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# Students' perception of online education in the COVID-19 pandemic framework

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## ABSTRACT

*Due to the wide worldwide spread the COVID-19 pandemic has reached at the beginning of 2020, many countries have imposed strict measures of social distancing, the result of which was a sudden shift towards the online environment for most institutions of each state. This study explores students' perception of the quality of online education during the COVID-19 pandemic, right after the shift from traditional face-to-face learning to online education. Using an online questionnaire, feedback from the respondents regarding their perception of online education, sources of information used and preventive behavior is collected. A total of 238 students from different levels and fields participated in the study which concludes with a general opinion reflecting that although in favor of online education, students are unsure if the quality of it matches the quality of the traditional face-to-face education.*

**Key Words:** Students' Perceptions, Online Education/E-Learning, COVID-19 Pandemic

**JEL Codes:** D90, I21

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## 1. INTRODUCTION

The technological realities, the effortless means of communication as well as the environmental, educational, health and equality issues that become increasingly global, lead to a level of globalization that not only allows for the creation of solutions to current problems but to the global exposure to certain crises with tremendous negative consequences on human life. The COVID-19 pandemic represents an example of such crises that threatens global economies and the standards of living around the world. COVID 19, initially reported in China, in December 2019, was in a span of a few months declared as pandemic, by the World Health Organization (WHO). The information received about COVID-19, in early March, was consistently spread globally; the virus spreads generally from individual to individuals through personal touch, saliva or by touching contaminated surfaces, hence social distancing was the most imposed measure across the world.

One by one, following the WHO's declaration, about 60 countries worldwide (Bao, 2020) the outbreak of the COVID-19 caused Chinese universities to close the campuses and forced them to initiate online teaching. This paper focuses on a case of Peking University's online education. Six specific instructional strategies are presented to summarize current online teaching experiences for university instructors who might conduct online education in similar circumstances. The study concludes with five high-impact principles for online education: (a, started closing the educational institutions, suspending traditional face-to-face activities and moving towards an online set-up. Some educational systems had more experience than others; some were more prepared than others, whereas students were completely unprepared for the swift change and ongoing development. China, the country that has been first and most affected, had already stepped into the 21<sup>st</sup> century with a large portfolio of online courses and available technologies to sustain such a shift (Bao, 2020) the outbreak of the COVID-19 caused Chinese universities to close the campuses and forced them to initiate online teaching. This paper focuses on a case of Peking University's online education. Six specific instructional strategies are presented to summarize current online teaching experiences for university instructors who might conduct online education in similar circumstances. The study concludes with five high-impact principles for online education: (a. Overall, there was an overwhelming impact on the educational system, more than 90% of the world student population across all levels of education, was impacted (Pragholapati, 2020). Although there is no unique definition for online education or e-Learning, we can obviously agree on the fact that it is a form of education where students and teachers

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are generally separated one from the others and from the educational institution setup. Furthermore, we can safely agree as well, that the internet and a multitude of tools, platforms and technology are used to create, deliver and disseminate the education towards enhancing individual knowledge and performance (Rosenberg, 2006).

Several studies were conducted over the last decade to determine the students' perception (as instruction recipients) towards the quality of online education (Bagriacik Yilmaz, 2019), (Bhagat et al., 2016), the teachers' perception, as instruction providers (Ghamdi et al., 2016), (Parsons et al., 2019), as well as their interactions (Hershkovitz & Berger, 2019).

In a study conducted by (Wim Van L., Zachary, P. 2020), it was determined that the closing of schools in the COVID-19 context represented a difficulty for students from low-income households to continue properly their studies. As presented, in Europe approximately 5% of children don't have appropriate conditions in their homes for doing homework, and 6.9% don't have access to internet. In USA it was estimated that 2.5% of students in public schools are dealing with the instability of residence. The concluded idea in this case was that children from low-income families will struggle in completing their homework and being present at the online classes. A similar approach was taken in a study concerning the Vietnamese students. As in the (Wim Van L., Zachary, P. 2020) study, the demographics, implying the family environment with the income and number of members, as well as the type of school and grade, proved to be significantly influential upon students' learning habits during the lockdown. Nevertheless, beside these aspects, the perception of students of how important it is to continue the studying process even in the pandemic, proved to have a more significant influence on how they succeed with the online education. (Tran T., Anh-Duc H., Trung Tien N., Viet-Hung D., Yen-Chi N., Hiep-Hung P., 2020)

We can also refer to the study of (Suzanne R., 2020) that implied medical students, and which revealed that the general perception in regard with the online classes was good, students considering enjoyable the fact that they will have access to all the material updates. However, due to the fact that their teachers should change the curriculum in order to comply with the context, they will have postponed the clinical practical experience, that represents actually, an important step in the formation of the medical student. The postgraduate pediatric students from India considered the online education very useful and informative, as well as feasible and cheap. Even the interaction was limited, they concluded that the online courses helped to keep up their morale and acquire knowledge even related to clinical practice. (Sakshi A., Jaya S. K., 2020)

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The goal of this study is to analyze the university students' perception of face-to-face and online instruction in the context of the COVID-19 pandemic, considering the channels of information used, as well as their take on credible content, while covering different behavioral aspects among which to be mentioned are compliance with state regulations, undertaking preventive methods that limit the spread of the virus and humanitarian acts.

## **2. DATA AND METHODS**

For this study, a self-reporting instrument was used to gather the participant's point of view regarding the quality of education in the context of the COVID-19 pandemic and the online media and social media sources they use for staying informed on the COVID-19 pandemic. The questionnaire is structured in three main sections which address the perception of students towards online education, the sources of information used in this period, including social networks, and some behavioral aspects that influence the activities carried out by the students in the intervening time. The three sections account for a total of 30 closed format, multiple-choice and linear scale questions (registered on a 5-point Likert scale).

The questionnaire was developed in English, in Google Forms in the month of April 2020, during the COVID-19 pandemic, by the master students of the Behavioral Economics program, from the University of Bucharest, and was available and distributed online for one month, starting with April 15<sup>th</sup>, 2020 on different online platforms, including Facebook, Instagram, Reddit, WhatsApp groups, etc. That was a period when universities were implementing flexible learning measures in response to the online switch of formal instruction. Participation to the questionnaire was voluntary. The participants were instructed that their answers are anonymous, the sole purpose of the research being to explore student's perception of a current issue.

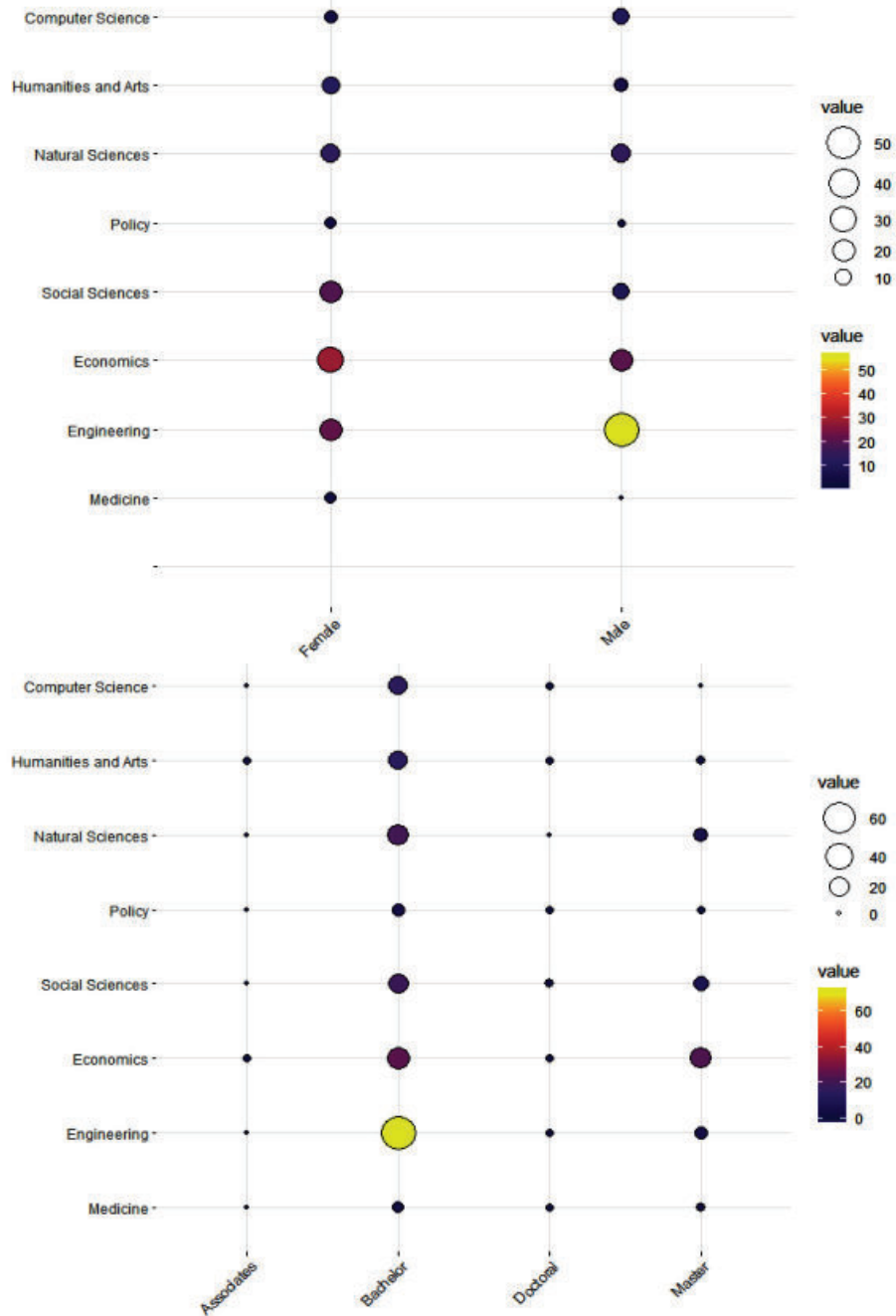
The data gathered was analyzed using R-Studio version 1.3.1073, descriptive statistics and tests of hypothesis being performed.

## **3. RESULTS AND DISCUSSION**

The data consists of 238 respondents, with a distribution of 47.5% males and 52.5% females students, 74.5% enrolled in a Bachelor's program, 21.4% enrolled in a Master's program, 3.4% enrolled in a Doctoral program and 0.8% pursuing an Associate's degree program in eight different fields. The questionnaire had worldwide exposure, 42.8% of the respondents were European, 47.1% from North America and 10.1% from Asia.

### Respondents distribution in the study

Figure 1



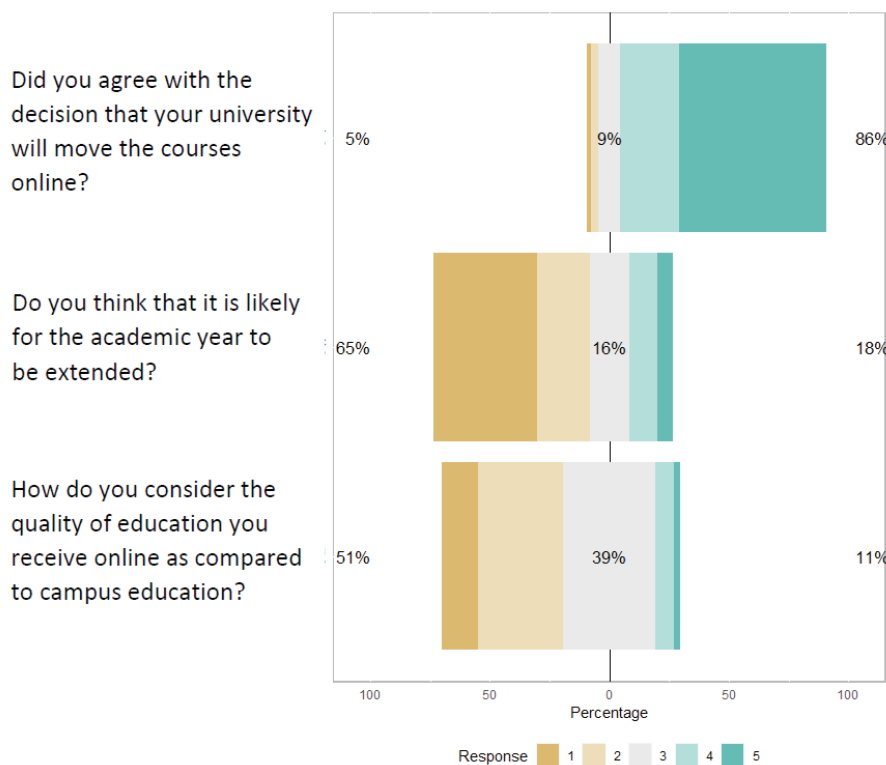
Most of the males were Engineering bachelor's students (44.8% of the male respondents), while most of the women were Engineering bachelor's students (18.6% of the total female respondents) and Economics master students (15% of the total female respondents), Figure 1.

### 3.1 Perception of online instruction in the context of the COVID-19 pandemic

The respondents were asked to comment on the move to the online instruction, how they perceive the quality of the education received and given the uncertainty on how the academic year will continue, what is the likelihood for the academic year to be extended.

#### Perception towards Online Education

Figure 2



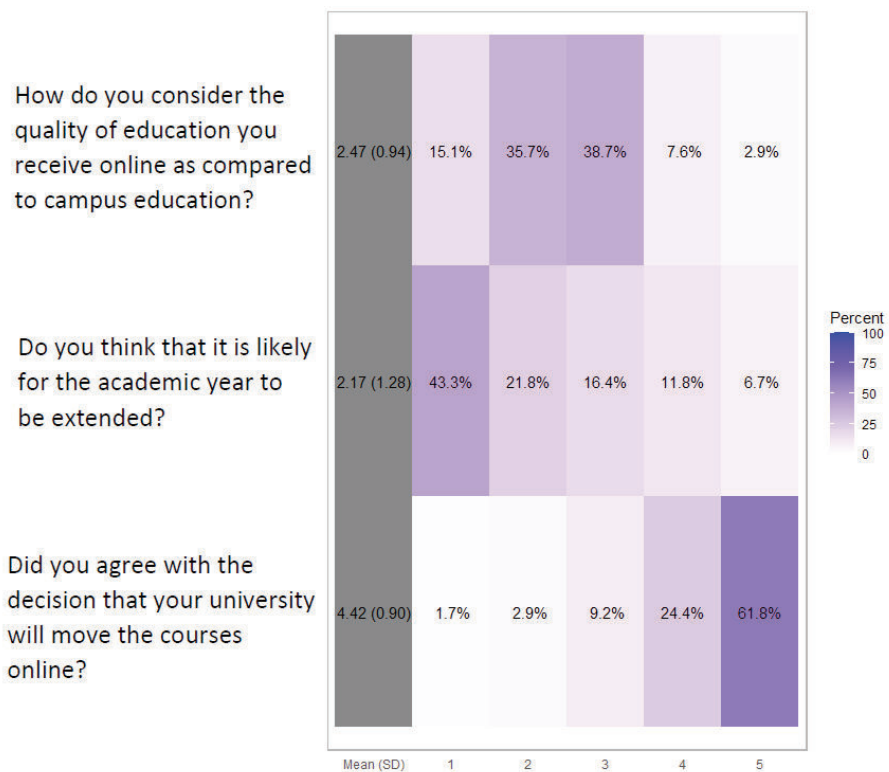


Figure 2 shows that students generally agreed to the move towards online classes ( $M = 3.04$ ), they were undecided regarding the quality of the education received online versus the face-to-face setup, cautiously saying that it is about the same ( $M = 2.48$ ) leaning more towards not an extension of the academic year ( $M = 2.14$ ), with  $M$  representing the average.

### 3.2 Perception toward sources of information for COVID-19 pandemic

Asked about the sources of information used in respect to the COVID-19 pandemic, the three most used sources were: online publications/newspapers (77.73%), social media platforms (67.65%) and other websites (61.76%), as seen in Table 1. Nonparametric statistical analyses using Mann-Whitney U test revealed that there was a significant difference in the preference towards social media among female respondents ( $p$ -value = 0.0082). A significant difference was observed for the university websites as the source of information, with the bachelor students more active in consulting them than the master students ( $p$ -value = 0.0019).

**Perception toward sources of information**

*Table 1*

What are your sources of information about the status of COVID-19?	University website		Television	Online publications/ newspapers		Social media	Websites	Family
		43.7%		47.27%	77.73%		67.65%	61.76%
Which social networks do you use for information?	Facebook	Twitter	WhatsApp	WeChat	Instagram	YouTube	Linkedin	Reddit
	41.18%	28.15%	12.61%	1.26%	31.09%	49.16%	10.50%	14.71%
Which social networks do you think provides accurate information, close to what competent authorities are providing?	Facebook	Twitter	WhatsApp	WeChat	Instagram	YouTube	Linkedin	Reddit
	19.33%	25.21%	3.36%	0%	6.72%	33.61%	9.66%	8.35%
Which social network do you trust the most?	Facebook	Twitter	WhatsApp	WeChat	Instagram	YouTube	Linkedin	Reddit
	12.61%	20.17%	2.52%	0%	3.36%	24.79%	5.46%	8.40%

With respect to the preferred social networks used for information, the analysis revealed that a significant difference exists for Instagram and YouTube, with women preferring Instagram (p-value = 0.0196) and men preferring YouTube (p-value = 0.0026). A significant difference was observed for YouTube as the preferred social network, with the bachelor students more active in consulting them than the master students (p-value = 0.0363) and also between the Engineering and Natural Sciences students in their preference for WhatsApp (p-value = 1.908e-05). The Humanities and Arts students exhibited a significant difference in their preference for Instagram as compared with the student in the other domains (p-value = 0.0166).

When asked which social network provides the most accurate information (close to what competent authorities are providing), female students showed preference for Twitter (p-value = 0.0017) and Facebook (p-value = 0.0435) and male students for YouTube (p-value = 0.0026) and Reddit (p-value = 0.0369).

Significant differences were reported for the level of education with bachelor students more in favor of Facebook than the master students (p-value = 0.0099), the master students considering YouTube the most accurate source (p-value = 0.0125). No significant differences were identified by the field of study.



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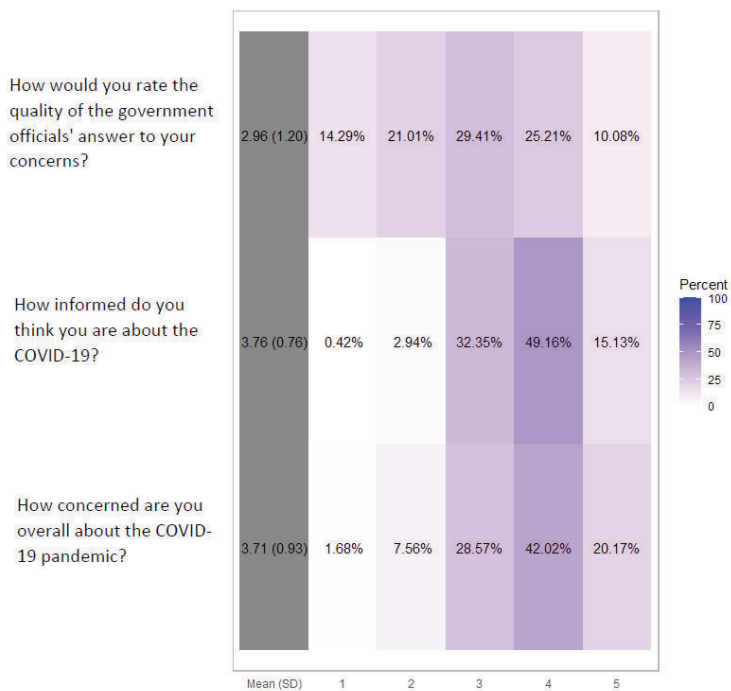
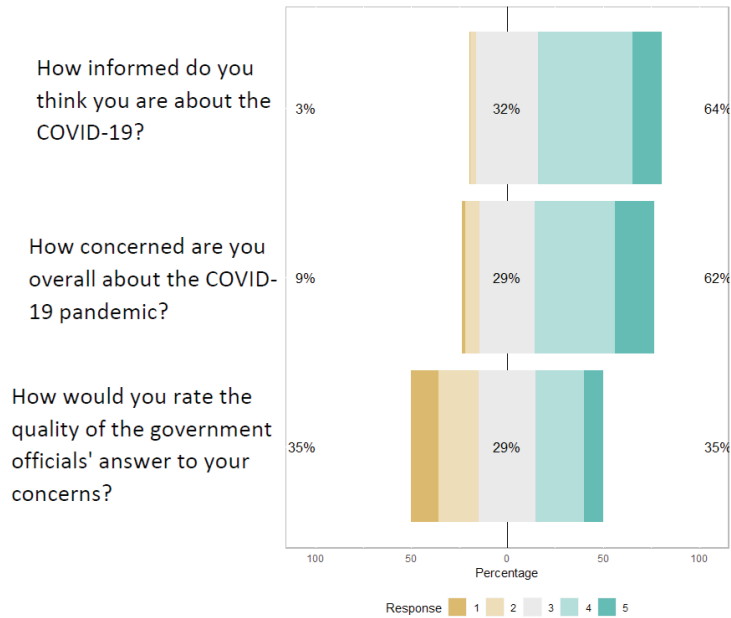
### 3.3 Actions undertaken by the students starting March 2020

The respondents were asked to comment on the overall awareness on COVID-19 and government actions. Figure 3 shows that on average, respondents consider themselves to be somewhere between neutral to informed about COVID-19 ( $M = 3.75$ , 49.26% consider themselves informed about COVID-19), they are somewhat to moderately concerned about the pandemic ( $M = 3.71$ , 42.02% moderately concerned) and tend to have a somewhat neutral opinion on the quality of their government officials answer to their concerns ( $M = 2.96$ , 75.63% in the bad or good opinion about the government responses), with slightly less than 25% in the extremes.

More students were self-isolating before their government imposed the social distancing measure (53.8%) with slightly more men doing so than women (30.3%). At the time the questionnaire was filled, the respondents have been complying, on average, with the self-isolation for about 6 weeks ( $M = 5.71$ ). 97.8% of the respondents declared that they are informed about the preventive methods regarding the COVID-19, hence based on the type of preventive methods they followed, a prevention score was computed. The results show that we only observe a gender effect, female students get a significantly higher score in prevention ( $p\text{-value} = 0.02988$ ) and no other effects are identified (level of education or field of study).

### Actions regarding COVID-19

Figure 3



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## 4. CONCLUSIONS

Based on the data collected in the second part of April 2020 (4 to 6 weeks after moving to online classes), we can conclude that although the students surveyed were in favor of online education, they were uncertain if the quality of online education matches the traditional setup.

With respect to sources of information differences can be observed by gender and level of education. More difference is noticed regarding the social media preference and trust, a strong gender effect and some (less strong) level of education and field of study effects. With respect to actions undertaken for preparation and preventive measures, male students tend to comply with social distancing before it was imposed by the government, while female students score higher on the preventive measures than male students do.

As far as the limitations of this study, it needs to be mentioned that the study used a self-reporting instrument to gather the students' perception on the quality of online education, which is always subjected to biased responses. The period in which the student's responses were collected was immediately after the shift to online education took place, which could explain why there was not a well-defined opinion on whether the quality of online education exceeds the quality of the traditional education. It is possible that students did not have enough time to get used to the new setup or truly experience every aspect of online education to form an accurate opinion of it.

A more extensive analysis is suggested as follow-up regarding online education, investigating various national approaches, faculty training, hardware and software equipment and standardization of measures.

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