Teachers’ intention to continue the use of online teaching tools post Covid-19

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Abstract: Covid-19 has forced educators to switch to online teaching as the only viable option, whether through video lecturing or using other online teaching tools. Therefore, the study investigates university teachers’ perceptions towards their continuing intention of using the online platforms after Covid19 situations. To answer such questions, the present study conducted a survey of 242 faculties engaged in higher education teaching at assistant. We have conducted the present study using a sample of 242 faculties. Based on the framework of technology adoption model (TAM), this study investigates the research questions in the context of India. The study has adopted a mixed-method research design comprising both qualitative and quantitative techniques. The data were analyzed using partial least square structure equation modeling (PLS-SEM). The results of hypotheses testing indicate that all the hypotheses based on were accepted in the complete sample and for the men's sample were accepted at p < 0.05 level. However, for the sample of women respondents, this was not the case. The study resulted that ease of use positively influences teachers’ attitude towards online teaching. This study provides theoretical contributions by applying the TAM to measure post-Covid-19 online teaching intention of teachers working at universities and college levels in India. It

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could help policyholders in the education sector to design appropriate strategies for online learning and teaching process. Though Covid-19 has adversely hit most of the industries, some industries might have benefited from this as well. Particularly, industries are thriving in the online market place.

**Subjects: Education - Social Sciences; Gender Studies - Soc Sci; Educational Research**

**Keywords: Online teaching; teachers; TAM; Covid-19; adoption; education; India**

1. Introduction

Since, the world health organizations (WHO) has declared the Covid-19 as the global public health emergency and then a pandemic at the onset of 2020, teachers all over the world, whether in schools, colleges or universities are experiencing a rapid behavioral change. Almost all educational institutions are forced to adopt online teaching tools and platforms for delivering education to the students. Gradually, as offline teaching is not available as an option, online teaching is becoming a norm (Carrillo & Flores, 2020).

As it was unpredictable when will we get back in a normal situation, a high priority to create an environment for teachers and students to meet the expectations of facilitating education with some accessible platforms was imperative. (Assunção Flores & Gago, 2020). Educational institutions are struggling to seek options to replace the face-to-face classroom teaching during this challenging situation. There is an urgent need to invest not only attention but the infrastructure to provide training to the teachers to make them efficient so that they can run classes more effectively on online platforms as well. Although this change in mode of education is completely imposed right now, it is not clear that whether the teachers are satisfied with the outcome resulted from using online platforms and tools for teaching. It is also important to know about their intention to use them in future so that institution will have a more clear vision regarding their huge investment or Up-gradation for the online platforms. Although before the emergence of COVID-19 several internet-enabled online teaching platforms were available, the adoption rate for such online teaching platforms was low. Students and teachers are gradually showing their interest in online platforms like zoom meetings, Google meets, Google classes, social media, blogs, and YouTube etc.

Despite the evolving concerns of various stakeholders in exploiting the education technologies, coupled with the advancement in internet facilities, technologies, and innovations that can revolutionize the education sector, the concept of online teaching has not been fully implemented in the education sector before corona (Dykman & Davis, 2008).

The questions arise whether online platforms for teaching are a revolutionary change in the education sector or it is just an imposed application for time being? Whether teachers are interested or satisfied with the various benefits of the online classes or troubled, taking over the various issues. Right now we are skeptical, can online platforms replace the traditional classrooms fully or partially even after Covid-19? Do the teachers have intention to use the online teaching platforms and tools even after post-covid-19 situations too? Are the teachers or institutions satisfied with the outcomes they desire from online teaching platforms? These questions are essential to the implementation of various policies related to the higher education.

The study investigates university teachers’ perceptions towards their continuing intention of using the online platforms after Covid-19 situations. To accomplish this purpose, Technology Adoption Model (TAM) has been implemented with the extension of gender as a moderating variable. The relationship among, attitude, intention, and behavior can be shown through this model for acceptance of I.T. or different online systems (Davis, 1989; Giesbers et al., 2013). The objectives of the study can be explained as followed:
(1) To find out the impact of perceived usefulness on attitude and intention of future use of online platforms.

(2) To check the impact of perceived ease of use on the teacher's attitude towards online teaching.

(3) To find out, whether attitude towards online teaching influences teachers' intention to continue online teaching.

(4) To check the moderation effect of gender between perceived usefulness and attitude/ intention to continue the use of online platforms for teaching.

(5) To check the moderation effect of gender between Perceived ease of use and attitude towards online teaching.

(6) To check the moderation effect of gender between attitude towards online teaching and intention to continue online teaching.

The study results will be beneficial not only for the academicians and institutions but also for the education policymakers. The findings of the study can be generalized for the Indian education sector reforms specifically higher education sector. It will be helpful to know the perception of the teachers regarding their continuation of use of the online platform for teaching combining them to the outcome of the teaching as learning of the students and their satisfaction.

2. Review of literature and hypotheses development

There are three main features of any theory to be acceptable.

First, the theory should be able to explain a complicated situation with parsimony. The second is generalization ability, and the third is verifiability. The first features parsimony support that the theory should be simple and easily implementable while generalizing ability is about applying theory in other similar areas and variability is for supporting informative data. As per research by Lee et al. (2003), TAM has become very much acceptable in various research areas. TAM presents a progressive model that shows the acceptance or adoption of I.T., which is an extension of the Theory of Reasoned Action (Davis, 1989). TAM is found as a model for a better explanation of the consumers who are positively inclined to use online platforms for teaching or learning and other activities, so it is found suitable for the present study (Moon & Kim, 2001).

2.1. Technology Acceptance Model (TAM)

Technology Acceptance Model is one of the most widely tested and accepted models across organizational among the available models of user adoption of innovations and technology (Ramirez-Correa et al., 2015). The TAM theory (Technology Acceptance Model) was developed by Davis (1989), who derived it from Reasoned Action theory, which was proposed by Fishbein and Ajzen (1977), also after modifications have been made in the theory of planned behavior. The model explained the positive influence of intention on performance.

The model effectively presents perceived ease of use and perceived usefulness which shows how an individual reacts to the use of innovations in information technology or online platforms. The more degree of ease of use of technology, the level of acceptance will be more. In the same quest, the more of a particular technology is perceived useful, the more technology adoption will occur (Weng et al., 2018).

The relationship among belief, attitude, intention, and behavior can be shown through this model for acceptance of I.T. or different online systems (Davis, 1989; Giesbers et al., 2013). TAM has been engaged in explicating behavioral and evaluating the acceptance of technology under which the behavioral intention and control are influenced by mainly two factors: perceived ease of use and perceived usefulness. One such study investigating the teachers' perception has also
found a significant relationship between perceived usefulness and behavioral Intention (Sánchez-Prieto et al., 2017).

Furthermore, another study on teaching-learning activities through YouTube (Chintalapati & Daruri, 2017) also supported the previous results. TAM has been widely used positively within the e-learning context from time to time (Giesbers et al., 2013; Shin & Kang, 2015). It is found that TAM can be widely applicable to specific or general as a parsimonious construct of theories (King & He, 2006; Venkatesh & Davis, 2000). In the present study, the researchers examine the relationships among TAM’s different variables, ultimately the intention of teachers to use online teaching continuously even after Covid-19 effects.

2.2. Perceived ease of use and perceived usefulness
Perceived ease of use and perceived usefulness are also found as essential predictors of online teaching acceptance. Perceived ease of use has an impact on perceived usefulness. Further, both factors affect the attitude regarding adopting information technology in teaching-learning (Davis, 1989). Perceived ease of use refers to the simplicity of handling or learning new technology. In contrast, perceived usefulness predicts the user’s perception about improving their efficiency of performing tasks after using a particular technology. In this way, a positive belief or perception results in a more favorable attitude regarding the adoption of technology and the continued use of the particular technology (Davis, 1989; Taylor & Todd, 1995). Furthermore, it has been pointed out by Ong et al. (2004) and Liaw (2008) that perceived ease of use affects the user’s intention to use the online platforms for teaching-learning. Li et al. (2008) also revealed that perceived ease of use is an important indicator of perceived usefulness and behavioral intention of using technology.

Furthermore, Schillemwaert, Ahearme, Frambach, & Moenaert (2005), also checked the mediating role of perceived usefulness and found that it is a significant mediator between perceived ease of use effects and its impact on behavioral intention of adopting technology (as cited in Seng & Yu). Tan and Teo consider (2000) and Chen, Lin, Yeh & Lou asserted that perceived ease of use and perceived usefulness are two necessary influencing factors that significantly influence the adoption of technology. Xiao and Zhao (2009) also found the Positive relationships exist between users’ online experiences and cognitive and affective image (as cited in Xia et al., 2018). Alraimi et al. (2015) also reported that the perceived usefulness is having a significant effect on the adoption of online courses (MOOCs). Almugari et al. (2020) also found that the easy implementation of the application can be useful in the adoption of technology.

2.3. Attitude
Yang and Su (2017) studied Massive Open Online Courses (MOOCs) and tried to find learner’s willingness to participate and respond to I.T. and online teaching methods. They revealed that attitude is one of the most significant influencing factors for learners’ behavioral intention to use online platforms. Bamberg et al. (2003), Davis (1989), and Taylor and Todd (1995) also found through their studies that attitude has a significant influence on behavioral intention. According to Fishbein and Ajzen (1977), previous experiences may have different actions due to difficulties; furthermore, it decides the extent of preferences for adoption from the individual. Some other past research (T. Teo & Zhou, 2014) also mentioned attitude as one of the most important variables for using technology.

2.4. Behavioral intention
Behavioral intention is related to the probability of performing a particular kind of behavior in continuation in the future or present. The common hurdle or hindrance will be small when the behavior intention to use some set of techniques or methods. Even robust behavior control can minimize the probability of discontinuation of performing a particular behavior (Fishbein & Ajzen, 1977). That is why Ajzen (1985) considered behavioral intention and perceived behavior as motivating and an enabler to perform a task. Perceived behavioral control predicts that either a user has enough resources and chances to perform a task in a particular manner. The behavior can be
controlled if yes, then up to what extent. It is found that when an individual comparatively has more appropriate recourses that stimulate him to use a particular pattern of manner, he or she is more inclined to follow firm behavioral intention to use that pattern or method (Taylor & Todd, 1995).

2.5. Gender

Much research has been conducted to check the gender role in the adoption of innovation and technology. It has resulted in gender being a significant variable in deciding the users’ behavior intention and attitude. As far as the education sector, there is always a controversial argument on the variable of gender and its pedagogical implications (Ramírez-Correa et al., 2015). Apart from some issues like pedagogical issues; differential attendance rates between male and female students (Woodfield et al., 2006), the approach of the study and style of communication, and motivation are also influencing factors (Robson et al., 2004). In the opinion of these researchers, the results supported the importance of gender equality in designing the courses for the students. It is also found that the satisfaction of the online platform’s study is higher in males rather than female teachers (Lu & Chiou, 2010). Gender has a moderation effect on performance, effort expectancy, and social context (Park et al., 2007). They found that females are less tended on performance while adopting technologies and innovations.

On the other hand, they are more inclined towards an expectancy of efforts in the decision of adoption or rejection of new technology. Furthermore, many researchers have supported the variable of gender in the adoption of different technology like email usage (Gefen & Straub, 1997), Internet banking (Lichtenstein & Williamson, 2006) online shopping (Van Slyke et al., 2002). Moreover, Gefen and Straub (1997) suggested that gender should be included as a moderating variable in Information Technology-related model testing. He found that women and men have different perceptions of the adoption and behavioral intention of the technology. Venkatesh and Davis (2000) explained through their research study that females are more influenced by subjective norms and perceived behavioral control than males who are more inclined towards attitude. Along above many other researches too concluded the role of moderating variable of gender in the adoption and continuing intention of use of technology.

On the other hand, some researchers have concluded that gender has no significant effect on satisfaction or attitude towards e-learning (Cuadrado-García et al., 2010; Hung et al., 2010). Some studies also found no effect of gender moderation on the teacher’s attitude (Chu, 2010; Kay & Knaack, 2008). Moreover, brain-related research has also been proved the different brain structures of males and females at the time of birth, responsible for the differing response to the environment’s effect. Some studies resulted in having significant differences in the attitude of males and females to use computers and the internet (T. S. Teo & Lim, 2000; Young, 2000). The evidence of the effect of moderation variable of gender regarding technology acceptance and use is not conclusive as previous studies show conflict about having or not having behavior attitude differences in using technology. Mainly, males’ perception of perceived usefulness, ease of use, and behavioral intention to use technology and online teaching-learning platforms are stronger than females. Furthermore, the males are more influenced by perceived usefulness for their behavior intention compared to females, who are influenced by perceived ease to use of e-learning teaching platforms.

After going through the previous literature, the authors found that no study was available to present the perception of the teachers about their intention to use online platforms for teaching even after the situation of Covid-19 will be sorted out or normalized. Everybody is talking about the online teaching-learning process, perception, tools and but there is no study about whether this imposed use of online platforms to teach students will be continued during future normal situations or not. Furthermore, the study presents the moderating impact of Gender in the continuation of online sources for teaching that is the parameter that has not been checked yet, in this particular phenomenon of the pandemic. It has been tried to present the perception of the
intention of use of the online platforms for teaching as well as the moderating impact of gender in one study. After going through the previous literature, a conceptual framework has been designed to understand the factors influencing the use of the online mode of study (Figure 1).

Thus, the following hypotheses have been framed for the study:

H1: Perceived usefulness positively influences teachers’ attitude towards online teaching.
H2: Perceived usefulness positively influences teachers’ intention to continue online teaching.
H3: Perceived ease of use positively influences teachers’ attitude towards online teaching.
H4: Attitude towards online teaching positively influences teachers’ intention to continue online teaching.
H5: There is a moderation effect of gender between perceived usefulness and attitude towards online teaching.
H6: There is a moderation effect of gender between perceived usefulness and intention to continue online teaching.
H7: There is a moderation effect of gender between Perceived ease of use and attitude towards online teaching.
H8: There is a moderation effect of gender between attitude towards online teaching and intention to continue online teaching.

3. Methodology

3.1. Design and data
This study has adopted a mixed-method research design comprising both qualitative and quantitative techniques. Therefore, in-depth interviews (qualitative) were conducted, followed by a closed-ended questionnaire survey (quantitative). The Non-random sampling method was utilized for both qualitative and quantitative studies. For the qualitative study, a total of 15 participants, which included teachers who are teaching at the university and college level, were
interviewed for about 30 to 40 minutes each. Semi-structured interviews including questions in English and Hindi both languages for example, “At what extent do you think that online platforms of teaching can replace physical classrooms?” “What kind of problems do you face during your online classes?” “What are the positive or negative factors you find during using online platforms of teaching?” “Are you comfortable if online classes will be continued even after the pandemic? “Would you like to continue the use of online platforms for teaching after the situation will be normalized?” In-depth interviews including a total of 13 questions helped elicit the participants' beliefs about continuing the online teaching, then selecting the variables, and arriving at a suitable model for the present study. After short listing the significant beliefs and concerns, a literature review was performed to find a suitable model. The idea was taken to go through the interviews first to conclude the influencing factors from the grounded theory of research. In which data has been collected systematically and analyzed to uncover the behavior of a group or social processes. Through these interviews the idea of the various issues faced by the teachers while using online teaching platforms, their perception towards its benefits, attitude regarding the use of online platforms for teaching, and intention of continuing to use the same after the pandemic situation were discussed. After getting an idea of their issues, perception, and intention we found some main variables influencing their intention of continuing of using online teaching platforms. Some of the major results are generalized follows: First, we have gone through the qualitative interview, some of the major summaries of findings are as follows: 80% of teachers are comfortable using online platforms. 40% of teachers find difficulty in learning to run these classes. 60% of teachers felt a lack of social environment on digital platforms. 40% of teachers felt they are becoming more confident in online classes. 40% of teachers said that they will increase using online teaching platforms for enhancing students' interest in the class. 60% of teachers found these platforms convenient to use from anywhere which motivates them to use online classes as an initiative on an absent day so that no class would be skipped. 50% of teachers shared their positive views on online platforms of teaching that they are satisfied with the outcome and they will continue using to use online platforms for teaching after the pandemic.

After that, we confirmed these variables with the help of previous literature though that we found our final variable suitable for the present study.

This study presents the results based on the gender difference in the technology adoption model (TAM). To achieve this objective, we conducted a multi-group analysis (MGA) in SmartPLS. MGA in PLS-SEM is a non-parametric technique that tests the significant difference between groups using the bootstrapping method (Henseler et al., 2012). Though, researchers have previously used the TAM model in the online teaching context; most studies have not bi-furcated the gender difference in the TAM model. Further, the present study's primary concern is the post-Covid-19 continuance intention of online teaching, which is peculiar to our study.

We have collected data from 242 teachers from various institutes. The data were collected online through a Google form based on a structured questionnaire including 15 questions in the English Language. The link of the questionnaire was mailed to prospective respondents with a consent letter explaining the study's purpose and integrity. Consent letter declared that the data shall only be used for academic and non-profit use. The online survey begins (first page) with the purpose of study and a consent paragraph. Those who agreed were routed to the next page and those who did not agree were routed to the last page which was a thanks note for participating in the survey. About 1200 emails were sent to the various teachers. The pool of emails was sourced from conference organizing committees, which had the lists of faculties' emails participated in the previous conference events. Some emails were also sourced from the profiles of the faculties available online. Respondents were also given options to exit survey at any point of time if they were not comfortable.

The questions were based on the TAM model 9 (Table 3) (Weng et al., 2018). The questions were suitable paraphrased to suit the context. Kindly check the Table 3 for scale items.
### 4. Results

#### 4.1. Descriptive statistics

Table 1 presents the respondents’ characteristics. About 40% are female, and 57% are male. Few of the respondents prefer not to reveal their genders. About half of the participants are assistant professors (47.5%), and about one-third are either associate professors or professors (28.3%). Roughly 13% of the participants are 30 years old or younger. Table 2 presents the descriptive statistics (mean and standard deviation) related to composite variables based on genders. The mean of composite variables for male respondents is higher than that of their female counterparts. We conducted the t-test to find whether the differences in mean values were significant. The results of the t-test revealed that except for the attitude variable ($t = -2.199$, $p = 0.029$), the mean differences were not significant. Though the t-test helps provide some evidence that the difference due to gender may exist, it may not help understand
Table 3. Construct reliability

|                         | Loadings | Alpha  | CR     | AVE  |
|-------------------------|----------|--------|--------|------|
| **Attitude towards**   |          |        |        |      |
| online teaching         |          | 0.782  | 0.861  | 0.609|
| Online teaching is a    |          | 0.734  |        |      |
| good idea.              |          |        |        |      |
| Online teaching has a   |          | 0.833  |        |      |
| positive influence on   |          |        |        |      |
| me.                     |          |        |        |      |
| I think it is valuable  |          | 0.862  |        |      |
| to teach online to      |          |        |        |      |
| my class.               |          |        |        |      |
| I am favorable          |          | 0.679  |        |      |
| towards online          |          |        |        |      |
| teaching in comparison  |          |        |        |      |
| to traditional classes. |          |        |        |      |
| **Intention to teach**  |          | 0.897  | 0.928  | 0.763|
| online (Post-Covid-19)**|          |        |        |      |
| I have plans to         |          | 0.868  |        |      |
| conduct online classes  |          |        |        |      |
| through various platforms in the future. | | | | |
| There is a high probability that I will conduct an online class in the future. | | | | |
| I will increase using   |          | 0.884  |        |      |
| online teaching platforms for my class to enhance students’ learning interests. | | | | |
| I would love to use     |          | 0.840  |        |      |
| online teaching platforms for my class. | | | | |
| **Perceived ease of**   |          | 0.777  | 0.870  | 0.692|
| use                     |          |        |        |      |
| I find it easy to       |          | 0.779  |        |      |
| teach online to my class. |        |        |        |      |
| Conducting online classes is easy and understandable. | | | | |
| Online teaching is      |          | 0.895  |        |      |
| more flexible to teach  |          |        |        |      |
| than traditional one.   |          |        |        |      |
| **Perceived usefulness**|          | 0.790  | 0.865  | 0.618|
| Using online teaching   |          | 0.695  |        |      |
| for my class helps me to |          |        |        |      |
| control the pedagogy.   |          |        |        |      |

(Continued)
how the independent variable’s influence on a dependent variable may vary due to gender. That is why we have conducted a Multi-group analysis in SmartPLS Software.

4.2. Outer model evaluation

The quality of the psychological constructs used in the study is assessed by evaluating the outer model in SmartPLS software. The outer model is equivalent to the measurement model of covariance-based structure equational modeling (CB-SEM), with the same purpose, evaluating the psychometric properties of the scales used in the instrument. We have assessed the validity (convergent and discriminant) and reliability of the constructs. Composite reliability (C.R.) and Cronbach’s alpha are used to indicate the reliability of the scale. Any value above 0.70 for C.R. and Cronbach’s alpha is acceptable; however, higher is better. All Cronbach’s alpha values are above the suggested criteria of 0.70, ranging from 0.777 (PEOU) to 0.897 (Intention). On the same line, the C.R. values are also above the threshold criteria (see Table 3). Therefore, we can consider the constructs used in the study as reliable. The convergent validity is evaluated by inspecting the values of outer loadings (aka factor loadings) and average variance extracted (AVE).

| Table 3. (Continued) |
|----------------------|
| Loadings | Alpha | CR | AVE |
| Attitude towards online teaching | 0.782 | 0.861 | 0.609 |
| Using the online teaching medium in my class enhances teaching performance. | 0.842 | |
| I find online teaching useful for my class. | 0.861 | |
| Using an online teaching method makes it easier to catch individual students’ needs. | 0.733 | |

* values based on complete data

**One general question was asked (Your opinion about online teaching in the future when the lockdown is relaxed)

| Table 4. Discriminant validity |
|-------------------------------|
| Attitude towards Online Teaching | Intention to continue online teaching | Perceived usefulness | Perceived ease of use |
| Attitude towards Online Teaching (ATOT) | 0.780 | | |
| Intention to continue online teaching (ITCOT) | 0.731 | 0.874 | |
| Perceived usefulness (PU) | 0.528 | 0.490 | 0.786 |
| Perceived Ease of use (PEOU) | 0.660 | 0.704 | 0.545 | 0.832 |
I
ing
ificant).
Table 6. Results of hypotheses testing

| Hypothesis                                                                 | p-value |
|---------------------------------------------------------------------------|---------|
| H1: Perceived usefulness → Attitude towards online teaching              | 0.239***|
| H2: Perceived usefulness + Intention to continue online teaching         | 0.144** |
| H3: Perceived ease of use → Attitude towards online teaching             | 0.530***|
| H4: Attitude towards online teaching + Intention to continue online teaching | 0.655***|

**p-value less than 0.05, ***p-value less than 0.001

Though all other items have outer loadings of 0.70 and above, one item of attitude construct (I am favorable towards online teaching compared to traditional classes) has a slightly low value of outer loading (0.679). Some researchers have suggested that values close to 0.70 may be accepted if their deletion does not improve the AVE considerably. In the present case, nothing much improved in AVE after deletion of the said item, therefore we decided to retain the item. AVE's value was also above the suggested values of 0.50 for all the constructs, ranging from 0.609 for attitude to 0.763 for intention. Assessment of discriminant validity was done using the Fornell and Larcker (1981) criterion, which requires that the values of the square root of AVE for a particular construct should be greater than the value of all the correlations of that with any other construct. This statement can be represented as follows: $\sqrt{AVE_{of\ construct}} > Correlations\ of\ that\ construct\ with\ other\ constructs$. It is clear from Table 4 that the measures have achieved the desired level of discriminant validity. As the instrument’s constructs have endured several criteria of reliability and validity, we can proceed to the next step of the data analysis. The upcoming section provides the results of the multi-group analysis.

5. Multi-group analysis
MGA helps understand how the relationship of one specific independent variable (for example, attitude) with some dependent variable (Intention) would differ in two independent groups. In the present case, each hypothesis has been tested from the perspectives of the two genders. We expect the relationships will vary for different gender groups. The beta coefficient and significance for the same hypothesis may vary across gender. MGA uses the bootstrapping technique using large subsamples (5000 in the present case) to indicate whether the difference in the beta coefficient for the same hypothesis belonging to two genders is statistically significant.

6. Hypotheses testing
Table 5 shows hypotheses testing results for the complete data set without discriminating between the male and female participants. It is evident from Table 5; all relationships are significant when the complete dataset is used for analysis. As mentioned earlier, the significance is based on the bootstrapping procedure conducted in the SmartPLS software (see Figure 2). The values in the middle of arrows starting from one blue circle to another blue circle represent the beta weights in the outside of bracket and t-values inside the bracket. The values in the middle of arrows starting from one blue circle to another blue circle represent the beta weights in the outside of bracket and t-values inside the bracket. The values in the middles of each arrows, originating from circle and ending at the yellow rectangle represent the factor loadings and their corresponding t-values. Factor loadings are outside the brackets and t-values are inside the brackets. The t-values are obtained using a bootstrapping procedure involving 5000 sub-samples. The t-values are obtained using a bootstrapping procedure involving 5000 sub-samples.

Table 6 shows the results of the moderating effect of gender. The results are obtained by the multi-group analysis (MGA) in the SmartPLS software. Hypotheses are presented in the rows. The columns show the different analyses performed for each hypothesis. When the testing is done for
male and female respondents separately (see Table 6), the significance associated with the relationships has changed for the complete data set (Table 5). All relationships are significant in the case of male respondents. This is similar to the results tested on the full dataset. However, in the case of women respondents, only two relationships are significant. First is the influence of perceived ease of use on attitude towards online teaching (PEOU→ATOT) and second is the influence of attitude towards online teaching on the intention to continue online teaching (ATOT→ITCOT).

Further, the difference between a sample of male and female respondents is not only due to significance but also due to the difference in beta value for male and female respondents for each hypothesis. To account for this difference, SmartPLS conducts the bootstrapping for the change in beta values for each group of males and females, which is referred to as MGA (see Table 6). For the relationship, P.U.→ATOT, the difference in beta weight is not significant between the two genders, which means that P.U.’s impact on ATOT is more or less similar for both the genders. Similarly, the

![Figure 2. Results of bootstrapping.](image-url)
way PEOU influences ATOT is also working in the same fashion as the result of MGA is also not significant in this case.

For two hypotheses, the MGA for male and female samples indicates some disparity by explaining how perceived usefulness and attitude towards online teaching influence the construct of intention to continue online teaching. As the MGA results are significant for the relationship of P. U.→ITCOT, it can be said that male respondents P.U. matters a lot in explaining the ITCOT. However, for women, P.U. does not contribute much in explaining the ITCOT. The results of MGA are also significant for another hypothesis (ATOT→ITCOT). In both samples, the influence of ATOT on ITCOT was significant, but in the beta, weight is significantly higher in the sample of female respondents. The results indicate that attitude is a better predictor of continuance intention in female faculties than in male faculties.

7. Discussion
In this study, we have tested the Technology Acceptance Model and have successfully applied it to explain the continuance of e-learning in post-covid-19 situations. Earlier, TAM has been applied in various online adoption contexts, such as enrolling in a MOOC. However, due to the lockdown's unique situation, online learning was a forced choice as it was the only option. Many teachers would like to use the online teaching tools and intend to continue integrating online teaching tools; on the other hand, many teachers would not choose to do so. Therefore, it was important to understand whether teachers are also willing to utilize online platforms for enhancing educational content. We corroborated that the TAM model can help understand the future continuance intention. Secondly, our study's major contribution was to reveal the moderating impact of gender within the TAM model.

We checked how the genders’ influence function for each hypothesis in the TAM model. Though all hypotheses were significant in the TAM model with a complete sample and the sample with the male population, the female sample tells a different story. First, only two hypotheses were significant in the female respondents' sample: PEOU→ATOT and ATOT→ITCOT. So, it is concluded that male teachers are more inclined to use online teaching platforms in post-Covid-19 situation. They are more satisfied with the outcome they found from online teaching tools and have intention to use online platforms for teaching in post-Covid-19 situations. On the other hand, female teachers are more comfortable to have positive attitude in case they find the ease and convenience in using online platforms as well as positive attitude push them to have intention to use online tools for teaching.

Further, MGA results were significant in two hypotheses: P.U.→ITCOT and ATOT→ITCOT. MGA results imply that in the case of women respondents, ATOT is much more closely associated with ITCOT. In other words, ATOT predicts ITCOT better in the sample of women teacher's responses. While for the construct of P.U., the implications are vice versa. P.U. is a better predictor of ITCOT in male respondents' samples, or in other words, P.U. is more closely associated with ITCOT in the male sample than in the female sample. The study resulted that ease of use positively influences teachers’ attitudes towards online teaching. Bajaj et al. (2021) also supported that the ease of use or convenience in using technology positively influences the users. The result of the present study that perceived ease of use ultimately clears the path of intention to use in technology is supported with various previous studies (Davis, 1989; Li et al., 2008; Taylor & Todd, 1995). Venkatesh and Davis (2000) also showed that gender plays a vital role in adoption and attitude towards the use of technology in the teaching-learning process. On the other hand, Cuadrado-Garcia et al. (2010); Hung et al. (2010) found no relationship between gender and adoption of technology.

The main idea about this study was whether teachers will continue using online tools of teaching even after ease of Covid-19 restrictions. Many teachers were already using online tools for students’ engagement and many were not using such tools. However, the Covid-19 situation forced teachers to use online teaching tools. Our study investigates whether teachers will continue or discontinue using online teaching tools after such restriction are eased. Our study confirms the application of TAM model in such unique contexts as well. However, there were some discrepancies when the data were analyzed separately for men and women. We found that being men or women...
may determine the strength of relationships in a given hypothesis within the TAM framework. Researchers and policymakers in the education sector may utilize our finding to design appropriate strategies for online learning and teaching process.

### 7.1. Future directions and limitations

This study utilizes the TAM model to understand the post-COVID-19 continuance intention of online teaching by the faculties. We have also investigated the moderating variable of gender in each relationship in the TAM model. Therefore, the present study provides two significant contributions to the current literature. The first is applying the TAM model in understanding the post-COVID-19 patronage of online teaching, and the second is the elaboration of the variable of gender in the TAM models. In this way, the huge scope of models like TPB (Theory of planned behavior), Technology usage model (TUM), UTAUT (Unified Theory of Acceptance and Use of Technology), Theory of Reasoned Action (TRA) to check the behavioral intention of teachers can also be used. As well as the studies having combinations of two or three models can also be explored through future studies. As the present study was based on the teachers, we suggest those students’ opinions should also be studied either using a similar model or using any extended version of the present models.

Though the present study provides significant insights on teachers’ continuance intention for teaching online after COVID-19, it is worth mentioning the major limitations of the present work. The study is based on survey data collected online from various faculty members across the country. Though the survey’s demographic content is somewhat in agreement with the national average, the non-probability methodology of sampling is not much applauded by many researchers. However, circumstances, like low budget, as the study was self-financed by the researchers; and the time constraints, were much more favorable for researchers’ controlled judgmental sampling. Snowball sampling technique was used for interviews, so strata, clustered, or quota sampling techniques can be used for more accuracy and reliability in future research. The study sample is about 242 faculties, an acceptable sample size for data analysis in SmartPLS, though a larger sample is always desirable in survey studies.

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