Summer 12-13-2019

Use of Mobile Phones in Scholarly Publications: A Review of the Emerging Behaviour of the 21st Century Scholars

Sudhier K G Pillai Dr.
Central University of Tamil Nadu, kgsudhier@gmail.com

Use of Mobile Phones in Scholarly Publications: A Review of the Emerging Behavior of the 21st Century Scholars

Murtala Ismail Adakawa CLN
University Library
Bayero University, Kano
miadakawa13@gmail.com

Kabiru Danladi Garba CLN
University Librarian
Skyline University Nigeria
head.library@sun.edu.ng

&

Dr. K.G. Sudhier Ph.D
Assistant Professor
Dept. of Library and Information Science
School of Communication
Central University of Tamil Nadu
Kangalanchery Post, Tiruvarur-610 005
kgsudhier@cutn.ac.in

Abstract
Scholars engage in intellectual enquiries which is why they are considered to be the cornerstones of any research geared towards solving societal problems or testing phenomena. This makes their research outputs needed to be readily available for public consumption. For quite long, scholars are rated based on the number of scholarly contributions they make. While mobile phone has diffused, adopted and used as part of our everyday life, researchers neglected the dimensions of attitudes of scholars for adopting and use of mobile phone technology in the course of their scholarly communication. The components of attitudes of scholars for adopting and the use of technologies depend solely on their strengths, accessibility and ambivalence. The paper examines the emerging behavior of the 21st century scholars in the digital age in using tools like Facebook, Tweeter, blog, social networking sites, etc. for accessing and using information. The paper is largely informed by consulting different literature and focusing on contemporary issues to support its claims. Technology advancement, globalization and its penetration into scholarly community clearly indicate how scholars should adopt the technology for increased content globally. Alternatively, the paper argued that, despite the potentialities of these online platforms the same cannot be said about Nigeria as many factors hinder the possibilities for harnessing these benefits. The study concluded that, unless the national bibliography is metamorphosed, the Nigeria's scholarly contents will be less visible and competition with scholarly global environment would be a challenge.
Key words: Scholars, Scholarly publications, emerging behavior, mobile phones

1. Introduction

Mobile phones are ubiquitous, necessity and as such adopted globally (Buhi, *et al.*, 2013). More than 70% (U.S. Census Bureau, (2011) to 73% (IHS iSuppli Market Intelligence, 2011) of the world population use mobile phones with the Europe as the highest 57.4% followed by Asia 48% (IHS iSuppli Market Intelligence, 2011) and US 6.4% (Portio. Mobile factbook, 2011; CTIA, Wireless quick facts, 2011) and it has been projected that, by 2021, 6.3 billion subscriptions would be available (Ericsson, 2016). This makes digital publishing on the rise (Martin, 2018). For instance, there are over 90 million people using e-books and more than 20 million readers of e-magazines which challenges the publishing and scholars to keep up to the audiences (Martin, 2018). Not being bound by traditional page-length restrictions is an advantage to writing for an online journal (Castells, et al., Fernandez-Ardevol, Qiu, & Sey, 2007). While mobile phones have diffused and adopted, the rate of adoption differs from geographical locations, culture and individual and depends, according to Castells, Fernandez-Ardevol, Qiu, and Sey, (2007) on socio-cultural, governmental, economic, industrial, and policy-related factors which have been the major reasons for this variation. The logarithmic growth in the use of these devices (Lehr & McKnight, 2007) opened up doors for social interaction (Abraham, Pocheptsova, & Ferraro, 2014) especially in densely populated communities like scholarly community. This has affected the information seeking behavior among scholars (Tenopir et al., 2009).

It has been observed that, the technologies that disappear by intertwining themselves into the fabric of everyday life thereby becoming indistinguishable from it are the most profound (Weiser, n.d.). That is why Rushkoff (2012) noted that … *computers and networks are more than mere tools: they are living beings themselves.* To support the above assertion, Elstad, (2016) noted that, change in today's world is fueled by a great technology-driven process. It is evident that, ICT is transforming many day-to-day activities and replacing manual labor to the machines (Wajcman, 2008). This makes it possible for those with the knowhow to spend little time to master new computer programs and new technological solutions (Cuban, 2009). This has also repositioned highly educated scholars to the better gratifications (Heckman, Stixrud & Urzua, 2006). Digital technology has provided quicker access to information (Saxena & Yadav, 2013) where work-related tasks are performed without the need to stay close to a wired information system infrastructure (Gebauer,& Schober, 2006) and the use of Internet enabled phones has been a 21st century phenomenon that spreads for different purposes and functions (Ezemenaka, 2013; Oloruntoba, Jumoke & Blessing, 2015).

Mobile phones have features and capabilities that people use them for internet surfing, reading books and interacting with friends to the extent only a lesser number of people need a computer to collect or share information (Saxena & Yadav, 2013). Since publication is self-representation which requires good writing (Luey, 2010); serves as a badge of sorts, a means of identifying scholars in a particular discipline and their depth of knowledge base; it has become a commonplace as observed by Bodomo, Lam and Lee, (2003) that, the 21st Century does no longer confine to writing or reading print books but a combination of digitized texts encompassing e-books, e-journals, etc with increased accessibility. This presupposes that scholarly publications in electronic format could be used by the majority of the audience. To buttress this further, the world is increasingly becoming multimodal due to the ever growing of new technologies (Okeke, Adu, Rembe, Duku, Maphosa, Drake, Shumba, & Sotuku, 2014) and that, researchers argue that these technologies shape what it means to be literate

in the 21st century as it continues to impact on how information is communicated and exchanged. Even though these new information technologies have totally changed the needs and expectations of the users (Khan, 2013), it has also equally created a big challenge for the scholars especially on how to make their research contributions into public domain electronically.

In an attempt to understand how people react, behave and respond to new innovation and technologies alike, a lot of theories have been used to investigate different phenomena relating to the use of technology in information systems and other related disciplines, one of such is the Technology Acceptance Model (TAM). In the same vein, TAM has received prominence in investigating technology-related phenomena, especially in developing nations. But there is no or very little research has been devoted to the understanding of components and dimensions of attitudes such as strength, accessibility and ambivalence of scholars in adopting the mobile phone technology for scholarly publications. Therefore, there is the need to conduct research on this issue and TAM is found to be relevant in this write up.

To achieve the objectives of this article, the paper is divided into the following:

1. Emerging Behavior of the 21st Century Scholars
2. Expectations of the 21st Century Scholars
3. Challenges Facing 21st Century Scholars

The concept of scholar has attracted considerable debate among scholars themselves. However, a scholar has a sharp focus that delimits the area of inquiry in which he (or she) works. In response to the lack of agreed definition of the word "scholar", Tolk (2012), was able to identify some characteristics of a scholar which encompass disposition, immersion, authority, persistence among others. It is of relevance to acknowledge that, scholars have their own culture. According to Marchant (n.d, p6), a research culture is a "*system of widely shared and strongly held values*" which necessitates communication of scholarly output. Research culture is the structure that gives (research behavior) significance and that allows us to understand and evaluate the research activity (Hanover Research, 2014); culture of research provides a supportive context in which research is uniformly expected, discussed, produced and valued (Cheetham, 2007, p5); where "institutions and units that have traditionally emphasized effective faculty contact with students as a criterion for success are looking to develop cultures of research and increase faculty research production" (Youn & Price, 2009, p205). Dundar and Darrell (1998) observed that, "research productivity of [research institutions] was highly related to their favorable reputation". Also, research productivity is important for the hiring and promotion of individual faculty members, even at traditional teaching institutions (Youn & Price, 2009, p205). Similarly, Fairweather (2002) reiterated that, a faculty survey on productivity showed that, respondents indicated that, what matters to them most is research and publications.

2. Theoretical Framework

The theoretical framework underpinning this study is Technology Acceptance Model (TAM). Technology Acceptance Model (TAM) has been widely used with the aim of seeking constant improvements, identifying intrinsic and extrinsic factors involved in decision, intentions, and satisfaction of users with respect to accepting newer technologies (Venkatesh, Morris & Davis, 2003; Silva, 2005; Silva, 2015). TAM is an applied model of attitude (Davis, 1989; Jain, 2014) where the intention to use a technology is influenced by the attitude towards that technology and

perception of its usefulness. Therefore, the technology acceptance model (TAM), according to Davis (1989), is an information systems theory that models how and why users come to accept and use technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably:

- ➢ Perceived usefulness (PU) – This was defined by Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance".
- ➢ Perceived ease-of-use (PEOU) – Davis defined this as "the degree to which a person believes that using a particular system would be free from effort".

Davis's technology acceptance model (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989) received wider recognition for users' acceptance, usage or rejection of technology (Davis, Bagozzi & Warshaw, 1989; Venkatesh, 2000). As argued by Davis (2006), the importance should be given not only to the technical eye rather should encompass the behavior of those using it. Attitude plays a special role in an individual's behavior concerning the PU or PEOU of a technology. It is in this regard that, the current paper focuses on dimensions and components of attitudes of scholars for using or otherwise of mobile phone technology for scholarly publications. These variables are used to guide this research activity.

2.1 Emerging Behavior of the 21st Century Scholars

As individuals are becoming more complex in the 21st century in the use of mobile phone as part of our everyday life using plethora of platforms and technologies (Ali, Garba & Adakawa, 2018), scholars too, under normal circumstances, should be more versatile in the use of social media platforms for publication. The era deals with currency in every aspect of its transactions (Bertman, 1998; Bauman, 2007); to the extent the technology is imperative for existence and socioeconomic development (Castells, Fernandez-Ardevol, Qiu, & Sey, 2007) where individuals use these emerging technologies beyond imagination (Goswami & Singh, 2016) for safety and convenience (Pew Research Center, 2010). Access to information has changed qualitatively and quantitatively (Fabra, & Reguant, 2014). However, few scholars are discovering that use of mobile phones specifically via the social media platforms can improve research, teaching and learning without sacrificing pedagogical quality (Mtebe & Raisamo, 2014) and influencing scholars to use these technologies, despite pressing needs, presents difficulties or even impossibilities.

There is also a concern that, only few scholars have been trained on technological skills (Tarus, Gichoya & Muumbo, 2015); or where they were taught such skills, they were trained in the absence of ICT infrastructure (Kanyemba cited by Tarus, 2011, p. 138). Lack of commitments (Khan, Hasan & Clement, 2012); fear to loss of jobs (Khan, Hasan & Clement, 2012) and many scholarly researches focus on the generation of new knowledge (Kwok, n.d) are some of the nagging issues distancing scholars from using these technologies. On the other hand, Tenopir et al., (2009); Nicholas et al., (2010) and Niu et al., (2010) showed the use of electronic information among scholars has increased as libraries begin to convert to electronic form and according to Tenopir et al., (2009), social media prevail in most of the institutions especially in advanced societies.

Studies of individuals' behavior and attitudes are gaining considerable attention of psychologists (Jain, 2014) due to their relations with social behavior (Wicker, 1969). Predicting and explaining

human behavior (Ajzen, 1991) is the central axis upon which psychology revolves. In fact, attitudes influence behavior (Jain, 2014). Thus, attitude encompasses concepts as preferences, feelings, emotions, beliefs, expectations, judgements, appraisals, opinions, intentions, etc (Bagozzi, 1994a; Bagozzi, 1994b). Furthermore, attitude is the building block of the structure of social psychology (Allport, 1954, p45). Also, attitude component is a function of a person's prominent behavioral beliefs which stand for perceived outcomes (Conner & Armitage, 1998). Hence, the relevance of attitudes in determining the social behavior with respect to the use of RSS, Wikis, blogging, personalization, podcasting, streaming media, ratings, alerts, folksonomies, tagging, social networking software, etc. for scholarly publications.

There are basically three components of attitude. Looking at the ABC (Affect Behavior Cognition) model of attitude is one of the cited models of attitude (Eagly & Chaiken 1998; Van den Berg, et al. 2006) where affect concerns with feeling about an attitude object, behavior deals with intention towards attitude object and cognition denotes belief an individual has about an attitude object (Jain, 2014). In this regards, it is argued that, scholars' preference to use mobile phone for scholarly publication is transcendent upon these three components. In order to prioritize the acceptability, voting trends, signing an agreement, job satisfaction, among others of scholars with respect to using mobile phones can be deduced. From the three dimensional approach proposed by Jain (2014), where eight categories were formed, altering one variable among the three variables has a corresponding effect on scholars. For instance, in terms of voting trends which has triode factors of ABC with respect object attitude; it has to do with affect where the feelings of scholars are respected. No matter how relevant, ease of use, perceived usefulness the technology is, if scholars have negative feelings about it they hardly use it. It equally applies to behavior and cognition.

Components of attitude affect formation, organization and change of an individual. According to Wilson, et al., (2000) and Ajzen (2001), when attitude changes, the new attitude dominates but may not replace the old one. But the old one becomes the implicit and the new one explicit. Contexts, contents and conditions of evaluating objects have considerable impacts towards similar objects. Mobile phone applications despite their PEOU and PU can be subjected to different opinions by scholars. That is why understanding the behavioral component is important. Behavioral component consists of action or reaction towards objects. It has four categories, according to Jain (2014):

i. Positive approach, e.g. friendliness towards mobile phone ii. Negative approach, e.g. attacking potentials of mobile phones iii. Negative avoidance e.g. repelling mobile phones despite their relative advantages and iv. Positive avoidance, e.g. allowing others privacy when they are under stress (Jain, 2014).

On the other hand, the dimensions of attitude are four: a) Intensity: the strength of the favorable or unfavorable feeling; b) direction: favorable or unfavorable aspect of a psychological object; c) salience: readiness with which an attitude can be aroused its closeness to the surface of the mind and d) generality: overall attitudes as a reflection of the generality of someone's attitude (Jain, 2014). It is argued that, the emerging behavior of 21st century scholars revolve around scholarly culture, interdisciplinary and psychological perspectives. This is so because, most of the challenges of the 21st century require a holistic approach an indicator of interdisciplinary researches (Nissani, 1997; Borrego & Newswander, 2010; Boyer Commission, 1998; Musa, 2015) that call for integration of theories, models, research methodologies from across disciplines (Pellmar & Eisenberg 2000;

National Institutes of Health, 2006; National Science Foundation, 2006). As Luey, (2010) noted, scholars' reputation which concerns with scholarly culture has an impact on the success or otherwise of scholars. Generation of new technology and its diffusion are important (Hollenstein, 2002) and capturing the importance of ICT manufacturing firms cannot be ignored (Pilat & Lee, 2001). Organization size and age are the two most investigated variables (Karshenas & Stoneman, 1995; Hollenstein, 2002) and market competition (Majumdar & Venkataraman, 1993) are the most navigated issues in studies of adoption behavior. With respect to psychological issues, matters bordering the positive attitude toward technology are important. For instance, using positive attitudes toward content communities, social networking sites, virtual game worlds, and virtual social worlds will support the way scholars embrace the use of technology for publications.

From the scholarly cultural perspective, the content of any research must be: publicly available over the Internet; creative effort and compiled outside professional routines and practices (OECD, 2007, p11). For the social media, Kaplan and Haenlein (2010) have classified it into six categories: collaborative projects, blogs and microblogs, content communities, social networking sites, virtual game worlds, and virtual social worlds. However, Gu and Widén-Wulff, (2011) reiterated that, web 2.0, web 3.0, Twitter, Facebook, blogs, online comments to articles, social bookmarking sites, wikis, websites to post slides, text or videos, etc. are the main avenues for their relative user-centeredness, open, participatory, interactive and knowledge sharing abilities. According to Procter et al., 2010; RIN, (2010), scholars make use of these tools and services for their research purposes particularly in identifying research opportunities to disseminating research results.

Although Nicholas et al. (2010) were surprised at the absence of social media sources in their study on the scholarly behaviour of researchers in the United Kingdom, a similar study conducted in the United States (Niu, et al., 2010) highlighted a notable trend in the use of collaborative technology for sharing information with colleagues and students. Social media may afford informal communication similar, or in some cases superior to, the channels of informal communication for dissemination and collaboration purposes traditionally used by scholars — face-to-face interactions with colleagues, seminars, conferences, etc.

2.2 Expectations of the 21st Century Scholars

Integration of communication, computing, mobile sectors as well as voice communication, messaging, personal information management (PIM) applications and wireless capability is evolving (Zheng, & Ni, 2006) due to the needs and preferences of consumers (Mokhlis & Yaakop, 2012). This makes mobile phone common choice for public consumption across all sectors (Techterms.com, 2010) thereby providing advanced functionalities and services on a mere piece of hardware (Nurfit, 2012; Comscore, 2012). These features make mobile phones acceptable in educational institutes, hospitals, public places including shopping malls, to mention but a few (Sarwar & Soommro, 2013). To buttress this further, from educational perspective which relates closely with the aim of this paper, mobile phone use is preferred (62.9%) among students (Massimini & Peterson, 2009) where they use it for e-mail, Instant Messaging (IM) services, Social Network services (SNSs), browsing the Internet, to the extent misplacing these devices cause them sleep deprivation (Massimini & Peterson, 2009) and the usage is higher among extraverts (Ehrenberg, Dip, White, & Walsh, 2008). This clearly indicates that, for studies and researches to be more comprehensive, scholars too need to be friendly with these technologies. In other words, as the

students use these technologies for daily activities, scholars should use them for teaching in institutions of higher learning. Therefore, it is of relevance to find the expectations of scholars on the use of these technologies for researches and teachings.

Even though several features affect the choice of mobile phones (Liu, 2002; Karjaluoto et al., 2005; Yun, Han, Hong & Kim, 2003; Han, Kim, Yun, Hong & Kim, 2004; Ling, et al., 2006; Mack & Sharples, 2009), no research has been devoted to investigate about the expectations of scholars on the use of mobile phones for scholarly publications. To begin with, it is important to consider the environment in which these scholars operate and their readiness and anticipations of mobile phones. This agrees with Billieux, Van der Linden and Rochat, (2008) who noted that, mobile phones allow individuals to engage in communication without being constrained by physical proximity or spatial immobility. This is an important consideration as many institutions are challenged by physical space, overcrowding, and infrastructure, use of mobile phones for conferencing, lecturing, etc. can serve many purposes.

With quantitative hypothesis-driven and qualitative interpretive approaches (Scifleet, Henninger, & Albright, 2013), social media have changed the information landscape across all environments. There is no apparent limit to the number of messages that might be acquired or the dimensions of society that might be investigated (Scifleet, Henninger, & Albright, 2013). Manovich, (2012, p462-463) noted that, "We no longer have to choose between data size and data depth. We can study exact trajectories formed by billions of cultural expressions, experiences, texts and links". There are high expectations about what kind of research might empower scholars (Dutton & Jeffeys, 2010) but still remains a challenge to scholars due to limited research, development activities and communications (Scifleet, Henninger, & Albright, 2013). Social media is emerging from disciplinary and methodological approaches as diverse as computer and social sciences (Boyd & Ellison, 2007). Research founded on the analysis of social media messages as noted by Scifleet, Henninger, and Albright, (2013) revolve around social fields as education (Simon, Davis, Griswold, & Malani, 2008), economics and business (Riemer & Scifleet, 2012), medical health (Oh, 2012), linguistics (Zappavigna, 2011), sociology (Boyd, Golder, & Lotan, 2010), media and communication (Papachariss, 2012) and political sciences (Woolley, Limperos, & Oliver, 2010). These challenge scholars for becoming relevant in the contemporary society thereby making their inputs. In other words, the scholars been the cornerstones of any research geared towards solving societal problems or testing phenomena, makes their research outputs needed to be readily available for public consumption for guiding policies and enhancing co-existence on this planet earth.

From another perspective, intellectual intercourse has been a leading factor why scholars use emerging technology (Ali, Garba & Adakawa, 2018), mobile phone can serve as a prerequisite for knowledge gain, productivity and reputation (Luey, 2010) of scholars. This also agrees with the submission of Bar-Yam, (2004) that, as the society advances in technology so also human and social complexities increase and Mosenthal (1985) argued that, the question of progress is fundamental to the understanding of how effective scholarly research is and might be in improving practice. Similarly, Amabile (1992) noted that, this age has three components of creativity which are: knowledge (expertise on procedural and intellectual), creative thinking (how flexibly and imaginatively scholars are in approaching problems) and motivation (intrinsic is more effective than extrinsive) and these qualities are characteristic of scholars.

2.3 Challenges Facing 21st Century Scholars

Good scholarly writing that is clear and precise saves reader's time and increases scholar's reputation (Luey, 2010) and serves as the dominant currency of employability (Soule, 2007). It increases motivation for peer recognition; aligns ethical and professional necessity to contribute (McGrail, Rickard & Jones, 2006) or desire to make knowledge progress which results in the universal culture of scholarly publication (Soule, 2007). Despite these important qualities highlighted, the scholarly community in Nigerian context is challenged by the following problems

Poor Internet Connectivity

The stability, quality, quantity and efficiency of bandwidth in Nigeria is poor to the extent a university's bandwidth in Nigeria is equated with a residential connection in the developed world (Eifert, Gelb, & Ramachandran 2008). This hinders scholars from making absolute use of Internet even if they try.

Technological Skills on E-content Development

Lack of technical skills that bedevil most researches has been documented (Jiang, & Ting, 2000) to the extent only very few are trained (Tarus, Gichoya & Muumbo, 2015). This is also confirmed by Kanyemba (as cited by Tarus, 2011, p. 138) that scholars have low ICT skills and where they are taught, they are trained in the absence of ICT environment.

Parallelism of the 21st Century Learners and the Scholarly Publications

Rodgers, Runyon, Starrett, and Von Holzen (2006) noted that, the 21st century learner has many educational traits that older educators may not be familiar or comfortable with. Most of the publications are in print formats and thus not visible to many users who mostly have visual-spatial skills.

Considering 20th Leftover Problems in Preference to 21st Century

Most of the contemporary Nigerian scholars are heavily putting more interest thereby concentrating on the 20th century emerging issues and negating the pressing challenges the 21st century presents. This trend should be looked into with a view to face reality and challenges this country is facing and enumerate available solutions to the pressing problems.

Relationships Between Scholars and Stakeholders

Establishing relationship between scholars and the stakeholders (Alexander, Miesing, & Parsons, n.d.; D'Aveni, 1994; Pfeffer, 1981; Jensen & Meckling, 1976; Morgan & Hunt, 1994; Williamson, 1975, 1985; Parsons, 2001; Ramaraju, 2012) of their institutions of affiliation and "paying attention to key stakeholder relationships" (Freeman, 1999, p235) is paramount. Most studies indicated that, the relationship is asymmetrical and this can hinder the purchase, maintenance and updating of the ICT infrastructure within a given organization.

(Do we end up identifying challenges encountered by scholars or we use theory as a lens to explicate the emerging behaviour of the 21st century?)

3. Conclusion

The use of modern technologies has shaped and will continue to characterize the scholarly terrene of scholarly publishing in an ever technology driven society. It is evident, from the assumption of the theory (TAM); acceptance of technology and attitude toward the use of the technology play a central role in ensuring their usage. As a result of that, the reason why scholars are not using the technology for publishing researches might be attributable to the components and dimensions of attitudes of the scholars in addition to the PEOU or PU. The paper highlighted that, there are components and dimensions of attitudes that either make or not make a scholar to use a mobile phone for scholarly publications. Other than the components and dimensions, challenges that bedevil the use of these technologies were highlighted. Considering the nature of social systems, the national bibliography whose responsibility is to ensure rapid maximization of the intellectual products through converting the paper generated information to more readily usable and useful formats has failed in ensuring equitable access by scholars in the global domain. The attitude of national bibliography to digitize the holdings despite the relevance of such collections is a function of latency in Nigeria's scholarly contributions. This hindrance has many implications from concentrating on national issues with a view to developing roadmap for national progress academically and national development conceptually. That is why most of the resources encountered on the web are from developed or developing countries other than Nigeria. Unless the national bibliography is metamorphosed, the Nigeria's scholarly contents will be less visible and competition with scholarly global environment would be a challenge. The Nigeria's academic contribution therefore, is required to correlate with emerging behavior of the 21st century scholars for scholarly publications.

References

Abraham, A. T., Pocheptsova, A., & Ferraro, R. (2014). The effect of mobile phone use on prosocial behavior. : https://www.researchgate.net/publication/267687748

Adams, K. (2005). The sources of innovation and creativity.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, (50), 179–211.

Ajzen, I. (2001). Nature and operation of attitudes. *Annu. Rev. Psychol*., 52:27–58

Alexander, C. S., Miesing, P. & Parsons, A. L. (n.d.). How important are stakeholder relationships? https://www.albany.edu/~pm157/research/stakeholders.pdf

Ali, Y., Garba, K. D., & Adakawa, M. I. (2018). Emerging behavior and expectation of 21st century students on the use of academic libraries. *African Journal of Information and Knowledge Management*, 1(7), 43-57, ISSN: 2384-6690

Allport, G.W. (1954). The Historical Background of Modem Social Psychology. In G. Lindzey, ed. *Handbook of social psychology*. Cambridge, Mass: Addison-Wesley, p. 45.

Amabile, T. M. (1992). *Growing up creative*. Creative Education Foundation.

Bauman, Z. (2007) *Els reptes de l'educació en la modernitat líquida*, Arcàdia, Barcelona

Bertman, S. (1998) *Hyperculture: The Human Cost of Speed*, Praeger Publishers, Westport

Billieux, J. L., Van der Linden., & Rochat, L. (2008). The role of impulsivity in actual and problematic use of the mobile phone. *Applied Cognitive Psychology*, 22: 1195–1210 www.interscience.wiley.com DOI: 10.1002/acp.1429

Bodomo, A., Lam, M & Lee, C. (2003).Some students still read books in the 21st century: a study of user preferences for print and electronic libraries. *The Reading Matrix;*Vol. 3 (3).

British Educational Association (2004).

Buhi, E. R., Trudnak, T. E., Martinasek, M. P., Oberne, A. B., Fuhrmann, H. J., & McDermott, R.

J. (2013). Mobile phone-based behavioral interventions for health: A systematic review. *Health Education*. DOI: 10.1177/0017896912452071 https://www.researchgate.net/publication/250612085

Castells, M., Fernandez-Ardevol, M., Qiu, J. L., & Sey, A. (2007). Mobile communication and society: A global perspective, MIT Press, 2007, 331 pp. 21.86

Corning, P. A.(2002*).* The re-emergence of emergence: A venerable concept in search of a theory. *Complexity, 7 (6): 18–30,* Bibcode*:*2002Cmplx...7f..18C, doi*:*10.1002/cplx.10043*, archived* from the original on 2018-02-02

Cuban, L. (2009). *Oversold and underused: Computers in the classroom.* Cambridge, MA: Harvard University Press.

Bagozzi, R. P., Davis, F. D. Warshaw, P. R. (1992). Development and test of a theory of technological learning and usage. *Human Relations,* 45(7), 660-686, doi:10.1177/001872679204500702

Bagozzi, R.P. ed. (1994a). *Advanced methods of marketing research,* Oxford: Blackwell Business.

Bagozzi, R.P. ed. (1994b). *Principles of marketing research,* Oxford: Blackwell Business.

Bar-Yam, Y. (2004). The Characteristics and Emerging Behaviors of System of Systems. NECSI: Complex Physical, Biological and Social Systems Project

Borrego, M., & Newswander, L. K. (2010). Definitions of interdisciplinary research: Toward Graduate level interdisciplinary learning outcomes. The Review of Higher Education, 34(1), 61–84. doi:10.1353/ rhe.2010.0006

Boyd, D. M., Golder, S., & Lotan, G. (2010). Tweet, tweet, retweet: Conversational aspects of retweeting on tweeter. Paper presented at the HICSS-43, January 6, Kauai, Hawaii

Boyd, D.M., & Ellison, N.B. (2008). Social network sites: Definition, *History, and Scholarship, Journal of Computer-Mediated Communication,* 13(1), 210–230

Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer Mediated Communication,* 13(1), 210-230.

Boyer Commission on Educating Undergraduates in the Research University. (1998). Reinventing undergraduate education: A Blueprint for America's Research Universities. State University of New York–Stony Brook.

Cheetham, A. (2007). Growing a research culture. Address to the Academic Senate – University of Western Sydney, May, 2007. p. 5. http://www.uws.edu.au/__data/assets/pdf_file/0018/7119/Item_3.6_Building_a_Research_Culture__Ta bled_Doc.pdf

Comscore, Inc. (2012). 2012 Mobile Future in Focus,

http://www.comscore.com/Insights/Press_Releases/2012/2/comScore_Releases_the_2012_Mobile_Future_in_Focus_Report

Conner, M. & Armitage, C. (1998). Extending the theory of planned behavior: A review and avenues for further research. *Journal of Applied Social Psychology*, 28(15), pp.1429–1464

CTIA. Wireless quick facts (online). http://www.ctia.org/media/industry_info?index.cfm/AID/10323 (accessed 21 January 2011).

D'Aveni, R.A. (1994). Hypercompetition*:* Managing the dynamics of strategic maneuvering. New York: The Free Press.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of

information technology, *MIS Quarterly*, **13** (3): 319–340, doi:10.2307/249008
Davis, F. D., Bagozzi, R. P., Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models, *Management Science*, **35**: 982–1003, doi:10.1287/mnsc.35.8.982
Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science, **35**: 982–1003, doi:10.1287/mnsc.35.8.982*
Dundar, H., & Lewis, D.R. (1998). Determinants of research productivity in higher education. *Research in Higher Education*, 39(6), p608
Dutton, W. H. & Jeffeys, P. W. (2010). *Worldwide research: Reshaping the sciences and humanities*. Cambridge, MA: MIT Press
Eagly, A.H. & Chaiken, S. (1998). Attitude structure and function.
Ehrenberg, A., Dip, S.,White, K.M., & Walsh, S.P. (2008). Personality and self-esteem as predictors of young people's technology use. CyberPsychology& Behavior, 11, 73 9-741.
Eifert, B., Gelb, A., & Ramachandran, V. (2008). The Cost of Doing Business in Africa: Evidence from Enterprise Survey Data. *World Development*, 22(7)
Elstad, E. (2016). *Digital expectations and experiences in education*. Sense Publishers. 3001 AW Rotterdam, The Netherlands https://www.sensepublishers.com/
Ericsson. (2016). Ericsson Mobility Report. (2016).
Ezemenaka, E. (2013). The usage and impact of Internet enabled phones on academic concentration among students of tertiary institutions: A study at theUniversity of Ibadan, Nigeria. *International Journal of Education and Development using Information and Communication Technology* (IJEDICT), 2013, Vol. 9, Issue 3, pp. 162-173
Fabra, N., & Reguant, M. (2014). Pass-through of emissions costs in electricity markets. *American Economic Review*, 104(9):2872-99
Gebauer, J., Schober, F. (2006). Information system flexibility and the cost efficiency of business processes, *Journal of the Association for Information Systems*, 7(3), 122-147
Goldstein, J. (1999). Emergence as a Construct: History and Issues. *Emergence.* 1(1), *49–72.* doi:10.1207/s15327000em0101_4.
Goswami, V. & Singh, D. R. (2016). Impact of mobile phone addiction on adolescent's life: A literature review. ISSN: 2395-7476, IJHS 2016; 2(1): 69-74 www.homesciencejournal.com
Gu, F., & Widén-Wulff, F. (2011). Scholarly communication and possible changes in the context of social media: a Finnish case study. *The Electronic Library*, Vol. 29(6), 762-776.
Han, S. H., Kim, K. J., Yun, M. H., Hong, S. W., & Kim, J. (2004). Identifying mobile phone design features critical to user satisfaction, *Human Factors and Ergonomics in Manufacturing*, 14(1), 15-29.
Hanover Research. (2014). *Building a culture of research: Recommended practices*.
Heckman, J. J., Stixrud, J., & Urzua, S. (2006). The effects of cognitive and noncognitive abilities on labor market outcomes and social behavior. *Journal of Labor Economics*, 24(3), 411–482.
Hollenstein, H. (2002). Determinants of the adoption of information and communication technologies (ICT): An empirical analysis based on firm-level data for the Swiss business sector. Paper presented at the DRUID Summer Conference on "Industrial Dynamics of the New and Old Economy - who is embracing whom?"
IHS iSuppli Market Intelligence. *Global wireless subscriptions reach 5 billion* (online). http://www.isuppli.com/Mobile-and-Wireless-Communications/Pages/Headlines.aspx

(accessed 28 January 2011).
INE. (2012). Estadística de enseñanza universitaria, http://www.ine.es
Jain, V. (2014). 3D model of attitude. *International Journal of Advanced Research in Management and Social Sciences*, 3(3), 1-12. www.garp.co.uk
Jensen, M.C. & Meckling, W.H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial* Economics, *3*, 305-360.
Jiang, M., & E. Ting. (2000). A study of factors influencing students' perceived learning in a web-based course environment. *International Journal of Educational Telecommunications* 6 (4): 317–38.
Julian, H. (1947). Now and again there is a sudden rapid passage to a totally new and more comprehensive type of order or organization, with quite new emergent properties, and involving quite new methods of further evolution.
Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media, *Business Horizons*, 53(1), 59–68
Karjaluoto, H., Karvonen, J., Kesti, M., Koivumaki, T., Manninen, M., Pakola, J., Ristola, A., & Salo, J. (2005). Factors affecting consumer choice of mobile phones: Two studies from Finland, *Journal of Euromarketing*, 14(3), 59-82.
Karshenas M. & Stoneman, P. (1995). Technological diffusion. In P. Stoneman (ed.), *Handbook of the economics of innovation and technological change*, Oxford: Blackwell.
Khan, Md. S.H., Hasan, M., & Clement, C. K. (2012). Barriers to the introduction of ICT into education in developing countries: The example of Bangladesh, *International Journal of Instruction*, 5(2), e-ISSN: 1308-1470, p-ISSN: 1694-609X www.e-iji.net
Khan, I. (2013). Library, librarian and library services in web 2.0 environment. *International Journal of Digital Library Services*, 3(4), ISSN 2250
Kwok, K. (n.d.). Academic research at university.
Fairweather, J. (2002). The mythologies of faculty productivity: Implications for institutional policy and decision making. *The Journal of Higher Education*, 73(1), 31-32
Ling, C., Hwang, W. & Salvendy, G. (2006). Diversified users' satisfaction with advanced mobile phone features, *Universal Access in the Information Society*, 5(2), 239-249.
Liu, C. M. (2002). The effects of promotional activities on brand decision in the cellular telephone industry, *Journal of Product & Brand Management*, 11(1), 42-51.
Mack, Z., & Sharples, S. (2009). The importance of usability in product choice: A mobile phone case study, *Ergonomics*, 52(12), 1514-1528.
Manovich, L. (2012). Trending: The promises and challenges of big social data. In M. K. Gold (Ed.), *Debates in the digital humanities* (pp 460-475). Minneapolis: University of Minesota Press
Musa, A. I. (2015). Cultural and communication barriers to interdisciplinary research: Implication for global health information programs – philosophical, disciplinary epistemological, and methodological discourses. In Al-Suqri, M. N., Al-Kindi, A. K., & Saleem, N. E. *Promoting interdisciplinarity in knowledge generation and problem solving*, IGI Global, USA.
National Institutes of Health. (2006). *NIH roadmap for medical research*. Bethesda, MD: Author.
National Science Foundation. (2006). National Science Foundation investing in America's future strategic plan FY 2006–2011 (No. NSF 06-48). Arlington, VA: Author.
Okeke, C., Adu, E., Rembe, S., Duku, N., Maphosa, C., Drake, M., Shumba, J., & Sotuku, N. (2014).

The effects of demographic variables on work stimulated stressors and coping strategies among early childhood educators in East London Education District, unpublished manuscript, University of Fort Hare, East London Campus.

Pellmar, T. C., & Eisenberg, L. (2000). *Bridgingdisciplines in the brain, behavioral, and clinical scien*ces. National Academies Press. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK44876/

Pew Research Center's Internet & American Life Project. (2010). Social media and young adults, Feb. 3, 2010 (http://www.pewinternet.org/Reports/2010/Social-Media-and-Young-Adults.aspx).

Lehr, W., & McKnight, L. W. (2007). Wireless Internet access: 3G vs. WiFi? *Telecommunications Policy*, 27, 351-370.

Luey, B. (2010). *Handbook for academic authors*. 5th ed. Cambridge University Press, New York.

Majumdar S. K. & Venkataraman, S. (1993). New technology adoption in US telecommunications: The role of competitive pressures and firm-level inducements, *Research Policy*, 22, 521-536.

Massimini, M. & Peterson, M. (2009). Information and communication technology: Effects on U.S. college students. *Cyberpsychology: Research on Cyberspace*, 3(1), 1-15.

Marchant, T. (n.d.). Developing research culture – Overcoming regional and historical obstacles. In *Professional Doctorate research in Australia: Commentary and case studies from busine ss, education and indigenous studies*. Lismore: Southern Cross University Press. p. 6. http://www98.griffith.edu.au/dspace/bitstream/handle/10072/32464/63376_1.pdf?sequence=1

Martin, N. (2018). Digital publishing trend to watch for in 2018. Digital Publishing News

McGrail, M. R., Rickard, C. M., & Jones, R. (2006). Publish or perish: A systematic review of interventions to increase academic publication rates'. *Higher Education Research & Development*, 25(1), pp. 19-35.

Mill, J. S. (1843). The chemical combination of two substances produces, as is well known, a third substance with properties different from those of either of the two substances separately, or of both of them taken together"

Mitchell, N. (2010). The participant-researcher relationship in educational research. http://eprints.nottingham.ac.uk/11357/1/Nick_Mitchell_2010.pdf

Mokhlis, S., & Yaakop, A. Y. (2012). Consumer choice criteria in mobile phone selection: An investigation of Malaysian university students. *International Review of Social Sciences and Humanities*, 2(2), 203-212 www.irssh.com ISSN 2248-9010 (Online), ISSN 2250-0715 (Print)

Morgan, R.M. & Hunt, S.D. (1994). The commitment trust theory of relationship marketing. *Journal of Marketing, 58,* 20-38.

Mosenthal, P.B. (1985). Defining progress in educational research. Vol. 14(9).

Mtebe, J. S., & Raisamo, R. (2014). Challenges and instructors' intention to adopt and use open educational resources in higher education in Tanzania. *International Review of Research in Open and Distance Learning*, 15(1), 250–271.

Nicholas, D., Watkinson, A., Rowlands, I., & Jubb, M. (2011). Social media, academic research and the role of university libraries. *Journal of Academic Librarianship*, 37(5), 373-375.

Nicholas, D., Williams, P., Rowlands, I., & Jamali, H.R. (2010), "Researchers' ejournal use and information seeking behaviour", Journal of Information Science, Vol 36 No 4, pp. 494-516.

Nissani, M. (1997). Ten cheers for interdisciplinarity: The case for interdisciplinary knowledge and

research. *The Social Science Journal*, 34(2), 201–216. doi:10.1016/S0362-3319(97)90051-*3*

Niu, X., Hemminger, B.M., Lown, C., Adams, S., Brown, C., Level, A., McLure, M., Powers, A., Tennant, M.R., & Cataldo, T. (2010). National study of information seeking behavior of academic researchers in the United States, *Journal of the American Society for Information Science and Technology*, 61(5), 869-890.

Nurfit, (2012). Smartphone addiction and impact on society.

http://nurfitriah.wordpress.com/2012/03/25/smarphone-addiction/

OECD. (2007). Participative web and user-created content: Web 2.0, Wikis and social networking, http://213.253.134.43/oecd/pdfs/browseit/9307031E.PDF (accessed 14 February 2012).

Oh, S. (2012). The characteristics and motivations of health awareness in social Q&A. *Journal of the American Society for Information science and Technology*, 63(3), 543-557

Oloruntoba, S. A., Jumoke, S. & Blessing, O. (2015). Analysis of mobile phone impact on student academic performance in tertiary institution.

Papachariss, Z. (2012). Without you, I'm nothing: Performances of the self on Tweeter. *International Journal of Communication*, 6, 1989-2006

Parsons, A.L. (2001). What make relationships important? An analysis of the buyer's perspective. *Proceedings*. H.E. Spotts, H.L. Meadows & S.M. Smith, (Eds.). Tenth Biennal World Marketing Congress: Academy of Marketing Science, Global Marketing Issues at the Turn of the Millennium, Volume X.

Pfeffer, J. (1981). *Power in organizations*. Marshfield, MA: Pitman Publishing.

Pilat, D. & F.C. Lee. (2001), Productivity growth in ICT-producing and ICT-using industries: A source of growth differentials in the OECD? STI Working Papers 2001/4, OECD: Paris.

Portio. Mobile factbook (online). http:// www.portiodirect.com (accessed 26 January 2011).

Procter, R., Williams, R., Stewart, J., Poschen, M., Snee, H., Voss, A., & AsgariTarghi, M. (2010). Adoption and use of Web 2.0 in scholarly communications, *Philosophical Transactions of the Royal Society A: Mathematical, Physical & Engineering Sciences*, 368(1926), 4039-56.

RIN. (2010), "If you build it, will they come? How researchers perceive and use web 2.0", available at: http://www.rin.ac.uk/system/files/attachments/web_2.0_screen.pdf (accessed 14 February 2012).

Rodgers, M., Runyon, D., Starrett, D., & Von Holzen, R. (2006). Teaching the 21st century learner. Paper Presented at the Annual Conference on Distance Teaching and Learning. From <http://depd.wisc.edu/series/ 06_4168.pdf.> (Retrieved 25 August 2011).

Ramaraju, S. (2012). Psychological perspectives on interpersonal communication. Journal of Arts, Science & Commerce, Vol.– III, Issue–4(2),October 2012[68]. www.researchersworld.com

Riemer, K., & Scifleet, P. (2012). Enterprise social networking in knowledge-intensive work practices: A case study in a professional service firm. Paper presented at the ACIS 2012: Location, location, location. Proceedings of the 23rd Australian Conference on Information Systems, 3-5 December, 2012, Geelong, Vic., Australia

Rushkoff, D. (2012). *The 10 essential issues of the Digital Age: Schedule your future not to be programmed by it. São Paulo: Saraiva.*

Sarwar, M., & Soommro, T. R. (2013). Impact of smartphone's on society. *European Journal of*

Scientific Research ISSN 1450-216X/1450-202X 98(2), 216-226 http://www.europeanjournalofscientificresearch.com

Saxena, A., & Yadav, R.D. (2013). Impact of mobile technology on libraries: A descriptive study. *International Journal of Digital Library Services*, 3(4), ISSN 2250

Scifleet, P., Henninger, M., & Albright, K. H. (2013). When social media are your source. *Information Research*, 18(3), http://InformationR.net/183/collis/paperc41.html

Silva, A. L. M. R. (2005). *An influencia do trein-amento de usuarios na aceitacao de sistemas ERP em empresas no Brasil* (Unpublished doctoral dissertation). Instituto COPPEAD de Administracao, Universidade Federal do Rio de Janeiro, Rio de Jeneiro, Brazil.

Silva, P. (2015). Davi's technology acceptance model (TAM) (1989). In Al-Suqri, M. N. & Al-Aufi, A. S. *Information seeking behavior and technology adoption: Theories and trends*. IGI Global, US.

Simon, B., Davis, K., Grisworld, W. G., Kelly, M., & Malani, R. (2008). Noteblogging: Notetaking taking public. Paper presented at the SIGCSE08, The 39th ACM Technical Symposium on Computer Science Education, March 12-15, 2008, Portland, Oregon, USA

Social Research Association (2003).

Soule, D. (2007). Introducing writing for scholarly journals. In Soule, D. P. J., Whiteley, L., and McIntosh, S. *Writing for scholarly journals: Publishing in the arts, humanities and social sciences.* University of Glasgow, Glasgow.http://www.sharp.arts.gla.ac.uk/

Tarus, J. (2011). *Adoption of e-learning to support teaching and learning in Moi University*. Thesis presented in partial fulfillment of the requirements for the degree of Master of Philosophy (Information Technology), Moi University.

Tarus, J. K., Gichoya, D., & Muumbo, A. (2015). Challenges of implementing e-learning in Kenya: A case of Kenyan Public Universities, *International Review of Research in Open Distributed Learning* Vol.16

Techterms.com, 2010. http://www.techterms.com/definition/smartphone

Tenopir, C., King, D., Edwards, S. & Wu, L. (2009). Electronic journals and changes in scholarly article seeking and reading patterns, *Aslib Proceedings: New Information Perspectives*, 61(1), 5-32

Tolk, A. (2012). What are the characteristics of a scholar? SCS M&S Magazine ISBN 1-56555-374-8

Trentin, M. A. S., Pazinato, A., & Teixeira, A. C. (2017). The development of mathematical logical reasoning through computer programming: The case of the computer programming olympics for basic education students. *Creative Education*, 8, 81-94. http://dx.doi.org/10.4236/ce.2017.81007

U.S. Census Bureau (2011). U.S. & world population clocks. http://www.census.gov/main/www/popclock.html

Van den Berg, H. et al. (2006). The impact of affective and cognitive focus on attitude formation. *Journal of Experimental Social Psychology*, 42, 373–379.

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model, *Information systems research*, **11** (4), pp. 342–365.

Wajcman, J. (2008). Life in the fast lane? Towards a sociology of technology and time. *British Journal of Sociology*, 59(1), 59–77.

Weiser, M. (n.d.). The computer for the 21st century. http://www.Weiser-Computer21stCentury-SciAm.pdf

Williamson , O. (1975).*Markets and hierarchies.* New York: Free Press

Wilson, T.D., Lindsey, S., & Schooler, T.Y. (2000). A model of dual attitudes. *Psychol. Rev*., 107, 101–26

Youn, T. I. K., & Price, T. M. (2009). Learning from the experience of others: The evolution of faculty tenure and promotion rules in comprehensive institutions, *Journal of Higher Education*, 80(2), p205.

Venkatesh, V., Morris, M. G., Davis, G. B., Davis, F. D. (2003). Use acceptance of information technology: Towards a unified view. *MIS Quarterly*, **27** (3): 425–478.

Wicker, A., 1969. Attitudes versus actions: The relationship of verbal and overt behavioral responses to attitude objects. *Journal of Social Issues*, 25(4), 41–78.

Woolley, J. K., Limperos, A.M., & Oliver, M. B. (2010). The 2008 presidential election, 2.0: A content analysis of user-generated political Facebook groups. *Mass Communication and Society*, 13(5), 631-652

Yun, M. H., Han, S., Hong, S., & Kim, J. (2003). Incorporating user satisfaction into the look-and-feel of mobile phone design, *Ergonomics*, 46(13-14), 1423-1440.

Zappavigna, M. (2011). Ambient affiliation: A linguistic perspective on Twitter. *Journal of New Media and Society*, 13(5), 788-806

Zheng, P., & Ni, L. M. (2006). Smart phone and next generation mobile computing. http://www.sciencedirect.com/science/book/9780120885602