

Winter 12-2-2021

## What is the impact of Work-From-Home (WFH) Arrangements on the Quality of Life (QoL)?

Jordan Lee

*Embry-Riddle Aeronautical University, LEEH58@my.erau.edu*

Mykyta Pervak

*Embry-Riddle Aeronautical University, PERVAKM@my.erau.edu*

Augustine Peh

*Embry-Riddle Aeronautical University, PEHA@my.erau.edu*

Jun Hao Tang

*Embry-Riddle Aeronautical University, JUNHAOT@my.erau.edu*

Eoh Jin Cho

*Embry-Riddle Aeronautical University, CHOE4@my.erau.edu*

*See next page for additional authors*

Follow this and additional works at: <https://commons.erau.edu/ww-research-methods-rsch202>



Part of the [Educational Psychology Commons](#), [Higher Education Administration Commons](#), [Higher Education and Teaching Commons](#), and the [Other Teacher Education and Professional Development Commons](#)

---

### Scholarly Commons Citation

Lee, J., Pervak, M., Peh, A., Tang, J., Cho, E., & Tan, C. (2021). What is the impact of Work-From-Home (WFH) Arrangements on the Quality of Life (QoL)? . Retrieved from <https://commons.erau.edu/ww-research-methods-rsch202/23>

This Article is brought to you for free and open access by the Course Projects at Scholarly Commons. It has been accepted for inclusion in Introduction to Research Methods RSCH 202 by an authorized administrator of Scholarly Commons. For more information, please contact [commons@erau.edu](mailto:commons@erau.edu).

---

**Authors/Creators**

Jordan Lee, Mykyta Pervak, Augustine Peh, Jun Hao Tang, Eoh Jin Cho, and Calister Tan

**What is the impact of Work-From-Home (WFH) Arrangements  
on the Quality of Life (QoL)?**

Cho Eoh Jin (2520960)

Jordan Lee Hok Zhi (2560002)

Augustine Peh (2577975)

Mykyta Pervak (2554845)

Calister Tan (2521183)

Tang Jun Hao (2577585)

Embry-Riddle Aeronautical University

RSCH 202: Intro to Research Methods

Dr. Somi Shin

December 2, 2021

## **Abstract**

The ongoing pandemic has forced countries' education systems to continue to operate in a fragile and uncertain environment. Given the limited existing literature regarding the pandemic's impact on the Quality of life (QoL) for teachers, this study aims to bridge the gap and provide a detailed analysis of how the extent of providing online courses and time to transition online during the pandemic could impact a tertiary educator's QoL. The factors defining the dependent variable, QoL, were derived from past studies and made applicable within the confines of our research. The independent variables are the amount of time spent working online, notice to transition online, and various control variables. The study will utilize cross-sectional data collated by conducting convenience and volunteer sampling surveys with Embry-Riddle Aeronautical University (ERAU) faculty in campuses around the world. The data will be analyzed through regression analysis and ANOVA test. The findings of the study will aid in the development of government and educational policies to ensure the future sustainability of the education workforce in the unknown endemic landscape.

*Keywords:* COVID-19, Quality of Life, Work from Home, Teachers, Tertiary, Online courses

**What is the impact of Work-From-Home (WFH) arrangements  
on the Quality of Life (QoL) of workers in the education sector?**

The COVID-19 pandemic has resulted in a major shift in the way the working population conducts their day-to-day office-based operations to working from home. The new and sudden change has resulted in governments, companies, and employees having to swiftly adapt their working styles to carry out business operations in a safe manner. Although other industries have swiftly addressed the challenges and difficulties in the shift to an online environment, the education sector has not been so fortunate. Higher education is known to be a very people-intensive and non-digitized sector (Gallagher & Palmer, 2020).

The initial outbreak in March 2020 forced schools and universities around the world to close their doors and shift all classes online (Times Higher Education, n.d.). Furthermore, despite the current reduction in cases and rising vaccination rates, sudden pockets of positive cases on campus or in the surrounding community will still mandate a temporary shift to online learning formats. Taking an example from Singapore, a country known for its strict government regulations regarding pandemic management, tertiary educational institutes have been on a constant cycle of uncertainty, transitioning through in-person to online or hybrid models frequently and on short notice (Phua, 2020).

There have been many articles focusing on the impact of online learning during the pandemic on students. However, there is minimal research on the impact on teachers. These universities and their staff have suffered from sudden shifts and uncertain futures in their careers. Moreover, individuals working in the education sector have experienced inadvertent side effects from these measures. Therefore, it is important to understand any insidious challenges the education workforce may experience, given the frequent tightening of restrictions. Our research aims to find out how the amount of time that a tertiary educator

spends working online affects their QoL. This is one of the first studies that intend to aid the development of government and educational policies that seek to improve the experience for higher education teaching staff, who are required to swiftly transition between different teaching mediums in the foreseeable future as the world continues to deal with the outbreak.

## **Literature Review**

Past studies have been conducted in other countries looking into the various attributes that affect general job satisfaction, mental health, and physical well-being. Furthermore, some studies have focused on the psychological impact and job confidence, specifically in the education sector. Thus, a wide range of attributes and factors were measured, some of which were unique to the specific industries and countries in the scope of each of the research papers. All these will allow us to discover research gaps and questions to meaningfully fulfill and contribute to the overall scope of research into this topic.

### **Job Satisfaction**

Job satisfaction can play a huge role in affecting one's quality of life. With the sudden shift to Work-from-home arrangements, the blurred lines between the work-life balance can have an overall effect on a worker's job satisfaction. A study was done by Irawanto et al., (2021) sought to understand the relationship of working from home, work-life balance, and work stress on job satisfaction, specifically, to see if the balance between work-life and work stress played a moderating role in the relationship between work-from-home arrangements and job satisfaction. The initial research described the pre-defined independent variables: work intensity, work from home, and work-life balance. One dependent variable, mainly job contentment, was defined in subscales consisting of 41 items. By issuing a questionnaire to 472 participants, the study was able to identify 7 hypothesis statements that concluded a negative relationship primarily between working from home and work-life and work stress. However, the study was entirely based on Indonesian office workers from various parts of the country. Therefore, the factors of their working environment were not included within the survey conducted. This research's precise definition of variables would benefit us from incorporating within our meaning of quality of life. However, a new questionnaire would be

needed to address living and working conditions at home, an independent variable in our study.

### **Depression, Stress, and Anxiety Levels**

The COVID-19 pandemic has negatively impacted the quality of life of many individuals physically and mentally. A study done by Öztürk Çopur and Karasu (2021) found a correlation between depression, stress levels, and anxiety with the impact of the COVID-19 pandemic. Depression, stress levels, and anxiety levels varied among age groups, education levels, and genders. The younger respondents reported having higher stress, depression, and anxiety levels compared to the respondents in their old age. This was mainly due to the younger respondents having to work and worry about being infected with COVID-19. Those with lower education levels also reported higher depression levels, mainly due to the lack of job and income security, increasing anxiety, and depression levels. Female respondents also reported higher anxiety scores than male respondents, as stress and anxiety are more prevalent among females, which negatively affected their quality of life more. However, Öztürk Çopur and Karasu generalized all the job sectors, whereas our study will focus mainly on the education sector to receive more accurate results on the impact of COVID-19 on depression, stress, and anxiety levels among teaching staff.

### **Psychological Impact**

An individual's psychological state of mind holds significant sway on one's quality of life. The sudden shift to WFH arrangements forced most faculty members across all COVID-19 affected countries to shift to an online-based classroom setting to curb the infections early into the pandemic (UNESCO, 2020). This unprecedented shift to a drastically new teaching environment threw many teachers off guard, potentially leading to various adverse psychological effects on teachers and teaching activities and, consequently, on their students,



who are children and adolescents. (Holmes et al., 2020). A study was done by Ozamiz-Etxebarria et al. (2021) to evaluate the emotional state of teachers six months into their transition into the WFH teaching environment in schools and educational centers of the Basque Autonomous Community. Primarily, the study used variables such as depression, anxiety, and stress as indicators for psychological health and how this was affected by the various teaching sectors in which the teachers worked (i.e pre-school, primary, secondary, vocational, or university education). Other independent variables such as gender, age, and whether the teachers had school-age children facing a WFH classroom were also used. A questionnaire was issued to a total sample of 1633 teachers within the Basque Autonomous Community and Navarre (Spain). The study used the Spanish version of the Depression Anxiety and Stress Scale-21, containing 21 items with four response options. The results from the study concluded that there was a high percentage of teachers who suffered from symptoms of anxiety, stress, and depression. Having said this, the study was only conducted within the first six months of the initial nationwide lockdowns that Spain was experiencing, leading to a lack of long-term evidence of the impact on the psychological state from prolonged WFH arrangements. Additionally, the study was only conducted within the Basque Autonomous Community and Navarre, therefore representing only a small portion of teachers within Spain. Individual living conditions were not included within the survey, leaving out many other factors influencing the results. The precise definitions of what constitutes psychological states could be beneficial for us to clearly define one of the variables that affect QoL. However, a new survey would be needed to collate the living and working conditions of teaching staff.

To further support the study above, in a study conducted by Kim and Asbury (2020), 24 teachers from mainstream primary and secondary schools in England were asked to recount their experiences and emotions during the nationwide lockdown and school closures

in March 2020. They had only two days advance notice to shift their classes online after the lockdown was announced and had to adapt quickly to this novel teaching method.

Participants were recruited via email and through social media advertisements, and the interviews were conducted over Zoom about 5-6 weeks after the implementation of the lockdown. Participants initially recounted the feeling of uncertainty after the announcement of the impending lockdown and school closures and used various analogies like “like a rug had been pulled from under you” and “I guess it felt a bit like, you know, you’re shown the diagram of how the parachute works and then you’re pushed out of the plane” (Kim & Asbury, 2020). Teachers interviewed also “expressed concern for vulnerable pupils, particularly those known to be unsafe in their own homes” (Kim & Asbury, 2020). This issue was found to be the most significant source of concern from teachers after the initial feeling of uncertainty had worn off. Limitations of this study include the fact that it was limited to primary and secondary school teachers, which gives us a gap to address the tertiary educators. Besides, there was a sample size of only 24 participants, and this did not allow for a representative view of all primary and secondary school teachers in England. Another limitation is that this survey uses qualitative data obtained from the respondents. It is not as suitable as the quantitative data we will be using to support or refute a hypothesis.

### **Home Environment**

A variable that affects the quality of life while working from home is the change of environment. Office space is designed to cater to and provide a conducive working environment to focus on their work. With the shift to a home environment, there is a drastic change in the environment, and not many would have a “workroom” designed in their homes to suit their needs of an office environment. Similarly, in a school environment, teachers might not have the equipment they require to carry out lessons effectively to students when conducted over a video call. A study done by Radulović et al. (2021) has shown that workers

have reported musculoskeletal pain after moving to a home environment to carry out their work. The research included 232 telecommunications company workers in Croatia of both genders who had been working from home for eight months (16 March to 4 December 2020). The research also laid out numerous variables while conducting the study that would benefit our research as we look into various factors that will potentially affect one's quality of life while working from home. The variables include age and gender, the difference between the work and home environment (i.e. ergonomic properties used for work at home or work), the organization at home, and one's perception of mood while working from home. This research will aid in our study, as having a conducive and comfortable environment at home would affect one's quality of life while working from home. However, the study participants were from a telecommunications company, which will have different job characteristics and working requirements compared to educators.

Therefore, our team hopes to capitalize on the existing research limitations and gaps, refine the variables and methodology used, and accurately incorporate them into our study to better address the education sector's specific characteristics and conditions.

## **Research Methodology and Analysis Report**

### **Research Question**

The study's main purpose is to find out how the relationship between the amount of time educators work from home and its effect on their QoL and how the QoL of educators is affected by the transition from in-person to online or hybrid models on short notice. What are the key factors that have the most pronounced negative or positive impact on the QoL of these educators when they encounter the above scenarios? Moreover, our research will look into how the different attributes contribute to QoL.

## **Theoretical Framework**

Our literature review revealed a multitude of independent factors that can affect the QoL of educators who have been forced to transition to an online setting. QoL was also discussed lightly, and the constitution of factors contributing to QoL can be broad and subjective.

## **Study Design**

The purpose of our study is to discover the impact of WFH arrangements on the QoL of tertiary educators in the world. Despite marked improvements and progress, the world has made since the initial crisis, occasional outbreaks will continue to threaten the fragility of the education sector, which is generally heavily dependent on traditional people-intensive and non-digital-driven methods of interaction. Therefore, our team will be surveying educators in the tertiary education workforce on the amount of time they spend working remotely, the amount of time given to shift from physical to online settings, and their subsequent impact on their QoL. The study will utilize cross-sectional data from at least 384 ERAU staff, both faculty and non-teaching staff. It will be collated through mass distribution of surveys via official ERAU work emails. After the data is gathered back, the raw dataset will be extracted into excel and R to be cleaned, analyzed through the use of different methods such as descriptive statistics, ANOVA Tests, Chi-Square tests, and Regression Analysis. There are two sets of hypotheses.

The first set's null hypothesis in the study would be "There is no difference in the amount of time spent working remotely on the impact on the educator's QoL", and the first set's alternate hypothesis would be "There is a difference in the amount of time spent working remotely on the impact on the educator's QoL".

The second set's null hypothesis in the study would be "There is no difference in the amount of notice given to educators to switch to a WFH setting on the impact on the educator's QoL", and the second set's alternate hypothesis would be "There is a difference in the amount of notice given to educators to switch to a WFH setting on the impact on the educator's QoL"

### **Population and Sample**

The population group in our study will be tertiary level educators in the world, who are individuals employed in and providing formal tertiary education programs to students in polytechnics, institutes of higher learning, and universities. There are approximately 12.5 million tertiary-level educators in the world (World Bank, n.d.). Non-teaching staff such as executives, administrators, and support officers will also be included as a control to provide a meaningful comparison against teaching staff. The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines higher and tertiary education as including academic, vocational, and professional levels of education, constituting International Standard Classification of Education (ISCED) levels 5 to 8 (UNESCO Institute of Statistics, 2012). The team is confident in utilizing this standard to accurately estimate the population of tertiary educators as the ISCED is internationally recognized, widely used, and referenced by UNESCO member states worldwide (UNESCO Institute of Statistics, n.d.).

Unfortunately, there are several limitations in gathering and surveying the entire population. There are already an estimated 31097 universities in the world, and this statistic does not include other tertiary institutes (Webometrics, 2021). Spread around the world, there are obvious difficulties in reaching out to all educators teaching there, such as language barriers in communication. Although some universities have publicly available figures, such as the 7,613 faculty and staff hired by Nanyang Technological University (NTU), they also

do not include adjunct faculty members (NTU, 2021). Information on all of the universities and institutions' faculty and non-academic staff data will be very challenging to access, given privacy, budget, and time constraints. We might also face rejection from certain staff who may not wish to take our survey for some reason.

Therefore, with these considerations in view, the team has decided to utilize and survey a sample consisting of ERAU staff, before associating and generalizing the data and findings to the population group. This would allow the team to overcome the incumbent difficulties such as ease of accessibility to data, privacy, and resource constraints of surveying other universities. Members of the research team are currently enrolled in Embry-Riddle Aeronautical University (ERAU) Asia under ERC Institute, a private education institute (PEI). However, given that the total staff headcount of 28 in ERAU Asia is too small for data to be normally distributed and does not provide a significant representation of the very large population, the team proposes to survey ERAU staff from other campuses worldwide. These would constitute 2422 full-time staff and faculty in the Worldwide, Prescott, and Daytona Campuses. ERAU Online Campus will not be included as they have always been conducting remote lessons. The ERAU staff in our study will consist of faculty or instructors, adjunct faculty included. Staff involved in administrative or supporting roles such as finance, research, library, campus operations, marketing, recruitment, career services, and human resources will also be included. One limitation of surveying only from ERAU is that it could produce skewed results and hide inherent organizational characteristics that affect staff members' QoL.

Given that the team has significant day-to-day interaction with ERAU Asia staff, it would be less of a challenge for us to approach the appropriate communications representative, request, propose, and conduct an internal study for ERAU. With approval and cooperation from the relevant stakeholders, the team can acquire staff email addresses and

send out the survey via mass emails. The team proposes to use non-probability convenience and volunteer sampling methods to attain our sample and data. One downside to volunteer sampling is that it could also encourage respondents who are more vocal or interested in expressing personal opinions. Although this sampling method will be easier and cheaper to administer given our lack of time, money, and industrial experience, there will undoubtedly be biased opinions from the staff.

## **Variables and Measures**

### **Key Independent Variables**

The key independent variable will be the amount of time an educator spends working remotely. Another key independent variable is the period of advance notice given to them by their superiors to transition from an in-person to an online teaching setting. We will ask respondents to input their average weekly working hours before and during the pandemic. Our team has selected this factor as in-person classes can be easily affected and forced to shift online in a very short period due to either students, teachers, or school staff contracting the virus or being close contacts. Furthermore, government and health authorities have frequently tightened restrictions and require educational institutes to swiftly implement online learning over the weekend.

### **Control Independent Variables**

Other independent variables that would serve as a control would be the subject modules the educators are teaching and the campus they are based in, as it will reflect the difficulty involved in converting it into a conducive online medium. The non-teaching staff will also be included in the sample size and participate in the survey, as they have different job characteristics. The respondent's age, length of service, work experience, and home



environmental factors would also serve as controls. The home environmental factors would include the number of children and the presence of domestic helpers. The presence of children and domestic helpers will directly affect a teacher's workload at home. Also, control variables can consist of the educator's technical ability and competence in conducting online classes, such as their familiarity with online learning tools and teleconferencing applications. Finally, the level of support rendered by their institution can be a control variable as well.

### **Dependent Variables**

In order to evaluate the impact of working from home on the teachers' QoL, we selected a few variables with high factor loadings from the World Health Organisation (WHO) QoL (WHOQOL-BREF) scale that matches our study to define QoL. The WHOQOL-BREF scale is a truncated and generalized QoL scale that is categorized into four domains: psychological state, physical health, social relationships, and work environment. The facets incorporated within each domain constitute specific variables that determine the overall state of each domain (WHO, 2012). As the WHOQOL-BREF is a generalized approach to determining QoL, the addition of other factors that include WFH productivity, job satisfaction, work-life balance, and work stress during the Covid-19 pandemic will be incorporated, so as to provide a more focused approach and increase accuracy when generating the results specific to our research. For the simplicity of the study, all other factors will be kept *Ceteris Paribus* (CP).

The combined QoL factors stated above may be adversely affected by the shift to online teaching. Mental well-being and psychological states are important, as teachers can be seen as mentors to their students. If their mental and emotional capacity is already affected and depleted, they may not have the bandwidth to mentor their students effectively. Furthermore, stress amongst teachers is closely linked to sudden changes in educational

settings and routines (Kim & Asbury, 2020). A dedicated home office space is also crucial for creating a conducive and consistent working environment, and thus, the effects of the sudden change in the work environment must also be taken into consideration. Extended periods of these episodes of stress often lead to burnout and loss of job confidence and satisfaction. Additionally, the individual workers' household constraints may pose an adverse physical effect, as employees may find themselves working with unergonomic furniture and generally uncondusive work environments.

### **Measurement of Variables**

The key independent variables will be measured in hours. The control independent variables will be measured on various scales, such as age and tenure by years. Nominal scales of measurement for subjects taught will be based on the three different subject departments within ERAU. Likewise, the various ERAU campuses would also be listed so as to categorize the respondents within each campus to control for inherent differences in the different states' or countries' standards of living. As most of our variables are hard to define, we would be using a 5-point Likert scale. The Likert scale is used in research to help represent people's opinions of our variables. The 5-point Likert scale is not as accurate as a 7-point Likert scale. However, it will allow us to have cleaner data, and also allow respondents to have an easier time responding to the questions (Formplus, 2021). The sum average for each section will be calculated and scaled in a positive direction, where the higher mean scores denote a higher quality of life indicator.

## Data Collection Methods

Since there has not been any prior research on educators' QoL during the pandemic in Singapore, the team is unable to utilize any secondary data. Therefore, the team will be conducting a first-time survey on our sample, the ERAU staff, to collate, analyze and interpret primary data. Despite having an unknown total population size of educators in higher education institutes in Singapore, the team can safely assume that the number is less than 1 million workers. A past study has shown that for a population size of 1 million, 384 observations in the sample are required to significantly represent the overall population (Guthrie, 2010). With ERAU employing 677 full-time faculty and 1755 full-time staff members across all campuses, there is a sufficient pool of respondents for a volunteer sampling survey to be issued (ERAU, n.d.). Cross-sectional data will be collated, as the study is not focused on the time factor, but rather the current experiences the survey respondents are feeling (Statista, n.d.).

The team will be taking reference and influence from a past survey conducted in Indonesia, Yemen, and Saudi Arabia, and utilizing a survey template created by the WHO which quantifies QoL. The team used questions regarding WFH measures and work-life balance (WLB) from Neufeld and Fang (2005), a work-life balance questionnaire by Fisher et al. (2009), a work stress survey from Lait and Wallace (2002), and indicators of job satisfaction from Schriesheim and Tsui (1980) and adapted them to better suit the target audience and environment that the study investigates.

The team will create a questionnaire afterward on a platform called Qualtrics. The survey will be broadcast to faculty and staff in the different ERAU campuses through official ERAU emails. The survey is completely voluntary, and it is up to the staff members' decisions if they wish to partake in the survey. Our target for the number of responses to have

sufficient data to support our study would be 384, obtained across all campuses. The survey questions will be attached in Appendix A. Finally, the data will be extracted into Microsoft Excel and R for analysis and interpretation of results.

## **Data Analysis Method**

Following the data collection method mentioned above, once we have the required number of responses, we will first clean the data and categorize them into different headings to make it easier to run data analysis functions on the software programs. If required, the team will also transform the categorical variables into dummy variables to quantify and run several types of analysis methods. We would then use the following analysis methods to study our data further to test our hypothesis.

### **Descriptive Statistics**

Descriptive statistics will allow the group to see a clearer view of all of our data and highlight the key statistics such as the mean, standard deviation, the minimum and maximum, and the total count of respondents. This will allow us to progress further by using different analysis methods and tests.

### **Regression Analysis**

Regression analysis will be used to test the relationship between the mean of one variable to the corresponding variables. By utilizing regression analysis, we will be able to analyze the best fit line among the plots of data and also identify significant variables to study how the coefficients affect the dependent variable of our study. We estimate the regression using this equation:

$$y = \beta_0 + \beta_1\mathbf{X}_1 + \beta_2\mathbf{Z}_2 + \varepsilon$$

$\beta_0$  denotes the intercept.  $\mathbf{X}_1$  denotes the vector of key independent variables (which are the amount of time an educator spends working remotely and the length of notice given to educators to shift to remote work).  $\mathbf{Z}_2$  is the vector of control independent variables, inclusive of age, job role, number of children, number of helpers, length of tenure, gender, subjects

taught, and assigned campus.  $\varepsilon$  denotes the residual.  $y$  denotes the dependent variable QoL, which is the constitution of physical health, psychological state, work environment, social relationships, work productivity, work-life balance, work stress, and job satisfaction.

### **Chi-Square Test**

The Chi-square test will enable the team to compare the expected types of responses with the actual observed responses, to determine if any difference between them is a result of the relationship between variables or just due to chance (University of Southampton, n.d.). The two commonly used Chi-square tests are the Chi-square goodness of fit test and the Chi-square test of independence. Since we have many values for each independent variable, we have chosen the Chi-square goodness of fit test to determine whether the variable has a clear result on the impact on the ERAU staff before and after WFH.

The team's expected percentage of respondents whose QoL was negatively impacted is 70%. The percentage will be used to test against the final observed result to generate a p-value. If the calculated p-value is below 0.05, the result will be concluded as statistically significant, thus we can reject our  $H_0$ .

### **ANOVA Test**

The two-factor ANOVA Test will allow us to test and observe the relationships of a few variables with the QoL experienced by an individual. The two-factor ANOVA test was chosen as the summary will show the data of each respondent's results as per the variable chosen to test. Furthermore, the ANOVA Test without replication would suffice, as the study would only be carried out once with the same respondents. Once the p-value is generated, we will be able to determine whether the chosen variables' relationship is significant.

The team will be mainly comparing respondents' results from section 10 of our questionnaire to dive deeper into the respondent's job satisfaction while they are working from home. Additionally, we would also conduct a test using section 8 to understand how work-life balance was affected. Each ANOVA table will generate both p-values for rows and columns. The row's p-value reflects whether there is a difference between respondents and the average variable chosen, while the column's p-value reflects each question's average in the sections.

## **Limitations**

One limitation of our research is that our sample only consists of individuals from ERAU campuses. Therefore, it may not be fully representative of the population of educators worldwide in other institutes, who have innate and different characteristics, cultures, and workplace practices. However, the team deduces that as long as the sample size attained is of adequate size, and because the data is gathered from respondents located in various campuses worldwide, it can contribute a good spread of variety and variance of demographic characteristics to be more representative of the diverse environment educators experience in different parts of the world.

Another limitation of our research is the sampling methods utilized. The team used convenience and volunteer sampling methods to attain our respondents and their survey data. The team chose to use convenience sampling as given our limited resources, we were in an adequate position to take advantage of our access to ERAU management and could attain the data required easily. However, these methods could introduce an inherently higher degree of bias into our study as the team would encounter volunteer respondents that would take advantage of the opportunity and voice out their potentially biased opinions, skewing our results and causing the provision of more vocal opinions to affect the data. Perhaps, a future study, with access to sufficient resources, could utilize probability sampling to truly gather unbiased data to improve the accuracy of the results collated. Furthermore, even quota sampling of educators in different departments could be considered. These would ensure the different faculties, like arts, science, and business, are equally represented and proportionally contribute to the overall results.



## **Conclusion**

In conclusion, our research intends to study the impact of the COVID-19 pandemic on the QoL for teachers. The study aims to find out how the extent of working online and transitioning from in-person to online affected a tertiary educator's QoL. The sample data will be collated cross-sectionally by conducting convenience and volunteer sampling surveys with ERAU faculty around the world, sent through their email. The respondents will have to provide answers on how different variables such as the amount of time spent working online, notice to transition online, and various control variables affected their QoL. The data will be interpreted through regression analysis, ANOVA, and Chi-square tests. The resulting findings would then bring into light this obscure issue that tertiary educators are facing. Furthermore, this study will aid in the development of government and educational policies that could create a more sustainable working environment for tertiary educators worldwide in the new and uncertain domain.

## References

- Danker, T. N., Yap, H. L., Zalzuli, A. D., Ho, H. F., & Ang, J. (2021b). Surviving Work from Home: Observations from Singapore. *Journal of Police and Criminal Psychology*.  
Published. <https://doi.org/10.1007/s11896-021-09461-y>
- ERAU. (n.d.). *Working at ERAU | Embry-Riddle Aeronautical University - Careers*.  
<https://careers.erau.edu/working-at-erau>
- Fisher, G. G., Bulger, C. A., & Smith, C. S. (2009). Beyond work and family: A measure of work/nonwork interference and enhancement. *Journal of Occupational Health Psychology, 14*(4), 441–456. <https://doi.org/10.1037/a0016737>
- Formplus. (2021, August 11). *The 4,5, and 7 Point Likert Scale + [Questionnaire Examples]*. <https://www.formpl.us/blog/point-likert-scale>
- Gallagher, S., & Palmer, J. (2020, September 29). *The pandemic pushed universities Online*. The change was long Overdue. *Harvard Business Review*. <https://hbr.org/2020/09/the-pandemic-pushed-universities-online-the-change-was-long-overdue>
- Glen, S. (2021, May 31). *Non-probability sampling: Definition, types*. Statistics How To. <https://www.statisticshowto.com/probability-and-statistics/sampling-in-statistics/non-probability-sampling/>
- Guthrie, G. (2010). Sampling. In *Basic research methods: An entry to social science research* (pp. 53-65). SAGE Publications India Pvt Ltd, <https://www-doi-org.ezproxy.libproxy.db.erau.edu/10.4135/9788132105961.n5>
- Irawanto, D., Novianti, K., & Roz, K. (2021). Work from home: Measuring satisfaction between work–life balance and work stress during the COVID-19 pandemic in Indonesia. *Economies, 9*(3), 1–13. <https://doi.org/10.3390/economies9030096>
- Kim, L. E., & Asbury, K. (2020). ‘Like a rug had been pulled from under you’: The impact of COVID-19 on teachers in England during the first six weeks of the UK lockdown.

British Journal of Educational Psychology, 90(4), 1062-1083.

<https://doi.org/10.1111/bjep.12381>

Lait, J., & Wallace, J. E. (2003). Stress at Work : A Study of Organizational-Professional Conflict and Unmet Expectations. *Articles*, 57(3), 463–490.

<https://doi.org/10.7202/006886ar>

Neufeld, D. J., & Fang, Y. (2005). Individual, social and situational determinants of telecommuter productivity. *Information & Management*, 42(7), 1037–1049.

<https://doi.org/10.1016/j.im.2004.12.001>

NTU. (2021, July 1). *Faculty and staff population*. <https://www.ntu.edu.sg/about-us/facts-figures/faculty-and-staff-population>

Ozamiz-Etxebarria, N., Berasategi Santxo, N., Idoiaga Mondragon, N., & Dosil Santamaría, M. (2021). The psychological state of teachers during the COVID-19 crisis: The challenge of returning to Face-to-Face teaching. *Frontiers in Psychology*, 11, 1–10.

<https://doi.org/10.3389/fpsyg.2020.620718>

Öztürk Çopur, E., & Karasu, F. (2021). The impact of the COVID-19 pandemic on the quality of life and depression, anxiety, and stress levels of individuals above the age of eighteen. *Perspectives in Psychiatric Care*, 57(4), 1645–1655.

<https://doi.org/10.1111/ppc.12730>

Phua, R. (2020, April 3). Most workplaces to close for one month from Apr 7 to curb spread of COVID-19. *CNA*. [https://www.channelnewsasia.com/singapore/covid19-](https://www.channelnewsasia.com/singapore/covid19-workplaces-close-april-one-month-761541)

[workplaces-close-april-one-month-761541](https://www.channelnewsasia.com/singapore/covid19-workplaces-close-april-one-month-761541)

Radulović, A., Žaja, R., Milošević, M., Radulović, B., Luketić, I. & Božić, T. (2021). Work from home and musculoskeletal pain in telecommunications workers during COVID-19 pandemic: a pilot study. *Archives of Industrial Hygiene and Toxicology*, 72(3) 232-

239. <https://doi.org/10.2478/aiht-2021-72-3559>

Schriesheim, C., & Tsui, A. S. (1980). Development and validation of a short satisfaction instrument for use in survey feedback interventions. In *Western Academy of Management Meeting* (Vol. 1980, pp. 115-17).

Statista. (n.d.). *Cross-sectional data - Statista definition*. Statista Encyclopedia.

[https://www.statista.com/statistics-glossary/definition/357/cross\\_sectional\\_data/](https://www.statista.com/statistics-glossary/definition/357/cross_sectional_data/)

Times Higher Education. (n.d.). *The impact of coronavirus on higher education*.

<https://www.timeshighereducation.com/hub/keystone-academic-solutions/p/impact-coronavirus-higher-education>

UNESCO Institute of Statistics. (2012). *International Standard Classification of Education (ISCED) 2011*.

<http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf>

UNESCO Institute of Statistics. (n.d.). *International Standard Classification of Education (ISCED) | UNESCO UIS*. <http://uis.unesco.org/en/topic/international-standard-classification-education-isced>

<http://uis.unesco.org/en/topic/international-standard-classification-education-isced>

University of Southampton. (n.d.). *Chi Square | Practical Applications of statistics in the social sciences | University of Southampton*.

[https://www.southampton.ac.uk/passs/full\\_time\\_education/bivariate\\_analysis/chi\\_square.page](https://www.southampton.ac.uk/passs/full_time_education/bivariate_analysis/chi_square.page)

Webometrics. (2021, July). *Countries arranged by number of universities in top ranks*.

[https://www.webometrics.info/en/distribution\\_by\\_country](https://www.webometrics.info/en/distribution_by_country)

WHO. (2012, March 1). *The World Health Organization Quality of Life (WHOQOL)*. World Health Organization. <https://www.who.int/publications/i/item/WHO-HIS-HSI-Rev.2012.03>

<https://www.who.int/publications/i/item/WHO-HIS-HSI-Rev.2012.03>

World Bank. (n.d.). *Teachers*. <https://www.worldbank.org/en/topic/teachers#>

## Appendix A

### Survey Questionnaire

#### *Welcome message and instructions*

Hello! We are a group of undergraduate students from Embry-Riddle Aeronautical University Asia Campus undertaking a research paper for Introduction to Research Methods RSCH 202.

Thank you for taking your time to complete our survey on how Coronavirus (COVID-19) has impacted your Quality of Life (QoL).

The survey will take approximately 5-10 minutes. Your responses will be kept anonymous and personal information will be kept strictly confidential. The information collected is strictly for research purposes.

#### *Section 1: Demographic sensing and profiling*

1. Gender
  - a. Male
  - b. Female
2. Age
  - a. [Input range from 16 to 90 years old]
3. Marital status
  - a. Single
  - b. Married
  - c. Divorced
4. Job description
  - a. Teaching Staff - Educates and teaches students (Instructors, Professors, etc.)

- b. Non-Teaching Staff - Does NOT perform any teaching duties (Finance, HR, Marketing, Administrative and Executive roles, etc.)
- 5. Organizational tenure (in years)
  - a. [Input range from 1 - 60]
- 6. How many children do you have currently?
  - a. [Input range from 0 - 10]
- 7. How many domestic helpers do you have currently?
  - a. [Input range from 0 - 10]
- 8. Which campus are you based in?
  - a. Daytona
  - b. Prescott
  - c. Asia
  - d. Worldwide
- 9. Which department do you teach in?
  - a. College of Aeronautics
  - b. College of Arts and Science
  - c. College of Business
  - d. Not a teaching staff member

***Section 2: Amount of work per week***

- 1. As of right now, are you working from home exclusively (i.e. 100% working from home, not needing to come to the office)?
  - a. Yes
  - b. No

2. Before COVID-19, how many hours do you work a week on average?
  - a. [Input range from 0 to 168 hours]
3. During COVID-19, how many hours do you work a week on average?
  - a. [Input range from 0 to 168 hours]
4. During COVID-19, how many of those working hours per week do you work from home (WFH)?
  - a. [Input range from 0 to the value input in 2a.]
5. During COVID-19, how many hours' notice on average were you given before having to switch to a WFH setting?
  - a. [Input range from 0 to 168 hours]

***Section 3: Work from Home arrangements on physical health***

1. WFH has a negative impact on my physical health.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
2. I am less physically active when working from home as compared to working in the office.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree

- e. Strongly Disagree

***Section 4: Work from Home arrangements on psychological state***

1. I feel safe from COVID-19 when working from home.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
2. I feel more anxious about work when working from home as compared to working in the office.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
3. Adequate mental support was provided to me during the transition to WFH.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

***Section 5: Work from Home arrangements on work environment***

1. My home was more conducive for working compared to my office pre-COVID.



- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
2. My home was more conducive for working compared to my office during COVID.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
3. I can concentrate on getting work done even when there are distractions from family members when working from home.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

***Section 6: Work from Home arrangements on social relationships***

1. Working from home has a negative impact on my relationships with my family.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree

- e. Strongly Disagree
2. Working from home has a negative impact on my relationships with my friends.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

***Section 7: Work from Home arrangements on work productivity***

1. I am productive when working from home.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
2. I feel that the quality of the work performed from home is better.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
3. I have sufficient technical knowledge to perform my work while working from home.
- a. Strongly Agree
  - b. Agree

- c. Neutral
  - d. Disagree
  - e. Strongly Disagree
4. I have sufficient authority in performing my work while working from home.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

***Section 8: Work from Home arrangements on work life balance***

1. Work affects my personal life negatively.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
2. I struggle to separate work and personal time.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
3. I neglect personal needs due to work.
- a. Strongly Agree

- b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
4. My work is affected by my personal life/interests while working from home.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree

***Section 9: Work from Home arrangements on work stress***

1. I feel overwhelmed getting work done at home.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
2. I feel many things are beyond my control and ability while working from home.
- a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
3. My work-from-home job frustrates me.

- a. Strongly Agree
- b. Agree
- c. Neutral
- d. Disagree
- e. Strongly Disagree

***Section 10: Work from Home arrangements on job satisfaction***

1. Has your job satisfaction changed negatively during COVID-19 as compared to pre-COVID-19 times?
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
2. I am satisfied with the current work-from-home setting.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree
  - e. Strongly Disagree
3. I am satisfied with the work I produce in a WFH setting.
  - a. Strongly Agree
  - b. Agree
  - c. Neutral
  - d. Disagree

e. Strongly Disagree

4. Overall, I am satisfied with my current job.

a. Strongly Agree

b. Agree

c. Neutral

d. Disagree

e. Strongly Disagree