

## Article

# How Do Different Types of University Academics Perceive Work from Home Amidst COVID-19 and Beyond?

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**Abstract:** The COVID-19 pandemic resulted in a massive and unintentional shift to work from home (WFH) or working remotely, as well as broad adoption of web-based platforms. The goal of this research is to uncover the attitudes to WFH among different types of academics in the Sri Lankan higher education sector. An online questionnaire survey was conducted amidst a severe COVID-19 wave during June–September 2021, and 337 valid responses were received. The questionnaire contained 49 questions under four sections excluding demographic questions. The gathered data were analysed using multiple regression models. Results of the study ascertained a significant ( $p < 0.01$ ) positive attitude among academics towards online teaching (academic orientation), other than academics who from disciplines with more practical components, and there was a significant ( $p < 0.01$ ) positive attitude among academics to conducting research (research orientation) while WFH. Further, the findings indicate a significant ( $p < 0.01$ ) negative attitude to WFH when disseminating knowledge and engaging in community services with various stakeholders. When considering the criticality of demographics variables in the new normal, a hybrid working model can be introduced by reaping the benefits of WFH based on different types of academic orientations and their favourability towards the WFH model, rather than reverting to a full physical academic working environment. As a developing country, Sri Lanka can formulate policies on effective hybrid working models for academics to realise the potential from the lessons learned. This experience will enable the country to accomplish or move towards accomplishing the fourth goal of SDGs, quality education by 2030.

**Keywords:** COVID-19; hybrid work model; university academics; work from home (WFH)



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## 1. Introduction

The coronavirus outbreak, globally known as COVID-19, created a global economic shock overwhelming all countries with challenges and uncertainty. The novel pandemic has already negatively affected daily lifestyles and the livelihoods of most individuals across the globe, and is still ongoing with emerging waves. However, it has created a digital revolution simultaneously in the majority of sectors worldwide. To minimise disruptions caused by the pandemic such as mobility restrictions and social distancing, working on virtual platforms has been the only available method so far for business survival. As a result, private companies, public organisations, schools, and universities have adopted offsite working, requesting their employees too to start performing their job roles staying at home or working from home (WFH) [1–18]. In the new normal condition, the WFH concept is a widely debated topic in various and diverse sectors. Hence, the impacts of COVID-19 on workers and workplaces in different countries have been complex and unique. Sri Lanka is among the countries most affected by the pandemic's third wave, the highly transmissible delta variant with a high number of infected cases and death rates.

Hence, there was another sudden shift from the physical working environment to the virtual platform (after the first wave in early 2020) as companies increasingly continued WFH practices. The online questionnaire survey for the present study was active from June to September 2021, during this wave and extensive lockdown period (with multiple lockdowns), when the daily number of new infections each day exceeded 2000.

Due to the COVID-19 pandemic, the government's coping strategies include stringent social distancing intervention during lockdown periods. Hence, the majority of employees had to continue their duties and responsibilities while staying at home or working remotely. This condition was applicable for university academic staff. University academics play a role covering three major domains of teaching, research, and community services or dissemination of knowledge [19,20]. Hence, the success of WFH heavily depends on the comfortability of performing duties and responsibilities relevant to each domain. There are types of academics who are more oriented towards one of the aforesaid three. Hence, the orientation of an academic depends on his/her dominant domain, and their attitude towards the concept of WFH may vary. Therefore, it is necessary to find out the attitude of different types of academics to the concept of WFH. Currently, there is a paucity of scientific research regarding COVID-19's impact on academic outcomes [21], and thus, a research gap exists globally on this topic and area of study. Further, to the best of our knowledge, the consequences of COVID-19 on educational aspects have not yet been examined in the Sri Lankan context. Hence, this study is an attempt to bridge the research gap to a certain extent by examining how Sri Lankan academics perceive WFH, based on their orientations.

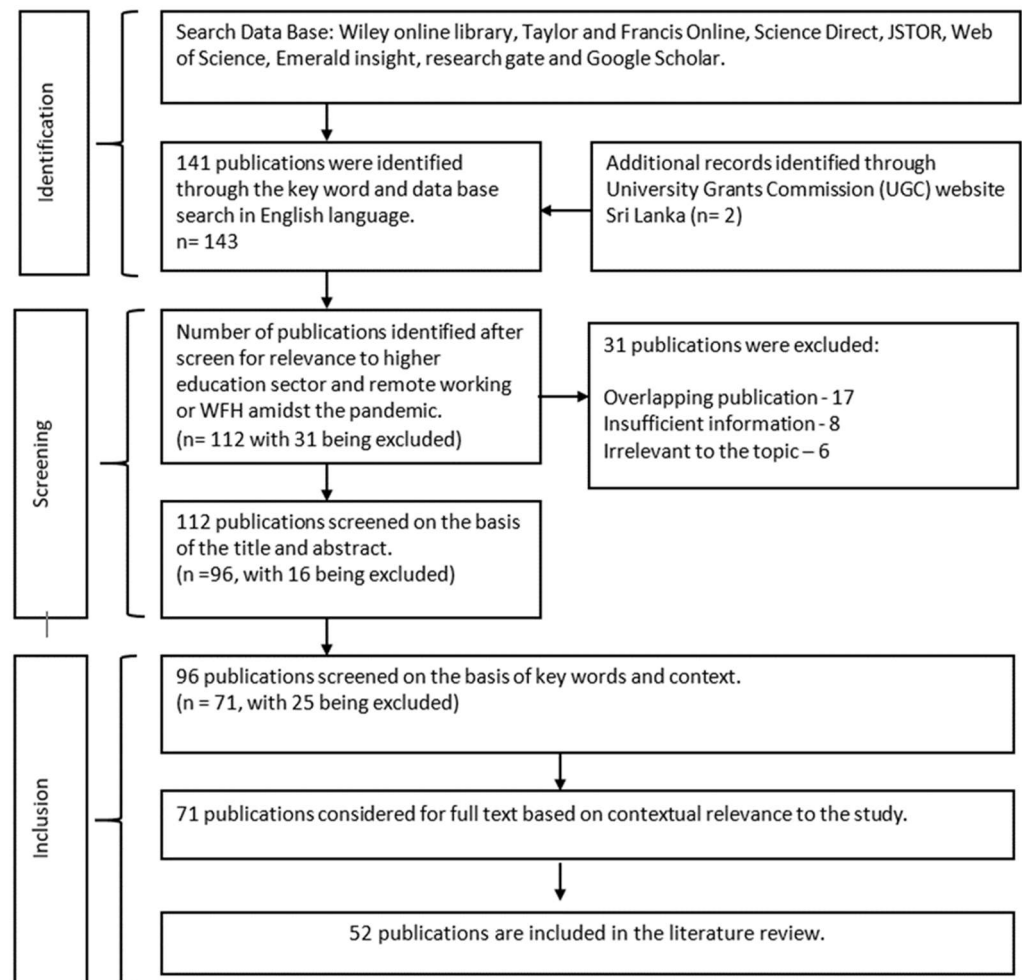
The findings provide a practical and helpful approach to determine the nature and the magnitude of the impact created by WFH on a multitude of academics. This publication carries unique findings in relation to the perspectives of Sri Lankan academics, and it will assist academics as well as policymakers in formulating policies in a health crisis like COVID-19. First, the current study allows academics to identify the priorities that should be considered when performing official duties through distance working or remote working. University regulatory bodies will also have a better awareness of the type of tasks, resources etc., required for effective WFH on diverse work platforms. In addition, authorities will gain valuable insights into the types of minimum facilities or requirements that should be provided and embedded to educational systems, and values to be inculcated among academics for successful moving and shifting from the on-premises working environment to a virtual environment.

Second, in the backdrop of the COVID-19 pandemic, it is essential to identify the collaboration impact of WFH on academics. In this regard, the current study helps both parties, including academics and regulatory bodies, to recognise and adopt new normal conditions by considering the different types of academics' attitudes; this kind of approach will be instrumental in developing a mutually acceptable and effective work model for academic institutions.

Third, there has been exceptionally scarce earlier research in the Sri Lankan setting to emphasise future implications and policymaking related to university academics and the WFH concept. Finally, the study findings will be useful to policymakers of apex bodies in Sri Lankan higher education in an endeavour to recuperate from the economic downturn and enhance the productivity of academic staff members. Hence, the main objective of this study is to identify the attitude of different types of academics towards the WFH practice in the Sri Lankan context. Therefore, this study differs from preceding studies and contributes to the prevailing literature in the four ways elaborated above.

## 2. Literature Review

The literature review is segregated into main four sections; on WFH; academics' orientation towards teaching (OTT); orientation towards research, scholarship and creative work (OTRSC); and orientation towards dissemination of knowledge (OTDOK) amidst academics performing roles via remote working. Figure 1, flow diagram summarizes the process of studies found, excluded in each phase of the literature review.



**Figure 1.** Literature source flow diagram. Source: Based on author’s observations and [22].

WFH is not an alien concept in the literature. It was the immediate and feasible solution for performing the job roles of the majority of employees across a multitude of sectors, while some essential workers physically reported to workplaces. The concept is known as “telecommuting”, and was first introduced during the 1970s and 1980s by accessing personal computers and networking facilities (Olson, 1983, as cited in [13]. Subsequently, the concept expanded gradually across diverse sectors and especially in information technology-related sectors. However, such sectors also had an on-premises work culture prior to the pandemic, unless it was essential to WFH [4,9]. As noted previously, to curb the pandemic spread, sudden lockdowns and tight travel restrictions affected the environment to minimise the congregation of people. Subsequently, most employees had to stay at home to protect themselves and others from virus contamination.

In the initial stages of WFH, there were several drawbacks and difficulties with the unprepared hurried shift from physical to the virtual environment. The main issues experienced include less efficiency, high work stress levels, poorer working conditions at home, inadequate social interaction, very limited knowledge of online teaching methods and difficulty conducting accurate assessment processes [23,24]. The above-mentioned studies conducted on future WFH -related research activities highlighted the necessity of analysing the diversity of work arrangements. According to these scholars, a requirement exists for examining how WFH is perceived by many types of employees in terms of productivity, creativity and innovation [25]. The COVID-19 pandemic created an opportunity for many organisations globally to experience the WFH concept in real terms and thus to acquire hands-on experience in this regard. When considering such experience using quantitative

as well as qualitative approaches, several empirical studies have identified pros and cons in diverse contexts [26–34].

Moreover, there is a high probability of strengthening traditional gender roles when working from home. Potential negative impacts on females' career prospects may be due to childcare and mothers shouldering a higher burden of household workload compared to fathers [3,35–37]. Therefore, the existing literature provides evidence on gender-related gaps when practising the WFH concept [38,39]. Similarly, WFH practices can trigger stressful conditions for some employees due to socio-demographic factors [40–43].

An Indonesian study revealed that an individual's digital capability significantly affects productivity when WFH during a pandemic like COVID-19. Moreover, certain arrangements are needed to develop and refine WFH efforts, which may be based on the experience of tackling tasks during a pandemic [1]. Similarly, another Indonesian study highlighted several advantages of WFH, such as being more flexible in completing work, saving costs of transportation, minimum level of stress experienced in traffic jams, flexible office hours and having more free time. Simultaneously, these scholars highlight a few disadvantages like less work motivation, electricity and internet costs, and data security issues [44]. Meanwhile, according to a study conducted in 29 European countries on the experiences of knowledge workers, the majority of employees had a "more positive rather than negative experience of WFH during lockdown" [45]. Hence, there is a high possibility of continuing the WFH concept even beyond the pandemic, particularly for knowledge workers, including university academics.

As COVID-19 forces universities to shift from traditional in-class delivery to online delivery, e-learning has become a major teaching-learning tool to continue educational activities [46]. Initially, university academics had to face an unexpected shock until they were able to manage this sudden change in the teaching-learning environment. Generally, the higher education sector swiftly adapts to technological features such as the Internet, the use of big data, Artificial Intelligence, and virtual teaching or learning platforms [47]. Furthermore, online teaching opens the door for several other benefits by creating more opportunities for learners. The literature emphasises that the development of university academics' capacity for online teaching will lead to improving the quality of education for a sustainable future [47–49]. This is further witnessed from the study related to training teachers for online teaching amidst the pandemic. Here, findings were confirmed by employing a range of innovative practices to create engaging classrooms, using different online tools and establishing a closer relationship for learner participation [50,51].

In a short period, various universities worldwide have responded with digital approaches and hybrid classrooms during the COVID-19 pandemic [52]. The majority of the developed countries in the world swiftly adapted to online learning or hybrid learning systems in their higher education sectors, while there was a delay in developing countries. Sri Lanka, as a developing country with no hybrid learning activities practised prior to the pandemic, hence underwent a delay in responding to the sudden COVID outbreak. After practising for a few months, the higher education sector switched fully to online teaching methods using online teaching platforms. Therefore, offline learning transformed to online learning due to COVID-19. Hence, teachers and learners experienced purely offline methods before the pandemic, and purely online methods amidst the pandemic, due to less exposure to hybrid methods. Therefore, the pandemic allowed developing nations to experience the online learning and teaching world, and later they realised the pros and cons of both approaches.

According to an empirical study, university teachers in Jordan displayed psychological distress and challenges when practising distance teaching [53]. Importantly, a high level of practical requirements are embedded in certain online teaching disciplines that makes the task increasingly challenging compared to teaching highly theoretical disciplines [54]. "Medical education delivery needs to be sustained with decentralised, remote and technology enabled formats" [55]. Regardless of challenges at the beginning, with gradual digital transformation, this problem has been overcome [56,57]. Furthermore, empirical

findings proved that technology usage has rapidly grown among academics in various fields, creating more opportunities for the involvement of multiple learners on a global scale for the process of teaching. Also, it is noted that virtual learning may be suitable for training-based teaching, but currently an underutilisation of such tools is observed [58].

Accordingly, we postulate the following hypothesis:

**Hypothesis 1.** *More teaching-oriented academics have a positive attitude towards WFH.*

The pandemic has created a need for alternative working conditions to conduct research activities, as one of the roles of academics [59]. Working in academia, to cater to the basic requirements expected from universities on research key performance indicators (KPIs), they had no option other than involvement in research work while staying at home. As a consequence, academics needed to broaden their connections and expand their networks to develop trust among academic colleagues beyond national borders, unlike earlier occasions [60]. Hence, this was a remarkable turning point in the rise of scientific globalism, which can be proven when comparing publications before and after the COVID-19. Especially, this brought benefits to countries with lower gross domestic product (GDP) that were severely affected by the pandemic [60,61]. Similarly, emerging methods of collecting and sharing data virtually within a highly collaborative research setting can be observed [62,63].

Simultaneously, one could observe academics working with research projects and research supervisions without discontinuation via virtual platforms in an effective way with flexible schedules [63,64]. In addition, the study concluded that performing research activities via virtual modes creates more opportunities to improve research outcomes. Hence, in the post-pandemic context universities can reconsider research strategies based on experiences accumulated from WFH; here, their purpose is to enhance the quality of education with impactful research [65]. Moreover, the novel platform will strengthen academic researchers in a sustained way by breaking several barriers of physical representation [60].

Accordingly, we establish the following hypothesis:

**Hypothesis 2.** *More research-oriented academics have a positive attitude towards WFH.*

At an unprecedented time, it is a challenge to facilitate disseminating knowledge and to get involved with community services in ordinary ways, unlike in circumstances before the pandemic. Thus, prior to the pandemic, technology did not play a significant role in the knowledge-sharing-behaviour of academics [66]. Moreover, physical representation and formalities were mandatory in local academic institutions. However, the technology contributed to the knowledge sharing process, after establishing trust within the collaborative environment among academics who were eager to disseminate knowledge [67].

During the pandemic, annual conferences and workshops were conducted online allow larger participation from various geographical areas worldwide [62]. Virtually, there is potential for greater opportunity for developing nations to obtain wider foreign exposure. Therefore, during the pandemic, by performing academic roles remotely, academics could use a considerably larger platform for knowledge sharing, "Educational institutions highly prefer online platforms for knowledge sharing and learning purposes" [46]. Consequently, the new normal situation allows academia to share international level best practice and expertise at the local level [58].

In contrast, in a case study carried out in Peru based on two universities, researchers revealed that the WFH system used during the pandemic had a number of critical challenges and drawbacks for disseminating knowledge; hence, it requires innovations and new perspectives of knowledge management [68]. Aligning with the same argument, another study highlighted that stakeholders in the higher education sector expressed feelings of deficiency of knowledge-sharing amidst COVID-19 [69]. Even with the pandemic, there is a role for academia to play regarding knowledge dissemination with relevant stakeholders [70].

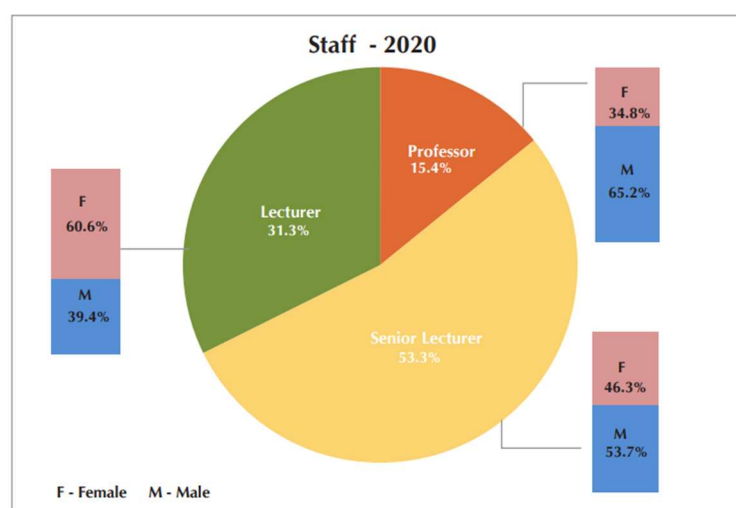
On this backdrop, the following hypothesis is postulated:

**Hypothesis 3.** *More practitioner (knowledge dissemination) oriented academics have a positive attitude towards WFH.*

### 3. Methodology

The study proposal was reviewed and approved by the Department of Business Economics, Faculty of Management Studies and Commerce, University of Sri Jayewardenepura, Sri Lanka. Cross-sectional data collection was conducted using a self-administered online questionnaire, with the participation of academic staff members in Sri Lankan Higher Education Institutions (HEIs). The questionnaire consisted of five sections. The first section was the individual's demographic profile and the subsequent sections respectively collected relevant data for the main study variables in the current study.

According to the University Grants Commissions (UGC) website, 6525 teaching staff members are employed in Sri Lanka, comprising 31.3% lecturers, 53.3% senior lecturers and 15.4% professors [71]. Figure 2 shows the composition of academic members gender-wise.



**Figure 2.** Sri Lankan higher education institutions teaching staff composition. Source: [71].

Out of this total of 6525 academic staff members, the distribution of educational qualifications were: 1st degree and postgraduate diploma 18.2%, 20% Master's degree, 10.9% MPhil, 7.8% Doctor of Medicine (MD)/Master of Science (MS) and 43.1% with PhD and other Doctoral degrees. The distribution of teaching staff according to the age group was: 21–30 years (9.25%), 31–40 years (34.50%), 41–50 years (28.31%), 51–60 years (22.56%) and the 61 years or above category comprised 5.38% of the academics [71]. Approximately 3300 permanent academic members are employed in the Sri Lankan higher education sector, in fifteen state and seven non-state universities [72]. In this study, the researchers only included permanent academic members employed full time in respective universities, in lecturer positions and above and therefore excluded visiting lecturers and those working on a contract basis. The authors developed a structured questionnaire and distributed the online survey among all scholastic members of Sri Lankan universities. The subsequent sections respectively discuss data collection, sampling technique, and analytical framework, concluding with the results.

Each individual voluntarily participated and could refuse their participation at any time without being discriminated or penalised. Hence, in the data collection process, the researchers adopted a sampling technique free of bias, and aimed to obtain around 346 responses from the academics in Sri Lankan HEIs from the target population of approximately 3300 academics [73]. A pilot study with 30 participants was conducted during May 2021 to find out whether questions were understandable, clear and presented in a logical manner. The on-

line survey of the current study was conducted during June–September 2021 and terminated receiving 337 usable responses with a representative sample of population parameters.

#### Analytical Framework

We estimated multiple regression models to test our hypotheses. The academic members' attitudes towards WFH is a function of their dominant orientation, and the baseline model is specified as follows:

$$WFH_i = \beta_0 + \beta_1 OTT_i + \beta_2 OTRSC_i + \beta_3 OTDOK_i + \beta_4 DM_i + \varepsilon_i \quad (1)$$

where  $WFH_i$  is attitude indicator towards WFH of  $i$ th academic member;  $OTT_i$ ,  $OTRSC_i$ ,  $OTDOK_i$  are orientation towards teaching; orientation towards research, scholarly and creative works; and orientation towards dissemination of knowledge, respectively;  $DM_i$  indicates control dummy variables relevant to  $i$ th academic member;  $\varepsilon_i$  denotes the random error term at the individual level. Further, alternative multiple regression models with different specifications were estimated to check the robustness of the baseline results. Accordingly, in model 2, we included an array of socio-demographic variables to control their effects, while in model 3 we excluded the academic members attached to universities' management faculties from the sample. The majority of academic members were from management faculties, and we needed to ascertain whether they made a significant influence on the baseline results. Furthermore, model (4) developed including subject areas with more practical orientation/component (Engineering, Medical and Technology) to explore the academics' attitude towards WFH with the changes of discipline with more practical orientation.

## 4. Results

### 4.1. Descriptive Statistics

Table A1 under the Appendix A presents descriptive statistics of the main study variables. Accordingly, the academic members belong to a diverse group in terms of their age, and they are approximately equally distributed between the two gender groups. The majority is having a PhD degree as the maximum educational attainment (51.93%) while the majority represents public sector universities (83.38%). Although we consider academic members from various faculties, 40.35% of the sample represents management or business faculties in Sri Lankan universities.

The independent variables of the model are: OTT which measures academics orientation towards teaching; OTRSC measures the academics' orientation towards research and scholarly works; OTDOK captures the academics' orientation towards dissemination of knowledge. All these three independent variables' scales were developed based on the University Grants Commission (UGC) circulars on academic performance evaluations in the Sri Lankan higher education sector. The index values of OTT range from 1.5 to 4.75 with a mean of 3.127 and a standard deviation of 0.513, while OTRSC ranges from 1.571 to 4.071 with a mean of 2.888 and a standard deviation of 0.480. OTDOK ranges from 1 to 4 with a mean of 1.737 while standard deviation is 0.664 (see Table 1).

**Table 1.** Descriptive statistics of main independent and dependent variables.

Variables	N	Mean	s.d.	Min	Max	Sum_w	Var	Skewness	Kurtosis	Sum
WFH	337	3.568	0.585	2	5	337	0.342	0.284	3.036	1203
OTT	337	3.127	0.513	1.500	4.750	337	0.263	−0.285	3.307	1054
OTRSC	337	2.888	0.480	1.571	4.071	337	0.230	0.117	3.435	973.2
OTDOK	337	1.737	0.664	1	4	337	0.441	1.029	3.748	585.4

Source: Authors' calculations.

The dependent variable of our model is WFH which measures academic's attitudes towards WFH. We used the scale developed by Almaghaslah & Alsayari (2020) to measure

attitudes towards WFH, including 10 questionnaire items. The sample items include 337 responses. As shown in the Table 1, the index value of WFH ranges from 2 to 5, with a mean value of 3.568 and a standard deviation of 0.585. The Alpha value of 0.8297 (see Table 2) indicates that the measure is internally consistent with an adequate degree of reliability.

**Table 2.** Cronbach’s alpha values of main study variables.

Variable	Reliability (Cronbach’s Alpha)	Number of Items
OTT	0.7812	12
OTRSC	0.7320	14
OTDOK	0.9234	13
WFH	0.8297	10

Source: Authors’ calculations.

#### 4.2. Reliability Results

The reliable and accurate information allowed researchers to bring a fruitful analysis. Furthermore, reliable measures ensured that our main latent constructs were internally consistent. We used Cronbach’s Alpha value of each latent construct to determine the internal consistency of composite measures. Accordingly, the Alpha values for the variables of OTT, OTRSC and OTDOK are reported in Table 2. The Alpha values of the three independent variables are higher than 0.7 (see Table 2), indicating that the measures are internally consistent with an adequate degree of reliability.

#### 4.3. Baseline Regression Results and Robustness Checks

In the data analysis, multiple linear regressions were applied model (1) including the main study variables; model (2) includes main variables along with dummy variables; model (3) demonstrates the regression model with specification test for robustness checks; finally, Model (4) shows the regression results with academics from more practical oriented disciplines (engineering, medical and technology).

The model specification tests were conducted to examine the fit across alternative models. For instance, multicollinearity was checked using Variance Inflation Factor (VIF) and tolerance to assure the independent variables were free from intercorrelation with each other. Our estimations showed that age and experience were strongly correlated, presenting a reasonable degree of multicollinearity. To rectify the issue, we dropped age from the dummy variables list and kept experience in the final model. After removing age as a dummy variable, the regression was rerun and we observed that VIF and tolerance were low; maximum VIF level was 1.99 and maximum tolerance level was 0.9601, suggesting that multicollinearity is not a crucial issue in this study.

To satisfy the regression assumptions and to improve further the trust in the regression results, heteroscedasticity was checked to assure that all residuals were drawn from a population with a constant variance (homoscedasticity). Our results concluded that the error term is homoscedastic in the model ( $\text{Prob} > F = 0.8040, p < 0.05$ ). Moreover, the significant variables were checked using the forward stepwise regression technique, allowing 5% error level for hypothesis testing. The model’s fit was assessed using a developed overall goodness-of-fit metric; the model with the highest goodness-of-fit value was chosen for this evaluation.

Table 3 presents baseline regression results and the results of the three alternative models. As shown in Table 3, academics with predominantly teaching-orientation have positive attitudes towards WFH ( $B = 0.365, p < 0.01$ ). Accordingly, a high level of teaching-orientation significantly increases the index value of attitudes towards WFH. Even after controlling for an array of socio-demographic including age, gender, level of education, experience, university sector, and research interests, the results in terms of the direction of their relationship remain the same ( $B = 0.347, p < 0.01$ ). Then, to check whether management or business faculties have a significant influence on the baseline results, we estimated an



alternative model excluding academics from management and business faculties. According to Table 3, the baseline results remained the same ( $B = 0.490$ ,  $p < 0.01$ ) in such a way that when the index value for teaching-orientation increases, the index of attitudes towards WFH also significantly increases, implying positive attitudes towards WFH. However, after incorporating model (4) using academics from the disciplines of engineering, medicine and technology, the results show that the academics with predominantly teaching orientation have negative attitudes ( $B = -0.0490$ ,  $p > 0.1$ ) towards WFH, though the relationship is not statistically significant. Hence, it can be concluded that those who are involved in teaching and researching more practically oriented modules show less preference for the concept of WFH.

**Table 3.** Regression results-on variables.

VARIABLES	Model (1)	Model (2)	Model (3)	Model (4)
Gender		0.0300 (0.0584)	0.128 * (0.0725)	0.130 (0.0872)
Education		-0.116 *** (0.0324)	-0.0850 ** (0.0378)	-0.0588 (0.0392)
Experience		-0.000520 (0.0211)	-0.0757 *** (0.0257)	-0.0669 ** (0.0308)
University Sector		0.0434 (0.0743)	0.0115 (0.117)	0.0711 (0.136)
Research Interest		-0.0321 (0.0640)	0.156 * (0.0887)	0.205 * (0.116)
OTT	0.365 *** (0.0657)	0.347 *** (0.0599)	0.490 *** (0.0804)	-0.0490 (0.120)
OTRSC	0.339 *** (0.0699)	0.345 *** (0.0703)	0.320 *** (0.0859)	0.581 *** (0.102)
OTDOK	-0.294 *** (0.0421)	-0.242 *** (0.0497)	-0.198 *** (0.0604)	-0.525 *** (0.0777)
Constant	1.957 *** (0.185)	2.248 *** (0.213)	1.824 *** (0.287)	3.176 *** (0.360)
Observations	337	337	201	86
R-squared	0.249	0.293	0.394	0.546

Note: Standard errors in parentheses: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Source: Authors' calculations.

According to Table 3, the academics with predominantly research-orientation have positive attitudes to WFH ( $B = 0.339$ ,  $p < 0.01$ ). Hence, a high level of research-orientation significantly increases the index value of attitudes towards WFH. After controlling for an array of socio-demographics as mentioned above, the results in terms of the direction of their relationship remain the same ( $B = 0.345$ ,  $p < 0.01$ ). Moreover, we estimated an alternative model excluding academics from management and business faculties since the majority of the sample items were from the same discipline. Even after excluding these variables, the baseline results remained the same ( $B = 0.320$ ,  $p < 0.01$ ). In addition, we estimated another model including academics from engineering, medical and technology-related disciplines. The results remained comparatively similar ( $B = 0.581$ ,  $p < 0.01$ ) to the baseline results. Therefore, when the index value for research-orientation increases, the index of attitudes towards WFH also significantly increases, implying positive attitudes towards WFH.

The academics with predominantly practitioner-orientation have negative attitudes to WFH ( $B = -0.294$ ,  $p < 0.01$ ), indicating that increased dissemination-of-knowledge-orientation significantly decreases the index value of attitudes towards WFH. It is noticeable

when controlling for an array of socio-demographic variables (see Table 3), the results in terms of the direction of their relationship remain the same ( $B = -0.242, p < 0.01$ ). In addition, based on the alternative model excluding academics from management and business faculties, the baseline results remain the same ( $B = -0.198, p < 0.01$ ). Furthermore, as per model (4) including academics from engineering, medical and technology-related disciplines, the baseline results remain the same ( $B = -0.525, p < 0.01$ ). Accordingly, when the index value for practitioner-orientation decreases, the index of attitudes towards WFH also significantly decreases, implying negative attitudes towards WFH.

## 5. Discussion

Multiple linear regression models were used in the data analysis: model (1) included the main research variables, and model (2) included key variables as well as dummy variables, model (3) showed a regression model with a specification test to ensure its robustness. The regression findings from academics who come from more practical related disciplines are shown in the final model (4).

As per the first model, significant ( $p < 0.01$ ) positive signs are available from more teaching and research-oriented academics towards the concept of WFH, while more practitioner-oriented academics showed a significant ( $p < 0.01$ ) negative attitude to the concept of WFH. These results achieved the study objectives by identifying how different types of academics perceived the WFH concept amidst a pandemic and even beyond. Similarly, model (2) was developed by including dummy variables for certain control variables (gender, experience in years as an academic, highest educational qualification, university sector and their primary research interest), and they finally confirm the same sign of coefficients with a significant ( $p < 0.01$ ) influence towards the favourable perception of the WFH concept. To achieve a reliable and accurate outcome, models (3) and (4) were constructed to check the robustness of results. As per the results, very similar results were generated regarding the main study variables, confirming the baseline results obtained from models (1) and (2). However, model (4) deviates from the results and generated a non-significant negative sign between teaching orientation and academics' attitude towards the concept of WFH. This result aligns with the previous studies conducted by Lambert & Schuck (2021), which found that as opposed to teaching highly theoretical disciplines, online teaching disciplines have a lot of practical components, which makes the task more difficult. Ashokka et al. (2020) stated that medical education must be delivered in decentralized manner and in modes enabled by advanced technology if it is to be sustained.

Previous studies discussed perspectives of online teaching, and revealed flexibility and timesaving when delivering teaching content online compared to physical sessions [74]. Hence, students too enjoyed online delivery with more questions and clarifications in the excess time. According to a study conducted in a Lithuanian university on students' attitudes to online learning environments based on favourable and unfavourable factors, those students gained more experience and became more familiar with the online learning environment with online learning practice. Hence, their resistance to using online learning platforms declined gradually and they successfully adapted to the system emphasising the favourable side of practising hybrid learning. However, during this process, the teacher has to play a bigger role as a mentor [75]. Another study assessed whether hybrid sports education could be more effective for less motivated students. The findings of that study suggested that a hybrid sports education teaching unit may be an effective pedagogical resource to improve students' motivational processes. Similarly, hybridisation of student-centred pedagogical models enables more favourable exposure to physical education sessions for all students [76].

Evaluating postgraduate students' perceptions of hybrid learning environments for business education in the context of Hong Kong Polytechnic University, a study revealed that "online learning is especially becoming a popular way of delivering courses in business education and a subject of interest in academic literature" [77]. Furthermore, the presence of industry speakers through virtual guest lectures and sessions arranged with the

participation of professors from abroad aided the internationalisation of the curriculum. In addition, the same study pointed out that students were able to enhance their independent learning capacities with the usage of various digital tools [77]. Another empirical study examined future preference for e-learning among undergraduates during the closure of HEIs in the Malaysian context. This study described how undergraduates shifted their attitudes toward e-learning activities from resistance to preference, and how undergraduates missed the advantages of e-learning when they returned to traditional face-to-face learning. Therefore, they requested hybrid learning or blended learning which combines the best of both worlds [78]. One of the studies in the context of Chinese universities found that university students were highly satisfied with the online learning platforms [79].

Moreover, Zhu & Liu (2020) emphasised the same idea and stated that this situation will open paths to quality access to education. The current study aligns with these previous studies. Performing teaching and research activities while staying at home minimises traffic congestion, pollution, and time wasted on travelling [74]. A study conducted in the Indonesian context based on one of the state sector universities investigated student impressions of the shift from offline to online instruction. The findings revealed that students embraced online learning adoption because they perceived online learning to be more flexible, efficient, and effective in terms of time, cost, and energy [80]. Aligning with the current study's model (4) observations, previous studies also indicated that nursing students have a favourable attitude to online learning. Students are delighted with the learning possibilities through online education during COVID-19. However, interrupted internet connections, unfeasible practical-natured courses, load-shedding, and other factors were seen as roadblocks to online learning. Positive perceptions were influenced by age, nursing program enrolment, academic year, and gadgets used [81]. According to Ayurveda students' perception of online learning, they appreciated online learning during the pandemic period and require a combination of both learning modalities in future to cover practical exposure in a better way [82].

However, Akour et al. (2020) revealed that continuous WFH may have effects on academics' psychological health and work-life balance. Therefore, it is essential that when formulating policies, policymakers determine the best WFH models by considering the overall impact on the teaching–learning process and its key stakeholders. As the main stakeholders, students also found certain drawbacks and reasons for reduced preference for online learning methods. The impact of online learning from students' and teachers' perspectives was studied by collecting data from colleges and universities in Bangalore city, India. The study found that, in terms of social presence, engagement, contentment, and overall quality, face-to-face learning is preferred over online learning. Even while online classes were said to be more convenient in terms of saving time, both professors and students thought these were less productive and structured than traditional classroom learning. Technical support was discovered to be a crucial component in determining student satisfaction with online classes [83]. According to postgraduate students' perspectives of learning from home in the context of an Indonesian graduate school, the researchers accepted that understanding the scope of e-learning can give a positive colour to the world of education delivery. This occurs by removing boundaries of time and space so that everybody can receive adequate teaching. However, they expressed concerns that limited internet network and other technological problems can ruin online lecturing [84].

Further, academics' engagement with foreign research collaborations has been improved tremendously by WFH [60]. This offers much potential and opportunities for a country like Sri Lanka, as a developing nation, to achieve greater outcomes in this field of research [60,61]. When performing the role of a global scientist, location is not vital, but online tools may play a crucial role. Therefore, when making policy decisions on WFH, it is mandatorily required to provide technological infrastructure appropriately. However, in model (3) and model (4), research interest shows a slightly significant ( $p < 0.1$ ) impact on WFH. The majority of respondents depended on field data. Particularly when conducting research in the domains of IT, Science, Engineering and Medicine, academics require

different aspects to be considered when compared to research studies in social sciences. Moreover, novel platforms in the new normal environment strengthen researchers in a sustainable way by removing barriers to physical representation [60].

Moreover, academics showed a significant ( $p < 0.01$ ) negative association with the role of the practitioner when WFH. Though previous studies stressed the disadvantages of WFH, the new normal environment allows researchers to share international level best practices and expertise at the local level [58]. Developing countries acquired greater foreign exposure by inviting foreign academics to local academic conferences during the pandemic using online platforms [62]. In this process, Sri Lankan academics received relatively fewer invitations for sharing knowledge as keynote speakers compared to the pre-pandemic situation, hence, the opportunities were adequately enjoyed by the scholars in more affluent contexts in terms of technology. Accordingly, policymakers should broaden opportunities for local academics to duly share their scientific knowledge and experience, to aid for decision-making in respective countries. Cole (2020) mentioned the necessity of enhancing effective relationships with different stakeholders, since academics need to continue their knowledge dissemination roles during any crisis.

Additionally, among dummy variables, experience showed a significant ( $p < 0.01$ ) negative impact on WFH. Accordingly, less experienced academics in Sri Lankan universities have relatively less motivation to WFH while experienced academics showed their willingness and the ability to cope with the technological tools. Based on model (2), educational qualification had a significant negative ( $p < 0.01$ ) impact according to the results. Hence, matured and highly qualified academics have less motivation to WFH and younger academics with bachelors and masters qualifications have motivation to WFH. However, in model (3), after removing management faculty respondents, gender becomes a slightly significant ( $p < 0.1$ ) factor when performing duties at home. This is applicable for academics who represent IT, humanities and social sciences, science, engineering, medical and other faculties. Recent studies have also emphasised that when WFH, potential negative impacts can occur for females' career prospects. The possible reason is that female academic members are normally double-burdened when they are at home with household activities along with academic-related activities like research [3,35–37].

Although, as Rodrigues et al. (2021) emphasised, there were negative psychological feelings towards WFH among academics at first, teleworking has shown positive signs of continuing even in the new normal environment for the betterment of social, economic and environmental pillars. Hence, there is a fairly high chance of embracing WFH in the new normal environment even beyond the pandemic [85], since WFH will be a win-win solution for some organisations during the crisis and beyond, especially for highly educated workers [86]. Academics have more opportunities to enjoy a more productive work model by adopting the best practices of the WFH concept.

## 6. Implications and Limitations

While online technology has demonstrated certain flaws in terms of the smooth functioning of higher education processes during COVID-19, it has also provided a variety of novel concepts to help higher education systems in a range of methods [87–89]. Without the insight of academics who are employed in HEIs island-wide the action plan may fail. Therefore, the current study provides significant input from academics' viewpoints as well as from students' insights. Based on the existing literature about preference towards the hybrid work model linked with WFH and learning from home for performing teaching and learning, research activities are seen to be at a better level compared to the dissemination of knowledge.

In accordance with findings of previous studies, researchers argue that a heterogeneous higher education system may fail to contribute significantly to the development of human capital theory [88,90–92]. Sri Lanka also faces the problem of heterogeneity in the higher education system [93] and it is necessary to find a solution for reducing heterogeneity in the system.

According to the findings of previous studies conducted in a variety of settings prior to and during the pandemic, modern technological developments such as computer-aided learning, online education, and social media can supplement “instructional technology” and help to lessen the heterogeneity of systems affecting higher education [94–98]. Therefore, as a developing country, Sri Lanka can obtain the benefits of online technology to minimise heterogeneity in the higher education system. In a study conducted by Alam & Parvin (2021) in the context of the Asian country of Bangladesh, researchers were able to create a policy framework that encourages the use of online technology to provide higher education. Hence, it is proven that the applicability of using online technology for delivering higher education extends beyond the pandemic.

Use of cutting-edge technical breakthroughs are especially well-suited to higher education in times of crisis [88]. Therefore, higher education should be able to play a positive role in bringing about real social change as a result of technical advancements. It can do so by reducing the discrimination that is so prevalent in developing countries’ societies. Moreover, Alam & Parvin (2021) highlighted that many developing countries may not be able to fully use their technical competitive advantages, particularly in higher education, due to a variety of political, economic, cultural, and traditional obstacles.

However, a study conducted in Bangladesh proposes an application-driven regulatory framework to ensure the viability of higher education during an emergency [99]. The same study emphasized that the introduced regulatory framework may require ongoing revisions, and that its application is critical to ensuring adequate higher education functionality during an emergency. Similarly, the current study also supports improvement of the regulatory framework for developing countries, considering the lessons learned during the pandemic to establish an appropriate regulatory framework beyond the pandemic.

As a result, Sri Lanka is well placed to gain the benefits of hybrid university practices by introducing an effective policy to employ the advantages of both online and offline worlds beyond the pandemic, rather than shifting towards a fully physical environment, getting the maximum out of the technological revolution introduced during the world largest educational crisis amidst the COVID-19 pandemic. Teachers and students can provide their support for the recommended hybrid methods which were not available when restricted to a single system. Generally, students and teachers are diverse in nature, hence a hybrid solution can meet each party’s requirements while minimizing disruptions caused by uncertainties or pandemics in future.

The current study scope was limited to research about university academics’ viewpoints and their attitudes towards WFH amidst the pandemic and beyond. Collecting a huge amount of data from a field survey with university students to check their attitudes towards learning from home was not possible due to the minimal funds available for this study. Hence, further research should be conducted to explore institutional and students’ readiness to accept proposed hybrid methods in the higher education system. Apart from that, the current study assumed linearity when developing regression models, and therefore, our models do not capture non-linear impacts of covariates on the dependent variable of interest. Thus, a future study may estimate quadratic regression models to discover non-linear relationships among variables. Furthermore, the findings and analysis were based on quantitative responses obtained from participants via online questionnaires using Google Forms. Future research may be able to combine qualitative evidence along with quantitative evidence to provide more robust and triangulated results. Despite these limitations, the current study has provided valuable insights into Sri Lanka’s higher education policy predicament.

## 7. Conclusions

This study is one of the first attempts to examine academics’ attitudes towards the WFH concept when performing different roles as an academic. The major findings of this research emphasise that there is a significant positive attitude among academics towards online teaching and researching while WFH. The findings also imply that there is

a significant negative attitude towards WFH when disseminating knowledge and being involved in community services with various stakeholders. Overall, for an academic, there is an opportunity to continue working with the hybrid work model in an effective way, even beyond the pandemic.

The current study findings deviate from those of the previous studies; it provides a pragmatic and convenient approach to recognising the impact of different types of academics based on their dominant orientations and their attitude towards the WFH concept, especially with unique results for developing nations like Sri Lanka. Furthermore, the present study provides a better path for universities' regulatory bodies to determine different work platforms with appropriate resource allocation. This type of approach using a successful hybrid working model will be a significant solution to the harmful impacts of economic downturn conditions. Moreover, considering academics' and students' points of view on the online and offline worlds of education, they now seek a blended model in the new normal. As such, this study opens the path for introducing an effective work model for academics while improving learners' satisfaction in an optimum way. Hence, this study provides input for policymakers to implement effective policies to recover from economic setbacks and improve the satisfaction of learners and teachers in the higher education system.

In developing countries, the main barriers to improving the quality of education include poor infrastructure facilities and limited accessibility. With the digital revolution, the switch from physical work to online platforms has created plausible causes for optimism, broadening the horizon with several opportunities. Hence, the pandemic was a blessing, 'the silver lining in the cloud', and has opened a path to success for the majority of developing nations receiving exposure to the best global practices and knowledge shared with the rest of the world. Hence, developing countries should have effective policies in place to create hybrid teaching and learning methods to realise the optimum from the lessons learned. For many developing countries, this online experience has helped climb towards accomplishing the fourth sustainable development goal, quality education by 2030. Subsequently, in the new normal environment, a hybrid working model may be introduced by realising the essence of WFH based on different types of academic orientations and their favourable perceptions of the WFH model, rather than returning to a full physical academic working environment.

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## Appendix A

**Table A1.** General description of the demographics.

Demographics	Categories	N	Percentage (%)
Age	25–30 Years	64	18.99
	31–35 Years	56	16.62
	36–40 Years	37	10.98
	41–45 Years	62	18.40
	46–50 Years	45	13.35
	51–55 Years	43	12.76
	56 and above years	30	8.90
Gender	Male	165	48.96
	Female	172	51.04
Highest Educational Qualification	Bachelors	34	10.09
	Masters	105	31.16
	MPhil	17	5.04
	PhD	175	51.93
	DSC	6	1.75
Experience as an academic	0–5 Years	99	29.38
	6–10 Years	58	17.21
	11–15 Years	41	12.17
	16–20 Years	60	17.80
	21–25 Years	52	15.43
	26–30 Years	7	2.08
	31 and above years	20	5.93
University Sector	Public	281	83.38
	Private	56	16.62
Faculty	Management/Business	136	40.35
	Humanities and Social Science	43	12.75
	IT/Computing/Technology	33	9.79
	Engineering	35	10.38
	Science	45	13.35
	Medical	18	5.34
	Other	27	8.04
Primary Research Interest	Field Survey	236	70.03
	Secondary Data	101	29.97
<b>Total</b>		<b>337</b>	<b>100.0</b>

Source: Authors' calculations.

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