

South African Female Academics' Work from Home Experiences during the COVID-19 Pandemic: Challenges and Opportunities

Alfred Henry Makura^a


a. Faculty of Humanities, Central University of Technology, Bloemfontein Campus, South Africa
Corresponding author:
E-mail: amakura@cut.ac.za

Article Info

Received: December 12, 2021

Revised: January 10, 2022

Accepted: February 17, 2022

 10.46303/jcve.2022.3

How to cite

Makura, A. H. (2022). South African Female Academics' Work from Home Experiences during the COVID-19 Pandemic: Challenges and Opportunities. *Journal of Culture and Values in Education*, 5(1), 13-22
<https://doi.org/10.46303/jcve.2022.3>

Copyright license

This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International license.
<https://creativecommons.org/licenses/by/4.0/>

ABSTRACT

The COVID-19 pandemic has triggered pedagogical ramifications in many higher education institutions. The Work from Home (WFH) phenomenon as an offshoot of this development has not been adequately investigated in so far as female (university) academics experienced it. This paper reports on ten female academics' WFH instructional experiences with blended learning during the COVID-19 pandemic era. The WFH concept has necessitated the 'virtualisation of pedagogy' through blended teaching and learning of academics. The sample was purposively extracted from some higher education institutions in Gauteng, Free State and Eastern Cape Provinces of South Africa. The sampling was done irrespective of geographical location or 'status' of the institution. Each female academic responded to an open-ended structured questionnaire whose questions broadly focused on: their understanding of the Working from Home (WFH) phenomenon; the influence of home environment on their academic activities and the place of blended learning in a South African Higher education context. The data were collated and analysed for its content with supporting excerpts to discern and support themes. The female academics viewed WFH as relocating offices to their homes with the attendant plethora of academic challenges this entailed. The WFH constrained their abilities to complete academic activities particularly instructional related ones. Despite the myriad challenges identified, the pandemic has presented female academics with opportunities for professional growth through the blended mode of learning and newer perspectives on the apparently shifting gender roles. Such opportunities promote female academics' quest for the reconfiguration of education pedagogy and gender autonomy in higher education post COVID-19.

KEYWORDS

Work from home; female academics; higher education; COVID-19; instructional management; blended learning.

INTRODUCTION

A body of knowledge on the pedagogical ramifications of the COVID-19 on female academics is slowly emerging (Deryugina et al., 2021; Kim & Patterson, 2020; Mavin & Yusupova, 2020; Minello, 2020; Minello et al., 2021; Parlak et al., 2021; Walters et al., 2021). Women are known to experience several challenges, chiefly patriarchy and gender discrimination. The COVID-19 pandemic is an additional ill that has compounded female academics' woes. The same extended to issues related to assessment, quality assurance and student support systems (Owolabi, 2020). Patriarchy for instance, has blurred the social identity (woman), and the nature of the job some women are expected to perform (Mavin & Yusupova 2021). Yildirim and Eslen-Ziya (2020) and Cui et al (2021) concede that men and women have been impacted differently. This reportedly stem from the traditionally gendered division of labour in most societies. Female academics with young children are mostly affected since children need closer attention. Such women are constrained when it comes to academic research productivity. Consequently, the academic (research) production levels of the women folk have reportedly plummeted (Gabster et al., 2021; Staniscuaski, 2021; Yildirim & Eslen-Ziya, 2021). In the case of the United States of America, Cui et al (2021) have demonstrated that women academics have produced proportionately (up to 13.9%) fewer research papers than male academics in the social sciences. Thus, structurally, I only include the effects of the pandemic and its attendant WFH on female academics. Thereafter, I account for the factors that explain those negative consequences and finally, I give scholars' suggestions to mitigate the challenges.

Staniscuaski (2021) showed that most academics conceded that they were negatively affected by the pandemic. They concluded that gender, parenthood and race are responsible for a decline in women's productivity during the COVID-19 pandemic. Male academics without children were least affected by the pandemic as regards research productivity. Whites as a group were less impacted compared to black academics. South African female university academics have not been spared (Khosa & Pillay, 2021; Walters et al, 2022). Hence the uniqueness of the inert talents and "indomitable spirit" (Khosa & Pillay, 2021, p. 139) particularly of the women academic leaders for instance, cannot be fully delineated due to the distortions of the Work from Home strategy adopted during the COVID-19 pandemic era. Robbins et al., (2019, pg. i) citing musician Bob Dylan implored 'average citizens' such as women to '...find their own way through the mess' [such as the COVID-19 pandemic] (own emphasis) and what they describe as 'reactionary populism' in education. The WFH platform thus presented female academics an opportunity to find their way amid a ravaging pandemic. The Work from Home (WFH) strategy (Deryugina et al., 2021; Stadnyk & Black, 2020; Yildirim & Eslen-Ziya, 2021) was adopted by many formal organisations in response to the ravages of the COVID-19 pandemic. The intention was to slowdown infections among a population while ensuring that productivity or output of goods and services were sustained. Hence, many academic institutions particularly universities directed their workforce to work from home using enhanced online platforms.

Likewise, students shifted to online pedagogical platforms to receive an education (Shatunova et al., 2021). This strategy appears to have worked in many instances despite the potential threats of innovations hitherto unknown in many societies. Kasymova et al (2021) report on challenges faced by female academics who are mothers and suggest strategies the female academics need to adopt to mitigate the impact of motherhood on research productivity. The researchers implore institutions to shoulder the burden of childcare responsibilities of their academics who are mothers. It is slowly being realised that the Work from home concept is disproportionately affecting individuals operating in academe.

Literature points to the fact that women are immensely adversely affected by the Work from Home phenomenon that arose after the onset of the COVID-19 pandemic (Kasymova et al., 2021; Mavin & Yusupova, 2020; Muller & Nathan, 2020; Parlak et al., 2021; Walters et al., 2022; Yıldırım-Şahin, 2020; Yildirim & Eslen-Ziya, 2021). A seminal study by Parlak et al (2021) shows that the pandemic 'has deepened gender inequalities and [plummeted women] productivity'. This appears to stem from increased domestic burdens, reduction in research time (Deryugina et al., 2021), increased caring labour and differentiated power relations (Zabaniotou, 2020), negative attitudes of spouses towards academia (Parlak et al., 2021) and an increase in teaching and administrative workloads of women in addition to their traditional roles (Khosa & Pillay, 2021; Minello et al., 2021; Walters et al., 2022). It is in this context that Kasymova et al (2021) suggest a policy-praxis shift at institutional level. Because of such challenges, the WFH concept has necessitated the 'virtualisation of pedagogy' through blended teaching and learning of academics. An earlier study by Bennett (2015) outlined the massive benefits that are associated with the virtualisation of teaching and learning. The resultant strategy fused traditional teaching approaches with technology. The implementation of such a blended or hybrid approach was not without other unintended challenges. Hove and Dube (2021) warn against the exclusionary practices of online learning, which, in some instances, have been commercialised.

Given that almost the entire academic labour force in many institutions recoiled to the captive domestic environment, pedagogy had to be offered through digital platforms. The advent of pedagogically friendly digital platforms was meant to mitigate the academic disruption caused by the pandemic. In other societies millions of girls were thrown out school (Muller & Nathan, 2020) and technically lost out on an online education system presented by the pandemic. Adedoyin and Soykan (2020) explain that the crisis response migration to digital platforms was met by logistical challenges, digital incompetence, attitudinal challenges, heavy workload and compatibility issues. Hove and Dube (2021) aver that the digitalisation and commercialisation of online platforms created 'virtual elite schools' which have widened the digital gap between the privileged and underprivileged learners. Within that matrix, as Stadnyk and Black (2020) observe, challenges faced by female academics will persist in post pandemic era. In their view, the area of research productivity or output is likely to bear the brunt of the deleterious impact of the pandemic.

Research question

- What are the South African female academics' understanding of Work from Home (WFH) phenomenon?
- How do female academics perceive the influence of home environment on their academic activities?
- What do female academics perceive as the place of blended learning during the COVID-19 pandemic era in a South African higher education context?

METHODOLOGY

Design

This study utilises qualitative data generated from a larger study and is thus grounded in the interpretivist paradigm. This paradigm is premised on the notion that knowledge is a social construct with multiple 'truths.' The assumption was that, in keeping with a qualitative design, the selected female (university) academics were well positioned to narrate their unique lived experiences during the COVID-19 pandemic. Holmes (2015) contends that intercultural encounters are socially constructed and bounded by cultural contexts of the research participants. In this case, the female academics operating in varying socio-economic contexts narrated their honest experiences, albeit, in writing. Hence, I was able to create a unique form of knowledge which enables us to communicate to the end user.

The sample

This consisted of ten purposively selected female academics from some targeted higher education institutions located in the Gauteng, Free State and Eastern Cape Provinces of South Africa. The sample selection was arrived at irrespective of geographical location or 'status' of the institution. The sample was part of a larger one (inclusive of male academics). Only data on, and from female academics is reported herein.

Instrument

Each female academic responded to an open-ended structured questionnaire whose questions broadly focused on: their understanding of the Working from Home (WFH) phenomenon; the influence of home environment on their academic activities and the place of blended learning in a South African Higher education context.

Data Collection

The questionnaire was administered through direct email to each participant. Direct contact with the participants was not possible due to the COVID-19 pandemic protocols or restrictions. In keeping with research ethics, each participant was allocated a coded *nom de plume*, and these ranged from codes FA1 to FA10 where FA stood for Female Academic (number 1, 2,3, 4 etc.).

Data analysis

The rich data were thematically collated and analysed for its content with supporting excerpts to discern and support themes in line with the declared research questions.

RESULTS

After collecting usable questionnaire instruments, they were later scrutinised for their content. De Vos (2010) advises that data should be processed to bring order structure and meaning. With that in mind, I set to analyse the data in line with thematic areas embedded in the three declared research questions. Hereunder is a detailed narrative of the areas of focus.

Female academics' understanding of Work from Home (WFH) phenomenon

Most participants indicated that working from home entailed executing formal work from the comfort of one's home in a "...designated space" [FA29] i.e., away from the office "...or at a remote location other than my physical work address to perform my duties [FA29]. Female Academic 1 (FA1) submitted a compelling description indicating that it is *"Involving in work related activities while you in the comfort of your home/house without office space, office furniture but use available space and your house furniture to make yourself comfortable to cope with the adjustments and new environment for teaching and learning."* This reasoning was echoed by both FA21 and FA23 with the former averring that *"Working from home means working from my house, flat etc. or any other setting either than [sic] the traditional office."* Participant FA23 expounded on the spinoffs of working from home indicating that it offered *"...greater flexibility in working hours but the output remains the same"*

Another academic, FA8, was mindful of the official working hours when she indicated that Working from Home was akin to *"Using working hours to do the job you are employed for, doing it from home."* Participants FA3 and FA11 from an Eastern Cape province-based institution indicated that WFH meant *"completing the work that you are unable to do at work due to uncertain circumstances, for instance, in the case of covid19 where we had to be locked in our homes"* [FA3]. This reasoning presupposes that only 'uncompleted work' qualified for being taken to the (comfortable) home environment. Both academics cited the COVID-19 situation as a special circumstance warranting working from home. Our study went further to probe how the home environment influenced their academic activities.

How the female academics perceived the influence of home environment on their academic activities

The general feeling among the female academics was that working from home had constrained their ability to execute official tasks and duties. FA1 was bold when she declared that *"Very difficult situation as I am working 24/7 without rest and relaxation. It is total different environment where you need adjustments as well as balance and prioritise between work and home chaos."* Another participant, FA21 added that the WFH requirement *"...made it difficult to complete academic activities..."* due family related demands. FA23 indicated that she has a *"home office"* but the increased workload (stemming from the COVID-19 pandemic) negatively impacted her family life. An academic based at a Gauteng higher education institution, FA11 claimed that she incurred expenses and inconveniences because of working from home. *"I have had to convert my dining room into a replica of my work office. We have not had a dining room*

since March! I have had to upgrade my laptop (at my own expense) and get a printer from my husband's office." In summation, she metaphorically mocked the power utility giant, ESKOM for compounding her woes through disrupting internet connectivity "Thank goodness we have fiber but that goes down when Eskom decides". FA1 disclosed that it was difficult and expensive to work from home as regards data, electricity, food etc.

Despite its challenges, FA29 and FA8 indicated that the home environment positively impacted on their ability to complete academic activities. The later indicated that she had "almost all the tools to work with" while the former indicated that she would "...work for hours on end without getting disturbed". Other participants cited time as a godsent given that they would work for longer hours after 'official' hours. Hence, the study notes that the pandemic presented academics with both positive and negative aspects. A common theme in the academics' narrative relates to the ease with which technology assisted them in executing their academic mandates by adopting blended learning.

Female academics' perceptions on the role of blended learning during the COVID-19 pandemic era

It was gratifying to note that almost the entire female academics' cohort perceived blended learning as a positive aspect during the pandemic. They were emphatic in their responses while offering several reasons to buttress their assertions. The following captions offer insights into the issue:

FA8 posited that the "Lockdown made me realized [sic] the importance of using blended learning instead of mostly face-to-face.... I used learning management systems (LMS) just to complement the face-to-face learning and teaching"

FA1 used the blended learning approach to "accommodate vulnerable students who may not be able to use online or remote teaching due to technological issues"

FA23 indicated that "blended learning will create the opportunities for a wider range of students to enrol at universities" Perhaps a very compelling submission regarding the instructional advantages of blended learning during the pandemic came from FA11 who argued that "I have seen first-hand the benefits of being able to deal with questions, issues etc. – right there and then in 'the real world' as opposed to online. A lot of students became very 'needy' and kept wanting reassurances even when things were crystal clear and explained in various forums!"

Despite these positive academic spinoffs, an academic at an Eastern Cape university bemoaned the inadequate support from ICT section of the institution arguing that "The thought of teaching in a new environment seemed initially excited. However, the support from ITC sustained the swift was not aligned with the change. One person supporting all the lecturers is not sufficient. In the past if you had a request, it was done. Nowadays you have to follow all the steps with the facilitator. It is time consuming and not the support to proceed faster (or to what I was used too in the past)". From this caption, it was apparent that the ICT section had inadequate labour to service its clientele.

DISCUSSION

From the forgoing, it is apparent that female academics at some South African universities hold similar views regarding the working from home phenomenon. They agree that WFH entailed executing formal work within the comfort of one's home i.e., transferring the official workplace office to their respective homes. Some female academics have created spaces within their household parameters to host the formal offices. This phenomenon has confined people (in general) to their domestic boundaries with varying degrees of consequences. Female academics revealed both negative and positive aspects of working from home. Married women particularly experience several family responsibilities due to the gendered nature of domestic labour (Zabaniotou, 2020; Muller & Nathan, 2020). Most South African participants reported an increase in the workload by working from home (Khosa & Pillay, 2021; Walters et al., 2022).

Regarding the issue of female academics' perceptions of the influence of home environment on their academic activities the general feeling among the female academics was that working from home had constrained their ability to execute official tasks and duties. Most participants indicated that they had experienced an increased workload. Consequently, this trend caused most female academics to experience reduced research output (Cui et al., 2021; Gabster et al., 2020; Parlak et al., 2021; Staniscuaski, 2021; Yildirim & Eslen-Ziya, 2021). Some participants experienced increased costs by working from home while others had connectivity related challenges. Technical related challenges compromised the female academics' quest to offer an education through the blended mode.

The blended mode of teaching and learning was perceived by female academics as a positive pedagogical tool during the pandemic. It assisted them in executing their instructional duties. As Adedoyin and Soykan (2020) observe, blended learning presents many benefits. Some of them are related to the virtualisation of pedagogy in spheres of assessment, quality assurance and student support systems (Owolabi, 2020). Most instructional related challenges that will be faced by some female academics, post-COVID-19 will persist (Stadnyk & Black, 2020). Hence the critical role played by the blended mode of learning and teaching will come in handy. Additionally, Omodan and Diko (2021) suggest the adoption of *Ubuntu* pedagogy as an alternative liberation pedagogy to the instructional challenges besetting African higher education systems.

CONCLUSIONS AND RECOMMENDATIONS

This study sought to report on the WFH instructional experiences with blended learning of some female academics during the COVID-19 pandemic era. Three research questions were posed and data from the research participants were used to address them. The COVID-19 pandemic necessitated the Working from Home concept, initially as a way of mitigating the spread of the virus. The study concludes that female academics understood the working from home (WFH) phenomenon as the taking of formal work to their place of residence. This practice constrained the already overburdened female academics. Their research productivity plummeted during the

pandemic era. Lastly, this study showed that the WFH concept has necessitated the 'virtualisation of pedagogy' through blended teaching and learning. The female academics fully embraced the role played by blended learning in a higher education context. This is despite the increased workload that they experienced. The female academics reported several advantages associated with the blended learning format. These included complementing the face-to-face mode of instruction, creating more opportunities especially for the marginalised candidates and improving one's pedagogical skills.

Based on the foregoing, the study implores female academics to sustain their instructional offerings despite the pedagogical challenges presented by the pandemic. The academics also need to tackle patriarchy head on. The data obtained herein showed that married or child rearing mothers faced several (more) challenges than other social categories. Universities thus need to institute policies that protect and enhance female academic participation in education with minimal interference. In parting, the pandemic has presented female academics with opportunities for professional growth through the blended mode of learning and newer perspectives on the apparently shifting gender roles. Such opportunities promote female academics' quest for the reconfiguration of education pedagogy and gender autonomy in higher education post COVID-19.

REFERENCES

- Adedoyin, O. B., & Soykan, E. (2020). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive Learning Environments*, 1-13.
<https://doi.org/10.1080/10494820.2020.1813180>
- Bennett, R.E. (2015). The changing nature of educational assessment. *Review of research in education*, 39, 370-407. <https://doi.org/10.3102/0091732X14554179>
- Cui, R., Ding, H., & Zhu, F. (2021). Gender inequality in research productivity during the COVID-19 pandemic. *Manufacturing & Service Operations Management*, 1-25.
<http://dx.doi.org/10.2139/ssrn.3623492>
- Deryugina, T., Shurchkov, O., & Stearns, J. (2021). Covid-19 disruptions disproportionately affect female academics. In *AEA Papers and Proceedings*, 111, 164-68.
<https://www.aeaweb.org/articles?id=10.1257/pandp.20211017>
- De Vos, A. S (2010). Qualitative data analysis and interpretation. In A. S. De Vos, H. Strydom, C. B. Fouche & C. S. L. Delport (Eds.). *Research at grass roots: For the social sciences and human service professions* (3rd ed., pp. 333-348). Van Schaik.
- Gabster, B. P., van Daalen, K., Dhatt, R., & Barry, M. (2020). Challenges for the female academic during the COVID-19 pandemic. *The Lancet*, 395(10242), 1968-1970.
[https://doi.org/10.1016/S0140-6736\(20\)31412-4](https://doi.org/10.1016/S0140-6736(20)31412-4)
- Holmes, P. (2015). Intercultural encounters as socially constructed experiences: Which concepts? Which pedagogies? In *The Routledge companion to cross-cultural management* (pp. 287-297). Routledge.

- Hove, B., & Dube, B. (2021). Covid-19 and the entrenchment of a virtual Elite private school: Rethinking education policies in Zimbabwe. *Journal of Culture and Values in Education*, 4(2), 84-94. <https://doi.org/10.46303/jcve.2021.5>
- Kasymova, S., Place, J. M. S., Billings, D. L., & Aldape, J. D. (2021). Impacts of the COVID-19 Pandemic on the Productivity of Academics who Mother. *Gender, Work & Organization*, 1-15. <https://doi:10.1111/gwao.12699>
- Khosa, P., & Pillay, P. (2021). Celebrating the Indomitable Spirit of South African Female Academics during the COVID-19 Pandemic. In ET. Pereira, C. Costa. & Z. Breda (Eds.), *4th International Conference on Gender Research, ICGR 2021* (pp. 139-147). Academic Conferences International Limited. <http://doi:10.34190/IGR.21.013>
- Kim, E., & Patterson, S. (2020). The Pandemic and Gender Inequality in Academia, 1-19. Available at <http://dx.doi.org/10.2139/ssrn.3666587>
- Mavin, S., & Yusupova, M. (2020). Gendered experiences of leading and managing through COVID-19: patriarchy and precarity. *Gender in Management: An International Journal*, 35, (7/8), 737-744. <https://doi:10.1108/GM-09-2020-0274>
- Minello, A. (2020). The pandemic and the female academic. *Nature*, 17, 2020. <http://www.nature.com/articles/d41586-020-01135-9>
- Minello, A., Martucci, S., & Manzo, L. K. (2021). The pandemic and the academic mothers: present hardships and future perspectives. *European Societies*, 23(sup1), S82-S94. <https://doi.org/10.1080/14616696.2020.1809690>
- Muller, J.E., & Nathan, D.G. (2020). COVID-19, nuclear war, and global warming: lessons for our vulnerable world. *The Lancet*, 395 (10242), 1967-1968. <https://doi.org/10.1016>
- Okeke-Uzodike, O., & Gamede, V. (2021). The Dilemma of Unrelenting Workload Amidst Covid-19 Pandemic: An Agenda for University Female Academics. *Journal of Research in Higher Education*, 5(1), 12-46. <https://www.cceol.com/search/article-detail?id=978319>
- Omodan, B. I., & Diko, N. (2021). Conceptualisation of Ubuntu-gogy as a Decolonial Pedagogy in Africa. *Journal of Culture and Values in Education*, 4(2), 95-104. <https://doi.org/10.46303/jcve.2021.8>
- Owolabi, J. O. (2020). Virtualising the school during COVID-19 and beyond in Africa: Infrastructure, pedagogy, resources, assessment, quality assurance, student support system, technology, culture and best practices. *Advances in Medical Education and Practice*, 11, 755-759. <https://doi.org/10.2147/AMEP.S272205>
- Parlak, S., Cakiroglu, O. C., & Oksuz Gul, F.O. (2021). Gender roles during COVID-19 pandemic: The experiences of Turkish female academics. *Gender, Work & Organization*, 28 (2), 461-483. <https://doi.org/10.1111/gwao.12655>

- Robbins, C. G., Bishop, J., & Tarman, B. (2019). Against reactionary populism: Opening a needed conversation in education. *Journal of Culture and Values in Education*, 2(3), i-vi. <https://doi.org/10.46303/jcve.03.02.ed>
- Shatunova, O., Bozhkova, G., Tarman, B. & Shastina E. (2021). Transforming the Reading Preferences of Today's Youth in the Digital Age: Intercultural Dialog, *Journal of Ethnic and Cultural Studies*, 8(3), 62-73.
DOI: <http://dx.doi.org/10.29333/ejecs/347>
- Stadnyk, T., & Black, K. (2020). Lost ground: Female academics face an uphill battle in post-pandemic world. *Hydrological processes*. <https://doi.org/10.1002/hyp.13803>
- Staniscuaski, F., Kmetzsch, L., Soletti, R. C., Reichert, F., Zandonà, E., Ludwig, Z. M., Lima, E. F., Neumann, A., Schwartz, I., Mello-Carpes, P. B., Tamajusuku, A., Werneck, F. P., Ricachenevsky, F. K., Infanger, C., Seixas, A., Staats, C. C., & de Oliveira, L. (2021). Gender, race and parenthood impact academic productivity during the COVID-19 pandemic: from survey to action. *Frontiers in psychology*, 12, 1-14.
<https://doi.org/10.3389/fpsyg.2021.663252>
- Walters, C., Mehl, G. G., Piraino, P., Jansen, J. D., & Kriger, S. (2022). The impact of the pandemic-enforced lockdown on the scholarly productivity of women academics in South Africa. *Research Policy*, 51(1).
<https://doi.org/10.1016/j.respol.2021.104403>
- Walters, C., Ronnie, L., Jansen, J., & Kriger, S. (2021). "Academic guilt": The impact of the pandemic-enforced lockdown on women's academic work. In *Women's Studies International Forum* (Vol. 88, p. 102522). Pergamon.
<http://doi.org/10.1016/i.wsif.2021.102522>
- Yildirim, T. M., & Eslen-Ziya, H. (2021). The differential impact of COVID-19 on the work conditions of women and men academics during the lockdown. *Gender, Work & Organization*, 28, (1) 243-249. <https://doi.org/1111/gwao.12529>
- Yıldırım-Şahin, E. (2020). Impact of the covid-19 pandemic on the daily life of female academics. In J. Dobрева, E. Alaverdov & E. Yildirim-Sahin (Eds.), *Geopolitics, Discrimination, Gender & Immigration*, pp115-129. IJOPEC.
http://www.ijopec.co.uk/wp-content/uploads/2020/11/2020_15.pdf#page=116
- Zabaniotou, A. (2020). Towards Gender Equality in Higher Education Institutions: Equal Female Academics in the Mediterranean during and after the COVID-19 pandemic, (pp1-8). *Global University Network for Innovation (GUNI)*.
https://www.guninetwork.org/files/paper_for_guni_covid-19.pdf