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College Teachers' and Research Scholars' Preferences Towards Participation in Workshops Related to Research: A Conjoint Analysis

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Abstract:

The main aim of this study is to understand research scholars' and college teachers' preferences towards the attributes of workshops held on research methodology and to examine the relative importance of the attributes of research methodology workshops considered by the research scholars and college teachers. This research study has used five attributes of research methodology workshops viz., type of course, level, duration, fees, and mode of conduction of workshop. The researchers have strived to understand which of these attributes are the most and least preferred by the potential participants. 227 research scholars and college teachers were surveyed to collect the required primary data. The data was gathered by using availability and purposive sampling techniques. A well-structured questionnaire was designed and 15 conjoint cards were created and distributed to the participants. The researchers also evaluated the relative importance of each choice under various attributes. The results of conjoint analysis show that the attributes of workshops related to research are significantly different from each other ($p < .05$, $F = 6.838$). A workshop on 'statistical analysis' is the most preferred course choice and a workshop on 'publication of research' is found to be the least preferred course choice. It was also found that college teachers and research scholars prefer to participate in advance level courses rather than basic-level courses.

Keywords: Research, conjoint analysis, preference, workshop, college teachers, research scholars

Introduction:

Research is an indispensable activity for college teachers and it is a mandatory activity for research scholars who have enrolled in a degree or doctoral program. In general, academicians are involved in research activities by enrolling themselves in doctoral programs, writing research

articles, or undertaking sponsored research projects by various funding agencies. There are many organizations and privately owned institutions that are organizing training programs on various topics related to research methodology and statistical analysis through both online and offline modes. Research methodology workshops have become common (Banerjee, 2018). The college teachers and research scholars join many such research-related workshops to keep themselves abreast with the latest developments. Their participation in such workshops is determined by many attributes such as the type of course, the duration of the workshop, the mode of the workshop, the fees charged by the organizers, the level of the workshop like basic or advanced, and many others. Various universities organize pre-PhD coursework for their research scholars. The privately owned institutions also offer short-term certification courses for research scholars to update their research skills. Private institutes prefer to offer such courses through online mode. This new mode of learning became popular, especially during COVID pandemic period. With this backdrop, it becomes imperative to understand the expectations of the research scholars related to the attributes of these research-related training programs. Importantly, such a study has not been conducted previously and this issue has not been adequately addressed by previous studies.

The present research work strives to address two-fold issues which are summarized in the form of the following research questions (RQs):

RQ:1 Which attributes of workshops related to research are preferred most by college teachers and research scholars?

RQ:2 What is the relative importance of each choice under various attributes of workshops related to research to college teachers and research scholars?

The remainder of the paper is organized as follows: Part 2 includes a literature review. The research methodology followed to conduct this study is presented in Section 3. Section 4 contains the results, while Section 5 contains the conclusions.

Literature Review:

Research is an effective educational tool in enhancing the educational experience (Enders, 2004). Incidentally, it is realized that not many studies had been conducted to understand research scholars' and college teachers' preferences towards the attributes of workshops held on research methodology. A few relevant studies found on training related to research are summarised in this section.

(de Oliveira et al., 2011) studied students' perceptions of research training course in medical schools. The researchers assessed whether the scientific training programmes are available in Brazilian medical schools. The results show that, only 7% of the medical students are interested in conducting research, and only 60% of them were undergoing research training.

(Ali, 2021) determined the perceptions of 215 UG medical students toward research. The

focus of the study was on understanding the primary motivators and difficulties that students confront. The results show that 62.3% of students were aware of the research. The biggest impediment was a lack of funding and a lack of students' interest. Learning research methodology was the main motivating factor.

The main objective of a study conducted by (Buaraphan, 2016) to improve in-service science teachers' awareness of qualitative research. The study was conducted on 32 science teachers from Uthai Thani province, Thailand. They were asked to attend a three-day program on qualitative classroom action research. The findings suggest that after attending the QCAR workshop, participants developed a better grasp of classroom action research and greatly improved their attitudes towards it. (Abdulghani et al., 2014) used Kirkpatrick's model to evaluate the research methodology workshop by assessing participants' satisfaction, knowledge, and skills gained and its impact on practices. 56.9% of participants said they had begun research, while 6.9% said they had published their studies. The outcomes of the participants' performances provided overwhelmingly positive feedback.

A study conducted by (Balaghafari et al., 2016) attempted to ascertain the state of student participation in research activities and the elements that influence it at Mazandaran University of Medical Sciences. The results showed the highest score of two factors viz "beneficial of acquiring research skills in the future life, the relevance of the research to the university education" on the student's participation in the research activities.

Conceptual Framework:

The main objective of this study is to identify college teachers' and research scholars' preferences towards the attributes of various workshops related to research organized by various institutions and organizations nationally and internationally. This study attempts to identify the most favoured and least preferred attributes of various workshops related to research by computing their preference scores and the choices within the attributes. The null hypothesis formulated for this study is:

H₀: All the attributes of various workshops related to research are not significantly different

On the basis of the discussions with the research scholars, faculties, and organizers the various attributes of the workshops related to research were identified. The five attributes identified by the researchers for this study are the type of course, level, duration, fees, and mode of conduction of the workshop. The research model prepared for this research study is exhibited in Figure 1.

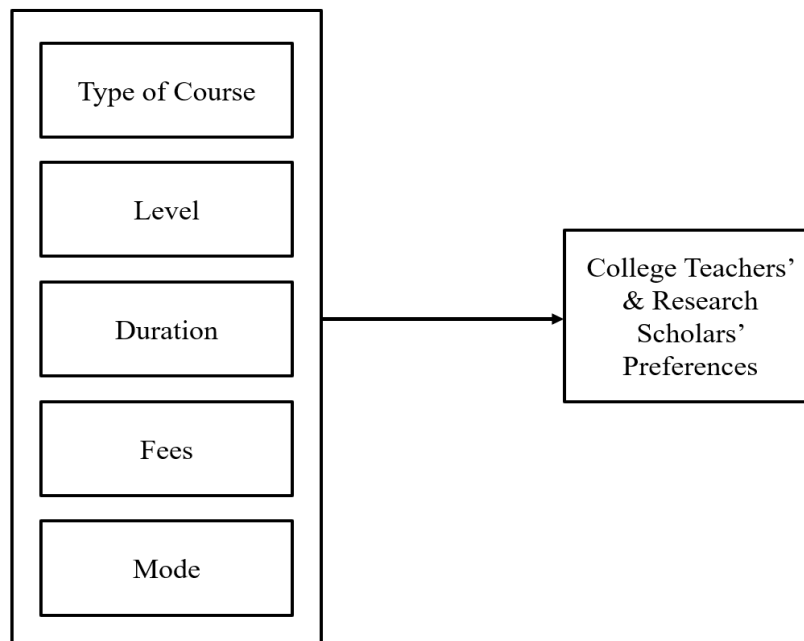


Figure 1: Research Model

Methodology:

Conjoint Analysis: Attributes and Levels

In this study, conjoint analysis is performed to determine the relative importance of the attributes of workshops related to research organized by various institutions and organizations at national and international level. Conjoint analysis is a statistical method for determining the value of a product's features for its users. It is a technique for analysing customer preferences. It is also an effective method for anticipating and determining customer reactions to new product features and completely new items (Hazar and Yilmaz 2018). In this research study, choice-based conjoint analysis is used to evaluate the college teachers' and research scholars' preferences toward various attributes of workshops related to research (Kakde, 2022).

In this study, the researchers have selected five attributes of workshops related to research viz; type of course, level, duration, fees, and mode of conduction of workshop. All the attributes consist of different levels. The researchers have identified four levels under the 'type of course' attribute viz; 'research methodology', 'statistical analysis', 'scientific research writing' and 'publication of research'. Under 'level' attribute, two levels viz; 'basic' and 'advance' were identified. Under the third attribute 'duration of course', the researchers have considered three levels viz '3 days', '5 days' and '7 days'. Under the fourth attribute 'fees', three choices were identified viz; 'Rs 500', 'Rs 1000' and 'Rs 1500'. Two levels viz 'online' and 'offline' choices were considered under the fifth attribute 'mode of conduction of workshop'.

Table:1 Conjoint Layout

| Type of Course | Level | Duration | Fees | Mode |
|-----------------------------|---------|----------|----------|---------|
| Research Methodology | Basic | 3 Days | Rs 500/ | Online |
| Statistical Analysis | Advance | 5 Days | Rs 1000/ | Offline |
| Scientific Research Writing | | 7 Days | Rs 1500/ | |
| Publication of Research | | | | |

The various choices under each attribute considered for this study are depicted in the conjoint layout (Table 1). 15 profiles were generated by using SPSS software (Table:2). The research scholars and college teachers were asked to rate each profile on a 1 to 7 scale where '1=Least Preferred' to '7=Most Preferred' profile.

Table: 2 Conjoint profiles

| Card ID | Type of Course | Level | Duration | Fees | Mode |
|---------|-----------------------------|---------|----------|---------|---------|
| 1 | Publication of Research | Advance | 3 Days | Rs 500 | Online |
| 2 | Statistical Analysis | Basic | 3 Days | Rs 1000 | Offline |
| 3 | Research Methodology | Advance | 5 Days | Rs 1000 | Offline |
| 4 | Research Methodology | Advance | 7 Days | Rs 1500 | Online |
| 5 | Publication of Research | Basic | 5 Days | Rs 1000 | Online |
| 6 | Publication of Research | Basic | 3 Days | Rs 1000 | Online |
| 7 | Research Methodology | Basic | 7 Days | Rs 1000 | Online |
| 8 | Scientific Research Writing | Advance | 3 Days | Rs 500 | Online |
| 9 | Research Methodology | Advance | 3 Days | Rs 1000 | Online |
| 10 | Publication of Research | Advance | 5 Days | Rs 1500 | Offline |
| 11 | Research Methodology | Basic | 5 Days | Rs 1000 | Online |
| 12 | Statistical Analysis | Advance | 3 Days | Rs 1000 | Offline |
| 13 | Scientific Research Writing | Advance | 5 Days | Rs 1000 | Online |

| | | | | | |
|----|-----------------------------|-------|--------|---------|---------|
| 14 | Scientific Research Writing | Basic | 7 Days | Rs 1000 | Offline |
| 15 | Research Methodology | Basic | 3 Days | Rs 500 | Offline |

Method:

Sampling

A survey of 227 college teachers and research scholars from Maharashtra, India was conducted to gather the primary data for this study. Purposive sampling and availability sampling techniques were adopted for the final selection of the respondents.

Measure:

The primary data for this study was gathered by administering a well-structured questionnaire. There are (4X2X3X3X2) i. e. 144 profiles after combining all the attributes and levels. An orthogonal design was used to construct 15 conjoint cards in this study. Subsequently, the questionnaire was distributed to the college teachers and research scholars. Along with these profiles, the socio-demographic characteristics of the respondents were also included in the questionnaire. The sample characteristics are presented in Table 3.

Data Collection:

The questionnaire was converted into a Google Form and the URL of the survey form was circulated electronically to the respondents in their individual WhatsApp accounts. The link was also posted at various WhatsApp groups of college teachers and research scholars across Maharashtra. A cover letter requesting potential participants to fill in the survey form was also posted along with the link of the survey form. Subsequently, respondents were reminded and motivated to participate in the survey and follow-up also was taken to ensure larger participation in the survey. The data was gathered in the month of March 2023.

Results:

Descriptive statistics:

This study is conducted to evaluate the preferences of college teachers and research scholars towards various attributes of workshops related to research and to determine their relative importance to them. The characteristics of the participants included in the sample are presented in Table 3. There were 43% male and 57% female respondents. The sample constitutes 59% college teachers and 41% research scholars. The college teachers include 79% assistant professors, 19% associate professors, and only 2% professors. Participants from five different subject disciplines were included in the survey. There were 22%, 42%, 4%, 16%, and 16% respondents from Arts & Humanities, Commerce & Management, Engineering & Technology, Interdisciplinary, and Science subject discipline respectively. 53% of participants are associated with aided and 47% with unaided

institutions. 64% of participants are teaching at the post-graduate level and 36% are teaching at undergraduate level.

Table: 3 Sample characteristics

| Characteristic | Choices | No. of Respondents | % |
|--------------------------------|--------------------------|--------------------|-----|
| Gender | Male | 107 | 47% |
| | Female | 120 | 53% |
| Designation | College Teachers | 135 | 59% |
| | Research Scholars | 92 | 41% |
| Categories of College Teachers | Assistant Professor | 107 | 79% |
| | Associate Professor | 25 | 19% |
| | Professor | 3 | 2% |
| Subject Discipline | Arts & Humanities | 51 | 22% |
| | Commerce & Management | 95 | 42% |
| | Engineering & Technology | 10 | 4% |
| | Interdisciplinary | 35 | 15% |
| | Science | 36 | 16% |
| Type of Institution | Aided | 120 | 53% |
| | Private | 107 | 47% |
| Level | PG | 146 | 64% |
| | UG | 81 | 36% |

N=164

The hypothesis is that all the attributes of various workshops related to research are not significantly different. This hypothesis is tested by performing conjoint analysis at a .05 significance level. The results show that the attributes of workshops related to research are significantly different from each other ($p < .05$, $F = 6.838$) (Table 4).

Table: 4 Conjoint Analysis

| ANOVA | | | | | | |
|-------|------------|----------------|----|-------------|-------|------|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | .381 | 9 | .042 | 6.838 | .024 |
| | Residual | .031 | 5 | .006 | | |
| | Total | .412 | 14 | | | |

The R^2 for the model shows that the preferences for the attributes of workshops related to research independently account for 92.5% of variance in different choices (Table:5). It indicates that the college teachers and research scholars are very clear about the attributes of workshops related to research.

Table 5: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|------|----------|-------------------|----------------------------|
| 1 | .962 | .925 | .79 | .07865 |

The part worth utility table (Table:7) is useful to compare the part-worth utilities of the choices in each attribute. After comparing the utilities of the choices in first attribute “type of course” it is found that, the course of statistical analysis has the highest utility to the college teachers and research scholars. A workshop on scientific research writing is the second most preferred choice of the college teachers and research scholars. Workshops on research methodology and publication of research are least preferred by the participants. As far as the level of workshop is concerned, the college teachers and research scholars find advance level workshop more useful to them. In terms of duration of the workshop, 5 days workshop has the maximum utility for the college teachers and research scholars followed by 7 days. 3 days workshops are least preferred by the participants. As far as fees of the workshop is concerned, Rs 500/ fees is most preferred by the participants and Rs 1500/ fees is least preferred by them. The college teachers and research scholar found to prefer the workshop conducted through online mode rather than offline mode.

Table 6: Coefficient Table

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--------------------|-----------------------------|------------|---------------------------|--------|------|
| | β | Std. Error | Beta | | |
| (Constant) | 5.246 | .070 | | 75.296 | .000 |
| Course_Stat | .069 | .096 | .142 | .723 | .502 |
| Course_Writing | .013 | .061 | .030 | .206 | .845 |
| Course_Publication | -.042 | .059 | -.113 | -.721 | .503 |
| Level_Advance | .169 | .053 | .508 | 3.154 | .025 |
| Duraation_5Days | .184 | .072 | .524 | 2.572 | .050 |
| Duration_7Days | .147 | .093 | .355 | 1.579 | .175 |
| Fees_Rs1000 | -.274 | .076 | -.780 | -3.601 | .016 |

| | | | | | | |
|-------------------------------|--|-------|------|--------|--------|------|
| Fees_Rs1500 | | -.526 | .118 | -1.080 | -4.454 | .007 |
| Mode_Offline | | -.145 | .051 | -.430 | -2.840 | .036 |
| a. Dependent Variable: Rating | | | | | | |

A conjoint calculator was used to calculate the part-worth utilities of all five attributes. Table 8 shows the relative importance of each attribute used in the research. The results show that, 'workshop fees' has maximum relative importance. 'Duration of the workshop' is the second most preferred attribute followed by 'level' and 'mode of conducting the workshop'. 'Type of course' is found to be the least preferred attribute. The relative importance of 'type of course', 'level', 'duration', 'fees', and 'mode' are 10%, 15%, 16%, 46%, and 13% respectively. The higher percentage of relative importance indicates a higher contribution of the attribute in the decision to participate in workshops related to research.

Table 7: Part worth Utility Table

| Attribute | Choices | Utility | Preferences |
|----------------|-----------------------------|---------|--|
| Type of Course | Research Methodology | -0.010 | Statistical Analysis > Scientific Research Writing > Research Methodology > Publication of Research |
| | Statistical Analysis | 0.059 | |
| | Scientific Research Writing | 0.003 | |
| | Publication of Research | -0.052 | |
| | Basic | -0.084 | |
| Level | Advance | 0.084 | Advance > Basic |
| | 3 Days | -0.110 | 5 Days > 7 Days > 3 Days |
| Duration | 5 Days | 0.074 | |
| | 7 Days | 0.037 | |
| Fees | Rs 500/ | 0.267 | Rs 500 > Rs 1000/ > Rs 1500/ |
| | Rs 1000/ | -0.007 | |
| | Rs 1500/ | -0.259 | |
| Mode | Online | 0.073 | Online > Offline |
| | Offline | -0.073 | |

Table: 8 Relative importance of different attributes

| Attributes | Relative Importance | Preference |
|-------------------|---------------------|------------|
| 1. Type of Course | 10% | |

| | | |
|-------------|-----|--|
| 2. Level | 15% | Fees > Duration > Level > Mode > Type of Course |
| 3. Duration | 16% | |
| 4. Fees | 46% | |
| 5. Mode | 13% | |



Figure: 2 Partworth Utilities of all the Choices with each attribute

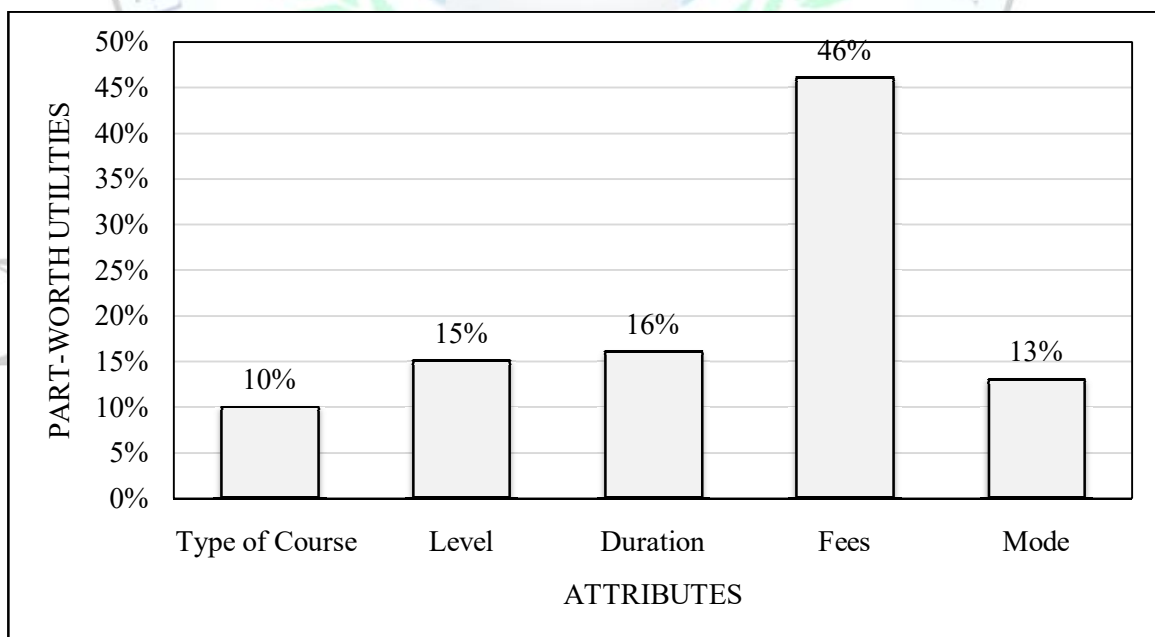


Figure:3 Part-worth utilities of each attribute

Conclusion:

This research study has used five attributes of workshops related to research viz., type of course, level, duration, fees, and mode of conduction of workshop. The main focus of this study is to determine which of these characteristics are most and least favoured by college teachers and research scholars. The researchers also assessed the relative value of each option in terms of numerous features by using conjoint analysis. The results show that the attributes of workshops related to research are significantly different from each other. It was also found that, the college teachers and research scholars are very clear about the choices in various attributes.

A workshop on 'statistical analysis' is the most preferred course choice and a workshop on 'publication of research' is found to be the least preferred course choice. It was also found that college teachers and research scholars prefer to participate in advance level courses rather than basic-level courses. A workshop of '5 days' duration is most preferred and '3 days' duration is least preferred by the participants. As far as participation fees is concerned, the college teachers and research scholars prefer to participate in the workshops charging lesser fees i.e. Rs 500/-. Interestingly, it is found that the participants prefer to join the workshops conducted through online mode rather than offline mode.

Limitations, Future Research, and Implications:

This study is confined to the evaluation of the research scholars' and college teachers' preferences for only five attributes of the courses related to research. Future studies could involve other attributes so that further information on this topic can be explored in depth. The college teachers and research scholars from Maharashtra, India only participated in this study. Future studies may also be conducted in various other geographic areas so as to get more insights into the topic at hand. The results of this research study would be useful to the research scholars, college teachers, and the institutions and organizations organizing workshops related to research.

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