

An Empirical Analysis of Learners' Experience on Select MOOCs Platforms with Reference to Users Reviews and Ratings



Smitha Sambrani

Abstract: Massive open online courses (MOOCs) is created greater prominence as a modern learning system mainly due to the advanced progress made in the area of Learning and Teaching Technology and. Covid pandemic also had open opportunities for Online Learning Platforms. Present study has focused on learners' experience with various MOOCs platforms through online reviews and ratings, which were collected from Google play store and appbot application. Seven MOOCs platforms namely Coursera, edX, Udemy, Swayam, LinkedIn, Khan Academy and Upgrad are reviewed in this paper. The main objective is to compare the select MOOCs platforms in the area of users' experience. Total number of reviews and rating has been taken for the study is 63, 652. The time frame of sample data was taken for last one year that is from 5th April, 2020 to 5th April, 2021. Sentiment analysis and chi-square test is applied to analyze the difference among the different MOOCs platforms. The major outcomes were the reviews and ratings of different platform found with very good uses experience.

Keywords: Sentiment Analysis, MOOCs and Consumers' Experience.

I. INTRODUCTION

The quick improvement of innovation has affected numerous parts of our lives, particularly identified with considering and schooling. Electronic gadgets, programming, learning stages and we have made learning simpler and quicker and furthermore their quality is by all accounts improved by these new advances.

A new improvement in advanced education and distance learning is the Massive Open Online Course (MOOC) that offers free access and intelligent cooperation to students from one side of the planet to the other through web and different advances. The motivation behind MOOC stages is to revive instructing and learning and to make a shiny new virtual space for instructive collaboration.

Moreover, this methodology of web based learning is an extraordinary chance to the two sides: buyers and suppliers, for customers it is addressed by the assortment and the notoriety of courses to be browsed; for the suppliers it is tied in with being liberated from commitment in regards to the

achievement of the course fruition. A MOOC (Massive Open Online Course) is an online instructive climate that permits countless understudies from anyplace on the planet to follow online courses in any field of study. The educators come from first class colleges and show utilizing recordings and introductions.

Simultaneously, individuals who try out these courses can associate with a local area of teachers and students with comparative interests. Toward the finish of the course, understudies who graduate may get a certification. MOOCs started as an improvement of the OER (Open Education Resources) development that energizes free getting the hang of, instructing and research materials.

The primary advantage of MOOCs is that you can learn at your own speed, following your own timetable, in any area on the planet. Courses may have cutoff times for tests, tests and appraisals; however the student can pick when to take them. As the customary learning, MOOCs likewise support joint effort between individuals utilizing gatherings and conversation gatherings.

They can utilize interpersonal interaction to assist each other with understanding the material and tasks and get prompt criticism from the educators. (Sokolova, 2014) This thought of internet learning enables the understudies with an extraordinary duty of self-arrangement and furthermore the determination of what best fits for his advancement. These days, the test of MOOC stages is to improve the quality and the intelligence of the material to build the quantity of enrolments.

Coursera and EdX are the probably the most remarkable suppliers of MOOCs, trailed by Udacity, Udemy and Khan Academy. Among the European suppliers, iversity.org merits referencing. Every supplier of MOOCs has explicit highlights and course content that have an influence in deciding the best fit for self-improvement.

As a feature of the MOOC Quality Project (Conole, 2013), Grainne Conole built up an order framework for MOOCs that comprises of 12 measurements: level of receptiveness, level of vastness, the measure of utilization of mixed media, the utilization of specialized instruments, the level of community oriented learning, the sort of student pathway (student focused learning against instructor focused learning), quality confirmation, measure of reflection, appraisal procedures, learning model (formal or casual), self-governance, and variety.

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* Correspondence Author

Dr. Smitha Sambrani*, Associate Professor, Department Business of Management, UCCBM, Osmania University, Hyderabad (Telangana) India. E-mail: smithasambrani@yahoo.com

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II. REVIEW OF LITERATURE:

MOOCs which started its excursion since the time 2008 when this term was authored (Longstaff, 2014), it was tested and has gone through its own development cycle. Ongoing examinations regarding the matter by prominent specialists uncover that individuals undertaking MOOCs are for the most part utilized, youthful in age, have finished advanced education courses effectively, overwhelmed by male students, generally hail from created nations, and can bear the cost of the expense of advanced education programs (Christensen et al., 2013).

These populaces of students who are profited the most are deficiently addressed of MOOCs. It is new rush of internet learning with three significant partners: people and associations who need to get new abilities, topic specialists who can work with the learning module and organizations who give the instruments, innovation and stage to empower figuring out how to occur. Associations access online projects and courses according to their need and by paying an expense. This turns into an extremely practical activity to prepare workers (Castellano, 2014).

An examination brought up that MOOCs has a little yet significant spot in instruction which ought to be viewed as another option, non-formal, proceeding and open schooling framework (Bates, 2014). MOOCs is assuming an indispensable part for the functioning experts from ability upgrade point of view which leads towards better vocation possibilities (Pappano, 2012). New improved advancements and frameworks are accessible today which further facilitates the selection of MOOCs like learning stages (Liyaganawardena, 2012). Learners who have accomplished a reasonable degree of formal instruction have improved MOOCs and they are the functioning experts who further need to upgrade their exhibition and vocation development (Christensen et al., 2013).

A member gets inspiration to investigate and recognize the adept courses is different and has shifted motivations to choose one. Coursera, a mainstream MOOC supplier, dispatched a course called 'AI' and a study led on those members made fascinating disclosures. The greater part of the members were working experts.

Among the other people who joined course had assorted profiles like jobless, going through investigations somewhere else and so forth Strangely, about 40% of members enrolled for the course since they were interested to on the course point itself, another 30% got the course together with an intend to hone their abilities regarding the matter, and generally 18% were focusing on a superior occupation by finishing this course.

These understudies were not restricted to a geology however joined across the world. Both Coursera and Udacity guarantee that the majority of their understudies live external the US (Gaebel, 2014). In the Indian situation, the Government of India is quick to expand the advanced channels and better approaches for learning by presenting SWAYAM stage.

Indeed, even before presentation of SWAYAM, NPTEL has managed job in this space alongside IITs and IISc to empower the experts further by giving a stage to improve their abilities and profession related choices. This likewise assisted with crossing over the acquiring hole and further

expertise working to working experts to remain important and serious in their separate fields. Such activities like SWAYAM without a doubt give an instrument to feasible and long lasting learning prerequisites (Kanjilal and Kaul, 2016). Studies pointed towards profiling the MOOCs students in India do show guys overwhelming the learning populace and a lion's share of experts' hail from data innovation area.

A comparable heading is noted by a portion of the significant investigations by MOOCs suppliers like Coursera and most MOOCs taker have a place from level 1 urban areas like metros (Kumar, 2015). Explained considers referenced that nation like India which is high on populace tally, requires MOOCs to be additionally utilized to connect the acquiring and ability hole (Chatterjee and Nath, 2014).

On the segment list, after USA, it is India which is put second on MOOCs cooperation and again information shows it is male overwhelmed on sexual orientation tally (Nesterko et al, 2013).

This investigation was led across 194 nations and 62% of students either had regular positions or were independently employed. Such information focuses add significance to the current examination.

1. Objectives:

1. To study the learners' experience on Massive-Open-Online-Courses (MOOCs) platforms through its users reviews and ratings.
2. To compare the learners' experience on Massive-Open-Online-Courses (MOOCs) platforms through its users reviews and ratings.

2. Hypotheses:

H01: There is no significant level of learners' experience on MOOCs platforms.

H02: There is no significant level of difference in learners' experience on MOOCs platforms.

III. RESEARCH METHODOLOGY:

The study is descriptive research in nature. It is completely done on the bases of different MOOCs platforms' reviews and ratings. Google app store is the major sources for collecting the data from different user in an around our country. Total number of reviews and rating has been taken for the study is 63, 652.

The time frame of sample data was taken for last one year that is from 5th April, 2020 to 5th April, 2021. It was from the popular seven MOOCs platforms namely Coursera, Swayam, Udemy, LinkedIn Learning, Khan Academy, Upgrad and Edx. Sample size of each MOOCs platform was respectively Coursera is 5,825, Swayam is 4,694, Udemy is 26,409, LinkedIn Learning is 6, 323, Khan Academy is 10,993, Upgrad is 1,010 and Edx is 7,886.

Appbot application was used to do review analysis, rating analysis and sentiment analysis. Simple mean and Chi-square test are applied for hypotheses testing.



3. Data Analysis:

a) Overall users' experience on MOOCs Platforms:

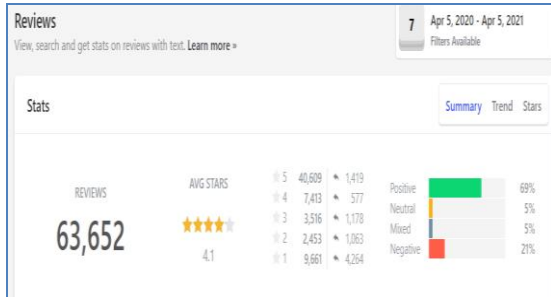


Chart-1: Overall users' experience on MOOCs Platforms

The overall consumers' experience on MOOCs platforms was analyzed with 63,652 reviews and ratings of all the seven platforms. The average stars out of five stars are 4.1. It is greater than 3 stars, means there is a good consumers' experience on MOOCs platforms. 69% of reviews are positive. 21% is negative. 40,609 members have given 5-stars.

b) Reviews and Rating Analysis on users' experience - COURSERA:

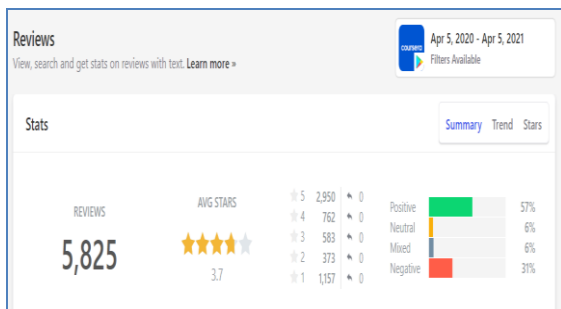


Chart-2: Reviews and Ratings Analysis on users' experience - COURSERA

Total 5,825 reviews are taken for the analysis of Coursera Platform, the average stars over 5,825 ratings it is 3.7 stars. It is greater than the average 3 stars. It means the consumers' experience is good. 57% of learners have given positive comment on this platform. 31% learners have given negative comment on these MOOCs platforms. Total 2,950 members gave 5 stars rating to this application.

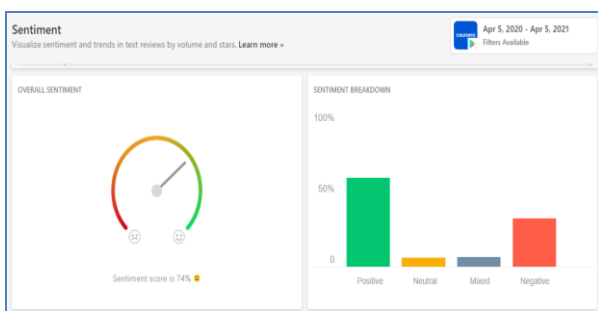


Chart-3: Sentiment score of users' experience - COURSERA

The sentiment score of Coursera is 74%. It is good, where it is greater than the 60%. The positive reviews also greater than the 50% of total reviews. It means the consumers' experience is satisfactory.

c) Reviews and Rating Analysis on Users' experience – EdX Platform:

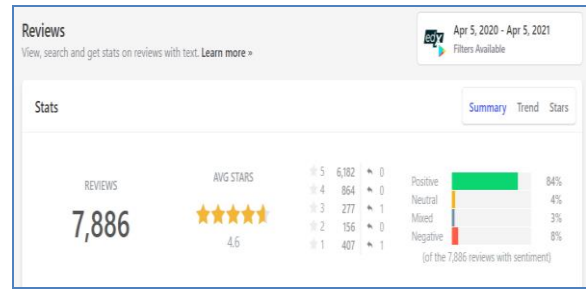


Chart-4: Reviews and Ratings Analysis on Users' experience – EdX Platform

From the above chart, total 7,886 reviews and ratings taken for the study. The average 4.6 stars are given by users. It is higher than the mean 3 stars.

It means the consumers' experience on Edx platform is very good and also highly satisfactory. 6,182 users have given 5 stars. It almost 80 percent in the total ratings. It shows the greater amount of satisfaction from user side.

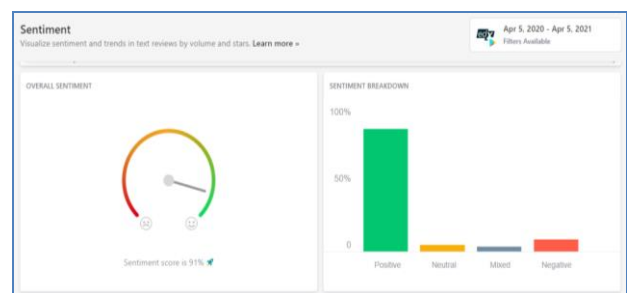


Chart-5: Sentiment Analysis on Users' experience – EdX Platform

The sentiment score of Edx is 91%. It is really very good score when compare with the required on that is 60%. The 84% of comments are positive and very less number of respondents is given negative and mixed reviews.

d) Reviews and Rating Analysis on Users' experience – Khan Academy Platform:

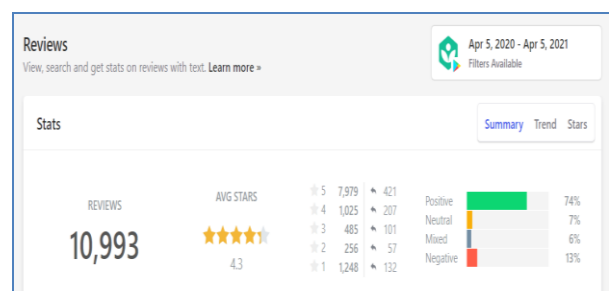


Chart-6: Reviews and Rating Analysis on Users' experience – Khan Academy Platform

The reviews and ratings of 10,993 were taken to analyze users' experience on Khan Academy platform. The average 4.3 stars were given by users out of 5 stars. It is greater than the average 3-stars. 7,979 members are given with 5-stars and 1,248 members are given with 1 star. It is for good and it means the user experience is highly satisfactory.

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There are 74% of users are given with positive reviews and 13 % of users give with negative. It also tells about the users' experience with this MOOCs platform.



Chart-7: Sentiment Analysis on Users' experience – Khan Academy Platform

The sentiment score of Khan Academy is 86%. It is greater than the required 60%. It means the comments of users and their sentiment towards this platform is good. Sentiment breakdown has shown the positive is 75% and negative is just 13% only.

e) Reviews and Rating Analysis on Users' experience – LinkedIn Learning:

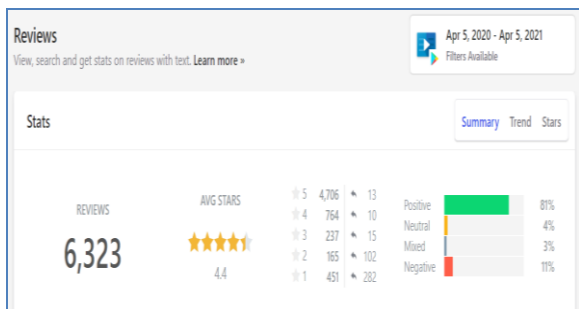


Chart-8: Reviews and Rating Analysis on Users' experience – LinkedIn Learning

From the above chart, the average stars from 6,323 users are 4.4. It is very good size of stars. It means the consumers' perception towards LinkedIn learning platform is very good. Total 4,706 members have given 5 stars; only 451 members gave single star. There are 81% of users commented positively on it and 11% of comments have negative orientation on the experience of using LinkedIn learning app.

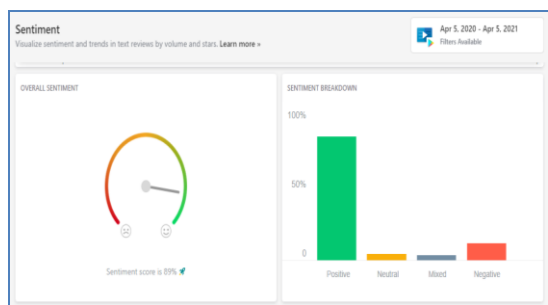


Chart-9: Sentiment Analysis on Users' experience – LinkedIn Learning

From the above sentiment analysis table, The sentiment score of LinkedIn learning App is 89% . It is far greater than the required on 60%. It means the sentiment of users on it is very positive and highly satisfactory. The above 80% of users have given positive comment of it. The sentiment breakup is shown in the above table.

f) Reviews and Rating Analysis on Users' experience – Swayam:

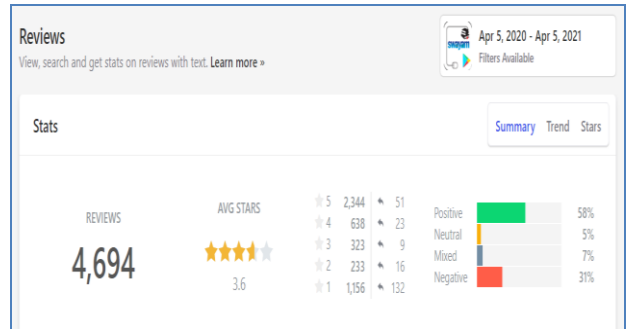


Chart-10: Reviews and Rating Analysis on Users' experience – Swayam

The above table shows the reviews and rating values of Swayam platform. There are 4,694 members have given their reviews and rating on this platform. The average 3.6 stars were scored. It is above average and it also close to 3 stars. It means learners are not highly satisfied with the performance of Swayam platform. There are 58% of users are quoted their reviews positively, 31% of user wrote their reviews negatively. It is also close to the average reviews. Also the reviews have revealed that there is average level of learner's experience on Swayam platform.

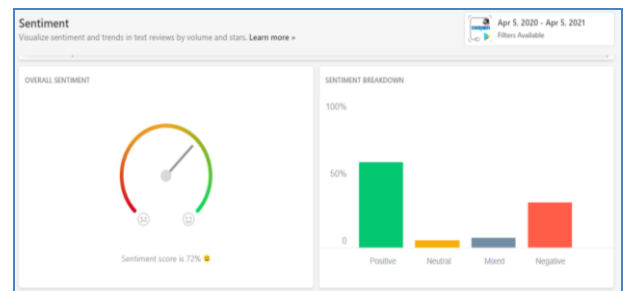


Chart-11: Sentiment Analysis on Users' experience – Swayam

From the above sentiment analysis chart, the overall sentiment score of Swayam is 72%. It is above average. The sentiment breakdown also shows that the positive sentiment is 60% and negative sentiment score is nearly 30%. It also means that there is moderate level of learners experience with swayam learning platform.

g) Reviews and Rating Analysis on Users' experience – UdemY Platform:

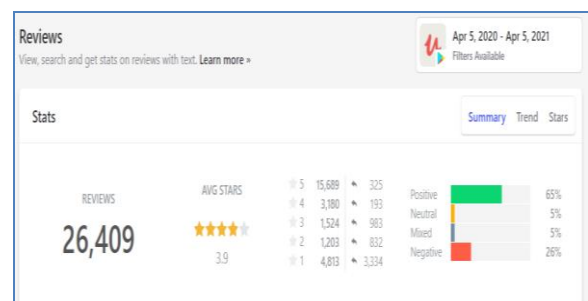


Chart-12: Reviews and Rating Analysis on Users' experience – UdemY Platform



The highest number of reviews and ratings were taken for the study is Udemey platform, it is 26,409 users are given their reviews and ratings during one year. The average stars are 3.9 out of 5 stars. It is good amount of ratings. In that 15,689 members have given 5 stars and 4,813 members have given single star based on appbot application. 65% of users quated positive comment on udemey and 26% of learners have posted negative comment on it.

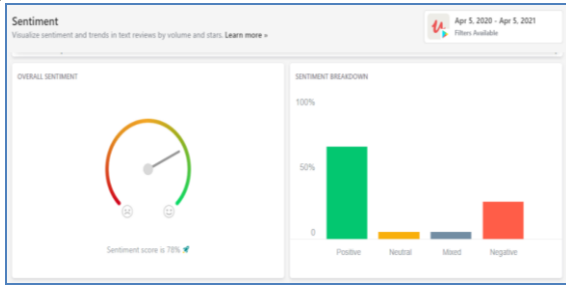


Chart-13: Sentiment Analysis on Users' experience – Udemey Platform

From the above sentiment analysis table run in the appbot application, the overall sentiment score of udemey is 78%. It is greater than the desired 60%. It means the learners experience on udemey platform is good. They have expressed positive sentiment on the performance of the udemey. The sentiment breakdown chart shows that 65% of users quated positive sentiment and 26% of users expressed negative sentiment on their experience with udemey platform.

h) Reviews and Rating Analysis on Users' experience – Upgrad Platform:

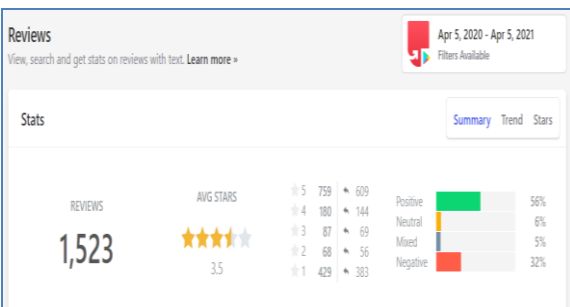


Chart-14: Reviews and Rating Analysis on Users' experience – Upgrad Platform

From the above review and rating analysis table, total 1,523 reviews and ratings of users had taken for analysis. The average stars are 3.5. It is above average, almost close to average level of stars that is three. It means the users experience on upgrad is above average. In that 795 members have given 5 stars and 429 members have given 1 star.

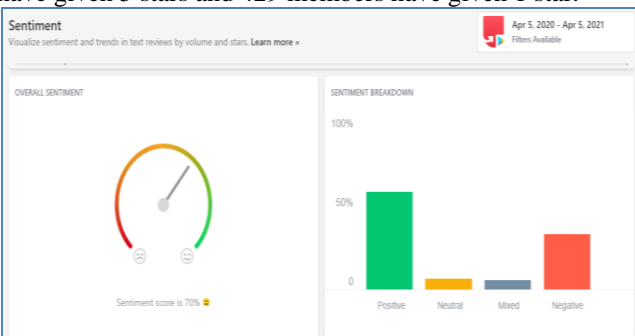


Chart-15: Sentiment Analysis on Users' experience – Upgrad Platform

The sentiment score of upgrad is just 70 percentages. It is very close to 60%. In that positive sentiment is 56% and negative sentiment is 32%. It also resulted with average performance of upgrad in the way of providing learners experience.

i) Comparative Analysis of Reviews and Rating Analysis on Users' experience select MOOCs Platforms:

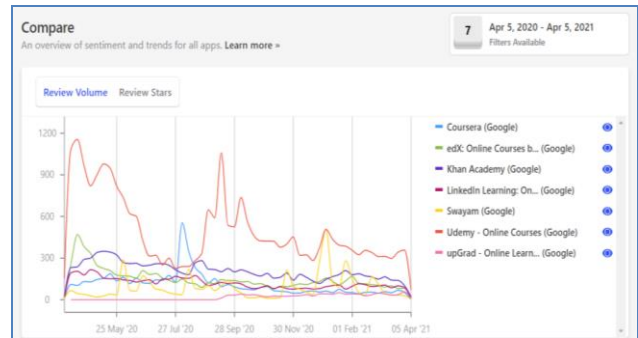


Chart-16: Comparative Analysis of Reviews and Rating Analysis on Users' experience

From the above comparative Analysis, It shows the trend in the volume of reviews from last one year. There are many ups and downs in the volume of Udemey, Coursera, edX and Swayam. During April, May and June – 2020 months are having higher rate of review volume because of corona pandemic. Most of the learners have depended on online platforms for continues education and updating of their knowledge.

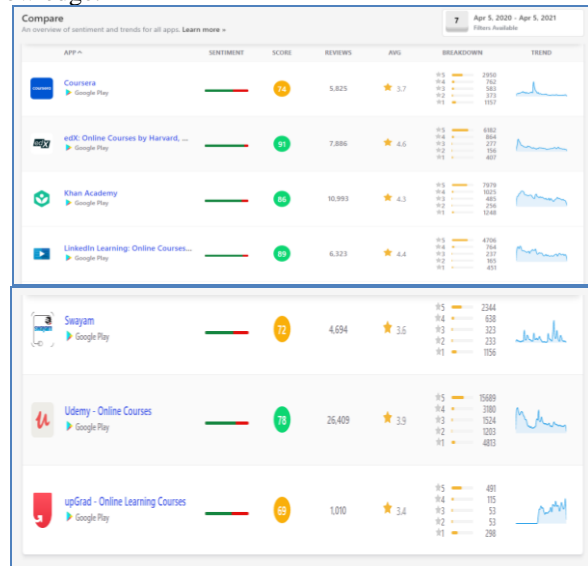


Chart-17: Comparative Analysis of Reviews, Ratings and Sentiment Analysis

From the above reviews, ratings and sentiment score analysis table, the highest reviewing platform firstly Udemey with 26,409 and secondly Khan Academy with 10,993. The average stars of edX is 4.6 stars, LinkedIn is 4.4 stars and third highest is khan Academy is 4.3 stars. Upgrad is having positive trend in the number of reviews and ratings when compare with remaining platforms. Udemey online courses application is having highest 5 stars rating than other platforms.



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When compare the sentiment scores of select platforms, the highest sentiment score shown by edX, and also Khan Academy, Udemy and LinkedIn learning platforms also have shown very good sentiment scores. Remaining platforms like Coursera, Swayam, Upgrad have shown the below 75 percentage. The lowest sentiment score is resulted for upgrad.

J) Hypotheses Testing:

H01: There is no significant level difference in sentiment score of consumers' experience on select MOOCs platforms.

Table-1: Sentiment score and mean rank

	Ranks			
	MOOCs Platforms	N	Sentiment Score	Mean Rank
Sentiment Score	Coursera	5825	74%	5.00
	Edx	7886	91%	1.00
	Khan Academy	10,993	86%	3.00
	LinkedIn	6,323	89%	2.00
	Swayam	4694	72%	6.00
	Udemy	26,409	78%	4.00
	Upgrad	1010	69%	7.00
	Total	63,652		

From the above ranks table of sentiment score, it has shown the seven MOOCs platforms with their sample sizes, sentiment scores and their mean ranks. Top ranked platforms is Edx with 91% and least ranked is Upgrad with 69% of sentiment scores.

Table-2: Chi-square statistics

Test Statistics ^{a,b}	
	Sentiment Score
Chi-Square	7.000
df	6
Asymp. Sig.	.0392
a. Kruskal Wallis Test	
b. Grouping Variable: MOOCs Platforms	

From the chi-square table, the chi-square value is 7.000 and the significant value is 0.392. The calculated significant values are lesser than the $p=0.05$, consequently it is evidenced that null-hypothesis is rejected and alternative-hypothesis is taken for consideration. Therefore there is a significant level difference in sentiment score of consumers' experience on select MOOCs platforms.

H02: There is no significant level of difference in ratings of consumers' experience on select MOOCs platforms.

Table-3: Rating and reviews rank score and mean rank

	Ranks			
	MOOCs Platforms	N	Avg. Ratings	Mean Rank
Ratings	Coursera	5825	3.7	5.00
	edX	7886	4.6	1.00
	Khan Academy	10,993	4.3	3.00
	LinkedIn	6,323	4.4	2.00
	Swayam	4694	3.6	6.00
	Udemy	26,409	3.9	4.00
	Upgrad	1010	3.4	7.00
	Total	63,652		

From the above ranks table of ratings, it has shown the seven MOOCs platforms with their sample sizes, ratings and their mean ranks. Top ranked platforms is EdX with 4.6 stars and least ranked is Upgrad with 3.4 stars.

Table-4: Chi-square statistics

Test Statistics ^{a,b}	
	Sentiment Score
Chi-Square	8.000
df	6
Asymp. Sig.	.0381
a. Kruskal Wallis Test	
b. Grouping Variable: MOOCs Platforms	

From the chi-square table, the chi-square value is 8.000 and the significant value is 0.381. The calculated significant values are lesser than the $p=0.05$, Thus it is proven that H0 hypothesis is rejected and H1 hypothesis is accepted. Therefore there is a significant level of difference in ratings of consumers' experience on select MOOCs platforms.

IV. CONCLUSIONS AND DISCUSSIONS:

Massive Open Online Courses are getting prominence in the recent past. Covid pandemic also had open opportunities for Online Learning Platforms. Present study has focused on learners' experience with various MOOCs platforms through online reviews and ratings. The overall consumers' experience with select MOOCs platforms are found very well. EdX platform is found with very good reviews and ratings by users and their experience also quoted very good and highly positive. Government initiated platform, Swayam, it is presented with average performance when compared with other platforms. Upgrad is having lowest performance compared with others. EdX, Khan Academy, LinkedIn and Udemy platforms have given good performance and higher user experience.

Coursera, Swayam, Upgrad platforms have given average performance and user experience when compared with others. There is significant difference found in the users' experience in their sentiment score, reviews and ratings given by users from last one year. Therefore, customer experience with select MOOCs platforms are overall doing good and the users' reviews and ratings almost found greater level of positive orientation.

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AUTHORS PROFILE



Dr. Smitha Sambrani, She holds a B.E degree in Electronics and Communication Engineering from Osmania University, College of Engineering (1994), with Distinction and an M.B.A from Osmania University, College of Commerce & Business Management (1996). She was awarded the Doctorate Degree in Management from Osmania University (2006), for her thesis titled 'The impact of Information

Technology on banking sector – A study of select banks'. She has qualified the National Eligibility Test for Lectureship and is a recipient of the Junior Research Fellowship. She has over 22 years experience in both industry and academics combined. She has around 50 publications to her credit in reputed national journals and has presented more than two dozen papers at national and international seminars. Her areas of interest include Marketing, General Management and Business Research. She is widely traveled and has visited The Kingdom of Saudi Arabia, Singapore, Nepal, Dubai and Sri Lanka. Currently she is Assistant Professor at Department of Business Management, Osmania University