

THE IMPACT OF COVID 19 PANDEMIC ON THE PRODUCTIVITY AND FUTURE PREPAREDNESS OF RESEARCH COMMUNITY

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Abstract

The Corona Virus Disease 2019 (COVID 19) has disrupted the scientific dynamics worldwide, and the researchers are juggling academic work and personal life. The current study is aimed to understand the impact of COVID 19 pandemic on the productivity and future preparedness of the research community in India. For this purpose, 131 responses were collected from the research community consisting of MPhil, Ph.D., and PostDoc scholars. The findings of this study describe that there is an association between the sudden university closure on the productivity and future preparedness and research from home acts as a mediator. The study also describes an association between sudden university closure and research from home on the wellbeing of the research community. The demographic variable, marital status was also found to have an association with the productivity of the research community, revealing that the impact of COVID 19 is not equal.

Keywords: COVID 19, Research community, Productivity, Future Preparedness, Wellbeing

Introduction

The COVID 19 pandemic is a global challenge and has indeed affected all sectors of life. The Indian government has incorporated varying degrees of lockdown and social distancing protocols to prevent the spread of the virus. The universities were closed on short notice, and the lectures were converted to online mode and the research activities to work from home. With 90% (Hora, 2020) of the scientific community working from home, it is necessary to understand the overall impact of change in the work environment and structure of work on scientific productivity and wellbeing. This study is thus conducted to understand the impact of COVID 19 pandemic on the research community in India. The outspread of the pandemic led to the sudden closure of universities, and this directed the researchers to work from their homes. In the current study the objectives are to understand the association between sudden university closure on productivity and future preparedness, taking research from home as a mediator. The association between gender and marital status on the productivity and the association between sudden university closure and research from home on the wellbeing are also captured.

Review of Literature

During this COVID 19 pandemic a few surveys and studies are conducted around the globe to understand its effect on the scientific community. In a survey conducted by the ResearchGate (Hora, 2020), the researchers reported they are “very badly” and “extremely” affected by the pandemic. The Wire conducted a study based on different cases of the field of science researchers (Geib, 2020). From this study, it could be inferred that due to the closure of laboratories, many ongoing experiments are

put on hold (Kalmouni, 2020; Weiner, Balasubramaniam, Shah, & Javier, 2020). As the boundaries are closed, the data collection for different projects and studies has also been affected. Even if researchers plan to write papers, the data collection and the performance of additional experiments are difficult (Eisen, Akhmanova, Behrens, & Weigel, 2020). There are certain specific studies conducted to understand the unequal impacts of COVID 19 pandemic on the scientific community, and it was reported that the female scientists are most affected (Myers et al., 2020). It is said that the productivity in terms of manuscript submission of the female scientists has decreased, and this captures the increased responsibilities of home and parenting during the pandemic (Staniscuaski et al., 2020). From the available literature, we understand that the COVID 19 pandemic has adversely affected the scientific community, thus it is essential to study the impact on the research community in India.

The Objective of the Study

The underlying aim of the study is to understand the impact of COVID 19 pandemic and the prevailing situation on the research community. The COVID 19 pandemic has initiated the sudden university closure by the authorities, and this led to 'the research from home' situation. Thus for this study, we have three objectives.

1. The association between gender and marital status on productivity during the pandemic
2. The association between sudden university closure and research from home on the productivity and future preparedness of the research community
3. An understanding of the wellbeing and coping mechanism during the pandemic

Research Methodology

The present study is a descriptive study to understand the impact of COVID 19 pandemic and related circumstances prevailing in India on the research community.

Participants

The current study was conducted on a sample size of 131, including female = 67 and male = 64. The participants included research scholars pursuing Mphil, Ph.D., and Post Doc in different universities in India.

Data Collection

An online survey form was used to address the objective of the study. The survey developed for the study comprised of 5 parts. The first section gathered the demographic details of the participant, which includes age, gender, marital status, and field of research. The corresponding sections of the survey form contained questions relating to sudden university closure, research from home situation, productivity, wellbeing, and future preparedness. The 'sudden university closure' section focuses on the absence of resources like laboratories and libraries and also impact on the data collection and overall research progress. The 'research from home' section emphasized on the inconveniences and interruptions while working from home. The 'productivity' captured the overall time spent on research, publications, and collaborations and networking during this pandemic and skill development. The 'wellbeing' session gathered information regarding mental wellbeing, stability, and coping mechanisms. The 'future preparedness' session captured anxiety regarding the future and readiness to adapt to the new normal.

The questionnaire, with the help of Google form, was circulated through Social Media Networking Sites.

Data Analysis and Results

The preliminary analysis of the sample is done using Microsoft Excel, and the sample characteristics are reported in Table 1.

Table 1: Characteristics of the sample

	Categories	% (Count)
Gender	Female	51.14 (67)
	Male	48.85 (64)
Age	20 – 25	23.66 (31)
	25 – 30	58.78 (77)
	30 – 35	8.40 (11)
	35 – 40	2.29 (3)
	Above 40	6.87 (9)
Marital Status	Single	71.76 (94)
	Married	27.48 (36)
	Divorced	0.76 (1)
Field of Research	Science and Engineering	28.24 (37)
	Social Science and Humanities	24.43 (32)
	Commerce, Economics, and Management	47.33 (62)

Objective 1:

This objective had two parts, the association between gender and productivity and the association between marital status and productivity.

Association between gender and productivity during the pandemic

H0: There is no significant association between gender and productivity

The Chi-Square test using multiple response tables in SPSS gave the result shown in Table 2. Thus as the P value is greater than 0.05, we fail to reject the null hypothesis.

Table 2: Test of association for Objective 1

Objective	Chi-Square	P Value
Gender and Productivity	2.47	0.781
Marital status and Productivity	17.1	0.004

Association between marital status and productivity during the pandemic

H0: There is no significant association between marital status and productivity

From Table 2, it is seen that the P-value is less than 0.05; thus, we reject the null hypothesis. It was observed from the responses that 56% of the married people reported decreased productivity, and out of this, 90% responded they face increased interruptions.

Objective 2:

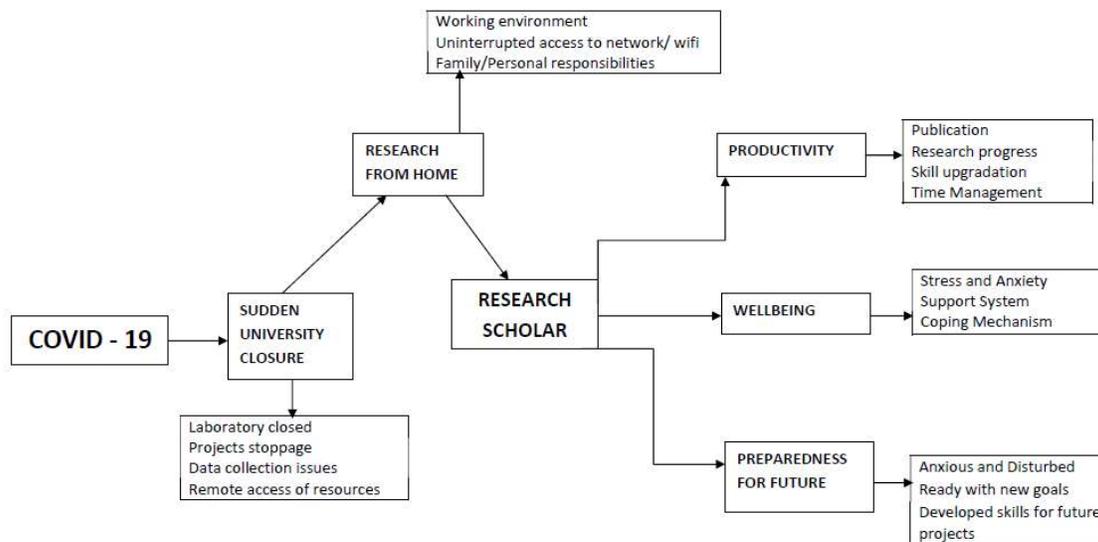
This objective is carried out in two parts. Initially, the Chi-Square test is performed in SPSS to understand the association between university closure and research from home individually on productivity, and future preparedness, and then the overall model with research from home as the mediator is checked in AMOS.

The Chi-Square test using multiple response tables in SPSS gave the result shown in Table 3. The P values in Table 3 show that there is a significant association between productivity and sudden university closure and research from home. Also, there is a strong association between future preparedness and university closure and future preparedness.

Table 3: Test of association for objective 2

Objective	Chi-Square	P Value
Sudden university closure and productivity	48.298	0.003
Sudden university closure and future preparedness	48.036	0.004
Research from home and productivity	113.645	0.000
Research from home and future preparedness	41.417	0.021

Figure 1: The overall model for the study



The overall model of the study is shown in Figure 1. The model takes research from home as a mediator between sudden university closure and productivity and future preparedness. This model is tested in AMOS to get the full mediation effect and also to comment on the model fit, the results are given in Table 4.

Table 4: AMOS results for Objective 2

Objective	Estimate	C.R	CMIN	P Value
RHT <--- UniClo	1.137	2.668		0.008
ProdT <--- RHT	1.212	5.795		0.000
FutuT <--- RHT	0.55	4.178		0.000
Model Fit (CMIN)			545.681	0.000

Objective 3:

The objective is carried out in two parts. Initially, it is required to find the association between sudden university closure and research from home on the wellbeing of the research community. Then an understanding of the support system and coping mechanism of the research community is presented.

Table 5: Test of association for Objective 3

Objective	Chi-Square	P Value
Sudden university closure and wellbeing	60.529	0.000
Research from home and wellbeing	87.481	0.000

The Chi-Square test using multiple response tables in SPSS gave the result shown in Table 5. The P values in the table confirm that there is a significant association between the wellbeing and the sudden university closure and research from home.

The analysis of the support system and coping mechanism is required to understand the source of support for the research community and also gives an idea of the resources and mechanisms used for dealing with the current situation. From the data, 54% of participants reported they have support from both family and friends during this pandemic. The coping mechanism changes from person to person; from our responses, there are three primary coping mechanisms that most participants mentioned. These are, using this phase to develop new skills to aid research, meditation and wellness, and adapting technology to help work progress.

Discussion and Interpretation

The current study was conducted to understand the impact of COVID 19 pandemic and related circumstances prevailing on the academic performance, future preparedness, and wellbeing of the research community in India. There are three main objectives of the study, and based on the results in the previous session, the following findings can be gathered.

Objective 1:

There is no association between the gender and productivity of the research community during the pandemic. From our sample, it can be inferred that the productivity of both male and female counterparts are equally impacted due to the COVID 19 pandemic and related university closure and research from home situations.

There is a significant association between marital status and productivity of the research community. From our sample, it can be inferred that married people face more interruption in workflow due to increased family responsibilities during the COVID 19 pandemic, and this has reflected in their productivity decrease.

Objective 2:

There is a significant association between the sudden university closure and productivity of the research community during the pandemic. From the responses, it can be inferred that productivity in terms of time spent exclusively for research and publications have been negatively impacted due to the pandemic. But on the other hand, the impact on the time spent on skill development and collaboration and networking is positive. Also the sudden closure of laboratories has impacted the research progress.

There is a significant association between the sudden university closure and future preparedness of the research community.

There is a significant association between research from home and productivity. From the responses, it can be inferred that the increased interruptions due to network problems and family responsibilities have negatively impacted productivity. The research community feels limited in terms of laboratory facilities and resource availability.

There is a significant association between research from home and future preparedness. From the responses, it can be inferred that the research community is preparing themselves for the new normal by the adoption of technology for research and by developing new skills.

The overall model shows that there is a significant effect of sudden university closure on the productivity and future preparedness of the research community during the COVID 19 pandemic, and the research from home acts as the mediator.

Objective 3:

There is a significant association between the sudden university closure and research from home on the wellbeing of the research community during the pandemic. From the responses, it can be inferred that due to limitations of resources and increased interruptions, the wellbeing of the research community is impacted during the COVID 19 pandemic.

Conclusion and future research prospects

The current study tried to describe the impact of COVID 19 pandemic on the research community in India. The results from the study show that the sudden closure of universities due to the pandemic, which led to the shift in the research environment has impacted the productivity and future preparedness. The wellbeing of the research community is also affected by the university closure and research from home.

The personality traits of the person are an essential parameter that may influence the productivity, future preparedness, and wellbeing and coping mechanism of the individual. Thus a model that can include and assess this parameter can be studied in the future.

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