

Ghanaian academic libraries' use of social media: A structural equation modelling approach

Information Development
1–20
© The Author(s) 2021
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0266666921999429
journals.sagepub.com/home/idv



Monica Mensah 

University of Ghana

Omwoyo Bosire Onyancha

University of South Africa

Abstract

The study was largely quantitative and employed the unified theory of acceptance and use of technology (UTAUT) as its theoretical lens. The target population was 31,157 consisting of library staff and library patrons from four academic libraries in Ghana. Sampling tables and census sampling techniques were used to select a sample size of 767 respondents. Adopting a cross-sectional survey design, the study used a pre-tested questionnaire to collect data from the sampled respondents. Statistical analyses were carried out using the Statistical Package for Social Sciences. The structural equation modelling technique was further used to estimate the relationships and correlations between the theoretical constructs from the UTAUT to understand behavioural intentions and use behaviour of social media in the academic libraries. The study found that performance expectancy, effort expectancy and facilitating conditions have significant influence on the intention to use and subsequent use of social media in academic libraries in Ghana.

Keywords

social media, UTAUT, Structural equation modelling, academic libraries, Ghana

Submitted: 10 November, 2020; Accepted: 20 January, 2021.

Introduction/Background

Today, the use of social media has become one of the most recent technologies presenting academic libraries the opportunity to improve their service delivery. Apart from helping academic libraries move beyond their traditional mandate as a repository of knowledge to being a conduit of information literacy (Howard et al. 2018)), social media have a vital role to play in empowering libraries to connect with and engage their diverse stakeholder groups. Consequently, social media today are more than a fringe activity for academic libraries worldwide. They are platforms that are central to the library's outreach and promotional efforts, and are therefore, increasingly becoming an integral part of the academic library system (Shah and Khan 2019; Peacemaker, Robinson and Hurst 2016). The number of social media tools available can be overwhelming. However, the popular

ones identified and used in academic libraries, both in the developed and developing world, include Facebook, Twitter, LinkedIn, Instant Messaging, YouTube, Rich Site Summary (RSS), bookmarks, Blogs, Wikis, Pinterest and Flickr (Howard et al. 2018); Sawalha, Al-Jamal and Abu-Shanab 2019); Al-Awadhi and Al-Daihani 2019)).

Although the potential of social media as a tool for delivery of academic library services and information services is generally understood, the use of such platforms seems to be slow and unplanned in Ghanaian academic libraries. Most academic libraries in Ghana do not appear to recognise social media as a key instrument in accomplishing their service delivery

Corresponding author:

Monica Mensah, Balme Library, University of Ghana.
Email: monimamens@gmail.com

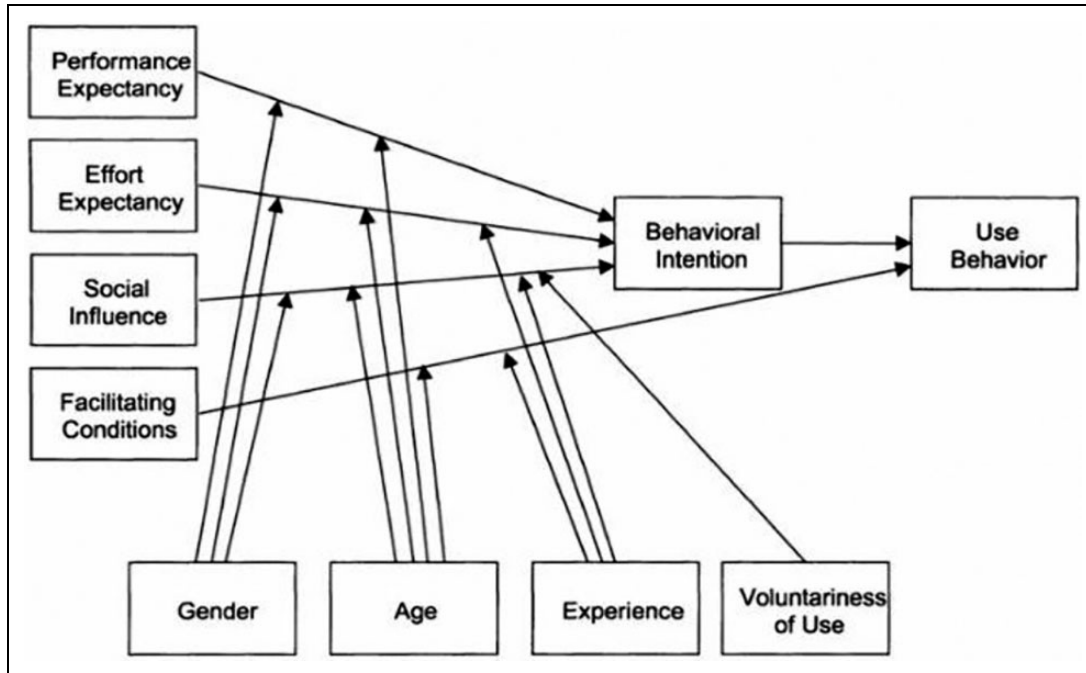


Figure 1. Unified Theory of Acceptance and Use of Technology(UTAUT).
Source: Venkatesh et al (2003).

obligations. Consequently, albeit various studies in the developed world such as Europe, the United States and Asia (e.g. Harrison et al. 2017; Howard et al. 2018; Deodato 2018; Al-Awadhi and Al-Daihani 2019; Jones and Harvey 2019; Shah and Khan 2019; etc.), and the developing world (e.g. Abok and Kwanya 2016; Mabweazara and Zinn 2016; Adewoyin, Onuoha and Ikonne 2017; Okuonghae, Achugbue and Ogbomo 2018) reveal the potential and actual use of social media for effective library services delivery, there is still paucity of literature on the use of such platforms among academic libraries in Ghana. Thus, this study draws on the most advanced technology acceptance model namely, the unified theory of acceptance and use of technology (UTAUT) to understand factors influencing the intention to use, and actual use of social media among academic libraries in Ghana. This among other factors will be useful to avoid being left behind in the quest to embrace social media, and the race towards newer ones to enhance academic library services delivery.

Theoretical background and research hypotheses

This study is anchored on the unified theory of acceptance and use of technology (UTAUT). The UTAUT was developed by Venkatesh, Morris, Davis, and Davis (2003) with the purpose of strengthening earlier

acceptance models, and to explain user intention to adopt an innovation as well as subsequent usage behaviour through the integration of fragmented theories and research. The UTAUT has been identified as the most popular and currently referenced framework in studying the acceptance and use of new technologies (Bawack and Kamdjoug 2018), and has been proven to explain variance in the adoption and use of information technology, more than any of the previous technology acceptance models (TAMs) standing alone (Engler and Alpar 2018). As presented in Figure 1, the original UTAUT model theorises that the intention to accept to use technology is influenced by individuals' perceptions of four (4) key concepts. Thus, the model's independent variables (i.e. factors influencing technology use) include performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh et al. 2003), which are moderated by age, gender, experience, and voluntariness of use. This research considers six constructs comprising of four independent or predictive variables (performance expectancy, effort expectancy, social influence, facilitating conditions), and two dependent variables (behavioural intention and use behaviour) from the UTAUT as significant to influence users' intention to adopt and use social media platforms in academic libraries in Ghana. The constructs were used

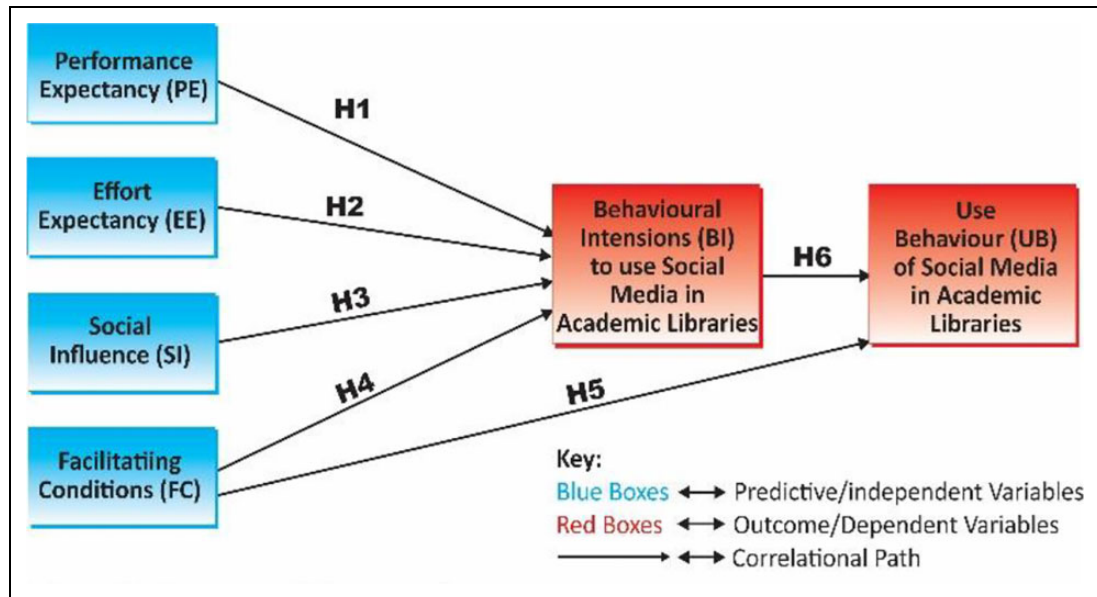


Figure 2. Conceptual Framework. Adapted from Venkatesh et al (2003).

to develop a conceptual framework upon which this study was anchored (see Figure 2).

Performance expectancy and behavioural intention to use social media

Performance expectancy is defined as the extent to which the use of a technology provides benefits to users and leads to performance gains (Venkatesh et al. 2003). Thus, if users find value from using a technology and believe that using such technologies in their daily transactions will help in the improvement of job performance, their desire towards purchasing and pursuing the use of such technologies increases. From the perspective of this study, performance expectancy is defined as the extent to which academic libraries in Ghana believe that social media will help in the access and provision of library services and resources. It is about whether Ghanaian academic libraries trust that using social media to operate services will improve their performance and accessibility. Certainly, the performance on the adoption of social media usage is whether the academic library provides information about their services on time and if they can spread the information faster than the traditional media. Supporting Venkatesh, Thong, and Xu, (2012)), many past studies on social media acceptance have found supporting relationships between performance expectancy and behavioural intention as hypothesised in the UTAUT, and concurred that performance expectancy is the strongest predictor of

behavioural intention to use social media (e.g. Salahshour Rad, Nilashi, Mohamed Dahlan. and Ibrahim 2019); Humaid and Ibrahim 2019), although others recorded no significant relationships (e.g. Mhina, Johar and Alkawaz 2019). This study theorised that:

H1: Performance expectancy has a significant relationship with the behavioural intention to use social media in academic libraries in Ghana.

Effort expectancy and behavioural intention to use social media

In this study, effort expectancy is termed as the extent of effortlessness related with the adoption and use of social media in academic libraries in Ghana. It is derived from the assumption that the adoption and use of social media will improve library services provision and reflect library staff and patrons' perception of library services improvement such as convenience, fast response, and service effectiveness. This is because Venkatesh et al. (2012) define effort expectancy as the extent of easiness associated with the use of technology. Thus, effort expectancy can be perceived as a measure of effort and learning associated with a user's perceptions and beliefs that using a system is comfortable and free of additional efforts. It is, therefore, expected that academic librarians who find social media services easy to use are more likely to adopt and use them than those who find such services to be difficult to use. Accordingly, this study

postulates that once academic libraries become accustomed to social media, the perceived ease of use becomes stronger. According to the UTAUT, effort expectancy positively influences the behavioural intention to use technology (Venkatesh et al. 2003). Particularly, effort expectancy is being described as a determining factor of behavioural intention, with a stronger influence on the early stages of use behaviour. In other words, effort expectancy is more significant only at the initial stages of using a new technology and can have an impact on the supposed usefulness of that technology. Indeed, prior research has confirmed the perceived significance of this variable in defining the behavioural intention to use social media (e.g. Salloum et al. 2018), although some found the opposite (e.g. Engler and Alpar 2018). Accordingly, this study postulated that:

H2: Effort expectancy has a significant relationship with the behavioural intention to use social media in academic libraries in Ghana.

Social influence and behavioural intention to use social media

According to Venkatesh et al. (2012, p. 451), social influence refers to the extent of belief that the behavioural intention to use new technology is influenced by the opinions of important others. It is associated with societal pressure from the potential technology adopter's external environment namely, friends, relatives and superiors' opinions, which may influence his or her perceptions and behaviours in the adoption and use of the technology (Jacob and Darmawan 2019). Essentially, depending on available social conditions or pressures, adopters of a given technology could be both proactive and engaged, or passive and alienated (Karikari, Osei-Frimpong and Owusu-Frimpong 2017). Indeed, in all social contexts, such as the workplace, individuals are subjected to the pressures of social interactions, and as such, may consider not only their own perceptions but also those of others whom they consider to be important in the given social context (Isaias et al. 2017). Previous research has shown that people who use an innovation can influence other people's acceptance decisions because of the belief that innovation will improve one's social status and reputation (e.g. Palau-Saumel et al. 2019); Hussain et al. 2019); Sivathanu 2019). Likewise, prior research (e.g. Humaid and Ibrahim 2019) empirically supported the assertion regarding

the influence of social influence on behaviour intention for using social media, even though others found the opposite (Gan, Li and Liu 2017). As academic libraries that feel more pressure from others to use social media are more likely to do so (Yuvaraj 2016), social influence is expected to predict the intention to use social media in academic libraries in Ghana. This is because staff and patrons of these libraries are predominantly adolescent and are, therefore, more likely to be influenced by their social group, especially friends, classmates, colleagues, supervisors and management. Hence, this study anticipates that social pressures could trigger certain behaviours that could either align or alienate staff and patrons of Ghanaian academic libraries interest towards social media behavioural intention. The study, therefore, hypothesised that:

H3: Social influence has a significant relationship with the behavioural intention to use social media in academic libraries in Ghana.

Facilitating conditions and behavioural intention/use behaviour to use social media

Facilitating conditions refers to the conditions that can improve or hinder the use of technology. Generally, this construct reflects the influence of a user's knowledge, ability and resources, and reduces the level of uncertainty or ambiguity towards the use of a new technology. In the context of this study, facilitating conditions refers to the knowledge, resources, training, technical infrastructure, and documentation that are available in academic libraries in Ghana to encourage usage of social media (Venkatesh et al. 2012). It is the extent to which staff and patrons in academic libraries in Ghana feel that the organisational and technical infrastructures are adequate to support the use of social media for accessing and delivering library services, with the presumption that the availability of external resources that will aid the access of social media will lead to its use. Facilitating conditions are, hence, measured by the opinions of the staff and patrons of the academic libraries in the ability to have access to the requisite resources and support to use social media.

Generally, patrons of academic libraries perceive social media platforms as informal, and as such, suitable for communication among their peers, whilst the information providers (staff) seem to be comfortable providing libraries services via available traditional platforms. It is, therefore, presumed that if staff and

patrons have low interest in access and provision of services through social media, then they are most likely to select traditional library service tools rather than social media platforms. However, the provision of requisite resources and support may increase staff and patrons' social media use behaviour. Further, even if academic libraries in Ghana perceive social media as a cutting-edge that needs to be adopted, they may not use it if they feel organisational and technical infrastructures are inadequate, as their use of social media may not only be determined by their perceptions towards the technology, but also by good and adequate technological support.

Facilitating conditions have been applied to understand and explain the use behaviour of emerging technologies in business (e.g. El Ouiridi, El Ouiridi and Pais 2016), health (e.g. Jewer 2018), banking (Abbas et al. 2018b), politics (e.g. Hoffman, Suphan and Meckel 2016), education (e.g. Arif, Ameen and Rafiq 2018) and in libraries (e.g. Moorthy et al. 2018) such that good facilitating conditions will increase users' use behaviour, whilst poor facilitating conditions will decrease the use of technology. Venkatesh et al. (2003) empirically identified facilitating conditions as a direct determinant of use behaviour. Even though this assertion by Venkatesh et al. (2003) has been negated by some researchers (e.g. Bawack and Kamdjoug 2018), a considerable number of researchers, particularly in the context of social media, have recognised a noteworthy influence of facilitating conditions on both behavioural intention (e.g. Engler and Alpar 2018) and use behaviour (Salahshour Rad et al. 2019). As such, this study hypothesised that:

H4: Facilitating conditions have a significant relationship with behavioural intention to use social media in academic libraries in Ghana.

H5: Facilitating conditions have a significant relationship with use behaviour of social media in academic libraries in Ghana.

Behavioural Intention and Use Behaviour of social media

Behavioural intention is considered as an immediate predictor of use behaviour and is perceived as the level of likelihood of an individual to perform the behaviour in question (Tarhini et al. 2016). In other words, behavioural intention proves the readiness of one's intention to carry out a behaviour and is considered as a direct antecedent and main indicator of

the effective use of a technology (Venkatesh et al. 2003). Use behaviour, on the other hand, is theorised to be influenced by behavioural intention and facilitating conditions. It refers to the intensity of the use of an information system (Venkatesh et al. 2003). Thus, in this study, behavioural intention refers to the level of desire to use social media, whilst use behaviour is the degree of actual frequencies of social media use in academic libraries in Ghana. Behavioural intention is a key, but often overlooked, construct in understanding the use of technology. In the UTAUT model, behavioural intention is hypothesised to be influenced by performance expectancy, effort expectancy and social influence. Aside from its essential role in predicting the use behaviour of technology, the relationship between behavioural intention and use behaviour appears to be the least understood variable in user acceptance models (Williams, Rana and Dwivedi 2015). This is because of the paucity of literature on use behaviour in technology acceptance research.

For instance, in their meta-analytical review of empirical findings of studies deploying the UTAUT as theoretical frameworks, Taiwo, Mahmood and Downe (2012) classified the relationship between behavioural intention and use behaviour as minor. This, according to Taiwo, Mahmood and Downe (2012), is because of the inability of many studies deploying the UTAUT in their investigations of acceptance and use of varied technologies to measure actual use of the system. Similarly, in an extensive, systematic and comprehensive review of articles adopting and adapting the UTAUT, Williams, Rana and Dwivedi (2015) submitted that the relationship between behavioural intention and use behaviour was, often, not examined by researchers in their quest to investigate factors affecting the acceptance and use of technology. All the same, there has been considerable evidence to support the causal relationship between behavioural intention and use behaviour in the context of social media use (Salahshour Rad et al. 2019; Humaid and Ibrahim 2019; Salloum et al. 2018; Chua et al. 2018). This study, therefore, hypothesised that:

H6: Behavioural intention has a significant relationship with the use behaviour of social media in academic libraries in Ghana.

Literature review

Generally, performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating

conditions (FC) have been noted as variables that play an important role in understanding the factors influencing acceptance and use of social media, and have successfully been adopted and validated in this context (Park and Lee 2018; Engler and Alpar 2018); Salloum et al. 2018; Salahshour Rad et al. 2019; Humaid and Ibrahim 2019; Mhina, Johar and Alkawaz 2019; etc.). For instance, El Ouiridi, El Ouiridi and Pais (2016) surveyed 244 recruiters from Central and Eastern Europe and found performance expectancy, effort expectancy, facilitating conditions and social influence to have a significant influence on the intention to use and actual use of social media in employee selection. In the political context, Hoffman, Suphan and Meckel (2016) applied the UTAUT to analyse the impact of use motives on politicians' social media adoption in Switzerland. With the structural equation model as a data analysis tool, the study confirmed performance expectancy and behavioural intention as significant influencers of social media use intention and usage behaviour among the politicians.

A study carried out by Yuvaraj (2016), from India, to investigate the adoption of social media in the process of recruiting and selecting library staff and faculty members, supported the hypothesised relationships as outlined in the UTAUT model. Performance expectancy, effort expectancy, social influence and facilitating conditions were reported as facets which significantly triggered the behavioural intention and subsequent use behaviour of recruiters to adopt social media.

In 2017, Berry's doctoral research, submitted to the Nova South-Eastern University, on the intention to use and actual use of social networking websites by senior adults also revealed perceived performance expectancy, effort expectancy and social influence as predictors of behavioural intention towards using a social networking website. Again, a senior adult's opinion on facilitating conditions and their behavioural intention to use a social networking website were found to be predictors of use behaviour. Perversely, interpretations from the data analysed suggested that no established correlations existed between gender and performance expectancy, effort expectancy, or social influence. Likewise, Esteve del Valle et al. (2017) used the UTAUT to explore university level instructors' use of social media in the assessment of factors contributing to the use of social media presently and in the future for teaching. Findings from an analysis of 333 respondents, largely from English speaking countries, show that the UTAUT'S effort expectancy and

performance expectancy were positively associated with social media use, although social influence and facilitating conditions had no influence in relation to an anticipated continuous or in the use of new social media in the future for teaching.

Recently, Humaid and Ibrahim (2019) presented mixed results of the relationships hypothesised in the UTAUT model. According to the study findings, the key constructs, namely, performance expectancy, effort expectancy, social influence and facilitating conditions, revealed the existence of significant positive influence on behavioural intention. However, the results from the moderating variables including age, gender and experience did not exhibit any influence on the path from the key constructs to behavioural intention to use social media.

Equally, in Malaysia, Salahshour Rad et al. (2019) in their attempt to validate a comprehensive model on the intentions of academic researchers to use academic social networking sites, adapted the UTAUT model by introducing additional constructs. As reported in the study findings, all the key constructs of the original UTAUT model, except for effort expectancy, exhibited positive and significant influence on behavioural intention of academic researchers' to adopt academic social networking sites, supporting the supposed relationships defined in the model.

Likewise, in Jordan, Sawalha, Al-Jamal and Abu-Shanab (2019) measured the influence of social networks represented by Facebook on e-government, and reported that performance expectancy, social influence and effort expectancy significantly predicted the continuous use of e-government pages on Facebook by Jordanians. Conversely, in Tanzania, Mhina, Johar and Alkawaz (2019) examined the factors influencing the adoption of social media among government employees with the UTAUT as an underlying theory. The results from a Structural Equation Modelling analysis using a sample of 600 revealed that, overall, the intention to adopt and use social media for work-related purposes is influenced by facilitating conditions and social influence, but not by performance expectancy or effort expectancy.

Furthermore, as indicated in the preceding chapter, studies employing the UTAUT to explain the adoption and use of social media in academic libraries are scanty and even more limited in academic libraries in Ghana. In fact, there seems to be paucity of research on the UTAUT to explain the phenomenon of social media adoption and usage in the context of academic libraries globally. Overall, studies on the application

Table 1. Population, Sample Size, Sampling Technique and Response Rate.

Population Category	Population, Sample Size and Sampling Technique			Total Sample Size	Response Rate
	Total Population	Sampling Technique	Sample size for each stratum		
LIBRARY STAFF	110	Census	110	110	94
LIBRARY PATRONS	31,047	Krejcie and Morgan's published table	379 + 278	657	511
Students (3rd/4th-year)	30,006		$\frac{30,006 \times 379}{30,006} = 379$	379	323
Teaching Staff (Full time)	1,041		$\frac{1,041 \times 278}{1,041} = 278$	278	188
Totals	31,157			767	605

Source: Field Data (2019).

of the UTAUT model in social media within academic libraries have predominantly been a restricted area. Largely, studies deploying the UTAUT as a framework do not examine the relationship between the theory's construct(s) and social media acceptance in this context, but do so when supportive of an argument or to criticise the theory as opposed to utilising it (e.g. Okite-Amugoro 2017).

Again, studies using the UTAUT to investigate social media use behaviour in academic libraries also deploy qualitative analysis, either because of the supposed inability of quantitative analysis to meet the study objective or a sample size which may be regarded as being too small to achieve the appropriate quantitative analysis. For example, in Botswana, a study carried out by Mpoeleng, Totolo and Jibril (2015) employed the use of an online questionnaire and content analysis which were only mapped against the UTAUT to investigate the perceptions, knowledge of and willingness to use Web 2.0, by library professionals, as tools for enhancing library services to patrons. Findings mapped alongside constructs of the UTAUT model, however, disclosed that the rate of adoption and use of social media applications was slowed down by facilitating conditions and social influences, as they positively influenced the library professionals' (who comprised the university librarian and senior management of the library) intention to use social media tools for library related activities.

Research methodology

The study was largely quantitative. Questions used to develop the study questionnaire were adapted from recognised and validated scales of the UTAUT model (Venkatesh et al. 2003). Questions were self-rated on

a five-point Likert scale, and were modified to conform to the study objectives. To ensure the survey's validity, the data collection instrument was pilot tested on 36 participants, conveniently sampled from among academic librarians in Ghanaian academic libraries.

The target population size was 31,157. This comprised of 110 professional and paraprofessional library staff and 31,047 library patrons. The library staff included those staff whose core duties were directly related to library services provision and library social media activities. Library patrons consisted of 1,041 academic teaching staff and 30,006 third- and fourth-year students from the four accredited university academic libraries in Ghana.

A triangulation of the census (for the library staff category), and the published tables approach using the Krejcie and Morgan's published table (see Appendix 1) (for the library patrons) were employed as the methods for selecting the study sample size, which stood at a total of seven hundred and sixty seven (767), comprising 110 library staff and 657 library patrons (379 teaching staff and 278 students). See Table 1.

Further, the stratified sampling technique was applied to obtain the required representative sample proportions from each stratum of the library patrons (teaching staff and students) with the following formula: $SP = \frac{N \times S}{TP}$ Where: SP = sample size for each population strata, N = the population size, S = sample size, and TP = total population for each strata. See Table 1.

Additionally, given that the study respondents were not found in a centralised location, the researchers employed a convenience random selection of respondents.

The same questionnaire items were administered to all categories of respondents and consisted of two sections. The first section requested respondents' demographic information, such as name of institution and respondent category, whilst the second section consisted of measurement statements adapted from the UTAUT model by Venkatesh et al. (2003), to make them relevant to the context of the current research, and were measured on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). See Appendix 2.

Out of the total of 767 questionnaires administered, a relatively high response rate of 78.6% (605) was achieved, this comprised of 94 from the library staff and 511 library patrons (teaching staff 188, students 323). See Table 1. The usable questionnaire data of 605 were analysed using descriptive statistics and the structural equation modelling (SEM) analysis as explained alongside the study results presented in the next section.

Results

Descriptive statistical analysis

To measure respondents' opinions on the influence of performance expectancy, effort expectancy, social influence and facilitating conditions on adoption and use of social media in the academic libraries surveyed, statements adapted from Venkatesh et al. (2003) were self-rated on a five point Likert scale ranging from '1' to '5', where '1=strongly disagree', '2=moderately disagree', '3=moderately agree', '4=agree' and to '5=strongly agree'. For the descriptive analysis, the 'mean values' (\bar{x}) are used to determine respondents' level of agreement or disagreement with a particular statement on each concept. Thus, for instance, a score of '1' indicates that respondents 'strongly disagree' with a statement used to measure a concept, whilst a score of '5' demonstrates that respondents 'strongly agree'. Findings have been presented in Table 2.

Firstly, findings presented show that most of the respondents agreed with the statements on performance expectancy with mean values (\bar{x}) above '4'. This is an indication that a large number of the staff and patrons, in the academic libraries surveyed, either 'agree' and/or 'strongly agree' that the use of social media in their daily transactions will help the provision and delivery of library services and resources, as well as contacting the library. Overall, the extent to which academic libraries surveyed believe that social media will help in the access and provision of library

services was high. Likewise, a large number of the library staff and patrons 'agree' with the statements used to measure effort expectancy, with a mean score (\bar{x}) of 4 and above for all the items on the scale. As a result, it was clear that when effort expectancy of social media services is high, academic libraries in Ghana are more likely to adopt and use them.

Conversely, findings from the responses on statements used to measure social influence and the use of social media depict that most of the respondents do not use or intend to use social media for library services just because they are subjected to the pressures of social interactions. In fact, all the statements used to measure 'social influence' recorded a mean value (\bar{x}) of less than '3', an indication of the respondents' level of disagreement (moderately disagree) with the items on the scale. However, relative to the statements used to measure facilitating conditions, findings from the responses provided reveal that the academic libraries would, largely, not intend to use the library social media platforms when they feel that organisational and technical infrastructures are inadequate, as the mean values (\bar{x}) to all statements were less than '3'.

Furthermore, on the behavioural intention to use social media for the provision and access of library resources and services, analysis of responses shows that, generally, respondents intend to use the library social media for the provision and delivery of library services and resources. Lastly, findings on the actual frequencies of social media use in academic libraries in Ghana, reveal a low level of use of social media for the provision of library services and resources in the academic libraries surveyed. Meanwhile, a high mean score ($\bar{x} = 4.49$, $sd = 0.986$) was recorded for the statements on "it is worthy to use the library social media", indicative of the fact that most of the respondents 'agreed' with the library social media as a commendable tool for provision of library services.

Structural Equation Modelling Analysis

This section puts forward the assessment and testing of the projected research model, using the structural equation modelling (SEM) analysis. The section consists of two main parts. The first part involves the assessment of the measurement model where the model fits and validity are tested. Thereafter, upon satisfactory results of the measurement model, the second step proceeds with the testing of the study hypotheses.

Table 2. Descriptive Statistical Analysis on the Influence of PE, EE, SI and FC on BI and UB of Social Media In Academic Libraries in Ghana.

Constructs	Measurement Statements	Mean(\bar{x})	Standard. Deviation
Performance Expectancy	Social media is/will be useful for providing and accessing library services and resources	4.49	0.948
	Social media will enable/enables faster communication within the library	4.35	1.079
	Social media will improve/improves communication with the library/patrons	4.27	1.081
	Social media will enhance/enhances communication with the library/patrons	4.24	1.119
	If I use social media, communication with the library/patrons is/will be easier	4.31	1.078
Effort Expectancy	I will use/use the library social media, because it is easy to learn how to operate	4.33	0.996
	I will use/use the library social media because I find it easy to use	4.23	1.093
	I will use/use the library social media because interacting with it is clear and understanding	4.21	1.095
	I will use/use the library social media because it is easy to develop the skills required to use such tools	4.18	1.164
Social Influence	I use/will use the library social media because my colleagues think I should use it	2.39	1.156
	My colleagues and friends think I should the library social media	2.44	1.131
	I use/will use the library social media because people who are important to me think I should use them	2.41	1.139
	I use/will use the library social media because people whose opinions I value think I should use them	2.44	1.157
	Using the library social media is considered a status symbol among my colleagues	2.51	1.193
Facilitating conditions	I have the knowledge necessary to use the library social media platforms	2.90	1.410
	I have the resources to use the library social media platforms	2.80	1.388
	Someone is available for assistance if I have difficulty with the library social media	2.68	1.347
	There is available guidance on how to use the library social media platforms	2.36	1.548
Behavioural Intentions	I desire to use the library social media platforms	4.39	1.064
	I expect to use the library social media platforms	3.75	1.587
	I predict to use the library social media platforms	4.46	0.972
	I plan to use the library social media platforms	2.43	1.229
Use Behaviour	It is worthy to use the library social media	4.49	.986
	I actually use the library social media platforms	2.96	1.69
	I will continue using the library social media platforms	3.38	1.19
	I consistently use the library social media platforms	2.36	1.548
	I regularly use the library social media platforms	2.16	1.39

Source: Field Data (2019) Valid N (listwise)=605, Minimum=1, Maximum=5.

Assessment of Measurement Model

The measurement model, as the first stage in the SEM approach, was assessed to determine the extent to which the items used to assess each construct conform to acceptable levels for the measurement model or construct of interest, to satisfy the validity and reliability procedures (Suki and Suki 2017). Hence, the adequacy of the sample, test for validity and reliability, as well as the model fit for the study's measurement model were examined.

Adequacy of sample size

The Kaiser-Meyer-Olkin (KMO) measure of adequacy, and the Barlett Test of Sphericity were used (Johnson and Christensen 2017, p. 170) to assess the suitability of data collected for factor analysis, and the adequacy of the significance level of the measurement items, respectively. As a rule of thumb, KMO correlates the magnitude of partial correlations amongst variables and yields an overall acceptable measure of 0.5 or higher (Cohen,

Table 3. KMO and Bartlett's Test of Sampling Adequacy.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.883
Bartlett's Test of Sphericity	Approx. Chi-Square	9581.938
	df	171
	Sig.	.000

Manion and Morrison 2011, p. 676). From the values obtained in Table 3, the KMO value obtained (0.883) highly exceeded the threshold of 0.5, and the Bartlett's Test of Sphericity was significant (0.000), showing an adequate sample size.

Validity and reliability of measurement model

For content validity the Cronbach's alpha values are computed to examine the extent to which the test content adequately represented the constructs and satisfied the statistical assumptions of the SEM analysis. Although the threshold for Cronbach's alpha is not absolute, the literature suggests that the ideal level of standardisation for extensive evidence of content validity is a Cronbach's alpha value of 0.70, whilst a value of 0.80 or higher provides exemplary evidence (Johnson and Christensen 2017, p. 171; Park et al. 2019). This study, however, interpreted the Cronbach's alpha (α) thresholds using George and Mallery's (2016) description, where $\alpha > 0.9$ is excellent, $\alpha > 0.8$ is good, $\alpha > 0.7$ is acceptable, $\alpha > 0.6$ is questionable, $\alpha > 0.5$ is poor, and $\alpha < 0.5$ is unacceptable. Hence, findings presented in Table 4 show that the content validity in the measurement model has been satisfactorily established, with all measurement model constructs exhibiting a 0.83 or higher Cronbach's alpha value.

For convergent validity, the measurement items serving as indicators of a given construct should have a high proportion of variance in common (commonalities) (Fornell and Larcker 1981, p. 264). For this study, convergent validity is assessed by calculating each construct's item loadings, composite reliability, and the Average Extraction Variance (AVE). In structural equation modelling, standardised loadings for each factor model should be greater than 0.707, with an acceptance level of AVE of 0.5 or higher (Park et al. 2019). The composite reliability (CR) of each construct was also measured with values greater than 0.60 as considered suitable (Bagozzi Yi and Nassen

1988). As demonstrated in Table 4 all item loadings, AVE and composite reliability surpass acceptable thresholds, and are above 0.707 (item loading), 0.5 (AVE) and 0.60 (CR), showing a high proportion of commonality among model constructs, confirming convergent validity.

Measurement model fits

For the measurement model, confirmatory factor analysis (CFA) is carried out to examine the goodness-of-fit (Cohen, Manion and Morrison 2011, p. 674). These included: the Goodness of Fit Index (GFI=>0.90), Normal Fit Index (NFI=>0.90), Relative Fit Index (RFI=0.90), Comparative Fit Index (CFI=>0.90), Tucker Lewis Index (TLI=>0.90), Root Mean Square Error of Approximation (RMSEA=<0.05), Root Mean Square Residual (RMR=<0.02), and CMIN=<5. As presented in Table 5, the values obtained as against the recommended value for each of the model fits computed show an overall acceptable fit for the study's measurement model without the moderators, as well as with the moderators.

Testing of the Study Hypotheses

An SEM analysis was conducted to examine the predictive relationship hypothesised. In this analysis, the predictive or independent variables were relative to performance expectancy, effort expectancy and social influence, whilst the dependent variable corresponded to behavioural intention and use behaviour towards using social media in the academic libraries under investigation. A summary of the results is presented in Table 6.

Hypothesis 1 (H1): PE has a significant relationship with the BI to use social media in academic libraries in Ghana

The results of the SEM analysis were statistically significant ($\beta = 0.410$, $p < 0.000$, $R^2 = 0.420$) for the anticipated relationship between the independent variable and the dependent variable, an indication that, a significant relationship existed between performance expectancy and the academic libraries behavioural intention towards using social media, thereby endorsing H1. This is suggestive that an increase in performance expectancy will cause an increase in the academic libraries' behavioural intentions to use social media for providing

Table 4. AMOS Output for Validity and Reliability for the Measurement Model.

Constructs	Construct Items	No.	Loading	(α)	CR	AVE
Performance Expectancy (PE)	PE1: Social media is/will be useful for providing and accessing library services	5	0.732	0.919	0.887	0.611
	PE2: Social media will enable/enables faster communication within the library		0.766			
	PE3: Social media will improve/improves communication with the library/patrons		0.808			
	PE4: Social media will enhance/enhances communication with the library/patrons		0.833			
	PE5: If I use social media, communication with the library/patrons is/will be easier		0.765			
Effort Expectancy (EE)	EE1: I will use/use the library social media, because it is easy to operate	4	0.775	0.898	0.821	0.604
	EE2: I will use/use the library social media because I find it easy to use		0.772			
	EE3: I will use/use the library social media because interacting with it is clear and understandable		0.785			
	EE4: I will use/use the library social media, because it is easy to develop the skills required to use such tools		0.739			
Social Influence (SI)	SI1: I use/will use the library social media because my colleagues think I should use it	5	0.703	0.929	0.874	0.581
	SI2: My colleagues and friends think I should the library social media		0.810			
	SI3: I use/will use the library social media because people who are important to me think I should use them		0.807			
	SI4: I use/will use the library social media because people whose opinions I value think I should use them		0.769			
	SI5: Using the library social media is considered a status symbol among my colleagues		0.717			
Facilitating Conditions (FC)	FC1: I have the knowledge necessary to use the library social media platforms	4	0.840	0.931	0.903	0.700
	FC2: I have the resources to use the library social media platforms		0.859			
	FC3: Someone is available for assistance if I have difficulty with the library social media		0.838			
	FC4: There is available guidance on how to use the library social media the platforms		0.809			
Behavioural Intentions (BI)	BI1: I desire to use the library social media platforms	4	0.801	0.833	0.878	0.642
	BI2: I expect to use the library social media platforms		0.803			
	BI3: I predict to use the library social media platforms		0.838			
	BI4: I plan to use the library social media platforms		0.762			
Use Behaviour (UB)	UB1: It is worthwhile to use the library social media	5	0.827	0.851	0.911	0.672
	UB2: I actually use the library social media platforms		0.765			
	UB3: I will continue using the library social media platforms		0.793			
	UB4: I consistently use the library social media platforms		0.883			
	UB5: I regularly use the library social media platforms		0.827			

Source: Field Data (2019).

and accessing library services and resources, as well as for contacting the libraries. Further, the R^2 value proposes that about 42.0% of the variance

in behavioural intention towards the use of social media in academic libraries can be explained by performance expectancy.

Hypothesis 2 (H2): EE has a significant relationship with the BI to use social media in academic libraries in Ghana

The results of the SEM analysis were statistically significant ($\beta = 0.263$, $p < 0.000$, $R^2 = 0.260$), thereby sustaining the study's second hypothesis (H2). The hypothesised relationship tested between the independent and the dependent variables suggested a significant relationship between effort expectancy and the academic libraries' behavioural intention towards using social media. This suggests that an increase in effort expectancy will cause an increase towards the academic libraries' behavioural intentions to use social media for providing and accessing library services and resources, as well as for contacting the libraries. The R^2 value advocates that around 26.0% of the variance in behavioural intention towards the

use of social media in academic libraries can be explained by effort expectancy.

Hypothesis 3 (H3): SI has a significant relationship with the BI to use social media in academic libraries in Ghana

The results of the SEM analysis were not statistically significant ($\beta = 0.070$, $p = 1.720$, $R^2 = 0.120$), suggesting that the predictive relationship as outlined in the study's third hypothesis (H3) between the SI and the BI was rejected. This indicates that social influence will not cause any change towards academic libraries' behavioural intentions to use social media for providing and accessing library services and resources, as well as for contacting the libraries. The R^2 value indicates that just 12.0% of the variance in behavioural intention towards the use of social media in academic libraries can be explained by social influence.

Hypothesis 4 (H4): Facilitating conditions have a significant relationship with the behavioural intention to use social media in academic libraries in Ghana

The SEM analysis was statistically significant ($\beta = -0.187$, $p = 0.00$, $R^2 = 0.18$) implying that there was a notable relationship between facilitating conditions and the academic libraries' behavioural intention towards using social media. Thus, H4 was supported, and indicates that an increase in facilitating conditions will cause an increase in the academic libraries' behavioural intentions to use social media for providing and accessing library services and

Table 5. AMOS Output for Fit Statistics of the Measurement Model.

Model Fit Index	Recommended Values	Obtained Values
GFI	>0.90	0.998
CMIN	<5	4.031
NFI	>0.90	0.996
CFI	>0.90	0.999
RFI	>0.90	0.978
TLI	>0.90	0.994
RMSEA	<0.05	0.024
RMR	<0.02	0.012

Note: >-greater than, <-less than.

Table 6. Summary of the extent of influence of construct of UTAUT on behavioural intention and use behaviour of social media in the academic libraries.

Independent variable	Dependent variable	Path	Path Coefficients	P Value	Outcome	R ²	Remarks
Performance Expectancy	Behavioural Intention	PE → BI	0.410	0.000	Significant	0.420	Supported
Effort Expectancy	Behavioural Intention	EE → BI	0.263	0.000	Significant	0.260	Supported
Social Influence	Behavioural Intention	SI → BI	0.070	1.720	Not Significant	0.120	Rejected
Facilitating Conditions	Behavioural Intention	FC → BI	-0.187	0.000	Significant	0.18	Supported
Facilitating Conditions	Use Behavioural Intention	FC → UB	0.024	0.000	Significant	0.20	Supported
Behavioural Intention	Use Behavioural Intention	BI → UB	0.196	0.560	Not Significant	0.020	Rejected

Source: Field Data (2019) Note: Significant level is at $p < 0.05$; $R^2 = .549$.

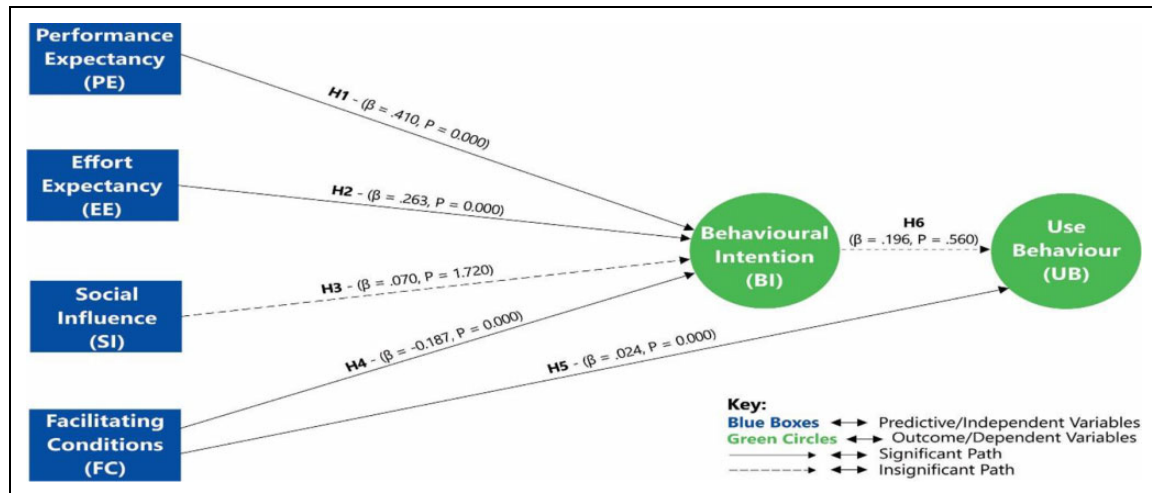


Figure 3. Fit of UTAUT Model Relative to the Study's Hypotheses.

resources, as well as for contacting the libraries. The R^2 value shows that roughly 18.0% of the variance in behavioural intention towards the use of social media in academic libraries can be explained by facilitating conditions.

Hypothesis 5 (H5): Facilitating conditions has a significant relationship with the use behaviour of social media in academic libraries in Ghana

The SEM analysis was statistically significant ($\beta = 0.024$, $p = 0.00$, $R^2 = 0.20$) for the probable relationship between the independent and the dependent variables, suggestive that there was a significant relationship between facilitating conditions and the academic libraries' use behaviour towards social media. This suggests that H5 was supported, and thus, an increase in facilitating conditions will cause an increase in academic libraries' use of social media for providing and accessing library services and resources, as well as for contacting the libraries. The R^2 value proposes that nearly 20.0% of the variance in use behaviour towards the use of social media in academic libraries can be explained by facilitating conditions.

Hypothesis 6 (H6): Behavioural intention has a significant relationship with the use behaviour of social media in academic libraries in Ghana

As shown in table 6, the results of the SEM analysis were statistically not significant ($\beta = 0.196$, $p = 0.560$, $R^2 = 0.020$) for the predictive relationship tested between the predictor variable and the outcome variable, suggesting that there was no significant

relationship between behavioural intention and the academic libraries' use behaviour towards social media. Thus, rejecting the sixth hypothesis (H6). This suggests that behavioural intention will not cause any change towards the academic libraries' use of social media for providing and accessing library services and resources, as well as for contacting the libraries. The R^2 value submits that only 2.0% of the variance in use behaviour towards the use of social media in academic libraries can be explained by behavioural intention.

Fit of UTAUT Model Relative to the Study's Hypotheses

The proposed conceptual framework for this study, as adapted from UTAUT theory, was to measure the factors influencing academic libraries' acceptance and use of social media for the provision and access to library services and resources, as well as for contacting the library. Based on the outcome of the hypothetical structural model and the results from hypotheses testing, all predictive factors, except for social influence, significantly influence the behavioural intention to use social media in academic libraries in Ghana. However, the behavioural intention to use social media was not a significant predictor of actual social media use in the academic libraries (see Figure 3).

Discussion

The findings of the study are discussed, based on the UTAUT's constructs that were used to inform the conduct of the study.

Influence of performance expectancy on the adoption and use of social media

The descriptive statistics of all five statements relative to performance expectancy, as well as the output of the SEM analysis, suggests that academic libraries in Ghana are more likely to use the library social media, believing that adopting and using such platforms will enhance the provision of and access to library resources and services, as well as contacting the library. Thus, the behavioural intention to use social media in academic libraries in Ghana will be influenced by its usefulness for library services provision and access, as well as its ability to provide faster, improved, enhanced and easier library communication. This finding is in concurrence with prior studies that have reported positive and significant relationships between performance expectancy and the intention to use diverse technologies in general (e.g. Moorthy et al. 2018; Chen and Hwang 2019) and social media in particular (e.g. Engler and Alpar 2018; Nawi et al. 2019). Indeed, Salahshour Rad et al. (2019) affirm this position when they emphatically indicated that performance expectancy remains the most significant and pertinent predictor of behavioural intention to use technology. Consequently, good performance expectancy is increasingly becoming a critical influencer of the intention to use a given technology, such as social media, since performance is expected to affect the decision of adoption positively.

Influence of effort expectancy on the adoption and use of social media

This study has demonstrated that academic libraries will be more likely to use the social media for providing and accessing the library resources and services, as well as for contacting the libraries, when the use of such platforms is perceived not to be difficult and require less effort to use. Although this finding is parallel with the results of earlier studies that have examined the influence of the path from effort expectancy on behavioural intention (EE-BI) to use social media (Salloum et al. 2018) and other related technologies (Chen and Hwang 2019), and contended that the intention to accept a given innovation is influenced by the degree of ease associated with the use of such innovation, they are inconsistent with those of Al-Azawei (2018); Naranjo-Zolotov, Oliveira and Casteleyn (2019); and Raza, Shah and Ali (2019); among others, who testified that the effort in using

technology was not predictive of the intention to use technology.

Influence of social influence on the adoption and use of social media

The non-significant relationship of social influence on behavioural intention obtained from this study indicates that the opinions of colleagues, friends and important others will not influence Ghanaian academic libraries' views regarding the intention to use social media for provision and access to library services and resources, as well as for contacting the libraries. So, library staff and library patrons of academic libraries in Ghana are not more likely to adopt or intend to think positively about the use of social media in the libraries, just because persons in their social cycle suggested the use of such platforms. A possible explanation of the non-significance of social influence in this study is that, although this variable was introduced in the UTAUT for the organisational context, where a given technology is widely used and, hence, becomes a norm (Venkatesh et al. 2003), the use of social media cannot yet be considered as a norm in the academic libraries surveyed, since the use of such platforms is voluntary and not yet widely acknowledged. As the literature alludes, when the use of a technology is perceived as voluntary, social influence is less significant (Venkatesh et al. 2003). Generally, the outcome of the impact of social influence on the intention to use social media is predominately negated in the literature (Naranjo-Zolotov, Oliveira and Casteleyn 2019; Raza, Shah and Ali 2019), although, some studies (e.g. Mhina, Johar and Alkawaz 2019) claim that pressure from colleagues and supervisors has positive influence on an individual's decision to either accept or reject the use of social media.

Influence of facilitating conditions on the adoption and use of social media

Apart from the relationship between facilitating conditions and use behaviour (FC→UB) as hypothesised in the UTAUT, this study further investigated the influence of the path from facilitating conditions to behavioural intention (FC→BI) to use social media in academic libraries in Ghana. The weighted mean values (\bar{x}) relative to measure facilitating conditions from the descriptive statistics were all above '4', providing strong proof to confirm the causal path between facilitating conditions and behavioural intention (FC→BI)

and use behaviour (FC→BI) with p-values <0.05. This reveals that respondents have a keen interest in the existence of facilities, resources, skills and guidance that are required to use social media for providing and accessing library services and resources. Certainly, for libraries that are catching up with the use of social media, such facilities are central to have effective, efficient and easy usage of such platforms for its intended purposes. As Salloum et al. (2018) write, the use behaviour of social media is predominantly faster among individuals who are offered a helping hand and equipped with the required resources and necessities essential for using such a system. Results of facilitating conditions coincide with findings of prior studies that have examined the impact of facilitating conditions on the intention to use (e.g. Engler and Alpar 2018) and actual use (Chua et al. 2018; Salahshour Rad et al. 2019; Humaid and Ibrahim 2019) of social media. Findings of the study are also like Al-Azawei (2018) who reported the importance of facilitating conditions in actual Facebook use in the context of Iraq. That notwithstanding, some studies also illustrate that facilitating conditions did not have any significant influence on behavioural intention or use behaviour (e.g. Nawi et al. 2019; Mhina, Johar and Alkawaz 2019; Salahshour Rad et al. 2019) of social media.

Influence of behavioural intention on the use of social media

Findings on statements used to measure the behavioural intention (BI) and use behaviour (UB) of social media in academic libraries surveyed is suggestive that even though the majority of the respondents thought social media use in the library is a worthy option (m=4.49), and as such desire (m=4.39) and predict (m=4.46) to use such platforms for providing and accessing library services, as well as for contacting the libraries, the actual use (UB) of such platforms was relatively low (2.96). This explains why the SEM analysis established a non-significant relationship between behavioural intention and use behaviour (BI→UB), regardless of the assertion in the literature (Ukut and Krairit 2019; Raza, Shah and Ali 2019; Sobti 2019; Sivathanu 2019) that behavioural intention leads to the usage of technology. This finding, however, supports studies that have argued that the influence of behavioural intention on use behaviour is non-salient (e.g. Attuquayefio and Addo 2014).

Conclusion

Social media are becoming so prevalent that they now dominate the daily personal and professional lives of individuals around the globe (Mabwezara and Zinn 2016). This popularity has affected the operations and activities of service providers, such as academic libraries, and is gradually becoming an indispensable tool in the work of the library professional, given its potential to increase users' awareness of academic libraries and their services, resources, activities, events and new arrivals, among others. Indeed, the adoption and use of social media is a modern-day phenomenon for an academic library, facilitated by advancement in technology. As such, drawing upon the Unified Theory of Acceptance and Use of Technology (UTAUT) theory, this study employed structural equation modelling (SEM) analysis to examine the factors influencing the adoption and use of social media in academic libraries in Ghana.

Theoretical implications of the study

This study makes several contributions to theory. It provides some evidence of the application of the UTAUT theory in the context of social media acceptance in academic libraries in Ghana. To the best of the researcher's knowledge, this is an early attempt towards a holistic approach to consider the significance of the UTAUT in the assessment of the factors influencing the adoption and use of social media in academic libraries in Ghana. Another significant theoretical implication of this study is that the original Venkatesh et al. (2003) model rejected a relationship between facilitating conditions and behavioural intention to use technology. The current research, however, highlights a significant theoretical contribution to existing literature by identifying significant positive relationships between facilitating conditions and the behavioural intentions to use social media in the context of academic libraries. In this regard, this study expands the current literature by providing empirical evidence of the important role of facilitating conditions in the behavioural intention of social media in the context of academic libraries' service delivery.

Recommendations for academic libraries

Based on the current research, three factors should be simultaneously considered as influencing the use of social media in academic libraries in Ghana. The

results from the structural equation model analysis indicate that the intention to use and subsequent use of social media for the provision and access to library resources and services, as well as for contacting the libraries, could be affected by performance expectancy, effort expectancy and facilitating conditions. Accordingly, academic libraries should not only consider strategies relative to social media best standards and practices, but also address these factors from a technical perspective, and focus on improving them to obtain a complete picture of the strategies required to optimise social media use in the libraries.

Following the findings on performance expectancy, academic libraries in Ghana should emphasise the usefulness of social media in the provision and access to library services, as well as for contacting the libraries, relative to their value-added benefits, such as improved performance, and quick and easy access anywhere and anytime, especially during awareness creation programmes. Doing so may capture patrons' attention and library staff's interest, thereby reinforcing the adoption of social media.

Secondly, given that social media ease of use (effort expectancy) is another driver of behavioural intention, academic libraries should emphasise the user friendliness of their social media platforms. When the interface is simple, clear, easy to process, easily accessible, with less mental effort required, the complexity and confusion in relation to the use of social media tools in providing and accessing library services will be mitigated. The academic libraries can achieve this through the provision of simple guidelines on how to use the library social media, to encourage and stimulate the behavioural intention to adopt and use such platforms.


Further, the findings on facilitating conditions reveal that the academic libraries were lacking, to some extent, in the resources necessary for effective use of social media. As facilitating conditions influence both use intentions and actual use of the libraries' social media platforms, academic libraries in Ghana are encouraged to keep a facilitating environment around social media. One practical method is for academic libraries to offer step-by-step guidance and tutorials, perhaps a video on the library webpage, or on YouTube, and downloadable online manuals on how to successfully use social media for library services and related activities. Indeed, with proper support and guidance, both the library staff and library patrons will be more receptive to use the academic libraries social media platforms in providing and

accessing library services and resources, as well as for contacting the libraries.

Recommendations for further research

Despite the theoretical and practical contributions of the study, it is important to acknowledge the study limitations, which can be considered for future studies. The first limitation is concerned with the generalisability of the study findings. Since this study focuses specifically on academic libraries, there are concerns regarding the applicability of the results to other library segments, such as college libraries. Again, findings from this study were based on survey data collected exclusively from academic libraries in Ghana, therefore the generalisability of the findings to other academic libraries in other country settings may have limitations. To have a better explanation on the factors contributing to the adoption and use of social media in different libraries across different nations, it would be interesting to extend this study to a wider geographical scope or to carry out a cross-country comparative study to overcome this limitation. In addition, this research was largely quantitative. Future research can be improved by including both quantitative and qualitative research approaches, to exploring any other important constructs that fit in the context and can explain adoption in further detail.

ORCID iD

Monica Mensah  <https://orcid.org/0000-0002-1997-6578>

References

- Abbas SK, Hassan HA, Iftikhar S and Waris A (2018)b) Assimilation of TTF and UTAUT for mobile banking usage. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3170641.
- Abok VA and Kwanya T (2016) Maximising the potential of social media to deliver academic library services to students: a case study of the Technical University of Kenya Library. *Inkanyiso: Journal of Humanities and Social Sciences*, 8((2): 147–155.
- Adewoyin OO, Onuoha UD and Ikonne CN (2017) Social media use and service delivery by librarians in federal universities in south-west, Nigeria. https://scholar.google.com/scholar?hl=en&andas_sdt=0%2C5&andq=Social+media+use+and+service+delivery+by+librarians+in+federal+universities+in+south-west%2C+Nigeria&btnG (Accessed 15 March 2018).
- Al-Awadhi S and Al-Daihani SM (2019) Marketing academic library information services using social media. *Library Management*, 40(3/4): 228–239.

- Al-Azawei A (2018) Predicting the adoption of social media: An integrated model and empirical study on Facebook usage. *Interdisciplinary Journal of Information, Knowledge, and Management*, 13: 233–258.
- Arif M, Ameen K and Rafiq M (2018) Factors affecting student use of Web-based services: application of UTAUT in the Pakistani context. *The Electronic Library*, 36(3): 518–534.
- Attuquayefio S and Addo H (2014) Review of studies with UTAUT as conceptual framework. *European Scientific Journal*, 10(8): 249–258.
- Babbie ER (2013) *The practice of social research*. Canada: Wadsworth, Cengage Learning.
- Bagozzi RP, Yi Y and Nassen KD (1998) Representation of measurement error in marketing variables: review of approaches and extension to three-facet designs. *Journal of Econometrics*, 89(1-2): 393–421.
- Bawack RE and Kamdjoug JRK (2018) Adequacy of UTAUT in clinician adoption of health information systems in developing countries: the case of Cameroon. *International Journal of Medical Informatics*, 109(15-22).
- Berry AM (2017) Behavioural intention and use behavior of social networking websites among senior adults. https://nsuworks.nova.edu/gscis_etd/1025/ (Accessed 25 April 2018)).
- Chen PY and Hwang GJ (2019) An empirical examination of the effect of self-regulation and the Unified Theory of Acceptance and Use of Technology (UTAUT) factors on the online learning behavioural intention of college students. *Asia Pacific Journal of Education*, 1–17. <https://doi.org/10.1080/02188791.2019.1575184> (Accessed 02 January 2019)).
- Chua PY, Rezaei S, Gu ML, Oh Y and Jambulingam M (2018) Elucidating social networking apps decisions: performance expectancy, effort expectancy and social influence. *Nankai Business Review International*, 9(2): 118–142.
- Cohen L, Manion L and Morrison K (2011) *Research methods in education*. UK: Routledge.
- Deodato J (2018) Overhyped fad or missed opportunity? A history of academic libraries and the social web. *Journal of Web Librarianship*, 12(1): 1–27.
- El-Masri M and Tarhini A (2017) Factors affecting the adoption of e-learning systems in Qatar and USA: extending the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). *Educational Technology Research and Development*, 65(3): 43–763.
- El Ouiridi M, El Ouiridi A, Segers J and Pais I (2016) Technology adoption in employee recruitment: the case of social media in Central and Eastern Europe. *Computers in Human Behavior*, 57: 240–249.
- Engler TH and Alpar P (2018) Contribution and consumption of content in enterprise social media. *Information Systems Management*, 35(1): 2–14.
- Enis M (2017) Social media is an important communications channel for libraries. Experts discuss how to do it right. *Library Journal*, 142(14): 38–40.
- Esteve Del Valle M, Gruzd A, Haythornthwaite C, Paulin D and Gilbert S (2017) Social media in educational practice: faculty present and future use of social media in teaching. <http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1018&context=hicss-50> (Accessed 13 December 2018)).
- Fornell C and Larcker DF (1981) Structural equation models with unobservable variables and measurement error: algebra and statistics. https://scholar.google.com/scholar?hl=en&and_sdt=0%2C5&andq=Structural+equation+models+with+unobservable+variables+and+measurement+error%3A+Algebra+and+statistics&btnG (Accessed 28 May 2018)).
- Gan C, Li H and Liu Y (2017) Understanding mobile learning adoption in higher education: an empirical investigation in the context of the mobile library. *The Electronic Library*, 35(5): 846–860.
- George D and Mallery P (2016) *SPSS for Windows step by step: a simple guide and reference, 11.0 update*. 14th edition. Boston, MA: Allyn and Bacon.
- Harrison A, Burrell R, Velasquez S and Schreiner L (2017) Social media use in academic libraries: a phenomenological study. *The Journal of Academic Librarianship*, 43(3): 248–256.
- Hoffmann CP, Suphan A and Meckel M (2016) The impact of use motives on politicians social media adoption. *Journal of Information Technology and Politics*, 13(3): 239–256.
- Howard HA, Huber SE, Moore EA and Carter L (2018) Academic libraries on social media: finding the students and the information they want. Libraries faculty and staff scholarship and research. Paper 194. <http://dx.doi.org/https://doi.org/10.6017/ital.v37i1.10160> (Accessed 5 February 2018)).
- Humaid AB and Ibrahim YM (2019) The examination of factors influencing Saudi small businesses: social media adoption by using UTAUT Model. *International Journal of Business Administration*, 10(2): 96–114.
- Isaias P, Reis F, Coutinho C and Lencastre JA (2017) Empathic technologies for distance/mobile learning: an empirical research based on the unified theory of acceptance and use of technology (UTAUT). *Interactive Technology and Smart Education*, 14(2): 159–180.
- Jacob DW and Darmawan I (2019) Extending the UTAUT model to understand the citizens acceptance and use of electronic government in developing country a structural equation modeling approach. https://scholar.google.com/scholar?hl=en&and_sdt=0%2C5&andq=Extending+the+UTAUT+Model+to+Understand+the+Citizens%E2%80%99+Acceptance+and+Use+of+Electronic+Government+in+Developing+Country&btnG (Accessed 15 April 2019)).

- Jewer J (2018) Patient's intention to use online postings of ED wait times: a modified UTAUT model. *International Journal of Medical Informatics*, 112: 34–39.
- Johnson BR and Christensen L (2017) *Educational research: quantitative, qualitative and mixed methods approaches*. 6th edition. UK: Sage Publishing.
- Jones MJ and Harvey M (2019) Library 2.0: The effectiveness of social media as a marketing tool for libraries in educational institutions. *Journal of Librarianship and Information Science*, 51(1): 3–19.
- Karikari S, Osei-Frimpong K and Owusu-Frimpong N (2017) Evaluating individual level antecedents and consequences of social media use in Ghana. *Technological Forecasting and Social Change*, 123: 68–79.
- Mabweazara R and Zinn S (2016) Assessing the appropriation of social media by academic librarians in South Africa and Zimbabwe. *South African Journal of Libraries and Information Science*, 82(1). http://journals.co.za/docserver/fulltext/liasa/82/1/liasa_v82_n1_a2.pdf?expires=1530293232&id=idandacname=guestandchecksum (Accessed 20 February (2017)).
- Mhina JRA, Md Johar MG and Alkawaz MH (2019) The influence of perceived confidentiality risks and attitude on Tanzania government employees' intention to adopt Web 2.0 and social media for work-related purposes. *International Journal of Public Administration*, 42(7): 558–571.
- Moorthy K, Chun-Ting L, Ming KS, Ping CC, Ping LY, Joe LQ and Jie WY (2018) Behavioral intention to adopt digital library by the undergraduates. *International Information and Library Review*, 0(0): 1–17.
- Mpoeleng D, Totolo A and Jibril L (2015) Perceptions of University of Botswana librarians on the potential of Web 2.0 tools. <http://library.ifla.org/id/eprint/1967> (Accessed 8 February 2018)).
- Naranjo-Zolotov M, Oliveira T and Casteleyn S (2019) Citizens' intention to use and recommend e-participation: drawing upon UTAUT and citizen empowerment. *Information Technology and People*, 32(2): 364–386.
- Nawi NBC, Mamun AA, Nasir NABM, Shokery NMBAH, Raston NBA and Fazal SA (2019) Acceptance and usage of social media as a platform among student entrepreneurs. *Journal of Small Business and Enterprise Development*, 24(2): 375–393.
- Okite-Amughoro FA (2017) *The effectiveness of web 2.0 in marketing academic library services in Nigerian universities: a case study of selected universities in South-south Nigeria* (Doctoral dissertation). <http://ukzn-dspace.ukzn.ac.za/handle/10413/14346> (Accessed May 2018)).
- Okuonghae OCLN, Achugbue E and Ogbomo MO (2018) Librarians' use of social media for informal scientific communication in university libraries in South-south Nigeria. *Library Philosophy and Practice (e-journal)*, 1–19. https://scholar.google.com/scholar?hl=en&andas_sdt=0%2C5&dq=Librarians%27+Use+of+Social+Media+for+Informal+Scientific+Communication+in+University+Libraries+in+South+south+Nigeria+Library+Philosophy+and+Practice%2C&btnG (Accessed 02 January 2019)).
- Palau-Saumell R, Forgas-Coll S, Sánchez-García J and Robres E (2019) User acceptance of mobile apps for restaurants: an expanded and extended UTAUT-2. *Sustainability*, 11(4): 1210.
- Park C, Kim DG, Cho S and Han HJ (2019) Adoption of multimedia technology for learning and gender difference. *Computers in Human Behavior*, 92: 288–296.
- Park H and Lee T (2018) Adoption of e-government applications for public health risk communication: government trust and social media competence as primary drivers. *Journal of Health Communication*, 23(8): 712–723.
- Peacemaker B, Robinson S and Hurst EJ (2016) Connecting best practices in public relations to social media strategies for academic libraries. *College and Undergraduate Libraries*, 23(1): 101–108.
- Raza SA, Shah N and Ali M (2019) Acceptance of mobile banking in Islamic banks: evidence from modified UTAUT model. *Journal of Islamic Marketing*, 10(1): 357–376.
- Salahshour Rad M, Nilashi M, Mohamed Dahlan H and Ibrahim O (2019) Academic researchers' behavioural intention to use academic social networking sites: a case of Malaysian research universities. *Information Development*, 35(2): 245–261.
- Salloum SA, Maqableh W, Mhamdi C, Al Kurdi B and Shaalan K (2018) Studying the social media adoption by university students in the United Arab Emirates. *International Journal of Information Technology and Language Studies*, 2(3): 83–95.
- Sawalha S, Al-Jamal M and Abu-Shanab E (2019) The influence of utilising Facebook on e-government adoption. *Electronic Government*, 15(1): 1–20.
- Shah GJ and Khan KM (2019) Use of social media tools by the academic libraries in Northern India: a study. *International Journal of Information Dissemination and Technology*, 9(1): 29–35.
- Sivathanu B (2019) Adoption of digital payment systems in the era of demonetization in India: an empirical study. *Journal of Science and Technology Policy Management*, 10(1): 143–171.
- Sobti N (2019) Impact of demonetization on diffusion of mobile payment service in India: antecedents of behavioral intention and adoption using extended UTAUT model. *Journal of Advances in Management Research*. <https://doi.org/10.1108/JAMR-09-2018-0086> (Accessed 11 January 2019)).
- Suki NM and Suki NM (2017) Determining students' behavioural intention to use animation and storytelling applying the UTAUT model: the moderating roles of

- gender and experience level. *The International Journal of Management Education*, 15(3): 528–538.
- Taiwo AA, Mahmood AK and Downe AG (2012) User acceptance of e-Government: integrating risk and trust dimensions with UTAUT model. In *Computer and Information Science (ICCIS), 2012 International Conference* (1:109-113).
- Tarhini A, El-Masri M, Ali M and Serrano A (2016) Extending the UTAUT model to understand the customers' acceptance and use of internet banking in Lebanon: a structural equation modeling approach. *Information Technology and People*, 29(4): 830–849.
- Ukut IIT and Krairit D (2019) Justifying students' performance: a comparative study of both ICT students' and instructors' perspective. *Interactive Technology and Smart Education*, 16(1): 18–35.
- Venkatesh V, Morris MG, Davis GB and Davis FD (2003) User acceptance of information technology: toward a unified view. *MIS Quarterly*, 27(3): 425–478.
- Venkatesh V, Thong JY and Xu X (2012) Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1): 157–178.
- Yuvaraj M (2016) Adoption of technology in recruitment of library professionals and faculty members: case study of social media in India. *The Bottom Line*, 29(4): 241–250.

About the authors

Monica Mensah is currently the Head of Cataloguing and Classification Department at the Balme Library, University of Ghana. She holds a Doctor of Philosophy Degree in Information Science. Her research areas include: information management, digital asset Management, and modern trends in librarianship. Dr Mensah can be contacted via: monimams@gmail.com

Omwoyo Bosire Onyanacha is a research professor at the Department of Information Science, University of South Africa. Prof Onyanacha was the Head of the Department of Information Science, University of South Africa, from July 2011) to September 2015). He holds a PhD in Library and Information Science. Prof Onyanacha is a C2 NRF-rated researcher. His areas of research interest includes informetrics, scientometrics, altmetrics, information resource management (IRM), management of information services, knowledge management and organisation, user education, ICTs in LIS education and training, and information searching and retrieval (ISR) (see https://www.researchgate.net/profile/Omwoyo_Onyanacha/contributions)

Appendix I. Krejcie and Morgan's Table for Determining Sample Size from a Given Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size; "S" is sample size. Source: Krejcie, and Morgan (1970)

Appendix 2: Questionnaire Survey

Dear Respondent

You are kindly being invited to participate in this study by answering the following questionnaire. Please answer questions by ticking (✓) next to your preferred answer. The questionnaire contains two sections, which will take about 5-10 minutes to complete. I assure you of the anonymity and confidentiality of all your responses. Thank you very much for taking time out of your busy schedule to complete this questionnaire.

Section A: Background information

Please indicate your University affiliation . . .

Please select your status

Library staff

Teaching staff

student

If your choice in question 2 above is student, please indicate your level

Level 300

Level 400

Section B: Factors influencing acceptance and use of social media

On a scale of 1-5 where 1=Strongly Disagree, 2=Moderately Disagree, 3=Moderately Agree, 4=Agree,

and 5=Strongly Agree, please answer the following questions by indicating the appropriate response that reflects your level of agreement with the statements provided in relation to the adoption and use of social media for the provision of library services and resources, as well as for contacting the library.

Statements	Scale				
	1	2	3	4	5
Performance Expectancy					
Social media is/will be useful for providing and accessing library services and resources					
Social media will enable/enables faster communication within the library					
Social media will improve/improves communication with the library/patrons					
Social media will enhance/enhances communication with the library/patrons					
If I use social media, communication with the library/patrons is/will be easier					
16. Effort Expectancy					
I will use/use the library social media because it is easy to learn how to operate					
I will use/use the library social media because I find it easy to use					
I will use/use the library social media because interacting with it is clear and understanding					
I will use/use the library social media because it is easy to develop the skills required to use such tools					
Social Influence					
I use/will use the library social media because my colleagues think I should use it					
My colleagues and friends think I should the library social media					
I use/will use the library social media because people who are important to me think I should use them					
I use/will use the library social media because people whose opinions I value think I should use them					
Using the library social media is considered a status symbol among my colleagues					
I use/will use the library social media because my colleagues think I should use it					
Facilitating Conditions					
I have the knowledge necessary to use the library social media platforms					
I have the resources to use the library social media platforms					
Someone is available for assistance if I have difficulty with the library social media					
There is available guidance on how to use the library social media the platforms					
19. Behavioural Intention					
I desire to use the library social media platforms					
I expect to use the library social media platforms					
I predict to use the library social media platforms					
Use Behaviour					
It is worthwhile to use the library social media					
I actually use the library social media platforms					
I will continue using the library social media platforms					
I consistently use the library social media platforms					
I regularly use the library social media platforms					