Webometric Analysis on Leading Course Providers in MOOC: A Study Based on Alexa Ranking

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Abstract

Massive Open Online Courses (MOOCs) are online courses that are offer via internet based platforms to a very large majority of people without charging course fee. Interested individuals can follow MOOCs anytime, anywhere without facing geographical and financial barriers. The major objective of this study was to evaluate the leading MOOC providers based on Alexa ranking. Ten major MOOC providers were selected as the target group. The data for this study were collected using Alexa Internet website. Further, Leading MOOC providers were compared using global ranking, bounce rate, daily page views per visitor, daily time on site, search visits, total site linking in and speed.

Keywords: Alexa Internet, e-Learning, MOOCs, Webometrics

1. Introduction

Right from its inception, Information and Communication Technologies (ICT's) have been an integral part in all walks of human life. Further, with the advancement of ICT's, the present day- to- day activities have shifted to a new paradigm, where the individual has access to all sorts of information right at his finger tip. The major issue is that one should gain the required ICT skills in order to search and retrieve information effectively. Due to the mass number of learners in the present era, the traditional classroom education does not fulfill their needs. Hence, the education institutes should deploy new way of teaching in order to satisfy these large numbers of learners. This is where the concept of e-learning was introduced where the teaching and learning is done by using electronic media which has the goal of learning anytime and from any place(Barjis, 2003).

MOOCs are one of the new phenomenal rises among internet users. It can be considered as the future of open online education. According to Czerniewicz, et al.,(2015), "MOOCs are a flexible and open form of self-directed, online learning designed for mass participation. There are no fees or entry requirements and no formal academic credit is available" (p. 01). MOOCs gain significant popularity in recent years. Individuals who are interested about learning new things can follow MOOCs anytime, anywhere without facing geographical barriers and financial barriers.

Currently, there are plenty of courses offered as MOOC, covering vast subject areas, which are provided by various course providers. However, to gain good and accurate knowledge individuals must follow courses provided by quality and well recognized MOOC providers.

Alexa Internet (http://www.alexa.com) is a web information company founded in 1996 and operating under Amazon.com(Alexa, 2017). Alexa Internet

provides web analytic data and web traffic data. Alexa rankings were calculated based on the global traffic data. The Alexa global traffic rank reveled that "how a website is doing relative to all other sited on the web over the past 3 months" (Alexa, 2017).

This study is using secondary data extracted from Alexa Internet to compare MOOC providers.

2. Objectives

The core objective of this study is to evaluate the leading MOOC providers based on Alexa ranking.

3. Literature Review

According to Liyanagunawardena, Adams, & Williams, (2013) the first research on MOOC was published in 2008. From 2008 to 2012 there were only 45 research publications were published based on MOOC (Liyanagunawardena et al., 2013). Though, the literature related with Alexa ranking in MOOC was unavailable.

However, several literature were available related to Alexa traffic data in Webometric analysis. Bhat (2013)evaluated the websites of 26 Indian Newspapers using Alexa databank. Similarly, Naheem (2016)has studied the websites of Malayalam newspapers. Furthermore, Kanellopoulos & Kotsiantis (2012)used clustering techniques with Alexa data to evaluate the websites of Greek newspapers. These researchers used the information about traffic rank, page viewed, speed, links, bounce percentage, time on site, search percentage and Indian/foreign users to compare the relevant websites. Therefore, to get an overall image of the MOOC providers, the above mentioned criteria were used in this study.

4. Methodology

In this study ten major MOOC providers were selected as the target group. Data of this study were collected using the website of AlexaInternet. Table 1 illustrates the selected MOOC providers and the relevant URL of their Alexa web pages.

Table 1 Selected MOOC providers

Course provider	URL
edX	http://www.alexa.com/siteinfo/edx.org
Coursera	http://www.alexa.com/siteinfo/coursera.org
Udemy	http://www.alexa.com/siteinfo/udemy.com
Udacity	http://www.alexa.com/siteinfo/udacity.com
Codecademy	http://www.alexa.com/siteinfo/codecademy.com
Alison	http://www.alexa.com/siteinfo/alison.com
FutureLearn	http://www.alexa.com/siteinfo/futurelearn.com
Open2Study	http://www.alexa.com/siteinfo/open2study.com
iversity	http://www.alexa.com/siteinfo/iversity.org
Canvas	http://www.alexa.com/siteinfo/canvas.net

The current study used following criteria extracted from Alexa Internet to evaluate MOOC providers: global rank, bounce rate, daily page views per visitor, daily time on site, search visits, total site linking in, and speed.

Table 2: Alexa Indicators

Term	New meaning
Global rank	The popularity of a particular website when compared to other sites
Bounce rate	The percentage of visits to the site which has a single page view
Daily page views per visitor	The daily unique page views per visitor on the site
Daily time on site	The daily time on the site per visitor to the site (min:sec)
Search visits	The percentage of traffic which comes to the site from a search engine for the past three months.
Total site linking in	The number of sites that are linking in to this site
Speed	median time taken to load web pages
Upstream sites	The sites that are previously visited by the users prior to visiting this site.

Source: Author's elaboration based on Alexa (2017).

5. Analysis

Individuals who are using MOOCs are playing an important role by contributing to the development of MOOCs. Hence, a brief summary of the considered MOOC providing websites users is presented in Table3, 4,5 and 6. However, Alexa Internet is not providing actual values on demographic characteristics in their open access view. Thus, the ranking of responses in each demographic characteristic were considered. The ranks were allocated by the researchers according to the majority of the enrollment. Rank 1 was allotted for high enrollment and similarly rank 2 for low enrollment.

Gender distribution of followers

Table 3 illustrates the gender ranking of followers of selected MOOC providers.

Table 3 Gender ranking of followers of selected MOOC providers

Course provider	Gender Ranking	
	Male	Female
edX	1	2
Coursera	1	2
Udemy	1	2
Udacity	1	2
Codecademy	1	2
Alison	1	2
FutureLearn	2	1
Open2Study	1	2
iversity	1	2
Canvas	1	2

As shown in Table 1, the majority (nine out of ten) of considered MOOC providers have male followers than female followers. Only courses offered by FutureLearn MOOC provider have more female followers than male followers.

Education level of followers

Table 4 demonstrates the ranking of the level of education of followers of selected MOOC providers.

Table 4: Ranking of Level of education of followers of selected MOOC providers

Course provider	Education			
	No College	Some College	Graduate School	College
edX	4	3	1	2
Coursera	4	3	1	2
Udemy	4	3	1	2
Udacity	4	3	1	2
Codecademy	4	3	2	1
Alison	4	3	1	2
FutureLearn	3	4	1	2
Open2Study	4	3	1	2
iversity	1	3	1	2
Canvas	4	3	1	2

In respect to the level of education (Table 4), majority of the course followers in MOOC are graduates, which is followed by college and some college. It is also noted that people who never went to college are also following MOOC courses.

Browsing location

Table 5 gives information about browsing location of followers of selected MOOC providers.

Table 5: Browsing location of followers of selected MOOC providers

Course Provider	Browsing Location		
	Home	School	Work
edX	1	3	2
Coursera	1	3	2
Udemy	1	3	2
Udacity	1	3	2
Codecademy	1	3	2
Alison	1	3	2
FutureLearn	1	3	2
Open2Study	1	-	1
iversity	2	3	1
Canvas	1	3	2

It is evident from the Table 5 that majority of the MOOC followers like to follow their courses from their home. The second most favorable place is to follow form their work place. It is also observed that, very few followers are accessing the relevant MOOC providers at their schools.

In their home, individuals have more freedom to focus and engage with course materials. Thus, they prefer to brows MOOC from their home. In schools, individuals should strict to a time table. Within that time table, there is no specific time allocation for MOOC browsing. Hence, they do not have enough

freedom and time to brows MOOCs when they are in school.

Audience geography

Table 6 illustrates the geographical distribution of MOOC followers. It only shows the information about top five countries of the considered MOOC providers.

As reveled by the above results, most of MOOCs followers are from English speaking countries. Currently, majority of MOOCs are offering in English medium. As a result, individuals who are not familiar with English language have difficulties in engaging with MOOCs provided in English language.

Table 6: Ranking of audience geography

Course Provider	Rank				
	1	2	3	4	5
edX	USA	India	China	Nigeria	Japan
Coursera	USA	China	India	Japan	UK
Udemy	USA	India	UK	Japan	Brazil
Udacity	USA	India	China	Brazil	Germany
Codecademy	USA	India	China	UK	Japan
Alison	India	USA	Nigeria	Egypt	UK
FutureLearn	UK	Egypt	China	USA	Nigeria
Open2Study	India	Australia	Nigeria	USA	China
iversity	Germany	USA	India	Nigeria	South Korea
Canvas	UK	India	Germany	Syrian Arab Republic	Italy

As shown in Table 6, followers from USA and India are using MOOCs provided by majority of the MOOC providers to get knowledge. Coursera,edX,Udemy, Udacity and Codecademyhad highest number of followers from USA. Alison and Open2Study MOOC providers had majority of followers from India. iversity MOOC provider had more followers from Germany. Italy, Japan, Nigeria, Egypt, South Korea and Syrian Arab Republic have comparatively low number of MOOCs followers.

Alexa ranking on MOOC providers

Table 7 shows the information about global ranking, bounce rate, daily page views per visitor, daily time on site, search visits, total site linking in and speed of the selected MOOC providers.

Table 7: Alexa ranking details about selected MOOC providers

Course provider	Global rank	Bounce Rate	Daily Pageviews per visitor	Daily time on site	Search visits	Total site linking in	Speed
edX	1089	36.4%	5.95	7:32	7.9%	1736	Slow
Coursera	693	42.8%	3.91	5:33	9.1%	3033	Very slow
Udemy	449	44.7%	5.05	6:06	11.6%	3192	Slow
Udacity	1947	40.31%	4.91	6:12	10.1%	2305	Very slow
Codecademy	1532	44.9%	4.82	6:40	13.8%	8666	Very slow
Alison	3948	35.8%	6.89	9:39	11.3%	1070	Slow
FutureLearn	4149	43.7%	8.75	11:36	5.40%	458	Slow
Open2Study	36589	30.3%	5.52	13:48	12%	99	Very slow
iversity	95362	45%	4.5	5:38	9.7%	161	Fast
Canvas	60293	42.5%	5.55	8:01	9.7%	125	Slow

As shown in Table 7, according to the global ranking, Udemywas the most popular MOOC provider (rank-449), followed by Coursera (rank- 693), edX (rank-1089), Codecademy (rank-1532) and Udacity (rank-1947). Open2Study (rank-36589), Canvas (rank-60293) and iversity (rank- 95362) were identified as the least popular MOOC providers.

With respect to Bounce rate of MOOC providers, Open2Study had the lowest bounce rate (30.30%) followed by Alison (35.8%) and edX (36.4%). Meanwhile, iversity (45%) and Codecademy (44.9%) had the highest bounce rates.

According to the Table 7, FutureLearn had highest number of daily page views per visitor (8.75). Coursera had the least number ofdaily page views per visitor (3.91). When consider about the daily time on site, Open2Study and FutureLearn had the highest time on site respectively, 13 minutes and 48 seconds and 11 minutes and 36 seconds. Coursera (5 minutes and 33 seconds) and iversity (5 minutes and 38 seconds) had the lowest daily time on site.

With respect to search visits, Codecademy (13.8%), Open2Study (12%), Udemy (11.6%), Alison (11.3%) and Udacity (10.1%) were identified as the MOOC providers with higher search visits. FutureLearn (5.4%) and edX (7.9%) were identified as the MOOC providers with lowest search visits. Search visits data provides “the percentage of traffic, both free and paid, that come to this site from a search engine over the past 3 months” (Alexa, 2017). Thus, the MOOC providers with high search visits value have more visibility than MOOC providers with lower values.

The total site linking in is illustrates the number of sites which have link to the considered site. As shown in Table 7, Codecademy (8666) had the highest number of site linking in. In contract, Open2Study (99) had the lowest number of site linking in. A MOOC provider with highest site linking in has high probability in including in search results, done using search engines. This also confirmed by the search visits information. As already identified, Codecademy had the highest number of search visits because of highest number of site linking in.

According to data extracted from Alexa Internet, iversity can identified as a fast website. Canvas, FutureLearn, Alison, edX, and Udemy are categorized as slow websites. Furthermore, Open2Study, Udacity, Coursera, and Codecademy categorized under very slow websites.

Upstream sites

Upstream sites are the sites that people visited before they visited to the considered site. Table 8, furnishes the information about upstream sites used by MOOC followers.

Table 8: Upstream sites

Upstream sites	Course Provider									
	edX	Coursera	Udemy	Udacity	Codecdemy	Alison	Futurelearn	Open2Study	iversity	Canvas
google.com	X	X	X	X	X	X	X	X	X	X
google.co.in	X	X	X	X	X	X	-	X	X	X
google.ru	-	X	-	-	-	-	-	-	-	-
google.com.eg	-	-	X	-	-	-	X	-	-	-
google.com.ua	-	-	-	-	X	-	-	-	-	-
youtube.com	X	X	X	X	X	X	X	X	X	X
coursera.org	X	-	-	-	-	-	-	X	X	-
facebook.com	X	X	X	X	X	X	X	-	X	-
android.com	-	-	-	X	-	-	-	-	-	-
yahoo.com	-	-	-	-	-	X	-	-	-	X
vk.com	-	-	-	-	-	-	X	-	-	-
alison.com	-	-	-	-	-	-	-	X	-	-
canvaslms.com	-	-	-	-	-	-	-	-	-	X

As revealed by Table 8, google.com and youtube.com are the most prominent upstream sites among considered followers followed by google.co.in and facebook.com. The least important upstream sites were google.ru, google.com.ua, android.com, vk.com, alison.com, and canvaslms.com.

6. Findings and Conclusion

MOOCs are now considered as one of the emerging e-learning techniques. Within the past few years it has attracted attention of lifelong learners from all around the globe. As revealed by the results, it is evident that more males were using MOOC than females. Majority of the MOOC followers were graduates. The most preferred browsing place to access MOOCs wasfrom their home. Since majority of MOOCs are offering in English medium, a significant number of followers are representing English speaking countries.

According to the global ranking Udemy was the most popular MOOC provider and iversity was the least popular MOOC provider. Open2Study had the lowest bounce rate and Codecademy had the highest bounce rate. With regards of highest number of daily page views per visitor, FutureLearn had highest number and Coursera had the least number of daily page views per visitor. Open2Study had the highest daily time on site and Coursera had the lowest daily time on site.

Codecademy was identified as the MOOC providers with higher search visits. Meanwhile, FutureLearn had lowest search visits. When considered about the total site linking in, Codecademy had the highest number and Open2Study had the lowest number of site linking in.iversitywas identified as a fast website and Canvas, FutureLearn, Alison, edX, and Udemywere categorized as slow websites. google.com and youtube.com were the most prominent upstream sites.

7. Recommendations

Based on the conclusions of the study, following recommendations can make.

- ❖ The female enrollment in MOOCs courses is low when compared to their male counterparts. In most countries, especially in developing countries, females have barriers for education than male. Course providers can offer more courses to attract more female. So by providing basic knowledge about subject areas with day to day application, which prefer by female such as housekeeping, currency management in household, etc. will be helpful to attract more female learners.
- ❖ Majority of followers have good educational background. So course providers can provide standard course with quality knowledge.
- ❖ There were some group of people who are browsing MOOCs from work place and schools. Less freedom and limited time are the major problems in schools and workplaces to follow MOOCs. Therefore, MOOC providers can provide more downloadable videos, lectures and documents etc. that learners can download from their work place or school and further refer in home.
- ❖ Identification of the country of followers is very helpful in course planning. Because based on the country, course providers can offer courses in their preferred language. As reveled by the resultsiversity course provider preferred by more German users. Thus, when planning

coursesiversity can offer and give priority to courses conducted in German language.

- ❖ MOOC providers must increase their visibility to attract more users to follow their courses. Therefore, they must pay attention to rise their site visits using increasing the total site linking in. Furthermore, by increasing the speed of the relevant websites, MOOC course providers can attract more learners.

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