

CAPTURING THE PERCEPTION OF RESEARCH SCHOLARS TOWARDS ONLINE PH.D. COURSE WORK DURING COVID-19: A DIPSTICK STUDY IN SELECTED REGIONS OF WEST BENGAL

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ABSTRACT

After the emergence of COVID-19 pandemic, research scholars have largely been active through the online mode of interaction, further demonstrating the need for such a whirlwind way of learning. In this light, it has been observed that a large number of research scholars all across India have been resorting to online PhD course work to fulfil their academic agenda. In this context, it becomes quite pivotal to throw light upon the perception of research scholars towards online PhD course work. The current research study is attempted at probing into the attitudes and behaviour of research scholars dwelling in the state of West Bengal towards online PhD course work by the application of "Technology Acceptance Model" (TAM). The findings reveal positive perception among the surveyed research scholars towards online PhD course work.

Keywords: Online PhD course work; Technology Acceptance Model; Attitudes and Behaviour; West Bengal; Research scholars

INTRODUCTION

The rapid pace at which globalization is occurring along with fine tuning in the milieu of technology has fuelled the emergence of head turning electronic devices, especially, smartphones and tablets, further propelling a spectacular proliferation of mobile internet. Online PhD course work classes is a tech-based platform enabled via various online platforms like Google Meet, Zoom, MS Teams which enables information sharing between research scholars and research guides. Online PhD course work are a great avenue for research scholars who have no access or limited access to physical classroom environment for the time being. It is extremely useful for research scholars who are "working professionals" and is in the continuous quest for improvisation. The online way of undertaking course work classes has reduced the hassles of scholars who otherwise were subjected to travails of physical travelling, expenses involved in travelling, various other miscellaneous expenses, etc. Research scholars have been benefitted widely by staying away from the real physical classroom while still being engaged in an impeccable learning environment, albeit, being virtual. The present research study is primarily based in selected districts of the state of West Bengal during the time of a menacing global pandemic, when education has been kept afloat mainly by online education. One such revelation has been high proclivity of research scholars towards online PhD course work. With the eye-twitching amelioration in the ambit of technology, the baptism of such an astounding way of learning has been a turning point in the domain of education sector. A whopping proportion of research scholars across India have been observed to highly value online PhD course work classes. In fact, the essence of the current research endeavour exists in this rudimentary idea.

LITERATURE REVIEW

The domain of online learning and student behaviour is not new, but measuring the perception of research scholars towards online PhD Course Work classes has limited researches, especially in the light of pandemic. In the present research study, an attempt has been made to study the attitudes and behaviour of research scholars towards online PhD course work and hence it is almost imperative to discuss about TAM. “TAM is an extension of TRA (Theory of Reasoned Action)”, which was brought into existence by Ajzen & Fishbein (1975).

Fred David first coined the term “Perceived Usefulness” which refers to the “extent of a belief held by an individual that the usage of a particular system results in the enhancement of his/her job performance”. Davis (1989), also defined the term “Perceived Ease of Use” as the “extent of a belief held by a person regarding the usage of a system which would be effortless”. In further addition to the existing theory, David (1993), opined that the usage of the actual information system was a determination of a concept called “Behavioural Intention” which was a result of the combined force of “attitude towards usage” and “perceived usefulness”. He defined it as “the subjective probability that an individual will perform a specified behaviour.” Attitude towards Usage (ATU) is a crux dependent variable in the TAM and in the words of Ajzen & Fishbein (2000), ATU is the “evaluative effect of positive and negative emotions among individuals towards the usage of a particular system”.

Over the course of years, TAM got metamorphosed from the archetypal dynamics of retrospective information technology, culminating novel dimensions like e-commerce and m-commerce. TAM also offers a real flexibility to include independent constructs most notably “Subjective Norm”, as first introduced by Taylor & Todd (1995), who defined it as “the influence gained from social circle on whether or not to use a particular system.” Roy (2017), conducted a very interesting study embedding the construct of “Subjective Norm” in a conventional TAM in the context of “Taxi Hailing Apps”. The study explored that “Subjective Norm” was significantly knitted with behaviour of consumers towards “Taxi Hailing Apps”. TAM 2 by Venkatesh & Davis (2000) and “Unified Theory of Acceptance and Use of Technology” by Venkatesh et al. (2003), are two major upgrades. One of the major find is a TAM 3, which includes concepts of “Trust Effects” and “Perceived Risk” (Venkatesh & Bala, 2003).

However, there has been quite a few researches discussing about the perception of students towards online mode of learning by applying TAM. Tracing back to almost a decade in 2012, a very interesting study done by Farahat delved into student perceptions towards online learning in the context of Egyptian universities. The study revealed that “perceived ease of use”, “perceived usefulness”, “attitude towards usage” and “social influences” as important determinants of online learning. Similarly, one of the latest researches by Han & Sa (2021), after surveying 313 university students of Korea found that all TAM constructs were related to each other, with “perceived ease of use” and “perceived usefulness” had a positive impact on educational satisfaction. Aguilera-Hermida (2020), found that “attitude”, “motivation”, “self-efficacy” and “use of technology” played key roles in cognitive engagement and academic performance of students.

Any exigencies or unforeseen emergencies triggers abnormal behaviour among individuals. The attitude and behaviour of students have also changed during the COVID-19 pandemic. The perceptions of research scholars witnessed during the time of this ongoing pandemic is quite different, wherein they are more alert towards health and safety and undertaking course work classes through online mode. This phenomenon is also having a prodigious impact on the attitudes and behaviour of the research scholars.

Research Gap

Erstwhile literatures have more or less focused at unravelling the perception of students towards online learning even in the context of COVID-19 pandemic via the TAM framework. However, a noticeable research gap lies in unfurling the acceptance of online PhD course work classes by research scholars during the times of a global pandemic. The current research study would address the present issues at hand. Furthermore, there is a clear lack of proper empirical researches conducted in the geographical territory of the state of West Bengal. This also provides an additional vista for research as respondents have been surveyed across selected regions of West Bengal.

Research Objectives

1. To develop a novel research framework of TAM emphasizing on the acceptance of online PhD course work by research scholars during COVID-19.
2. To examine and analyze the attitudes and behaviour of research scholars towards online PhD course work amidst COVID-19 pandemic.

Conceptual Framework

The content of literature in the domain of consumer behaviour and TAM is a huge one. In this respect, a major contribution to the existing literatures would be to blend the keywords of “Subjective Norm” and “Exigency (COVID-19)”.

The present research study is attempted in developing a conceptual framework which emphasizes on the research scholars’ adoption and usage of online PhD course work classes, pillared on marginally modified Technology Acceptance Model (TAM). The proposed research model is composed of the traditional TAM constructs along with the domains of “Subjective Norm” and “Exigencies (Covid-19)” for catering to the influence of peer groups and urgent unforeseen needs respectively. Therefore, the research model would actually consist of six ingredients, which has been developed and presented below. Also, the following hypotheses have been developed.

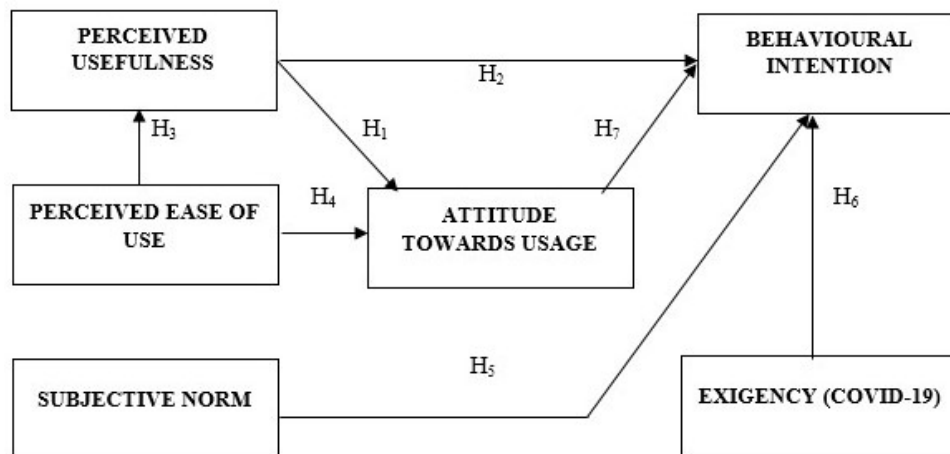


Figure 3: Research Model (Author’s own conceptualization)

H₁: “Perceived Usefulness has a positive influence on Attitude towards Usage”

H₂: “Perceived Usefulness has a positive influence on Behavioural Intention”

H₃: “Perceived Ease of Use has a positive influence on Perceived Usefulness”

H₄: “Perceived Ease of Use has a positive influence on Attitude towards Usage”

H₅: “Subjective Norm has a positive influence on Behavioural Intention”

H₆: “Exigency (Covid-19) has a positive influence on Behavioural Intention”

H₇: “Attitude towards Usage has a positive influence on Behavioural Intention”

Data and Methodology

The data methodology consist of the use of both primary and secondary data. Secondary data has been used to lay the base of a strong conceptual framework. This has been possible through accessing various research paper from authentic and reliable databases like BASE, EBSCO and Google Scholar. The process of primary data collection has been done through a structured questionnaire, wherein a survey has been conducted among 462 research scholars who are all residents living in different regions of West Bengal. The data collection took place in two phases. The first phase included the respondents of West Bengal surveyed during the months of September and October’ 2021 while the second phase of data collection were conducted in the months of December and January’ 2021. The regions of survey from West Bengal include areas of Kolkata, Burdwan and Hooghly. The questions in the questionnaire were mostly self-developed albeit few questions have been adopted from previous researches (Roy, 2017). The questionnaire contained 23 questions under 6 segments, namely, “Perceived Usefulness” (PU), “Perceived Ease of Use” (PEU), “Subjective Norm” (SN), “Exigencies” (Covid-19), “Attitude towards Usage” (ATU) and “Behavioural Intention” (BI). A “Five-point Likert scale”, where “(5= Strongly Agree; 4=Somewhat Agree; 3=Neutral; 2=Somewhat Disagree and 1=Strongly Disagree)” has been used to measure the concepts. Few responses were rejected due to minor errors and incomplete responses. After the rejection of such responses, the final valid responses stood at 462.

Data Analysis and Presentation

• Demographic Profiling

Table 1: Representation of Descriptive Statistics (Source: Author's Own Calculations)

Demographic Construct	Classification	Population Statistics	Percentage
Gender	Male	244	0.53
	Female	218	0.47
	TOTAL	462	1.00

As observed in the above the number of male respondents (n=244) exceeds the female respondents (n=218).

• Reliability Analysis

For the purpose of testing the internal consistency of the variables, "Cronbach's Alpha Test" has been conducted. This will serve the purpose of measuring the scale reliability of the various constructs which has been taken into consideration in the current research endeavour. The table below displays robust reliable results as the "Cronbach's Alpha" values for all items exceed the standard value of 0.7.

Table 2: Reliability Statistics (Source: Author's Own Calculations)

Construct	Cronbach's Alpha	Items	Total Correlation Value of Corrected Item	Cronbach's Alpha When Item Removed
Total	0.994	23	—	—
Perceived Ease of Use	0.988	PEU1	0.987	0.982
		PEU2	0.985	0.980
		PEU3	0.985	0.978
Perceived Usefulness	0.989	PU1	0.975	0.986
		PU2	0.974	0.985
		PU3	0.978	0.985
		PU4	0.979	0.985
		PU5	0.977	0.985
		PU6	0.917	0.983
Attitude Towards Usage	0.990	ATU1	0.980	0.985
		ATU2	0.978	0.986
		ATU3	0.971	0.988
		ATU4	0.969	0.988
Subjective Norm	0.962	SN1	0.872	0.957
		SN2	0.935	0.943
		SN3	0.950	0.940
		SN4	0.938	0.945
Behavioural Intention	0.981	BI1	0.977	0.961
		BI2	0.941	0.984
		BI3	0.974	0.962
Exigency (Covid-19)	0.975	EXC1	0.972	0.989
		EXC2	0.930	0.912
		EXC3	0.974	0.962

• Convergent and Divergent Validity Test

As observed by Table 3, the subcategories of construct validity are the "convergent and divergent validity". The "convergent validity" has been estimated by their respective "factor loadings" (CFA), "average variance extracted" (AVE) and "composite reliability" (CR). It is observed from the table depicted below that the CFA for all items are above the ideal level of 0.7, while AVE and CR fall above their respective threshold criterion of 0.5 and 0.7.

Table 3: Convergent Validity Results (Source: Author's Own Calculations)

Construct	Items	Factor Loading	AVE	C.R.
Perceived Ease of Use	PEU1	0.972	0.977	0.968
	PEU2	0.972		
	PEU3	0.977		
Perceived Usefulness	PU1	0.978	0.947	0.992
	PU2	0.977		
	PU3	0.980		
	PU4	0.981		
	PU5	0.980		
	PU6	0.942		
Attitude Towards Usage	ATU1	0.978	0.961	0.991
	ATU2	0.977		
	ATU3	0.979		
	ATU4	0.977		
Subjective Norm	SN1	0.925	0.885	0.990
	SN2	0.846		
	SN3	0.889		
	SN4	0.857		
Behavioural Intention	BI1	0.979	0.960	0.986
	BI2	0.977		
	BI3	0.976		
Exigency (Covid-19)	EXC1	0.980	0.947	0.992
	EXC2	0.942		
	EXC3	0.978		

The usage of “square root of ACE” and the “correlation coefficient matrix” is imperative for testing the “divergent validity” of constructs. As per Fornell & Larcker (1981), “discriminant validity was obtained by comparing the shared variance between factors with the AVE from the individual factors.” The above matrix clearly reflects that the variables and their in-between MSV and ASV fall short when juxtaposed to AVE and also the “square root of AVE” is higher compared to the “correlations of inter-constructs”, hence, satisfying the “discriminant validity” test.

Table 4: Divergent Validity Results (Source: Author's Own Calculations)

Construct	Inter-construct Correlations					
	PEU	PU	ATU	SN	BI	EXC
PEU	0.989					
PU	0.985	0.973				
ATU	0.982	0.954	0.980			
SN	0.805	0.827	0.817	0.941		
BI	0.963	0.969	0.974	0.934	0.942	
EXC	0.975	0.982	0.989	0.958	0.966	0.980

- *Test for Structural Equation Modelling*

SEM has been performed to delve into the relationships existing between 6 variables, namely, PEU, PU, ATU, SN, BI and EXC. The rationality exist in testing the fit between the model and the obtained data. The first stage of making inference about the results of SEM encompasses a review of “fit indices.” All the fit indices when juxtaposed with their corresponded values which has been suggested will give a good model fit “Ratio of Chi-square to its Degrees of Freedom” (χ^2/df) = 1.977, “Goodness of fit index” (GFI) = 0.958, “Adjusted Goodness of fit index” (AGFI) = 0.936, “Relative Fit Index” (RFI) = 0.967, “Comparative Fit Index” (CFI) = 0.983 and “Root Mean Squared Error of Approximation” (RMSEA) = 0.042.

Table 5: Indices for measure of “Goodness-of-Fit” (Source: Author’s Own Calculations)

Goodness of Fit	Recommended	Actual Value of	Result of Model Fit
Measure	Value	Measures	
CMIN/DF	≤ 3.00	1.977	Good
GFI	≥ 0.90	0.958	Good
AGFI	≥ 0.90	0.936	Good
RFI	≥ 0.90	0.967	Good
CFI	≥ 0.90	0.983	Good
RMSEA	≤ 0.05	0.042	Good

To this end, the results of hypothesis testing have been obtained. The below table clearly represents the validation of all the hypotheses through the path analysis. It can be concluded that “perceived usefulness” and “perceived ease of use” favourably impact attitudes towards usage with each reporting figures of ($\beta = 0.192$, $P < 0.05$) and ($\beta = 0.402$, $P < 0.05$) respectively, thereby supporting H₁ and H₄. The same could be safely asserted for the relationship between “perceived usefulness”, “subjective norm”, “attitude towards usage” and “Exigency (COVID-19)”, which are all significantly associated with “behaviour intention” of research scholars towards online PhD course work, with each reporting figures of ($\beta = 0.198$, $P < 0.05$), ($\beta = 0.405$, $P < 0.05$), ($\beta = 0.443$, $P < 0.05$) and ($\beta = 0.402$, $P < 0.05$) respectively substantiating H₂, H₅, H₆ and H₇. The relationship between “perceived ease of use” and “perceived usefulness” is also linked with figure reporting ($\beta = 0.609$, $P < 0.05$), thus, substantiating H₃.

Table 6: Results of Path Validation (Source: Author’s Own Calculations)

Hypotheses	Path	Coefficient	Direction	Results
H1	PU→ATU	0.192	Positive	Supported
H2	PU→BI	0.198	Positive	Supported
H3	PEU→PU	0.609	Positive	Supported
H4	PEU→ATU	0.408	Positive	Supported
H5	SN→BI	0.405	Positive	Supported
H6	ATU→BI	0.443	Positive	Supported
H7	EXC→BI	0.402	Positive	Supported

RESULTS AND DISCUSSIONS

The present research study delved into the attitude and behaviour of research scholars towards online PhD course work by applying “Technology Acceptance Model” (TAM). The inter-relationships between traditional TAM components and the other two contemporaneous components like “Subjective Norm” and “Exigency (Covid-19)” has been explored. According to the first hypothesis, “Perceived Usefulness” (PU) had a positive relationship with “Attitude towards Usage” (ATU) as the extent to which the importance of usefulness will be psychologically casted would have a bearing on the attitude of the research scholars. As per the second hypothesis, it was also observed that “Perceived Usefulness” (PU) was related to “Behavioural Intention” (BI). An explanation for this would be that the research scholars are always in the quest for using a beneficial application. We evidence, in the third hypothesis testing that “Perceived Usefulness” (PU) was strongly influenced by “Perceived Ease of Use” (PEU). This hints that providing appropriate user training is essential for bolstering the research scholars’ perception of the usefulness of online model of undertaking course work classes. Besides, “Perceived Ease of Use” (PEU) was also positively related to “Attitude towards Usage” (ATU), validating our fourth hypothesis. The fifth hypothesis was attempted at examining the relationship between “Subjective Norm” (SN) and “Behavioural Intentions” (BI). The impact cast by social circle had a significant impact on the “Behavioural Intentions” of research scholars towards online PhD course work. As observed by the sixth hypothesis, it is fathomed that the attitude of research scholars towards online PhD course work has been instrumental in shaping their “behavioural intention”, as both mental as well as physical faculties are a nifty driving force in developing their perceived likelihood. Finally, the seventh hypothesis analyzed the relationship between “Exigency (Covid-19)” (EXC) and “Behavioural Intentions” (BI). Any unforeseen exigencies would trigger an abnormal behaviour among people and the current pandemic of COVID-19 is no exception. In addition to this, resorting to the online model of undertaking PhD course work classes is easy and convenient and reduces a lot of hassles. Such prolonged attitudes observed among the research scholars during this “new normal” has brought a bewildering change in their behaviour as well.

CONCLUSION

The current research study is highly relevant in the context of recent advancements in technology and the strong proclivity of research scholars towards online course work classes. The current research study highlighted certain crux elements under TAM constructs which shall be highly relevant in guiding future researches. Research scholars of West Bengal are highly valuing online PhD course work classes during the current ongoing pandemic. This has been empirically proved through in the present study.

Ever since the beginning of the pandemic, the education sector has been severely jolted, resulting in hiccups experienced in the flow of education. Truth to be told, the integration of information and communication technology (ICT) in the ambit of education has been a major boost. The online mode of education has been the “new normal”. In this light, online activities related to even a gargantuan academic pursuance like PhD has been lauded over. The online course work classes undertaken has received widespread acceptance from the PhD scholars. The current study has probed into the perceptions of scholars through robust empirical analysis by using the popular “Technology Acceptance Model” (TAM). There has been certain criticism pointed at TAM, but it still proves to be amongst the most popular theoretical model used in academia. The current research study is strong enough to provide valuable conclusions concerning behaviour of research scholars towards online PhD course work classes.

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