

Online Education in Emerging Knowledge Economies: Exploring factors of motivation, de-motivation and potential facilitators; and studying the effects of demographic variables

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ABSTRACT

In 2015, the United Nations member states adopted the 2030 Sustainable Development Goals (SDGs). Education, which is the fourth Sustainable Development Goal, has seen some major transformations with the advent of digital technologies. Education is increasingly being imparted through these digital technologies. However, this change resulting from the use of Information and Communication Technologies (ICTs) is often reported without in-depth analysis especially in emerging knowledge economies. This paper overcomes that barrier by exploring the motivating factors and de-motivating factors; as well as potential facilitators of online education. The paper also attempts to understand the enrolment, preference and awareness related to online education of the respondents with respect to country, gender, age, employment status and educational qualification, while presenting a comparative analysis of two emerging knowledge economies: India and Uganda. In the first phase, in order to explore motivating, de-motivating factors, and potential facilitators of online education, in-depth interviews were conducted with 51 learners. Data thus collected was checked for content validity through an extensive literature review. In the second phase, a questionnaire was administered to 252 respondents from both countries, drawn from a population of participants pursuing or having an intention to pursue online education. It explored any potential differences in enrolment, awareness, and preference for online-education on the basis of country, gender, age, employment status and existing educational qualification, in order to get better insights for further facilitation and improvement of online-education in emerging economies. To establish statistical validity, Mann-Whitney U-Tests and Kruskal-Wallis Tests were conducted. Based on this primary and secondary data, the paper concludes with some suggestions and recommendations on how to overcome barriers and factors which de-motivate learners from pursuing online education in order to achieve the desired Sustainable Development Goals.

CCS CONCEPTS

Applied Computing → Computing in Other Domains → Computing in Education

Keywords: *Education, Online Education, Skill, Sustainable development, Emerging knowledge economies, Motivators & De-motivators, ICTs, India, Uganda*

INTRODUCTION

Obtaining a quality education is the foundation for improving peoples' lives and attaining sustainable development. Major progress has been made towards increasing access to education at all levels and increasing enrolment rates in schools, particularly for women and girls in emerging economies. (OECD, 2017). Basic literacy skills have improved tremendously, but bolder efforts are needed to make even greater strides for achieving universal education goals. For example, although the world has achieved equality in primary education between girls and boys, few countries have achieved that target at all levels of education. (OECD, 2017; UNDESA, 2014; UNDP Uganda 2013; United Nations Economic Commission for Africa, MDG 2014 Report; UNSDG, 2015). Additionally, although many countries are improving performance on universal education coverage, there are still gaps in the education quality levels. Quality education is very important as it ensures the achievement of many other sustainable goals. For example, when people are educated they can break the poverty cycle. Data from 114 countries shows that one extra year of education is associated with a reduction of the Gini coefficient (numerical statistic used to measure income inequality in the society) by 1.4 percentage points. (United Nations, 2017).

ICTs refer to all technologies used to communicate, create, manage, access, gather and distribute information. These include computer hardware and software, the Internet, telephone, television, radio, and audio-visual equipment (UNESCO, 2009). The term covers a vast technology range, from simple technologies such as the radio and telephone to complex technology such as computers, network hardware and software as well as the associated equipment and services (United Republic of Tanzania, 2007). With the emergence of the digital era, the role of digital platforms and ICTs in imparting education has become significantly important in pursuing education through the online mode. The trend of online education not only helps in providing quality and lifelong education at all levels, but also narrows the gap among the genders and rural/urban communities in terms of accessibility to quality education. Millions of students, both male and female, from around the globe have enrolled; thousands of courses have been offered; and hundreds of universities have lined up to participate (Christensen, G. et al., 2013).

The role of ICTs, its acceptance and use (UTAUT-Unified theory of acceptance and use of technology by Venkatesh, 2003) is vital in order to encourage education via the online mode. Most of the studies focus on the potential effect(s) of ICTs and related motivation(s) of learners towards online education (Kaliisa et al., 2017; Papadakis and Kalogiannakis, 2017; Ventakesh, 2003). However, they fail to tap learners' hidden perceptions regarding online education. Hence, they lag behind in understanding the motivational factors, de-motivational factors and potential facilitators through the lenses of participants, which limits or inhibits our understanding of learners' attitude towards online education. As such, they pose restrictions to improve the existing facilities to impart quality education and encourage lifelong learning through the online mode. This study attempts to fill this gap by exploring motivational and de-motivational factors and potential facilitators by carrying out exploratory research in India and Uganda. It then presents a comparative quantitative analysis in order to understand any potential differences in enrolment, awareness, and preference for online education on the basis of country, gender, age, employment status and existing educational qualification.

LITERATURE REVIEW

The expansion of education plays a vital role in the development of emerging knowledge economies like India and Uganda. The role of higher education for the economy is seen by governments as having an increased importance, to the extent that higher education has become the new anchor for governments around the world. Universities are seen as a key driver in the

emerging knowledge economy, and as a consequence, educational institutions have been encouraged to develop links with industry and business in a series of new venture partnerships (Olssen and Peters, 2005). The recognition of the economic importance of higher education and the necessity for economic viability has seen initiatives to promote greater entrepreneurial skills as well as the development of new performance measures to enhance output and to establish and achieve growth targets (Olssen and Peters, 2005). However, with growing population size and comparatively lesser infrastructure to support traditional modes of education (van Heerden & van Greunen 2006), online education can be seen as a boon for emerging economies in order to cater to the growing need for quality education and lifelong learning. India and Uganda are two emerging knowledge economies which top the list of the fastest growing economies by 2025, at a rate of 7.7% annually (Harvard Kennedy School, 2018). Education /online education would therefore play a significant role in improving this growth rate.

The online education market in India stands at approximately USD 247 million and is estimated to witness a phenomenal growth of 1.96 billion USD in 2021 (KPMG, 2017). While according to IMARC Group's latest report titled, "Africa E-Learning Market: Industry Trends, Share, Size, Growth, Opportunity and Forecast 2019-2024", the Africa e-learning market reached a value of more than USD 792 million in 2018, exhibiting a Compound Annual Growth Rate (CAGR) of around 14% during 2011-2018. As a result of its various advantages, the market for e-learning is further expected to reach a value of more than USD 1,813 million by 2024 (<https://www.imarcgroup.com/africa-e-learning-market>). Because of this, it becomes imperative to analyse the views of learners and understand the factors which motivate them to pursue, or demotivate them from pursuing online courses. It is also important to obtain the views of learners on what they think could improve the present state of online education in their respective countries.

Importance of Online Education

The ability to use ICTs effectively is one aspect of achieving success in today's society, both for individuals and for organisations (Colwell, 2001). Online education offers increased access to high quality education for the masses because of ICTs unparalleled capacity to manage and access large amounts of information, and present it in a novel and interesting way (Bates, 2003; Moore and Anderson, 2003). Similarly, computer-based education allows students to become active learners rather than mere passive recipients of teaching (Candy, Crebert and O'Lear, 1994). Computers may not necessarily be linked to a network: computer learning can be achieved by standalone computers using particular software stored in the hard disk, or an external source.

In the early literature, the online mode of learning refers broadly to features of a learner-centric environment, which integrates a number of technologies to enable opportunities for activities and interaction in both asynchronous and real time modes and the model is based on blending a choice of technologies with aspects of campus-based delivery and distance education (Reid, 1999). Here the learner (or student/participant) assumes responsibility for specifying individual learning needs, goals and outcomes, planning and organising the learning task, evaluating its worth and constructing meaning from it (Candy, Crebert and O'Lear, 1994). Online access to topical information can also provide a convenient mechanism for sustained learning throughout individuals' careers (Ashton and Levy, 1998). For example, one might earn a valued professional certificate or a university degree in mid-career stage through online education. This ease of access to online training and education helps make periodic and lifelong learning more convenient. Online education also provides learners with a modularised curriculum, in which 'chunks' are designed to optimise and deliver large components of curriculum online and target narrow markets for specific educational needs, which helps in focusing on the aspect of feasibility as well (Dykman and Davis, 2008).

Traditionally, higher education requires higher economic considerations, but because of ICT and the advent of the Internet, the incremental cost to universities decreases and affordability for the participants increases (Dykman and Davis, 2008) making opportunities for market expansion huge in case of online education. With growing ICTs, the interactive digital experience has been revolutionised (Papadakis and Kalogiannakis, 2010; Hwang et al., 2015). These devices are designed in such a way that even young learners can use them easily to explore and promote further learning (Papadakis et al., 2017).

Online Education in India

Value is defined as an overall assessment of the utility of an offering according to perceptions of what is received and what is given (Zeithaml, 1988); and the main purpose of education is to create value. According to the All India Survey on Higher Education (2015-16; 2016), around 260 million students were enrolled in more than 1.5 million schools and around 39,000 colleges catered to 27.5 million undergraduate and four million post graduate students (MHRD, 2016). Formal education in India includes primary and secondary schools, graduate, post-graduate and diploma courses. Schools are governed by state and central bodies, namely CBSE, ICSE, state and international boards. India has one of the largest higher education systems in the world, dominated by the private sector (KPMG, 2017). Informal education includes pre-primary, coaching classes, vocational education and multimedia/technology based educational courses. The informal education market in India is one of the largest in the world (KPMG, 2017).

The value of the traditional university degree is increasingly being challenged by innovative disruptors such as Coursera, edX, Udemy and Udacity, and universities are now offering low-cost, fully online or blended programmes (Weise & Christensen, 2014). In a country like India, which has a multi-layered education system, it seems difficult to cater to the ever-increasing demand for lifelong quality education in the traditional way. According to Saxena et. al. (2016), India has around 520 million people in the 25 to 59 age group which constitutes the working population and is expected to increase continuously. This demographic brings along with them enormous economic opportunities. However, the ability to seize these opportunities depends on how successfully the challenges in the Indian education system can be addressed. The Indian traditional education framework suffers from poor infrastructure and capacity constraints. There is a shortage of trained teachers, which has become a major concern for the education sector. The comparatively low pay-scale and the availability of jobs in more lucrative sectors are some of the reasons that have contributed to this shortfall (Saxena et al., 2016). Digital learning can complement the conventional model of education by filling in the existing need-gaps of continuous and lifelong learning.

There have been some major initiatives taken by the Government of India to promote and spread the benefits of online education, in order to enhance learning effectiveness in the field of technical education by using technology. For example, in 2003, the Ministry of Human Resource Development (MHRD), initiated a Project – National Programme for Technology Enhanced Learning (NPTEL) – to encourage quality Engineering, Science and Humanities streams for education in the country. This involved developing curriculum-based video courses and web-based online courses (MHRD, 2017). Virtual Labs which provide remote-access to Labs in various disciplines of Science and Engineering are also expected to cater to students at the undergraduate and post graduate levels as well as to research scholars. Another initiative, the Spoken Tutorial project is the initiative of the ‘Talk to a Teacher’ activity of the National Mission on Education through ICTs. E-Yantra is another initiative designed to incorporate Robotics into engineering education with the objective of engaging students and teachers through exciting hands-on application of Mathematics, Computer Science, and Engineering principles. Project OSCAR (Open Source

Courseware Animations Repository) provides a repository of web-based interactive learning objects in the form of animations and simulations. These learning objects span topics in Science and Engineering at the college level, as well as Mathematics and Science at the school level. Students and teachers can view, run and download these learning objects. SWAYAM, launched in 2016, is a programme initiated by the Government of India, designed to achieve the three cardinal principles of Education Policy namely: access, equity and quality through an indigenous developed IT platform that facilitates hosting of all the courses. It is taught in classrooms from 9th class till post-graduation and is accessible to anyone, anywhere at any time.

Online Education in Uganda

The spread of technologies has grown rapidly in emerging economies. The International Telecommunication Union (ITU) 2015 Report on Internet and mobile device coverage asserted that seven billion people (95% of the global population) have access to a mobile-cellular network. According to Briggs (2014), Africa was the second largest and fastest growing mobile phone market in the world, with a penetration rate of 60%. In Uganda, approximately 19.5 million out of 34 million Ugandans (52.3%) were connected to different communication networks in 2015 (Uganda Communications Commission, 2015).

The government of Uganda has made an effort to improve the education standards in the country. This has been demonstrated by the introduction of universal free primary and secondary education in 2001 and 2011 respectively. The country, through the Ministry of Education and Sports is pursuing improvement of the respective curricula, and also working towards building more schools especially in the underserved regions of the country. This has led to improvement in the adult literacy rate from 46% to 73% between 1999 and 2014. The country expects the adult literacy rate to be at 95% by 2040 (UBOS, 2013).

Education in Uganda is divided formally into four stages – nursery or kindergarten (three years), primary school (seven years), secondary school (six years) and then university. Education in Uganda is currently free at the primary and secondary levels (Universal Primary Education (UPE) and Universal Secondary Education (USE) respectively). The government also sponsors some students on merit for undergraduate and postgraduate education. The Right to Education has been recognised by the Government of Uganda, following Article 13 of the United Nations' 1966 International Covenant on Economic, Social and Cultural Rights. Over the last 30 years, Uganda has made great progress in improving the digital literacy levels of the country's citizens.

This improved literacy rate is attributed to the implementation of universal primary and secondary education policies and programmes. Over the last 15 years, the total primary school enrolment has grown to about 8.7 million pupils, representing over 90 per cent of the primary school age population. On the other hand, secondary school enrolment increased by 25 per cent from 814,087 in 2006 to 1,088,744 in 2008 with girls constituting 46 per cent (UBOS, 2013).

The Government of Uganda has accelerated government reforms in the education system and the curriculum to obtain a globally competitive human resource, with skills relevant to the development paradigm. The Government further plans to develop and implement a specific policy to attract and retain top-rated professionals in the universities and mainstream ICT in education to take advantage of ICT-enabled learning and to prepare future generations of ICT-savvy workers, and ensure their effective utilisation.

STUDY OBJECTIVES AND HYPOTHESES DEVELOPMENT

Studies conducted earlier have put forth the success of online education based on the concept of acceptance and perceived use of technologies (Venkatesh, 2003, Kaliisa et. al., 2017). Technologies like mobile phones and digital devices have been shown to facilitate the process of

online learning (Papadakis and Kalogiannakis, 2017). A study by Christensen et al. (2013), clearly explains the MOOCs (Massive Open Online Courses) phenomenon by highlighting the two underlying learners' motivations: advancing in a current job, and curiosity. MOOCs commanded a lot of public attention due to their disruptive potential in emerging economies, but failed to take it further. Previous studies have however failed to address the fundamental question of what underlying factors motivate individuals to take up online education other than the obvious ones of availability of the technologies and their friendliness. A more complete study must also understand the de-motivating factors, as eliminating them may decrease the intention to not pursue online education. This study therefore tries to fill these gaps. It also explores the factors which, according to learners, could help overcome the barriers in the way of effective and quality online education.

It is important to explore the underlying factors of motivation and de-motivation and assess the effect of demographic variables on enrolment, preference and awareness towards online education in emerging knowledge economies, as they differ in terms of the available infrastructure, culture and existing demographic and social structures (Zang & Zhou, 2003; Niles 1995; Maldonado et. Al., 2011; Adeoye & Wentling, 2007; Andrews et al. 1998, Mehra & Mital, 2007).

Hofstede (2001) provided an example of how one of his cultural dimensions, 'uncertainty avoidance', affects educational settings. Adeoye and Wentling (2007) observed participants in a usability laboratory to determine any correlations between uncertainty avoidance and how learners interacted with an online learning environment. The research found strong correlations between the learners' cultures and how they interacted with the learning resources. Culture has been found to have a significant effect on learning both offline and online (Kinasevych, 2010). Further, a study by OECD (2017) has shown that young women in emerging economies are largely participating in tertiary education more so than young men and gender differences in education are being reduced.

Although emerging knowledge economies have shown great potential in adapting online education, there is a delay in how fast the benefits of the technology can reach the people because of the increasing population. A lack of awareness, the high cost involved in acquiring and use of ICTs and low computer literacy levels also act as barriers to adaption. (Naresh and Reddy, 2015). This study also cited the need for a high level of discipline as a requirement for e-learning compared to traditional learning. Lack of awareness about, and of systematic approaches towards online education and technology also pose a threat in transforming the education system via the online mode (Nawaz and Qureshi, 2010).

On the basis of above discussions, the study addresses the following research objectives and testable hypotheses:

Research Objectives

-) To explore the factors of motivator(s) and de-motivator(s) of learners from emerging knowledge economies pursuing or intending to pursue online education
-) To explore the potential facilitators of online education according to learners in emerging knowledge economies which could promote online education and overcome barrier(s)

Research Hypotheses

H₀₁- *The distribution of enrolment in online courses is the same across categories of country and gender*

H₀₂- *The distribution of enrolment in online courses is the same across categories of age, employment status and educational qualification in both countries*

H₀₃. The distribution of awareness towards online education is the same across categories of country and gender

H₀₄. The distribution of awareness towards online education is the same across categories of age, employment status and educational qualification in both countries

H₀₅. The distribution of preference for online education is the same across categories of country and gender

H₀₆. The distribution of preference for online education is the same across categories of age, employment status and educational qualification in both countries

METHODOLOGY

The research is divided into two parts:

- (i) An exploratory study to obtain learners' view points on factors of motivation, de-motivation and potential facilitators towards online education. This was considered important as motivation(s) and de-motivation(s) could vary across developed and emerging economies as discussed in the earlier section of this study. Given the exploratory nature of the research, the most suitable method was an approach based on qualitative in-depth interviews. We conducted a qualitative study with 51 participants from India and Uganda over a period of 21 days. These were spread across key groups as follows: students (undergraduate and post graduate), professionals (academicians, government officials, and other professionals) and housewives (not employed in a professional job). These groups were either pursuing or had an intention to pursue an online education. Semi-structured in-depth interviews helped researchers to understand learners' perspective on motivation(s), de-motivation(s) and potential facilitator(s) of online education. In order to elicit responses from the learners, we first asked them "Are you pursuing or do you or intend to pursue online education?" Then follow up questions were asked such as "Why" or "Why not" and "What, according to you could help the present scenario of online education in your country?" Researchers allowed respondents to talk freely and present their views on the topic. The responses were cross verified with the existing literature and authors' observations in order to achieve content validity. Based on the responses and available literature, we identified 11 motivational, 13 de-motivational and 11 suggested potential factors as facilitators to online education. Table 1 below, presents these factors along with the responses which helped researchers to identify them.

Table 1: Motivational, De-motivational and Potential Facilitators

S. No.	Motivating Factors	De-Motivating Factors	Potential Facilitators
1	Convenience (no need of commuting, can be studied at the comfort of home)	Lack of awareness (not aware of available platforms to pursue online education)	Spreading awareness (there should be proper promotion of available online educational platforms)
2	No age limit (can be pursued at any age which is unlikely in formal mode of education)	Lesser social interaction (can't interact with classmates, aloof learning, lack of collaboration among students)	Regulating online education (there should be proper mechanism to track courses and performances, standardisation)
3	Modular approach (small modules can be taken up)	Lack of personal attention by the	Proper validation and recognition of certificates

	at a time, no lengthy syllabus)	instructor (no interaction with the instructor during lectures, less point of contact)	(Government and job providers must recognise the certificates and consider it valid)
4	World class instructors (opportunity to learn from the best, courses from reputed foreign universities)	Intense requirement of self-discipline (anytime, anywhere concept requires lots of self-discipline, after some time the tempo goes off as there is no pressure)	Improving the infrastructure (better connectivity, better speed, low cost smart devices)
5	Affordable fees and flexible payment options (no need to pay at once, flexible payment options, modules are quite affordable)	Lack of time management skills (can't manage time, work doesn't allow to pursue online education)	Competitive differentiation by players (materials should have quantifiable differences, easy to understand and verify)
6	To remain employable (to be competent at work-place, learning new and relevant things helps at work-place)	Lack of desired courses (don't get desired courses, not interested in the available courses)	Enhancing practical component (highly academic, lacks practical component of the studies)
7	Technology penetration and friendliness (internet is not a problem and can be accessed from anywhere, friendly to use and operate)	Lack of interest in pursuing hobbies/higher career roles (lack motivation to learn, happy with the status quo)	Working on user feedback (feedback should be taken, improvements based on feedback)
8	Hobbies/casual learning (love to learn anything interesting, want to pursue hobby as career)	Perceived lower value of certificate (the certificates don't have value as compared to regular degrees/certificates)	Providing free access to content (everything is charged, free content should be available)
9	Availability of tailor-made courses (availability of choices in course and its content, can choose as per market need)	Language barrier (difficult to understand the language and the accent)	Enhancing value added services (apart from academic courses, career counseling, soft skill training should be available)
10	Learner centric approach (freedom to access anytime anywhere, courses are designed as per learners, freedom to explore)	Limited internet access (don't have good internet connection, speed is low)	Digital education promotion (education through digital platforms should be encouraged in formal education also)
11	Access to international content	Structure of the existing education system (rigid syllabus, formal courses)	Promotion of local content (local content should be provided online, customisation of content)

		and lack of experimentation)	
12	-	High costs (everything is charged and paying in dollars or other currency is tough)	-
13	-	Lack of local content (Most of the things are specific according to developed markets, lack of local content)	-

- (ii) After identifying the factors of motivation, de-motivation and potential facilitators, at the second level, we then asked 252 participants (127 from India and 125 from Uganda) 18 structured follow up questions on what motivates them to pursue or continue with online education, what kind of device they prefer, how different is the online mode, what inhibits them from pursuing online courses, how could the experience of online learning be made better, among other questions. Two versions of the interview guide were developed by the authors, to cater to the respondents in India and Uganda.

Also, Frequency tests were carried out on the available data from the 252 responses, in order to understand and present a comparative view of both countries. Mann-Whitney U-Test and Kruskal-Wallis tests were conducted to test the statistical validity of the hypothesis formed as the sample distribution was found to be not normally distributed.

Sampling Method

Two sampling methods were used for the study. For the qualitative study, purposive sampling was used, while for the quantitative study, the convenience sampling technique was used. In the first part, the number of interviews was not fixed in advance, as the sample size should generally follow the principle of saturation (Glaser & Strauss, 1967), whereby data collection stops when new data do not shed any further light on the issue under investigation. Following Miles and Huberman (1994), a purposeful sampling technique was used to identify and target the specific individuals representing the spectrum of knowledge and experience relevant to this study. To be included in the sample, participants should be enrolled or should have an intention to pursue online education. Data saturation was achieved after conducting 51 in-depth individual interviews. After this in the second level of study, we administered the structured questionnaire to respondents.

Responses for the purpose of quantitative analysis in India were collected by sending links of the Google form to the respondents but in Uganda, respondents completed the questionnaire when given in hard copy format (hard copies were only used in Uganda as people were not able to respond online due to weak network and poor Internet access). The questionnaire was distributed among 200 respondents in India and 200 from Uganda. We received a total of 285 responses (150 and 135 from India and Uganda respectively). Among the 150 responses from India, we found 127 responses were complete, and 125 responses from those received from participants in Uganda were complete, for a total of 252 completed questionnaires that could be used for analysis of responses. The response rate for India and Uganda was 63.5% and 62.5% respectively.

Sample description

For the first phase, the sample size was 51, broken down as follows:

India: 30 participants were from India. 48% were students (undergraduate and post graduate), 30% were employed, 12% were housewives and 10% were self-employed. The average age was 29 years. 37% of respondents were married and 34% were graduates. 49% were post graduate, 12% were doctorates and 5% were post-doctorate. They all were either pursuing or had an intention to pursue online education.

Uganda: 21 participants were from Uganda, 35% were students (undergraduate and post graduate), 40% were employed, 22% were housewives and 3% were self-employed. The average age was 35 years. 67% respondents were married and 24% were graduates, 69% were post graduate and 7% were doctorates.

For the second phase, the sample size was 252 broken down as follows:

India: Amongst the 127 participants 59.8% were in the 18-25 age group, 24.4% were in the 26-34 age group, 11.8% were in the 35-42 age group, while 3.1% were above 50 years of age. Respondents had diverse work experience (70.9% had 0-5 years of experience, 17.3% had 6-10 years of work experience, 5.5% had 11-15 years of work experience, 1.6% had 16-20 years of experience, 1.6% had 21-25 years of experience and 3.1% had 25 and over years of work experience) with different educational qualifications (graduates in science, arts, engineering, post graduates and doctorates, where, 18.9% obtained education up to 12 years, 43.3% obtained 15 to 16 years of education, 33.9% were post graduates and 3.1% of participants had a doctoral degree). 72.4% of the respondents were unmarried and 27.6% were married. Of these respondents, 45.7% were female and 54.3% were male.

Uganda: Amongst the 125 participants 52.8% were in the 18-25 age group, 23.2% were in the 26-34 age group, 15.2% were in the 35-42 age group, while 4.0% were above 50 years of age. Respondents had diverse work experience (64.8% had 0-5 years of experience, 15.2% had 6-10 years of work experience, 12.8% had 11-15 years of work experience, 1.6% had 16-20 years of experience, 0.8% had 21-25 years of experience and 4.8% had 25 and over years of work experience) with different educational qualifications (graduates in science, arts, engineering, post graduates and doctorates, where, 56% obtained 15 to 16 years of education, 40% were post graduates and 4% of participants had doctoral degree). 51.2% of the respondents were unmarried and 48.8% were married. Of these respondents, 56% were female and 44% were male.

All participants were either pursuing or had an intention to pursue online education.

FINDINGS AND DISCUSSION

In the first phase of qualitative data collection from 51 respondents the study identified 11 motivators, 13 de-motivators and 11 potential facilitators (see Table 1). Comparative Frequency tables (Table 2, Table 3 and Table 4) below represent the data collected from 252 respondents in phase two of the study from India and Uganda on motivation, de-motivation and potential facilitators factors. Also, below are comparative pie-charts to show the respondents' general awareness, enrolment and preferences on education via online mode. Testing for normality was also conducted where the sample distribution was found to be not normally distributed. The Kolmogorov-Smirnov test showed p -value < 0.05 . So, non-parametric tests were conducted to test the hypotheses. The sample design was found to be reliable with Cronbach's Alpha value of 0.755.

Table 2: Motivational Factors

S. No.	Motivational Factors Identified	India		Uganda	
		Frequency %	Valid	Frequency %	Valid
1	Convenience	61	48%	44	35.2%
2	No age limit	50	39.4%	40	32%
3	Modular approach	30	23.6%	16	12.8%
4	World class instructors	39	30.7%	12	9.6%
5	Affordable fees & Flexible payment options	39	30.7%	26	20.8%
6	To remain employable	28	22%	36	28.8%
7	Technology penetration & friendliness	45	35.4%	26	20.8%
8	Hobbies/casual learning	45	35.4%	27	21.6%
9	Availability of tailor-made courses	28	22%	12	9.6%
10	Learner centric approach	29	22.8%	17	13.6%
11	Access to International Content	44	34.6%	20	16%

Table 2 above shows the comparative frequencies and valid percentage of motivational factors of the respondents in both countries. 'Convenience' emerged as the most important factor which motivated learners to pursue online education followed by 'No age limit' in both countries. This is in line with the findings of Zhang and Zhou (2003), which suggests that learners can engage in self-paced learning, taking control over both the process and the content of their learning. 'Technology penetration & friendliness', appeared to be one of the important motivators in India with 35.4% of respondents recognising it but in Uganda the percentage of respondents fell steeply to only 20.8% for the same factor. This suggests that Uganda lagged behind in building up favourable infrastructure in order to facilitate lifelong learning through online education. To 'Remain employable' seems to be an important motivation in Uganda (28.8%) as compared to India (22%). This suggests that education is not only limited to formal structures, but today, because of increasing competitiveness at the work-place and gaps in labour supply-demand, even employed people pursue or intend to pursue education through the online mode to continue with their livelihood as it is convenient, and welcomes people from all age groups. Here it is noteworthy that most of the motivators highlighted by the respondents were environmental factors (extrinsic) rather than individual factors (intrinsic). The interpretation from this could be that a favourable environment plays an important role in promoting online education.

Table 3: De-motivational Factors

S. No.	De-motivating Factors Identified	India		Uganda	
		Frequency %	Valid	Frequency %	Valid
1	Lack of awareness	45	35.4%	18	14.4%
2	Lesser social interaction	37	29.1%	23	18.4%
3	Lack of personal attention by the Instructor	47	37%	23	18.4%

4	Intense requirement of self-discipline	19	15%	17	13.6%
5	Lack of time management skills	35	27.6%	13	10.4%
6	Lack of desired Courses	25	19.7%	23	18.4%
7	Lack of interest in pursuing hobbies/higher career roles	21	16.5%	7	5.6%
8	Perceived lower value of certificate	26	20.5%	9	7.2%
9	Language Barrier	23	18.1%	8	6.4%
10	Limited Internet Access	28	22%	14	11.2%
11	Structure of the existing Education System	26	20.5%	6	4.8%
12	High Costs	41	32.3%	40	32%
13	Lack of Local Content	24	18.9%	6	4.8%

Table 3 above highlights the factors which de-motivate learners from pursuing or to continuing to pursue online education. In India 'Lack of personal attention' and 'Lack of awareness' were found to be two of the main de-motivators at 37% and 35.4% respectively. In Uganda 'High cost', 'Lack of social interaction', 'Lack of personal attention by the instructor' and 'Lack of desired courses' were found to be the main de-motivators at 32%, 18.4%, 18.4% and 18.4% respectively. This affirms the fact that in high contextual cultures and emerging economies 'social approval', 'social influence' and 'higher preference for instructor guidance' are very important (Niles, 1995; Maldonado et. al., 201; Andrews et al, 1998). Learners seem to be so connected with the formal education system that lack of proper interaction with classmates/batch mates and instructors bothered them to an extent where it became a de-motivator. Without social interaction, the learning process was found to be difficult for learners. So, we might interpret that integrating online and offline touch points can enhance the experience of online education.

Also, the data in Table 3 suggest that some pre-requisite skills were required to pursue online education such as, knowledge of language and content in order to catch up with the predesigned flow of the course(s). Cost also came out as one of the main de-motivators in the path of online education. This may be because some reputed international universities charge in dollars and because of the currency exchange-rate (1\$=72INR approx. and 1\$= 3,673 Ugandan Shilling approx., (<https://www.oanda.com/currency/converter/>)), making the cost exorbitant in local currencies. Here, unlike motivational factors which inclined towards environmental (extrinsic) factors, de-motivating factors were found to be more inclined towards individual (intrinsic) factors. There seems to be merit in an interpretation as follows: even when individuals lack internal motivation for life-long learning, the facilities and favourable environment would encourage them to pursue education via the online mode in emerging economies.

Table 4: Potential Facilitators of Online Education

S. No.	Potential Factors Identified as Facilitators	India		Uganda	
		Frequency %	Valid	Frequency %	Valid
1	Spreading awareness	73	57.5%	71	56.8%
2	Regulating online education	58	45.7%	37	29.6%
3	Proper validation and recognition of certificates	62	48.8%	42	33.6%
4	Improving the infrastructure	59	46.5%	45	36%
5	Competitive differentiation by players	27	21.3%	32	25.6%
6	Enhancing practical component	35	27.6%	29	23.2%
7	Working on user feedback	30	23.6%	17	13.6%
8	Providing free access to content	56	44.1%	54	43.2%
9	Enhancing value added services	37	29.1%	30	24%
10	Digital education Promotion	58	45.7%	38	30.4%
11	Promotion of Local Content	24	18.9%	21	16.8%

Table 4 above presents the potential facilitators according to the learners, which may enhance the quality of education and lifelong learning through the online mode. 'Spreading awareness' emerged as the main potential facilitator in both the countries with 57.5% in India and 56.8% in Uganda. In Uganda the second most important factor was 'Providing free access to content' (43.2%) and in India the second important factor was 'Proper validation and recognition of certificates' (48.8%). However, in India learners also indicated 'free access to content' as one of the important potential facilitators towards online education. This is important in the context of the existing economic landscape of the countries where cost plays a vital role in access to quality education. 'Digital education promotion' also emerged as an important potential facilitator. For this purpose, Union Cabinet in India has approved 'Pradhan Mantri Gramin Digital Saksharta Abhiyan' (PMGDISHA) to make 60 million rural households digitally literate. The outlay for this project is Rs 2,351.38 (US\$ 353.70 million) to usher in digital literacy in rural India by March, 2019 (Press Information Bureau Government of India Cabinet, 2017). At present there is no similar initiative by the government in Uganda. This should be encouraged not only in Uganda but also all other emerging economies. Nawaz and Qureshi (2010), also indicated that lack of awareness and systematic approaches towards technology; lack of technical support; and administration support toward the implementation and attitude towards technology; and transforming education systems remain some of the biggest challenges of emerging economies when it comes to online education.

The study also found that, around 52% of learners from India and 66% learners from Uganda never completed their online course. Around 31% from India and 20% from Uganda partially completed their online course. Only 17% learners from India and 14% learners from Uganda always completed their online course. Overcoming these barriers will certainly improve and facilitate lifelong learning and quality education for all via the online mode.

To test the H_{01} , H_{03} , and H_{05} , hypotheses, Mann-Whitney U-Tests were performed and the results are summarized in Table 5 below. The data file was split by country before analysis.

Table 5: Mann-Whitney U Test for Hypotheses H_{01} , H_{03} and H_{05}

	Sig. Value for Enrolment in Online Courses		Sig. Value for Level of Awareness		Sig. Value for Preference between Online and Offline Education	
Country	0.000		0.009		0.000	
Gender ^a	India	Uganda	India	Uganda	India	Uganda
	0.102	0.169	0.504	0.781	0.713	1.000

a. Grouping Variable: Gender

The tests result showed p-values (0.000, 0.009 and 0.000) < 0.05, at 95% confidence level for grouping the variable 'country' towards test variables 'Enrolment in Online Courses', 'Level of awareness' and 'Preference between Online and Offline Education' respectively and thus was found to be significant. So, we rejected the null hypotheses H_{01} , H_{03} , and H_{05} for grouping variable 'Country'. However, p-values were found to be non-significant (Table 5) for grouping variable 'Gender', towards the test variables. Thus, we accepted the null hypotheses H_{01} , H_{03} , and H_{05} for grouping variable 'Gender'. So, one can conclude that distribution of enrolment, awareness and preference for online courses is not the same across countries, but is non-significant across categories of gender. The test results pointed towards the country specific facilities which make people aware and persuade them to choose and enrol in online education. Also, this result suggests that the role of policies and effort by the government matters a lot. Emerging economies will have to create greater awareness and build favourable infrastructure in order to facilitate online education. However, the gender gaps related to education seem to be narrowing with more and more women opting for online education in emerging economies.

Further, to test the null hypotheses H_{02} , H_{04} , and H_{06} Kruskal-Wallis Tests were conducted. Table 6, 7 and 8 below summarizes the test results for India & Uganda.

Table 6: Kruskal-Wallis Tests for hypotheses H_{02} (Enrolment in Online Education)

	Age		Employment Status		Educational Qualification	
Sig. Value for Enrolment in Online Education	India	Uganda	India	Uganda	India	Uganda
		0.047	0.010	0.002	0.000	0.280

The significance values were found to be 0.047 and 0.010 respectively, less than 0.05 at 95% confidence level for grouping variable 'Age'. Thus, we failed to accept the null hypothesis H_{02} in the study. The result is significant for both the countries in terms of enrolment in online courses on the basis of age. On the basis of the results, the study drew some important inferences that though learners from various age groups were enrolled in the online education courses, and were using ICTs and digital platforms for the purpose of learning and enhancing their skills; there needed to be more awareness creation to enhance the enrolment across age categories and also measures taken in order to build intentions among learners across age categories to enrol in online education.

However, as compared to Uganda India seemed to be moving towards achieving higher enrolment in online education with a significance value higher than that of Uganda. This is a fairly good indicator for any knowledge economy as it suggests promotion of growth and zest for learning.

For grouping variable 'Employment Status', results were found to be significant with p-values less than 0.05; 0.002 and 0.000 for India and Uganda respectively. The null hypothesis for grouping variable 'age' was therefore rejected. This suggests that pursuing online education depends on the employment status of the learners. This might be because of the existing competition at the workplace and intention to remain employable. This reflects our findings of exploratory analysis in the first phase of this study, where 'Desire to Remain Employable' emerged as a major motivator.

For grouping variable 'Educational Qualification', results were found to be non-significant with p-values greater than 0.05 with 0.280 and 0.380 for India and Uganda respectively. So the null hypothesis for grouping variable 'Educational Qualification' was accepted. This suggests that learners' motivation to online education is independent of their educational qualification and people from various educational backgrounds (the study focused on 5-levels of educational qualification: 10th, 12th, graduation, post-graduation and doctoral) were found to be interested in life-long learning.

Table 7: Kruskal-Wallis Tests for hypotheses H_{04} (Awareness of Online Education)

	Age		Employment Status		Educational Qualification	
	India	Uganda	India	Uganda	India	Uganda
Sig. Value for Awareness towards Online Education	0.570	0.000	0.671	0.000	0.490	0.000

Table 7 above summarises the results for learners' awareness towards online education for grouping variables age, employment status and educational qualification. For the grouping variable 'Age', India had a significance value of 0.570, which is greater than 0.05 at 95% confidence level. The study concluded that for India, awareness doesn't differ across age. However, the enrolment level was found to be less than that of Uganda (Figure 1). This may be because of the belief in the classic method of learning. For Uganda, the p-value was found to be significant at 0.000, which is less than 0.05 at 95% confidence level. The study therefore concluded that for Uganda, awareness does differ across age. However, the greater enrolment in online education in Uganda (Figure 1) may be attributed to the adaptable and more flexible attitude of the people to try something new. The study drew some important inferences that people from various age groups were enrolled in online education courses and were using ICTs and digital platforms for the purpose of learning and enhancing their skills. This is a fairly good indicator for any knowledge economy as it promotes growth and zest for learning and development.

For grouping variable 'Employment status', India had a significance value of 0.671, which is greater than 0.05 at 95% confidence level. The study concluded that for India, awareness didn't differ across categories of employment status. This suggests that people across sections of the society are aware of online education in India, which may indicate a brighter future for online education and life-long learning. In Uganda, however, the p-value was found to be 0.000 less than 0.05, thus H_{04} was rejected for grouping variable 'Employment status'. The significant p-value and the mean rank of the test indicated that in Uganda the employed are more aware of online education. This may be because of the desire to upgrade skills to remain employable or grow in a professional

capacity. This is common in emerging economies where a growing population puts pressure on available resources.

For the grouping variable 'Educational qualification, the study found that again for India results were non-significant (p -value $0.490 > 0.05$) but for Uganda the results were significant (p -value $0.000 < 0.05$) at 5% confidence level. In India the recent digital push and government initiatives to promote online education may have created this awareness among learners at various educational levels, whereas the mean rank for Uganda showed that as educational qualification increases, the awareness also increases. This may also be due to linkages to employment and lifelong learning attitudes. More efforts from the government is needed to create awareness in Uganda in order to cater for a larger population and direct them to the benefits of online education at various levels. This would help in providing quality education and encourage life-long learning.

Table 8: *Kruskal-Wallis Tests for hypotheses H_{06} (Preference for Online Education)*

	Age		Employment Status		Educational Qualification	
	India	Uganda	India	Uganda	India	Uganda
Sig. Value for Preference for Online Education	0.295	0.429	0.252	0.001	0.788	0.023

Table 8 shows some interesting test results. For grouping variable 'Age', though the awareness of and enrolment in online education in Uganda varied across age groups, preference for online education did not vary. This suggests that if enough awareness is created and provided with proper infrastructure, learners from Uganda would prefer to opt for education via the online mode. A similar situation was evident in India for the grouping variable 'Age'. For both countries p -value remained higher than 0.05 (India: 0.0295; Uganda: 0.429). This again is a good indicator as it hints at a shifting learning landscape of the educational environment. This certainly is one of the requirements in today's need for quality education in emerging economies with large populations. However, despite greater awareness and enrolment in online education across age categories, preference for online education in India was less than in Uganda by 'Age'. This may be because of the existing culture and social norms. One more interesting reference could be drawn from this result - awareness of online education in Uganda was less in younger age-groups, but when it came to preference, the younger age group exceeded the others. This could be supported by providing better facilities to the learners.

For grouping variable 'Employment status', the p -value for India was found to be non-significant at 0.252. This meant that the null hypothesis was accepted for India, and thus one could say that preference for online education remained the same across categories of employment. However, for Uganda, the p -value was found to be significant at 0.001 at 95% confidence level. Thus, we rejected the null hypothesis for grouping variable 'Employment status' for Uganda. Employment in Uganda seems to be a bigger issue and those who are not employed showed greater preference for online education, than those who were employed. However, enrolment and awareness were found to be more significant among employed learners.

For grouping variable 'Educational qualification', preference for online education remained the same across categories of educational qualification in India, as the p -value showed non-significant results with 0.788 which is greater than 0.05. Thus, the null hypothesis was accepted. People no matter how educated they were, preferred the online mode of education more than the traditional mode. For India this result may be indicative of the higher learning motives among people

irrespective of their educational qualifications. Also, it may be an indicator of the existing level of competition and the dynamic environment which always keep learners on their toes to learn and upgrade their knowledge and skills. For Uganda, the results were found to be significant with p-value less than 0.05 ($0.023 < 0.05$). Thus, the null hypothesis was rejected and one might conclude that preference for online education varies across categories of already existing educational qualifications.

Interestingly, preference remained higher among learners with lower education qualifications. However, enrolment and awareness showed greater values (the mean for graduates was found to be 68.36, for post graduates it was 56.75 and for Ph.Ds. it was found to be 50.50 in Uganda) in the higher educational qualification category. This highlights the technology preference of youth in both countries, but due to the uncertainty of employment and the rigid formal education system, enrolment remained higher in the higher age groups and educational levels.

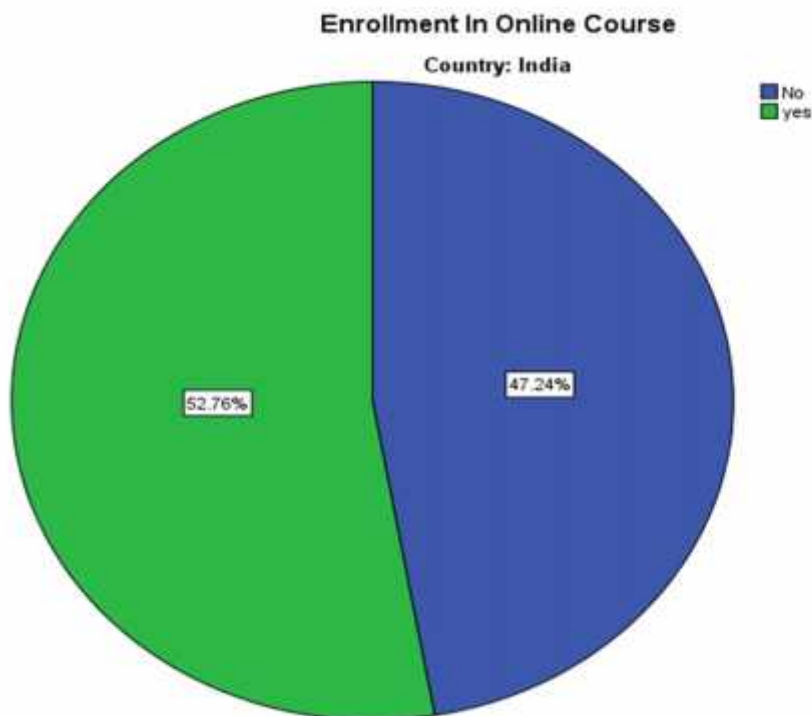


Figure 1: Enrolment in online courses - India

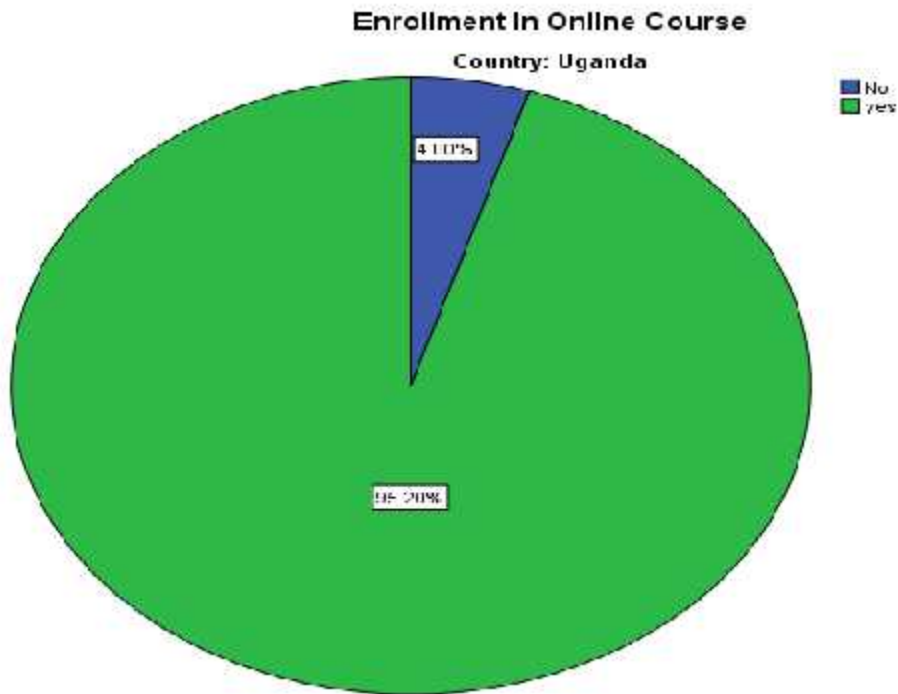


Figure 2: *Enrolment in online courses - Uganda*

Figures 1 and 2 above provide a general picture of enrolment in online education in both countries. This suggests that the belief and trust in the old-school method of teaching was more prevalent in the Indian context as compared to Uganda. However, according to KPMG (2017), online higher education in India is at an early stage of development and has witnessed the emergence of different private universities offering undergraduate and post graduate e-learning courses to students.

The report also found that the market for online education in India is expected to witness a significant growth rate in the next five years, from USD 247 million in 2016 to USD 1.96 billion in 2021. Goyal (2018) reported that India is the world's second largest market by subscriber base, after the United States, and also among the fastest-growing markets for such online platforms.

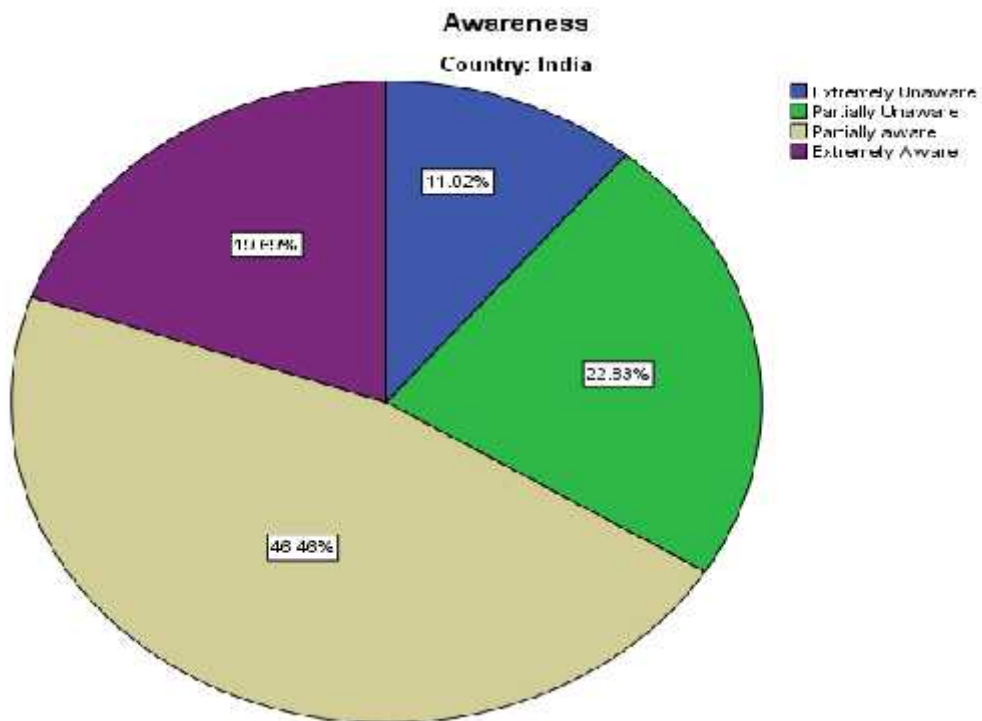


Figure 3: Awareness of online courses - India

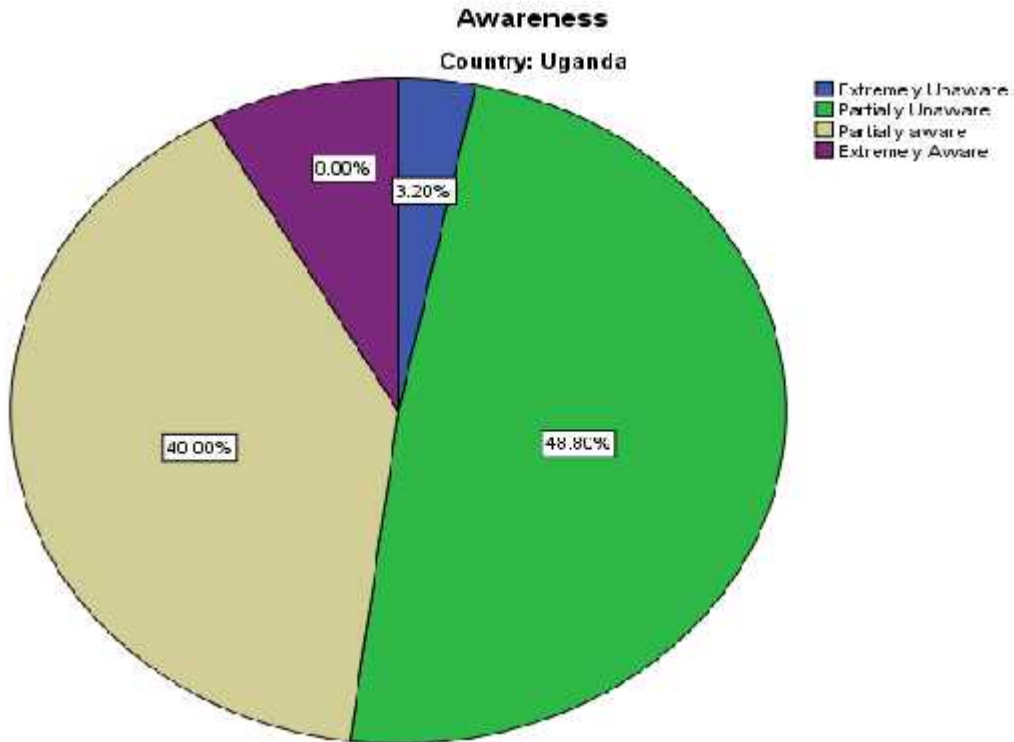


Figure 4: Awareness of online courses - Uganda

Figures 3 and 4 above provide a general picture of awareness in both countries. Awareness in India stood at 66%, as compared to 48% in Uganda. The higher proportion of awareness of the online educational platforms and courses available in India may be because of the existing greater penetration of ICTs and digital platforms in India and the awareness created by the stakeholders.

Figures 5 and 6 below indicate that generally (without any grouping variable) more learners from Uganda prefer online education compared to learners in India. This may be because of their increasing need for digital and ICTs platforms, which is supported by the data in Table 2 where it is indicated that technology penetration and ease of use with the digital platform is only 20.8% in Uganda. This could be considered as a very good indication that people are ready to embrace ICTs in order to pursue education via an online mode. Hence, environmental support would surely enhance and facilitate online education.

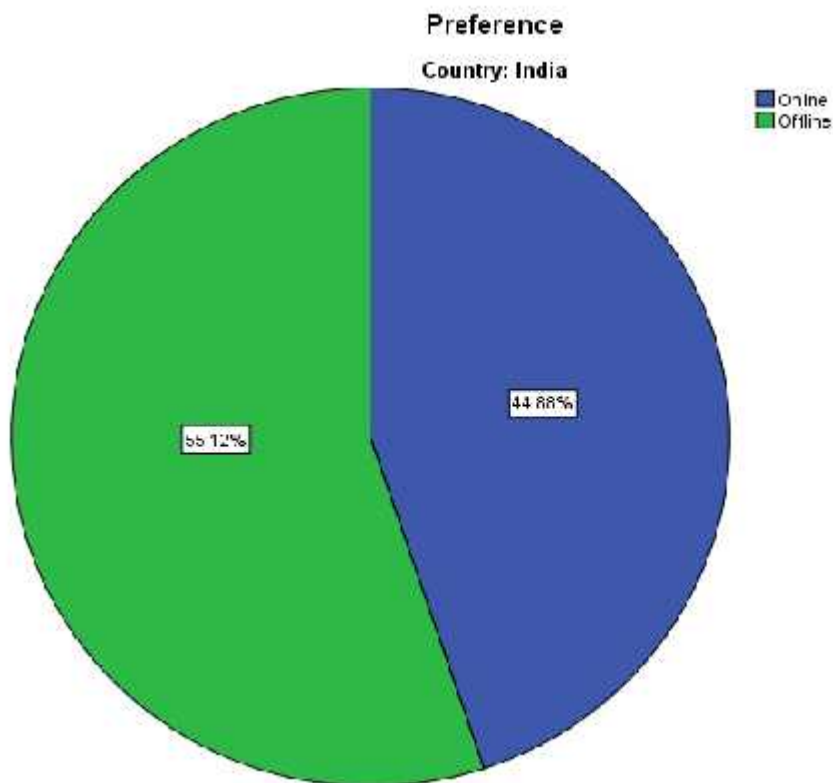


Figure 5: Preference for online courses - India

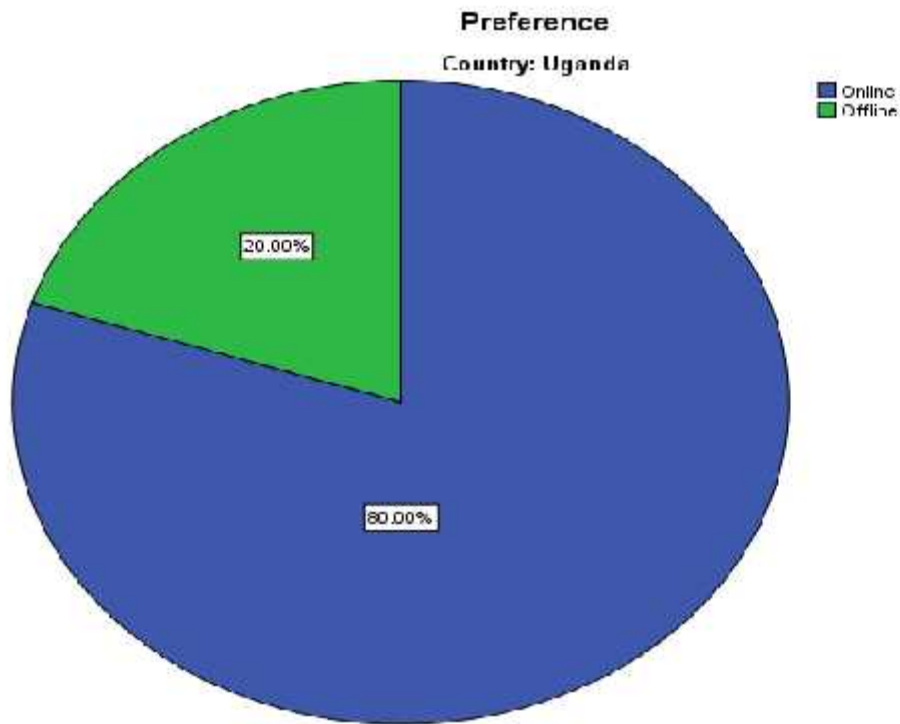


Figure 6: Preference for online courses - Uganda

CONCLUSIONS AND RECOMMENDATIONS

This paper examined the present (highlighting motivators and de-motivators and effect of demographic variables) and future prospects (highlighting potential facilitators) of online education in capacity building in emerging economies. Our primary findings suggest a requirement for determination and enhancement of basic infrastructure. This research extends current e-learning research on perceived motivation and frameworks by specifying which dimensions learners consider important in their judgment to pursue online education. Research shows that ICTs can offer great opportunity for learners in emerging knowledge economies to improve learning processes in aspects of content and pedagogy (Chirwa, 2018). The paper also highlighted indicators of major motivators and de-motivators among the emerging knowledge economies which remains similar in most aspects across the countries compared. This may be as a result of their somewhat similar economic, technological and social environments. Though India caters to a larger population as compared to Uganda the need to provide quality education precedes all other goals in both of the countries. However, the finding of the study that only 17% of learners from India and 14% of learners from Uganda always completed their online course, is slightly disturbing data as incomplete education may not result in the dividends expected.

There are still a few hindrances such as lack of ICT literacy skills, lack of awareness, and the high cost involved, among others. This suggest the need for a proper ecosystem to be created to address the needs and availability of digital aids in the field of education. Governments in emerging

knowledge economies along with all the stakeholders (such as educational institutions, teachers, students, Internet service providers, and parents) must devise policies to expand and enhance the online learning experience to cater for the growing need of quality education and also to narrow the gap which exists among genders as social and financial inequality (Sinha and D'Souza, 2017) within emerging economies. To cater for such large populations the governments would incur a heavy cost in providing physical infrastructure for educational institutions and online education could be the answer to this problem.

Promotion of the motivators and addressing the de-motivators as identified from the primary survey would improve the uptake and adoption of online education. This would contribute to the narrowing of the gender and literacy gaps which would in turn lead to faster attainment of the Sustainable Development Goals (SDG).

Based on the findings of this study, the authors believe that the future of education in the emerging knowledge economies lies in the blended learning approach, where there could be touch points between online and offline modes. This mode of delivery combines the benefits of online learning – such as low cost, flexibility and convenience – with social contact, instructor attention and a sense of community associated with face-to-face learning (Toufaily et al., 2018). Such models are particularly well suited to the high contextual culture, which places high value on relationships, avoidance of ambiguity and physical presence of an instructor as a knowledge expert and facilitator. This blended model would also help in addressing the de-motivating factors explored in the study of online education.

LIMITATIONS AND FUTURE DIRECTIONS

Though elementary, the study has the potential to provide a solid ground for academics and researchers in order to understand the scope of online education in emerging knowledge economies. The study adopted a qualitative and a quantitative methodology, thus providing insights into the learners' perception of online education. Understanding the perception of one of the most important stakeholders of online education - the learners, has been achieved by this study. However, one can also look into various other stakeholders' perceptions along similar parameters. In addition to what this study explores and elicits, one can also assess various other demographic factors like marital status and income levels. The study focused on two specific countries which can be expanded or narrowed to get better insights into the space of online education. Also, researchers can further validate the motivating and de-motivating factors identified in this study. Similarly, the suggested potential facilitators can also be validated. A lack of generalisability common to qualitative methods should be acknowledged.

This research is preliminary in nature and tries to explore the various aspects of online education through the learners' point of view. However, it provides solid ground for further research to understand the learners' perception and impact of online education on their personal and professional lives.

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