



ORIGINAL RESEARCH PAPER

Education

FACTORS AFFECTING A STUDENT'S PREFERENCE FOR ONLINE PROFESSIONAL COURSES: A CONJOINT APPROACH

KEY WORDS:

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ABSTRACT

Online professional courses have changed the learning methods, especially after covid 19. These professional courses proved to be very useful and broke the geographical boundaries for learning. This research paper aimed to study the preferred attributes of the online professional courses offered by the different institutions and their relative importance from a student's perspective. This paper applied the conjoint method to identify the preferred attributes of online courses. The paper found the highest utility associated with the renowned resource person, with a good research background, etc, and contemporary content. The main aim of joining the courses is to upgrade with new knowledge and skills which makes them employable and improve their earning potential. The utilities for a year duration with reasonable course fee is found positive. The positive reviews from previous students stimulate the chance of opting for the courses and most of the students prefer evening timings and live sessions for these courses.

INTRODUCTION

Many students from different education streams enrolled in online courses after covid 19. The academic institutions started offering online courses to attract students from large geographical regions. These online courses break the boundaries and many barriers to learning. The students identified the benefits of the online courses and participated with great enthusiasm. The students understand that the learning outcomes from the online courses are the same or even superior to face-to-face traditional class instruction (Allen & Seaman, 2015). Academic leaders reported that online learning is the focus of their long-term strategies. Online course offerings motivate the best teachers to share their knowledge with the world even at a faster rate than current facilities. This research paper tries to understand the preferences of students towards online professional courses. The study applied a conjoint method to examine the student's preferences for these online courses. This paper identified the different attributes from the literature review and discussions with the enrolled students. The paper discusses the findings of a few research studies, followed by the methodology adopted in the study, data analysis, and interpretation, and ends with major conclusions drawn from the analysis.

Review of the Literature

Han, J. X., & Ma, M. Y. (2019) analyzed the students of online courses and explored what the user's attraction factors for online courses are, as, the key factors that affect students' usage of online courses and the weights of impact relations were also identified, they are presented, aiming to guide future improvement of online courses. The author found that the charm factors of online courses for students include convenient learning style, simple course retrieval, thoughtful course service, multivariate classroom environment, powerful user adhesion, the introduction of emerging science and technology into teaching; and a strong force of teachers.

Kang, D., & Park, M. J. (2022) found that students' feelings about instructors' interaction with them and their preference for online courses positively affected their satisfaction with those courses. The result suggested that Instructors and universities needed to enhance course quality and the student's satisfaction level with online courses. This study also empirically analyzed two relationships, between students' satisfaction and its factors, and between satisfaction and their recommendation of the current course system to others. These findings suggest that although students prefer online courses in an unfavorable educational environment, especially the time during the coronavirus, they want to feel a sense of satisfaction and meaning from courses through their instructors' feedback on their questions and the assignments

they complete.

Rongli Tang (2009) found that the online education market had been developing rapidly in China, but in the process of development, problems were noticed. This paper studied how consumers would choose preferences when facing different attributes of online courses. First, the factors influencing consumers' preference for online courses are the type of curriculum, the total price of courses, charging methods, the type of teachers, teaching time per class, and class style. Secondly, men tend to favor courses related to skills, especially computer skills, and prioritize the expertise of teachers. On the other hand, women lean towards courses related to skill development, especially in language, and are more attentive to the pricing structure of the courses. Third, the consumer's utility for online courses is greater for online courses than traditional methods, however is not an absolute factor to consider.

According to Malarkodi et al., (2018), Online education in India initially progressed at a slow pace. However, with conjoint analysis, it became evident that students favored certificate courses in PDF and video formats, typically spanning a month with a two-hour time commitment. The primary motivations for this preference among all students were the flexibility to study from any location, the convenience of choosing study times, and the avoidance of campus visits. Students did express some uncertainty about the challenges associated with distance education. Consequently, the recommendation was to establish a dedicated website for online courses, ensuring easy access to study materials across various devices, including smartphones and tablets. To enhance the learning experience, it was suggested to supplement pre-recorded videos with live interactive sessions conducted by experts in respective fields.

Maheshwari, G. (2021) understands what factors have an impact on students' intentions to study online and indicates that institutional support and perceived satisfaction affect the students' intentions to study the course online in the future. It is advisable to integrate mobile technology into online learning, QR codes can be one of the ways to integrate that into the course materials, and the lecturers can be encouraged to use videos, audio, and instant messaging to increase the perceived enjoyment of the students. Furthermore, to better support the students and the teachers, an official online learning and teaching training course can be developed along with effective and user-friendly learning platforms. Also, one or two days in an academic year can be assigned explicitly to online learning to provide them with the experience, so that it becomes easy to adapt to online

learning in any difficult situations arising in the future.

Another study done by Boca, G. D. (2021) presents the results of student's behavior and attitude toward online education. The four factors that were taken into consideration for the model were the individual characteristics specific to each student, the student's knowledge, the student's needs, and the preferences for the quality of online education influencing the students' behavior and attitude. The results confirm that the students obtained knowledge by using online education during the pandemic. The study identifies and confirms also that there are some inequalities regarding Internet access (no telephone signal, or not having a computer/ laptop/ tablet/ mobile phone, as well as a low level of digital skills. Students have noticed that it is possible to put in more effort and have more time to attend courses through online digital tools, even if they are in isolation, at home.

There are also other factors such as flexibility, cost, course content, and technology accessibility. Quality instructors, interactivity, accreditation, and reviews also play an important role. Additionally, support services, career opportunities, and personal learning styles impact choices. Geographic location can be a factor, as can ease of enrollment. Positive prior experiences and demonstrated online learning success are also influential. Ultimately, individual preferences depend on a combination of these factors, making it essential for institutions to consider them when designing and marketing online courses, and for students to assess them when selecting courses aligning with their goals and needs.

Another study done by Keller, H., & Karau, S. J. (2013) finds that Conscientiousness consistently stood out as the most reliable predictor of how students view online courses. Specifically, conscientiousness had a significant connection with all five aspects of online course impressions examined. Moreover, agreeableness and openness were both linked positively to how students perceived the value of online courses for their career. Work experience was linked positively to engagement, career value, and overall evaluation, while it was linked negatively to feelings of anxiety/frustration. Undergraduate students tend to prefer online courses more than graduate students, and married students tend to experience lower levels of anxiety/frustration when taking online courses. These findings help us better grasp the role of personality in how students perceive their online learning experiences.

Other factors can also include the personal circumstances of the students, these circumstances include a variety of things, from work commitments and family responsibilities to health issues and geographic location. For instance, students with full-time jobs may find online courses better due to the flexibility they offer in adapting to work schedules. Similarly, students with family obligations or health concerns may also go for online learning to accommodate their situations. Furthermore, Geographic location can also be a determining factor, as students in remote areas could lack access to traditional educational institutions. Additionally, financial constraints, transportation limitations, and personal

preferences for a comfortable learning environment can all contribute to the choice of online courses.

Career opportunities also play a pivotal role in shaping students' preferences for online professional courses as many students opt for online education because it offers them the chance to acquire specific skills and qualifications that are directly relevant to their desired career paths. These courses often align with industry demands and trends, ensuring that graduates are well-prepared for the job market. Also, institutions offering online professional courses frequently showcase success stories from alumni and high placement rates, instilling confidence in prospective students about the potential returns on their educational investments. This focus on career advancement and real-world applicability makes online professional courses an enticing option for individuals eager to improve their job prospects and achieve their career goals.

Research Methodology

This research paper intends to study the role of different attributes of the open online courses offered by different academic institutions to working professionals. The primary data is collected from the 489 professionals enrolled in such courses using a questionnaire method from the different cities of India. The questionnaire consists of eight selected attributes namely course content, resource person, course duration, cost fee per hour, course reviews, course timings, institution affiliation, and type of sessions. These attributes, considered in the selection of the online professional courses were identified through literature review and expert opinion. These attributes are then further classified into various alternatives. The set of attributes with their alternatives (conjoint layout) are shown below in Table 1. The conjoint layout represents the different levels of choices for each attribute related to online professional courses. Considering all attribute levels, the possible number of profiles is $2 \times 2 \times 3 \times 3 \times 2 \times 3 \times 2 \times 2 = 864$. Being difficult to rate such a large number of profiles, the "fractional factorial design" is performed using SPSS, which gave the optimal number of profiles as sixteen. The conjoint layout is used to develop a questionnaire having 16 options. The selected professions were requested to rate the profiles on a scale of 1 to 10, where 1 means not preferred and 10 means preferred. The selected sixteen profiles are shown in Table 2:

Table 1: Conjoint Layout

Sno	Attribute	Choice levels
1	Course Content	Normal contents, Contemporary contents
2	Resource Person	Normal, Renowned
3	Course Duration	Week, Month, Year
4	Cost Fee Per Hour	\$1, \$3, \$5
5	Course Reviews	Normal, Very Good
6	Course Timings	Daytime, Evenings, weekends
7	Institution Affiliation	Normal Institution, Branded Institution
8	Type of Sessions	Recorded, Live

Table 2: Conjoint Profiles For Different Choices

Sno	Course Content	Resource Person	Course Duration	Cost Fee Per Hour	Course Reviews	Course Timings	Institution Affiliation	Type of Sessions
1	Normal Contents	Renowned	Month	\$ 1 per hour	Very Good	Daytime	Branded	Recorded
2	Normal Contents	Normal	Month	\$ 5 per hour	Very Good	Weekends	Norma;	Live
3	Normal Contents	Normal	Year	\$ 1 per hour	Normal	Daytime	Norma;	Live
4	Normal Contents	Renowned	Year	\$ 5 per hour	Normal	Evenings	Branded	Recorded
5	Contemporary Contents	Normal	Month	\$ 1 per hour	Normal	Evenings	Branded	Live
6	Contemporary Contents	Normal	Week	\$ 5 per hour	Very Good	Daytime	Branded	Recorded
7	Normal Contents	Renowned	Week	\$ 1 per hour	Very Good	Daytime	Branded	Live

8	Normal Contents	Normal	Week	\$ 1 per hour	Normal	Daytime	Norma;	Recorded
9	Contemporary Contents	Normal	Week	\$ 1 per hour	Normal	Weekends	Branded	Recorded
10	Contemporary Contents	Renowned	Month	\$ 3 per hour	Normal	Daytime	Norma;	Recorded
11	Contemporary Contents	Renowned	Year	\$ 1 per hour	Very Good	Weekends	Norma;	Recorded
12	Contemporary Contents	Normal	Year	\$ 3 per hour	Very Good	Daytime	Branded	Live
13	Normal Contents	Normal	Week	\$ 3 per hour	Very Good	Evenings	Norma;	Recorded
14	Contemporary Contents	Renowned	Week	\$ 5 per hour	Normal	Daytime	Norma;	Live
15	Contemporary Contents	Renowned	Week	\$ 1 per hour	Very Good	Evenings	Norma;	Live
16	Normal Contents	Renowned	Week	\$ 3 per hour	Normal	Weekends	Branded	Live

The professional students of the online courses were contacted through different social media platforms. The criteria questions are included in the questionnaire which asks about their enrolment in any online course to decide the selection of the respondents in the survey. The conjoint analysis is used in the study using SPSS software.

Data Analysis And Interpretation

This section discusses about the results of conjoint analysis applied to the responses received from the selected participants of the online courses. The conjoint analysis discovers the order of relative importance attached by participants to the different selected attributes included in the conjoint layout along with the order of preference for the attribute levels. The paper intends to identify the order of importance and preferences for the factors considered by participants of the open professional courses offered by the different institutions. The sixteen generated profiles in the questionnaire were rated by the participants.

Regression Analysis

The average rating by the participants was included in the conjoint analysis. The dummy regression is applied to estimate the utilities for all the choices included in the conjoint layout. Table 3 reported the results of the regression analysis applied with the participant's rating as the dependent variable and the included choices as the independent variable.

Table3: Multiple Regression Analysis

Independent Variables	Regression Coefficients	Standard Error	t	F stats	R Square
(Constant)	2.300	.675	3.409**	5.856	94.2%
Contemporary contents	2.125	.450	4.724**	**	
Renowned resource person	2.275	.450	5.058**		
Month duration	.213	.551	.386		
Year duration	.838	.551	1.520		
\$3 per hour	-.062	.551	-.113		
\$5 per hour	-1.387	.551	-2.519		
Very good reviews	.650	.450	1.445		
Evenings sessions	.750	.551	1.361		
Weekends sessions	.350	.551	.635		
Branded Institution	-.600	.450	-1.334		
Live sessions	.550	.450	1.223		

The table reported the results of the regression analysis. The regression coefficients indicate the differential utilities of each choice to reference choice, dropped from the dummy analysis. The differential slope coefficient indicates the direction and magnitude of the utility of the respective choice of the attribute and with respect to the dropped choice of the same attribute.

Utility Estimation

The utility of each choice is estimated with the help of the following equations

$$a_1 + a_2 + \dots + a_i = 0 \quad a_{2-1} = \beta_1 \quad a_{2-2} = \beta_2$$

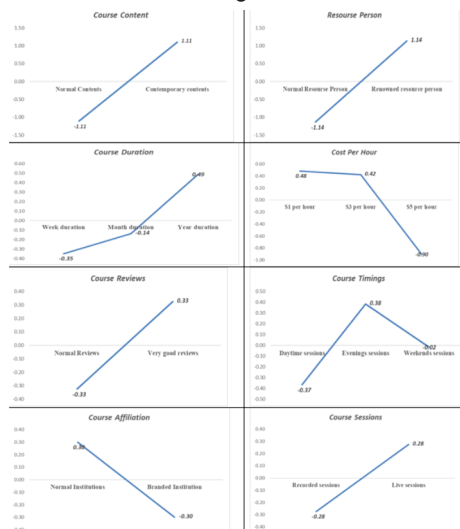
Where a_1 , and a_2 are the utilities of all the choices for an attribute of an online professional course. It is assumed that the sum of utilities for all the choices within an attribute is zero as few of the utilities are positive and others are negative making the sum of utilities equal to zero. The difference ($a_2 - a_1$) is the difference in the utility which is estimated by the slope coefficients of the regression model. Table 4 represents the estimated utilities for the different choices of selected eight attributes included in the conjoint design.

Table 4: Utility Estimation

Attributes	Choices	Estimated Utility
Course Content	Normal Contents	-1.107
	Contemporary contents	1.107
Resource Person	Normal resource person	-1.137
	Renowned resource person	1.137
Course Duration	Week duration	-0.350
	Month duration	-0.137
	Year duration	0.487
Cost Fee Per Hour Course	\$1 per hour	0.483
	\$3 per hour	0.421
	\$5 per hour	-0.904
Reviews	Normal Reviews	-0.325
	Very good reviews	0.325
Course Timings	Daytime sessions	-0.366
	Evenings sessions	0.383
	Weekends sessions	-0.016
Institution Affiliation	Normal Institutions	0.3
	Branded Institution	-0.3
Type of sessions	Recorded sessions	-0.275
	Live sessions	0.275

For each attribute, the highest utility among the included choices represents the most preferred choice, while the level with the lowest utility represents the least preferred level. As the estimated utilities are expressed with a common unit, utility estimations for a product profile can be added to calculate the total utility. For example, the total utility of (a) Contemporary content (b) Renowned resource person (c) year duration, (d) \$1 per hour, (e) very good reviews (f) evening sessions (g) normal institutions and (h) live sessions can be calculated as (1.107 + 1.137+ 0.487+ 0.483+ 0.325 + 0.383 + 0.3 + 0.275) is 4.237. The utility of the renowned resource person is found to be highest followed by the contemporary contents. To put it another way, the resource person involved in the open courses is found to be the most preferred attribute. After resource persons the next most preferred choice is contemporary content to be covered in the courses. The participants have negative utilities with normal contents i.e., which are not contemporary as well as normal or unknown resource persons. The utilities for year duration are found to be positive and low for low duration courses. The participants, no doubt, preferred to spend less

than expected. The positive reviews increase the chance of opting for the courses. Normally, these reviews are highlighted by the institutions from the old students. The participants prefer evening timings for these courses as most of the potential students are engaged with their day-to-day routines and prefer evening time to upgrade themselves. The institutions seem not important as it is dominated by the contents and the participants prefer live sessions and have negative utility with recorded sessions. The estimated utility for each attribute is shown in Fig 1.



Relative Importance

The utility estimations for the different choices included in the conjoint layout are used to estimate the relative importance of each attribute. The range of utility is estimated for each attribute by subtracting the least utility from the highest utility. The sum of ranges of the utility is estimated. The range of the utility indicates the importance attached to the attributes by the participants. It seems that high mental calculations are involved in finding out the best choice within that attribute with a high range. Table 5 reported the relative importance estimated for each attribute. The attribute “Resource person (24.54%)” ranked as the highly preferred attribute in selecting online professional courses. This is followed by the “Course contents (23.89%)” and “Course Fee (14.96%)”. The other attributes seem to be secondary namely Course Duration (9.04%), course reviews (7.01%), course timings (8.09%), institution affiliation (6.47%), and type of sessions (5.93%).

Table 5: Relative Importance Of The Attributes

Attributes of Online Professional Courses	Range of utility	Relative importance
Course Content	2.22	23.89%
Resource Person	2.28	24.54%
Course Duration	0.84	9.04%
Cost Fee Per Hour	1.39	14.96%
Course Reviews	0.65	7.01%

Please Rate The Following Set Of Profiles Of The Online Professional Courses In The Scale Of 1 To 10 Where 1 Means Not At All Preferred And 10 Means Absolutely Preferred:

Sno	Course Content	Resource Person	Course Duration	Cost Fee Per Hour	Course Reviews	Course Timings	Institution Affiliation	Type of Sessions	Rating
1	Normal Contents	Renowned	Month	\$ 1 per hour	Very Good	Daytime	Branded	Recorded	
2	Normal Contents	Normal	Month	\$ 5 per hour	Very Good	Weekends	Norma;	Live	
3	Normal Contents	Normal	Year	\$ 1 per hour	Normal	Daytime	Norma;	Live	
4	Normal Contents	Renowned	Year	\$ 5 per hour	Normal	Evenings	Branded	Recorded	
5	Contemporary Contents	Normal	Month	\$ 1 per hour	Normal	Evenings	Branded	Live	
6	Contemporary Contents	Normal	Week	\$ 5 per hour	Very Good	Daytime	Branded	Recorded	
7	Normal Contents	Renowned	Week	\$ 1 per hour	Very Good	Daytime	Branded	Live	

Course Timings	0.75	8.09%
Institution Affiliation	0.60	6.47%
Type of Sessions	0.55	5.93%

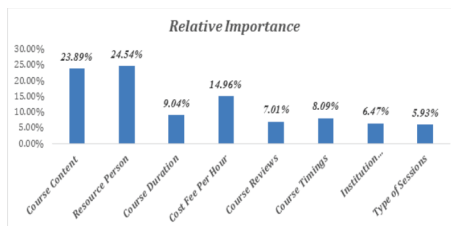


Fig 2: Relative Importance Of The Attributes

Conclusion

This study aimed to identify the attributes preferred by potential students of the online professional courses offered by the different institutions and their relative importance. After covid 19 these professional courses proved to be very useful and broke the geographical boundaries for learning. The institutions offered different professional courses for various reasons such as to capture the huge open market of students and explore new sources of revenues. The paper found that the highest utility is associated with the renowned resource person, who has high recognition among the students, also has a presence on social media, a good research background, etc. The other most preferred choice with high utility is found to be the contemporary content. One of the main aims for joining the courses is to upgrade with new knowledge and skills which makes them employable and improve their earning potential. This is only possible with only latest content to be added to the courses. The students were found to have negative utilities with normal contents and normal or unknown resource persons. The utilities for year duration are found positive and low for low duration courses. The participants preferred to spend less. The positive reviews from previous students help to increase the chance of opting for the courses. The participants prefer evening timings for these courses as most of the potential students are engaged with their day-to-day routines and prefer evening time to upgrade themselves. The institutions seem not important as it is dominated by the contents and the participants prefer live sessions and have negative utility with recorded sessions. The attribute resource person ranked the highly preferred attribute in selecting the online professional courses, followed by the course contents and course fee. The other attributes are secondary namely course duration, course reviews, course timings, institution affiliation, and type of sessions.

This paper helps the institutions to understand the preferences of the potential students for the different attributes so that they design the courses to have maximum participation.

**Annexure
Questionnaire
Dear Respondents,**

8	Normal Contents	Normal	Week	\$ 1 per hour	Normal	Daytime	Norma;	Recorded	
9	Contemporary Contents	Normal	Week	\$ 1 per hour	Normal	Weekends	Branded	Recorded	
10	Contemporary Contents	Renowned	Month	\$ 3 per hour	Normal	Daytime	Norma;	Recorded	
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