of traditional learning systems, which require to be addressed. Arguably, social media can address many challenges of traditional learning if used properly. On this basis, it was important for the study to determine factors associated with the adoption of social media in learning.

Objectives: This study determines the relationship between the ease of use and the usefulness of social media to its adoption. Moreover, it shows whether the perceived security of social media relates to its adoption in the learning environment of higher learning students. The objectives were met through testing hypotheses.

Methods: Overall, the study was objective and followed the positivism philosophical stance. It adopted the survey research design. Data were collected through the use of a closed-end questionnaire and was tested using descriptive statistics and the One-Way ANOVA model. The generalisation of the results of tested hypotheses is allowed to the population with characteristics similar to that of the study.

Results: Social media offer a good platform for the learning process. Moreover, necessary efforts are required to enhance the perception of users on the usefulness of social media, and improve their awareness of security issues because they relate with the adoption of social media. Also, the complexity of social media relates with to adoption. An ease of use platform enhances the adoption.

Conclusion: Social media offer a suitable platform for the extension of traditional classes. Their use would be more effective provided that users are aware of maintaining their safety, able to apply social media tools and able to share the content useful to their learning process. Moreover, the study recommends further studies in specific social media.

Background of the study

Traditionally, formal learning depended on the attendance of learners to planned physical venues, where they met their mentors for lectures or self-studies. Eventually, learning environment required adequate physical facilities, and the presence of mentors and learners in the venue (Scagnoli 2005; Staines 2013). Therefore, the traditional method of learning becomes more beneficial to learners who manage to access recommended learning venues. Under such settings, it is difficult to engage a group of learners beyond physical classes. As a result, the establishment of the learning environment becomes expensive and with limitations (Lubua 2014; Scagnoli 2005).

Currently, the introduction of the information and communication technology (ICT) addresses many challenges of the traditional learning environment. One of the areas positively impacted by the use of ICTs in the learning process is the necessity to attend physical classes and limitations for information sharing. Modern ICT tools allow the learning process to proceed without (or with minimum) physical structures (Kamba 2009). At first, such tools were used to support distance learning programmes through storing lecture notes, videos and audio files in compact discs (CDs), floppy discs, digital versatile discs (DVDs) and others (Chawinga & Zozie 2016; Mnyanyi, Bakari & Mbwette 2010). The content that would be stored in hundreds of pages was available in a very small physical disc. However, these storage devices required physical transfers to their destinations (Mnyanyi et al. 2010). Although the reliability and efficiency was improved, it was not completely assured.

Later, the ICT industry received more improvements because of progressive innovation. The availability of the Internet allowed people to store learning materials online through cloud technologies (Bora & Ahmed 2013). Since the majority of individuals could not manage to have private computers, they depended on computers dedicated to public access (Lubua 2014).

Moreover, the knowledge to operate the new technology was necessary. Together with the experienced challenges, the risk of the manual transportation of digital materials was addressed.

Arguably, the recent development in the area of ICTs has improved the accessibility of information. Firstly, the technology allows the use of mobile phones and computers in accessing the Internet. Moreover, it enables the use of Web 2.0 tools in creating and sharing information contents (Bora & Ahmed 2013). Arguably, social media form one of the most used Web 2.0 platforms for information exchange (Darwish & Lakhtaria 2011). Social media are a form of electronic communication platforms, where users create online communities to share the information in different formats (Byabato & Kisamo 2014; Johnston et al. 2015). Because of the Web 2.0 capability, there are many online social forums, where people with the common interest conduct discussions. This includes the academic discipline.

Generally, the literature provides a number of factors for promoting the use of social media and the general ICTs in learning. One of the factors is the usefulness of the platform (technology). The platform must have adequate relevant resources to support learners' activities (Jewitt et al. 2010). In social media, learners form an equal source of resources because of the enhanced interaction ability (Alabdulkareem 2015). Also, learners must access learning materials and interact with others through discussions (Arkorful & Abaidoo 2007). Another factor is the ease of use of the technology. Users must be comfortable with the use of available online learning tools (Arkorful & Abaidoo 2007; Bora & Ahmed 2013). This is the fact well enhanced in most social media (Alabdulkareem 2015; Arkorful & Abaidoo 2007). Also, social pressure may influence the use (Bora & Ahmed 2013). Therefore, inherent qualities of social media for information exchange do not guarantee the adoption for every activity and by everyone (Gefen & Straub 2000). This includes their adoption in the learning process.

In Tanzania, although access to social media has increased, their usefulness in learning is not well known (Mtega et al. 2014). Furthermore, factors that influence the adoption of social media in the learning process are not universal. Since the use of social media may extend academic discussions (related activities) beyond physical classrooms, they can become a powerful tool in enhancing the goal of the government for increasing enrolment, while enhancing the quality of higher education (Chawinga 2017; Chawinga & Zozie 2016). Therefore, it is important to understand their usefulness and how they can be enhanced in the Tanzanian environment.

Statement of the research problem

In Tanzania, a standard class is expected to accommodate 30 students (Ministry of Education and Culture 2004). In the past, this number was possible because a small number of students had access to secondary schools, colleges and universities. With the current increase of enrolment, very few classes manage to meet the standard requirement (Byabato & Kisamo 2014). Eventually, a class with a large number of students becomes difficult to manage (Byabato & Kisamo 2014; Ni 2013). With the continuing increase in the number of mobile phone and computer users, and social media subscribers, ICT tools offer an alternative to traditional means of managing classes (Lubua 2014). Learning materials can be created, shared and evaluated online (Mshangi 2013). Moreover, social media are proved to engage many students in higher learning institutions (Olson et al. 2011).

Together with the benefits of using social media in managing the learning process, not all stakeholders of education (in Tanzania) have adopted it. Some of the possible reasons include the lack of technical knowledge, teaching materials and other negative moral and social impacts that come with the traditional use of social media (Yunus et al. 2013). Morally, parents and educators are concerned about possible negative impacts of using online social media in the learning process, which include exposure to pornography and cyber bullying (Tedla 2012). Regardless of the negative perspective of the adoption of social media, this study acknowledges its power in sharing information in the learning process. This would accelerate the learning process and support the government in meeting its enrolment and quality goals in higher education. It is because of this reason that the study determines the factors influencing the use of social media in the learning process of higher education.

Main objective

This study determines the factors influencing the use of social media in the learning environment of higher learning students. The study is conducted with an understanding that Internet accessibility in Tanzania has improved because of the National ICT Backbone (NICTBB) covering about 7560 km across the country, and the increase in the ownership of mobile phones and computers (Lubua 2014; Tanzania Communication Regulatory Authority 2016). According to telecommunication statistics provided in June 2016, there are about 39 097 660 registered mobile phone users in Tanzania. If each subscriber identity module (SIM) card was to represent a single user, about 78% of citizens owned a mobile phone (Tanzania Communication Regulatory Authority 2016). In the same manner, the Tanzania Communications Regulatory Authority (TCRA) estimated that in 2014, about 23% of citizens had access to the Internet (Tanzania Investment 2014). Also, the study acknowledges the intention of the Tanzanian government to enable learners to use ICT enabled tools in managing their studies. The study offers the following contributions in ensuring that this goal is achieved: It informs the stakeholders about the factors which influence the rate of adopting social media in the learning process, it informs the stakeholders about the perception of users on the suitability of social media in the learning process and it establishes the extent to which social media tools are easily used by learners, and whether the platform is relevant in the learning process.

Literature

The literature presents a number of models for the adoption (use) of the new technology. According to the technology acceptance model (TAM), the following variables are keys in the adoption process: the ease of use, the perceived usefulness and the intention to use the new technology (Davis 1989; Venkatesh, Davis & Morris 2003). TAM considers the ease of use as fundamental to the adoption of the new technology because many users adopt new innovations through informal trainings (Lubua 2014). Also, the assertion is supported by the unified theory of acceptance and use of technology (UTAUT), where the variable is known as effort expectancy (Venkatesh et al. 2003). The effort expectance suggests the amount of effort required to learn a new programme (Attuquayefio & Addo 2014; Lubua 2014). Generally, the ease of use is likely to be possible if the technology is simple to understand (Byabato & Kisamo 2014; Johnston et al. 2015).

Accordingly, the TAM suggests that the ease of use of the technology equally influences the perception of the user about the usefulness of a new technology (Davis 1989; Oye, Iahad & Rahim 2012). This is the extent to which the user believes that the adoption of the new technology will enhance his or her performance. The UTAUT acknowledges this variable as the performance expectance (Venkatesh et al. 2003). Based on the TAM, the ease of use and the perceived usefulness of the technology exert a combined influence to the user's intention to adopt the technology (Arkorful & Abaidoo 2007; Attuquayefio & Addo 2014). Nevertheless, factors external to the user may affect the level of influence exerted by the two variables to the intention to use the new technology. These include the social factors of the community (Jovanovic & Chiong 2012; Lubua 2014). In the UTAUT, social factors are acknowledged to independently influence the adoption (Venkatesh et al. 2003).

Furthermore, through the review of the literature, researchers were convinced that security is another important variable to the adoption of online platforms for service provision (Alabdulkareem 2015; Blaschke 2014). Generally, the subscribers of social media provide a lot of their personal information online, and the risk that such information could be misused, is high when you are in a social network (Achumba et al. 2013). In the report released by the Tanzanian Police Force in 2012, crimes formerly conducted in our traditional environment are now conducted online. There are about 82% increase of the cybercrimes between 2009 and 2012 (Tanzania Police Force 2012). With these statistics, it is possible to scare some potential users of online platforms, including social media (Johnston et al. 2015; Jovanovic & Chiong 2012).

This study acknowledges past research works of the same area of interest; that is, studies about social media and ICT use in a learning environment. In the study by Dzvapatsva, Mitrovic and Dietrich (2014), the focus was on how social media can be used to improve the academic performance of students. The interest was on the output of the use of social media in learning. Accordingly, the study by Chawinga (2017) investigated how social media facilitated teaching and learning. The study by Chawinga (2017) was an extension of the earlier study on how Twitter can be integrated into the learning environment of African institutions (Chawinga 2016). Both studies concentrated on the process of integrating social media to learning environment. Moreover, the study by Lwoga (2012) addressed the challenges of integrating technological tools in classrooms. Furthermore, Knight (2016) made an analysis on how the social media is used to shape students' experience in learning. Accordingly, the study furthered its analysis to include best practices for enhancing curriculum requirements through social media. Arguably, these studies are in three main themes: how to integrate social media to learning, how to enhance the output of learning and challenges of integrating social media in learning. Although these themes present a slight difference from the current study, they provide an important basis for its operationalisation through highlighting issues which are already covered. It is the interest of the current study to determine factors for the adoption of social media in learning. Generally, the study limits its work through testing three hypotheses. The first two hypotheses include two key variables: the ease of use and the usefulness of the technology. These variables are broadly accommodated by different theories. Moreover, the study included the perceived online security (in one hypothesis) because it is among users' concerns during online presence (Byabato & Kisamo 2014; Jewitt et al. 2010).

Hypothesis one

H_0: There is no relationship between the perceived relevance (usefulness) of social media and the adoption rate in the learning.

H_1: The perceived relevance of social media relates to the adoption rate in the learning process.

Hypothesis two

H_0: There is no relationship between the ease of use of social media and the rate of adoption in the learning process.

H_1: The ease of use of social media relates to the rate of adoption in the learning process.

Hypothesis three

H_0: There is no relationship between the level of perceived privacy in social media and its rate of use.

H_1: The level of perceived privacy in social media relates to its rate of use in the learning process.

Methodology

This study is ontologically objective. Therefore, its design suggests no influence from the researcher in the research process (Easterby-Smith, Thorpe & Jackson 2008; Scotland 2012). Moreover, its operationalisation follows the positivism epistemological stance (Denscombe 2010). The epistemology of this study dictates the use of scientific procedures in its

operationalisation (Scotland 2012). Therefore, the quantitative approach is adopted as the basis for decision-making. In addition, it uses follow-up interview questions to obtain missing interpretations about observed aspects of the results (McNamara 1999). Moreover, the generalisation of findings is allowed where the population of the study shares key characteristics with the population for generalisation (Polit & Beck 2010).

Moreover, it is important to acknowledge that the study collected data from students of the Institute of Accountancy Arusha (IAA), a higher learning institution based in Tanzania. During the study, about 3500 students were registered. Therefore, the online register was used to establish the sampling frame. The study used the framework by Mogan and Krejcie (1970) to establish the sample. The sampling technique was the step by step systematic sampling. According to Mogan and Krejcie framework, in a population of about 3500, a total of 350 members form an acceptable representation if selected scientifically. Therefore, the study extracted 350 students of the Institute's community, and used them as the first step sampling frame. Again, in a population of 350, the framework suggests about 180 respondents for the sample. In the last step, the study used 180 respondents as a framework, and extracted 100 units of inquiry, as recommended by the framework. Generally, a sample above 30 units is recommended for quantitative research (Saunders, Lewis & Thornhill 2012). The current sample meets the recommended number of units, and it is workable to the researcher given the limited number of resources. Table 1 presents the sample based on the field of study. Additional information is presented in the next section.

Moreover, the survey questionnaire was self-administered. The researchers distributed a closed-end questionnaire to the identified respondents during class sessions. The process was supervised by the researcher to ensure that responses were not shared. The following are the main areas of the extracted information: the perceived relevance (usefulness) of social media, the perceived level of privacy in social media, the degree of comfortability in the use of social media for learning and the use of social media in the learning process. The content of the questionnaire was based on these themes to attain the validity of data to the addressed problem.

Furthermore, the validity was enhanced through a pilot study conducted with 20 students of the IAA. The basic characteristic for members of the pilot study was their registration status as students. Moreover, the pilot sample had 10 students for postgraduate and undergraduate programs. Also, the study ensured that there were 10 respondents for ICT-related and 10 for non-ICT-related

TABLE 1: The sample.

Course category	Respondents	%
Information systems	26	30
Business-related studies	34	40
Management	26	30
Total	**86**	**100**

programs. These characteristics reflect those of the actual population of the study; therefore, they are relevant for ensuring the validity of data collected. The feedback from the pilot study was adopted to the questionnaire before the actual data collection took place. In addition, the questionnaire was coded to fit in the Statistical Package for Social Science (SPSS). The study used descriptive data and the One-Way ANOVA model to make decisions on the stated assumptions (Tavakol & Dennick 2011). Accordingly, the reliability was tested through the Cronbach's Alpha, and the recorded value was 0.72. This level of reliability is acceptable (Scotland 2012; Tavakol & Dennick 2011).

Accordingly, the study adhered to ethical ways of research. Firstly, the study ensured that referenced works are acknowledged (Denscombe 2010). The work was operationalised understanding that plagiarism is unacceptable. Moreover, researchers were not part of the sample and did not influence respondents' understanding in anyhow (Polit & Beck 2010). This is the key for studies which are ontologically objective. Furthermore, the study engaged respondents through their consent, and they had the liberty top withdraw from the process, if they were uncomfortable (Denscombe 2010; Scotland 2012). Generally, the confidentiality of respondents was ensured (Saunders et al. 2012).

Results and discussion

In this study, researchers considered demographic variables, which we thought could significantly impact the use of social media in the learning process. The variables were the directorate of study (undergraduate or postgraduate), the programme of study (Business, Informatics and Management) and years of postsecondary education. Table 2 presents summarised results for each of these categories.

The study conducted further analysis to determine whether the analysed demographic variables significantly related to the use of social media. Upon the use of the One-Way ANOVA, the results showed the following: the relationship between the directorate category and the use ($p = 0.7$), between the programme of study and the use of social media ($p = 0.3$), and years of postsecondary education and the use of social media ($p = 0.6$). Arguably, in all cases, the study proves that these categorical variables do not relate to the use. Therefore, the next sections of this study do not use these variables as the basis for discussion.

Moreover, studies acknowledge an increase of social media use in human activities (Blaschke 2014; Mnyanyi et al. 2010). Regardless of the negative experience that users of social media may have experienced, a well-planned use brings positive benefits to the society (Chawinga 2017; Jovanovic & Chiong 2012). One of the areas to be benefited is the learning process. Social media provide the opportunity for educators to engage learners in online classrooms (Blaschke 2014; Bora & Ahmed 2013). In this study, it was important to understand how higher learning students adopt social media in the

TABLE 2: Summary of demographic characteristics.

Variable	Demographic variables	Number of respondents	Respondents in %	Valid respondent in %	Cumulative %
Directorate	Postgraduate studies	26	30.2	30.2	30.2
	Undergraduate studies	60	69.8	69.8	100.0
	Total	**86**	**100.0**	**100.0**	**-**
Programme of study	Information systems	32	37.2	37.2	37.2
	Business-related studies	47	54.7	54.7	91.9
	Management	7	8.1	8.1	100.0
	Total	**86**	**100.0**	**100.0**	**-**
Years of postsecondary education	4 years and above	28	32.5	32.5	32.6
	3 years	41	47.7	47.7	80.2
	2 years	16	18.6	18.6	98.8
	1 years	1	1.2	1.2	100.0
	Total	**86**	**100.0**	**100.0**	**-**

learning process. In the analysis (Figure 1), we found that 38%[1] of respondents admitted to have a regular use of social media in the learning process. Although the majority of respondents admitted a moderate use, this study acknowledges the potential for boosting these individuals to a regular use. A response to a follow-up interview question showed that all students use social media out of their liberty, to enhance the learning process. This study did not extract data from academic administrators; however, the literature suggests that initiatives from instructors or institution management would add value to the use of social platforms for learning (Ni 2013; Yunus et al. 2013). This is because students will have the obligation to use the platform to access learning materials and make their discussions.

The subsections below offer the information on how the adoption of social media in the learning process relates to the perceived relevance, comfortability (ease of use) with social media tools and the confidence on security measures.
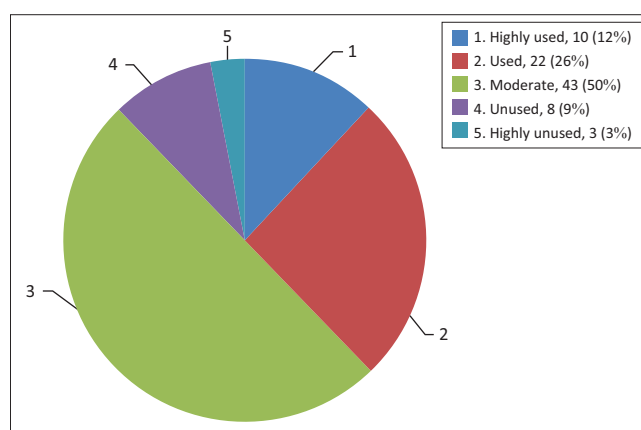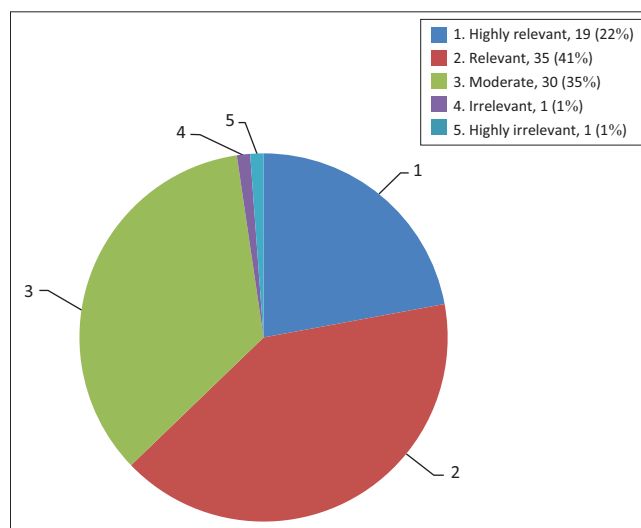
The perceived relevance (usefulness) of social media

The study determined the perception of respondents on the relevance of social media in the learning process. The results in Figure 2 revealed that 63%[2] of respondents have a positive perception towards the relevance of social media in the learning process. It is partly known that the positive perception is because of the ability of social media to connect learners and tutors in the learning process beyond traditional classrooms (Bora & Ahmed 2013; Chawinga & Zozie 2016; Jovanovic & Chiong 2012). Social media are readily available and affordable to many surveyed respondents.

The study adopted the One-Way ANOVA to know whether the difference in the adoption of social media in the learning process relates to learners' perception about the relevance of social media in the learning process. The output showed that the p-value is less than 0.05 ($p = 0.022$). There is a significant difference in the adoption of social media across learners, based on their perception on the relevance of social media. Those who admit the relevance are the ones who are likely to use social media than those who does not. This observation

1.Used + Highly used.

2.Relevant + Highly relevant.

FIGURE 1: Perceived rate of use in per cent.

Legend:
1. Highly used, 10 (12%)
2. Used, 22 (26%)
3. Moderate, 43 (50%)
4. Unused, 8 (9%)
5. Highly unused, 3 (3%)

FIGURE 2: The relevance of social media.

Legend:
1. Highly relevant, 19 (22%)
2. Relevant, 35 (41%)
3. Moderate, 30 (35%)
4. Irrelevant, 1 (1%)
5. Highly irrelevant, 1 (1%)

agrees with the TAM, where the technology usefulness relates to the intention to use (Davis 1989; Venkatesh et al. 2003). In the UTAUT, this relationship is represented by the relationship between the expected performance and the behavioural intention (Venkatesh et al. 2003). Academic administrators form one group that can enhance the usefulness of the social platforms (Arkorful & Abaidoo 2007). If lecturers and the management were to use social media for providing the content such as lecture notes, announcements and other forms of feedback, users'

perception about the relevance of social media would positively increase (Arkorful & Abaidoo 2007; Oye et al. 2012). On the contrary, the increase would positively enhance both the adoption and the rate of use.

Comfortability with the use (ease of use) of social media tools

The literature cites the following factors to be important in enabling users to comfortably use social media in the learning process: the ability to install the platform, the accessibility of the platform, how easy is navigation in the platform and the readability of the content (Johnston et al. 2015; Yun-Jo et al. 2009). In this part of the study, we determined the perceived comfortability of using social media by learners in the learning process. The results in Figure 3 show many users to be at least comfortable with the tools used in social media to facilitate the extension of a traditional class to online platforms. This is about 62.8% of all respondents. This observation agrees with other studies which concluded that social media could comfortably facilitate the learning process for college students, if used appropriately (Chawinga 2017; Odom et al. 2013; Qureshi, Raza & Whitty 2014).

We conducted a further analysis to understand whether different levels of comfortability with the use of social media result in differences in the adoption of social media in the learning process. After the One-Way ANOVA was adopted, the results showed that different categories of respondents, with respect to their level of comfortability with the use of social media, resulted to a significant difference in the adoption of using social media in the learning process. The p-value was 0.021, where $p < 0.05$. The category of respondents with more comfortability admitted to have a higher rate of use. For example, 55% of those who admitted to be very comfortable, 44% of those who were comfortable, 16% of those who were moderately comfortable used social media. This observation is supported by the TAM model, where the ease of use is the determinant of the intention to adopt a new technology (Davis 1989).

Security concerns

Internet users are increasing on a daily basis, and new users are more vulnerable to security concerns because they have less experience and low knowledge to secure methods for Internet uses (Jovanovic & Chiong 2012; Kamba 2009). Currently, Tanzania has a new cyber law to address users'
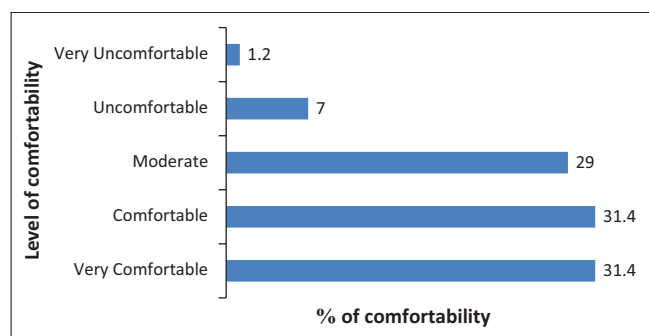

FIGURE 3: Per cent of comfortability.

security concerns; however, the challenge remains on whether its implementation will adequately ensure online security to Internet subscribers. In this study, we determined the confidence of college students towards the privacy they (perceive to) enjoy while using social media. The result shows that 51% of respondents are at least confident with the privacy they enjoy in social media. Although this percentage is moderately high, a follow-up interview suggested that such confidence is only based on their ability to control their password and username for account access.

Moreover, we established whether the categories of respondents (based on the perceived level of privacy) related to the adoption of social media for academic purposes. According to the test conducted through the One-Way ANOVA, the p-value was 0.003 ($p < 0.05$). There is a significant difference in the use of social media by students, based on the extent to which they perceive that they were secure. The testing through the Pearson Correlation model ($p = 0.001$) suggests that the increase in the confidence in the level of privacy increases the rate of use by respondents. In this case, it is important to educate users about important security issues to build their confidence on these platforms.

Conclusion

The purpose of this study was to evaluate factors for the adoption of social media in the learning process at a Tanzanian institute. The study was guided by three hypotheses. These hypotheses intended to establish the relationship between each of the following variables with the adoption (or rate of use) of social media in the learning process. The variables were the level of comfortability of users to social media tools, the level of security concerns and the perceived usefulness of social media by learners. The findings showed that each of the studied variables existed in different levels among learners. Moreover, different levels (states) of each of the variables resulted to a significant difference in the adoption and rate of using of social media among learners. Higher learning institutions have the opportunity to enhance their use of social media in the learning process, through offering an ease to use platform, encourage sharing of the information useful in the learning process and enhance the security of the platform. Therefore, provided that users are aware of maintaining their safety while online, they are able to apply social media tools and share the content useful to their learning process; the rate of users to use such media in the learning process will eventually increase. The extended use of social media will enable learners to overcome challenges posed by traditional classes in the learning process. Lastly, this study focused on social media in general; further studies could follow on the adoption of specific social media (such as Facebook, Twitter, etc.) in learning.

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Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

Three individuals participated in shaping this article. E.W.L. managed the whole authoring process. A.S. participated in data collection and early writing of the article. P.P. complemented the final stage of article refinement.

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