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Impact of technostress and workload on behavioural stress during Covid-19: A cross sectional study

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Abbreviations:

FIR	Fourth Industrial Revolution
ICTs	Information and Communication Technologies
TMSC	Transactional Model of Stress and Coping

Impact of technostress and workload on behavioral stress during COVID-19: A cross sectional study

Chapter 1: Introduction

1.1 Background

Over the past many years, technology has become an integral part of everything (Jena, 2015). It is impossible to imagine life without smart phones, laptops and internet. These technologies are being used daily by everyone all over the world (Nauta, 2020). However, a faster adoption of Information and Communication Technologies (ICTs) happened in early 2020, when the World Health Organization declared novel coronavirus (COVID-19) as health emergency and the world shifted towards digitalization (Petersen & Bluth,2020). In the wake of pandemic, countries across the globe developed several emergency measures and implemented countrywide lockdown to prevent the spreads of virus. Trade activities and travel activities around the world were halted. During these times working from home became necessary and was one of the measures that was adopt to keep the economic and business activities going (Savić, 2020). Like many other countries, working from home was adopted in Pakistan as well. There has been increase in number of people working from home both in public and private organizations worldwide. However, in Pakistan, except some private organization which shifted to remote working, governments and public institute were lock down and shifted to online teaching (Government of Pakistan, 2020). Worldwide, almost 81% workforce was affected due to locked down (Savić, 2020) and many of them experienced working from home for the first time (Barbuto et al., 2020).

It was observed that even after the locked down was lifted, many organizations intended to continue online working. Companies adopted work from home policy had seen many benefits during the locked dwon such as reduction in travel costs, reduction in usage of organizational resources (Thulin, Vilhelmson, & Johansson, 2019; Barbuto et al., 2020). Nevertheless, there is a possibility of negative impact on worker's wellbeing (De Menezes & Kelliher, 2011). Studies have shown that technology can contribute to cognitive problems at work place and can cause technostress over time (Sellberg & Susi, 2014). Technostress is stress experienced by users as a result of using information and communication technology (Brod, 1982; Ayyagari et al., 2011). Studies conducted by Tarafdar (2007) and Ayyagari (2011) provided framework to understand manifestation of technostress in the form of employee burnout and exhaustion (Tarafdar et al., 2007; Ayyagari et al., 2011). A recent study conducted

on sale professionals to understand the side effects of use of technology at workplace showed that technostress decreased job satisfaction of sales professionals and increased job stress (Pullins, Tarafdar, & Pham,2020). The study shed a light on technostress creating conditions and its effect on employee wellbeing. The initial research conducted on psychological impact of technostress focused on physical impacts such as fatigue, headache (Arnetz & Wiholm, 1997). Other studies focused on role conflict and disruptive behavior (Tarafdar et al., 2007). Consequently, it becomes imperative especially in the wake of second wave of coronavirus and potential lockdown in Pakistan, to study impact of technostress during a pandemic. Thus, the present study aims to study the impact of workload and technostress among employees working from home. in particular aims to study the role of ICTs technostress and occurance of technostress during pandemic. The study aims to understand use of technology and worker's stress during remote working conditions. There exists a gap in research about the stressful impact of ICTs. This will help in finding possible solutions and better suggestions for its improvement in the future

1.2. Problem Statement

The research on technostress in an organizational context is in its initial stage. Studies explaining technostress effects on employees specifically during the pandemic has not been studied in developing countries such as Pakistan. There exists a lack of theoretical background and empirical studies that explain the work-related stress phenomenon that effects the employee performance. This lack of knowledge about technostress in an organization could be fatal to the decrease employee performance.

However, over the last decade several studies conducted in developed countries showed that employees exposed to work related technological environment suffer from psychological symptoms (Kossek & Lautsch, 2012; Lanaj, Johnson, & Barnes, 2014; Derks, Duin, Tims, & Bakker, 2015; Li & Lin 2019). The studies showed the reason behind these increased psychological problems at work is due to increased dependence on technology, more availability to work and less time spent with the family. One of the study done by Rosen, Lim, Carrier and Cheever (2011) signifies the different stress creating situations that add into technostress for employees like workload, work role, job control and interpersonal characteristics etc. These factors cause stress among employees and influence job performance and increase negative job outcomes. Work related stress problem can be defined with model of work -related stress (Kompier & Marcelissen, 1990) which explains the various consequences of the work-related stress that are shown by employees, when exposed to technology stress

factors. The reactions shown by employees could be of various form, like emotional reactions, cognitive and behavioural reactions. The model also explains the long-term consequences associated with the technostress such as, if the stressful experiences remained for longer period, the reactions can prolong (Chen, 2015). Thus, considering theses prior studies in context the current study will investigate which and how technological stressors (techno-invasion, techno-overload, techno-complexity) and workload impact mental well-being (Behavioral stress) of the academics working from home during lockdown in the midst of pandemic in Pakistan. This is one of its kind study as the setting of the study is unique.

1.3. Research Objectives

1. To examine the impact of technostress on behavioral stress in academics working from home during COVID-19 pandemic.
2. To find out the influence of workload on behavioral stress in academics working from home during COVID-19 pandemic.

1.4. Research questions

1. What is the association between technostress and behavioral stress in academics working from home during COVID-19 pandemic?
2. What is the association between workload and behavioral stress in academics working from home during COVID-19 pandemic?

1.5. Research Contribution

The current literature on technostress explains the negative relationship between technological stress and employee productivity and organizational performance (Tarafdar et al., 2007). However, the recent shift of work practice due to the pandemic has totally digitalized the workplace which has created its own consequences (Wiederhold, 2020). Aside from the struggle of adopting and understanding the usage of technology, there are other consequences such as anxiety, tiredness and stress. On one hand it might have ease the businesses during the pandemic it has increased the technological exhaustion (Wiederhold, 2020). Nevertheless, it seems that no organization can now escape this technological phenomenon and its respective consequences. Thus, it might be helpful to understand its negative aspects and consequence to develop coping mechanisms and practices especially at workplace where mental health is rarely discussed and can be considered as a taboo.

Hence, the current study based on Transactional Model of Stress and Coping (TMSC) theory holds a theoretical significance in supporting the technostress studies in explaining its possible

impacts on employees' wellbeing. The study specifically investigates the impact of technostress on behavioral stress of the employees working from home during COVID-19 Pandemic in Pakistan. As the incidences from prior researches have been quoted from western context and studies that are conducted in one cultural context cannot be generalized in any other cultural scenario. The study also includes the workload and work from home during COVID-19 as this has made the use of technology necessary irrespective of the job sector and nature.

1.6. Research Gap

Despite the increased focus on side effects of intensive usage of ICTs in work, there exist a gap about the stressful impacts of technology and how and why technology create stress in end users (Tams, 2015). It is imperative to study technology related stress (technostress), particularly in times such as the current one, where a pandemic has completed shitted the work to digitalization and remote working. Thus, Considering the prior studies in context the current study will investigate which and how technological stressors (techno-invasion, techno-overload, techno-complexity) and workload impact mental well-being (Behavioral stress) of the employees working from home during lockdown in the midst of pandemic.

1.7. Scope of the study

The current study focuses on the impact of technostress or and workload on behavioral stress of academics working from home during the pandemic in Pakistan. The study explores the triggers and manifestation of technology related stress among employees within organizational context. The study findings can be important in understanding the underlying cause of technology related stress among employees at workplace and in developing coping mechanism and Human Resource Practices to better the well-being of the employees especially with anticipated second wave of Coronavirus and potential locked down situations. Also, this gives an opportunity to understand the potential working solution in extreme events such as the pandemic which otherwise would not have been possible to study and explore.

Chapter 2: Literature Review

2.1. Independent Variables:

2.1.1. Technostress

Technostress may be explained as a problem of adaptation of latest technology in the fourth industrial revolution of the world. It can additional be descried in two connected ways that first;

inability to adopt and address new technology, and second; overexposure or interaction with the technologies. (Brod 1984,).

One of the sub-dimension of the strain is technostress. Technostress is additionally indirectly connected with human cognition (Weil & Rosen, 1997). Technostress is additionally defined as a price that human should pay to use technology (Champion, 1988). To explain it further, the technostress bound symptoms were identified such as; laptop anxiety, headaches, joint aches and sleep disorder etc. (Brod,1984).

As explained earlier technostress is related to the employment of technology. This technology that was made-up for the benefit and convenience of the employees came at a worth within the form of technological stress known as technostress. As these technologies work faster than human, consequently pressure is put on humans to work faster and learn these technologies. Thus, this over usage of technology in some people causes inability to adopt to ever-changing technologies. Wang (2005) deliberated technostress to be a threat to organizations because it will have an effect on the turnover and productivity negatively. Whereas, these technologies evidenced to be essentials growth as they have completely affected organizational growth (Melville, 2004). In easy words, technostress is technological stress faced by its user when technological demands exceed the individual skills to adopt (Wade, 2004).

Technostress has been around for technology users for a long time. The term technostress was initial coined by Brod (1984). He represented the term as a sickness that's experienced by its users as he's making an attempt to adopt the technologies. However, this clarification of Brod (1984) describing technostress as a sickness has been criticized. As explained by Champion (1988) that technology is a change, a resistance or stress experienced by users could be a traditional response to a change and not a sickness. Thus, Clark and Kalin (1996) argued that the main target of stress management ought to be the change that caused it instead of the technology itself because it is simply a tool. They explained technostress as a behavioral or psychological response shown by its users either directly or indirectly. They argued Brod's definition of technostress by stating that it's a clinical definition and doesn't embody the necessary environmental and social factors. Arnetz and Wiholm (1997) defines it as stress that arises once individual works with many technological tools at a time and making an attempt to balance the work life and private life. Leka, Griffiths, and Cox (2003) in favor of Brod's definition justify technostress as downside of the technology which is being

experienced by each young and old staff operating in a company. Thus, effecting the organization in many ways like turnovers, complaints, increase absenteeism and organization's productivity overall.

Working with the technology makes user to solve problems and complete tasks quicker and this creates fatigue. because of these technologies, like mobile computing devices needs individual to try and do multitasking and causes fatigue (Smeltzer, 1987). This fatigue is caused as a result of intrusions and disturbances that occur in the middle of multitasking that causes frustration in individual. Interruptions such as emails, messages and alternative workplace communications place a lot of pressure on staff as they're needed to response as shortly as they receive it that produce anxiety and stress in them. The second downside with the technology is that it's accessible all the time and because of that it is the well accepted notion people should be accessible all the time. All time availability of the employees causes feelings of intrusion (Agboola, 2016). Moreover, employees are constant expected to stay updated with the newest upgradations. aside from this worker gets annoyed once technological devices like laptop doesn't work properly. Recently the issues concerning the harmful impact it will cause to its users have immerged particularly among accountants and IT users as they use technology daily to perform bound task of their job. Thus, creating technostress a vital issue of the today's times (Agboola, 2016). This can be applied in the current scenario of COVID-19 pandemic where mode of working has totally shifted to online and the use of technology is inevitable (Wiederhold, 2020).

Technostress in relation to workplace has been defined by five dimensions and conditions that cause technostress. (1) Techno-overload: refers to when employees are expected to work with the technology to work more and at a faster pace. (2) Techno-invasion; as technology has made accessibility of employees easier than before, thus employees are approachable at home and at any time of the day, which disturbs their family and personal time (3) Techno-complexity; As technology has advanced it has changed the way it operates which makes it harder to operate or work with it thus, employees can have hard time learning the interface of the technology. (4) Techno-insecurity: refers to concern of losing one's job due to ineffectiveness to use the technology right. (5) Techno-uncertainty: due to constant upgradation of technologies staff feel pressure to stay updated and trained as a result of they struggle and face difficulties (Tarafdar et al, 2007).

2.1.2. Workload

Workload can be defined as the amount of work allocated to the employee to complete. Several researcher studies have been conducted that have supported a positive relationship between workload and job stress (Andrew et al., 2008; Jex, Beehr, & Roberts, 1992). However, study conducted by the Glaser, Tatum, Nebeker, Sorenson, & Aiello (1999) indicated a significant impact of workload on stress.

Studies have also showed an inverted u-shaped relationship of workload with innovative behavior at work emphasizing the positive impact of workload on job performance (Sawang 2012; Montani et al. 2019). A recent study conducted by Alsurayykh, Wilson, Tennent, and Sharples (2019), Identified the effects could be negative and positive, depends on the user experience of workload as well as other cognitive factors that should be taken into account to analyse its relationship with stress. Another study conducted on 504 full-time workers in USA has found that the higher workload at workplace leads to higher stress and higher negative emotions and psychological strain (Stich et al. 2019). The relationship between workload and job stress is also explained by Boyle's (1995) model of Job stress. A study conducted on primary school teachers to test the model indicated workload as a factor contributing towards job stress of primary school teachers (Abdullah & Ismail 2019). Thus, in the light of above mentioned literature review, it can be indicated that both variables; technostress and workload have mixed results when it comes to stress. The current study includes Technostress creators and Workload as independent variables in the context of remote working during COVID-19 pandemic. Following hypothesis are formed based on the above mentioned studies:

H1: Higher technostress will lead to higher behavioral stress among academics working from home during COVID-19 pandemic.

H2: Increased workload will lead to increased behavioral stress among academics working from home during COVID-19 pandemic.

2.2. Dependent Variable

2.2.1. Behavioral stress

The term stress is derived from the word 'strictere' (Cooper & Dewe, 2004) meaning to 'draw tight'. According to the literature the stress can be defined as 'arousal of mind and body in reaction to the demand made' (Schafer, 2000). Stress can also be defined as an unmet demand

or the gap between personal resources and environmental demands (Varca, 1999). Thus, a stress occurs when there is an imbalance between demands of the environment and resources of the individual to meet that demand (Anderson, Litzenberger & Placas, 2002). Work related stress has the same characteristics other than that it is caused by work related factors (Rothmann & Cooper, 2008). The stress experienced at work arise due to unmet demands of work such as work overload, working conditions and role conflict (Weinberg & Cooper, 2011). Particular stressors such as workload, role conflict and some times over usage of technology can manifest in the form of anger, anxiety and frustration (Newstrom & Davis, 2002) called behavioral stress. There has been studies conducted to understand the psychological or behavioral stress reactions in computer users (Carayon et.,al, 2001). As measured by Copenhagen Psychosocial Questionnaire (COPSOQ) (2003) the behavioral stress occurs in response to stressors in work environment such as lack of initiative, low mood, difficulty in speaking and interacting with coworkers, feeling of agitation or emotional.

2.3. Contextual Variable

The current study is being conducted within the context of COVID-19 Pandemic. The nationwide locked down in Pakistan as well as in the world has forced almost every sector to shift online mode of business. People who might have not worked online before are now working online from their homes. Working from home has its own variables such as availability of resources required to work online, family space that is being occupied by work and so on. All these factors along with the stress and anxiety associated with Pandemic act as a contextual factor for the current study.

2.4. Relationship among the all variables

Over the last decade there has been immense advancement occurred in technology and way of working has changed extremely as the world entered to fourth industrial revolution (FIR). This new way of working and technology has brought many benefits as well as negative impacts. According to the literature the over usage of technology among worker is causing technostress among ICT users (Ghislieri, Molino & Cortese 2018). A basic assumption in the stress theory indicates that stressors such as workload, lack of support and control may create anger, anxiety among employees which can be harmful for their health and well-being (Karasek and Theorell, 1990; Levi et al., 1986; Melin and Lundberg, 1997). According to World Health Organization (WHO) new way of working has foster unrealistic expectations from workers to work better and faster. As 24/7 availability of internet has created an expectation that workers to be available, operate and remain connected to work all the time. This can create negative

consequences such as stress and work-holism (Molino, Cortese & Ghislieri 2019). According to the literature, symptoms such as irritability, feeling of exhaustion, anxiety, physical disease, and insomnia are related to technostress. There are three most common stressors that are related to technostress are information over load, technological complexity and techno invasion. Due to ICTs (internet, smartphones, tablets, laptops) the frequent interruption during work and constant availability of the employee have been identified as the other stressors (Ghislieri et., al,2017). According to the research (Ayyagari, 2011; Tarafdar et al., 2011) conducted on person environment fit model and transactional model theory of stress indicated that technostress creators are related to psychological strain and behavioural outcomes. Such as when individual resources are not enough to meet the environmental demand, a stress response occurs. As the study done on teleworkers showed that although technology has improved the work of teleworkers in some way but at the same time it has caused employees to work harder than before to meet new technological demands (Suh & Lee, 2017). Another study done on 200 librarians in Dehli India showed that due to daily usage of the technology in their work, they suffer from sever technostress (Yuvaraj, 2015). Study done by Agboola (2011) on auditors showed that auditors are experience high level of stress due to high stress conditions such as workload and technological demands to complete the tasks and deadlines. Due to this exhaustion and anxiety they are unable to fully perform their job (such as accuracy of numbers). Based on the aforementioned literature review the current study investigates the consequences of the three techno-stressors (techno-overload, techno-complexity and techno-invasion) and Workload as a predictor of behavioiral stress during work from home in COVID-19 pandemic. Workload can be explained as an individual perception of having too much task to perform with not enough time to complete them (Carlson, 2003). In the presence of high level of workload, employees can feel more pressure of working fast, spend more time working and using ICTs for work purposes which can increase behavioral stress among employees. As per the transactional theory of stress and coping behavioral stress is one of the symptoms of technostress and workload. Behavioral stress symptoms such as lack of energy, initiative, hunger and socialization were considered for the current study.

2.5. Theory: Transactional Model of Stress and Coping

The model projected by Lazarus and Folkman (1984) known as transactional model of stress and coping explains how people experience stress. Recently all studies done on technostress are based on this model (Ragu-Nathan et al, 2008). The idea relies upon mental paradigm –a process that explains the relationship that exists between environment's demands and

individual's resources. Lazarus and Folkman (1984) additionally justify the idea that each individual interprets atmosphere differently. Stress is defined as a result of the transaction that happens between an individual and its atmosphere. The connection that binds or forms a relationship between the individual and his atmosphere is named appraisal. The appraisal is what a person thinks about or understands of the environmental demands.

Lazarus (1999) defines two varieties of appraisals (as a method through that a person evaluates his environment). One is termed primary appraisal and second is secondary appraisal. The explanation behind the different individual in stressful situation is because of these appraisals. These appraisals represent a method that a personal goes through when in stressful situation. This method defines the strain development itself. This method determines the individual's emotional, behavioral reaction and experience of stress (Lazarus, 2001). The first appraisal is when an individual analyzes the situation and risk or danger of the situation. The analysis of the event or setting is personal and subjective.

There are four primary appraisal explained by Lazarus (2001) (harm/loss, threat, challenge and demand). Lazarus defines harm/loss appraisal as that's already being done and therefore the individual is evaluating the case. Threat appraisal is outlined as one thing that's on the point of happen and challenge is once a person is encountered with the demand displayed by the environment or situation. The fourth appraisal, called benefit, is explained as an attainable profit that a person expects from the encountered demand. Later, Dewe, O'Driscoll, and Cooper (2010) explained the association of various emotions associated with appraisals (negative and positive, both). These later were explained as coping methods of people.

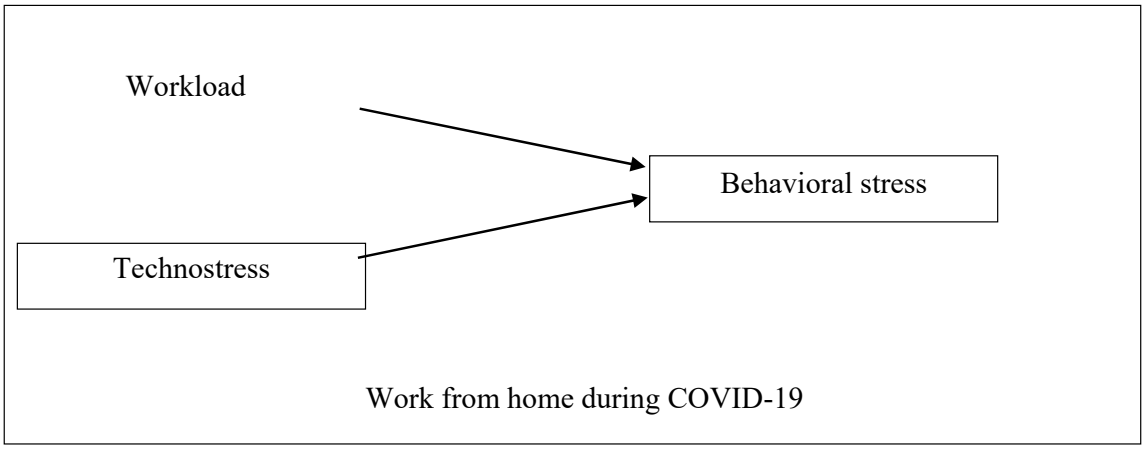
After the first appraisal comes secondary appraisal that is about; occurs once the person has evaluated the case, he thinks what to try and do concerning this current situation- what would be next move. The studies done by Al-Fudail and Mellar (2008) and Ragu-Nathan et al., (2008) to use theory to understand technostress. The study by Califf (2015) on attention data technology system, analyzed the impact of technostress caused by technology on care providers, used this theory. The results of the study showed that there's a major relationship between technostress creators and techno-distress. Aayyagari et al. (2011) connected this theory to the reasoning ability of the person, that explained the transactional method in terms of individual interaction with his environment. In terms of technological usage this theory explains the strain in respect to different technological encounters. Such as when technological

demands exceed the person's talents, causes a threat to its health (mental and physical) in the form a stress (Ayyagari et al., 2011).

Cooper, Dewe, and O'Driscoll (2001) outline four major mechanism of transactional theory. These mechanism, stressors, strain, situational factors and outcomes are all connected parts that create stress as explained by the transactional theory. Stressors all those things and events that likely to cause a stress in a person. These nerve-racking situations or factors at workplace are daily usage of technology by workers, constant changes within the work, technology and invasion into employee's personal life. Cooper et al. (2001) defines situational factors that are a part of structure method and system e.g. the technology related trainings and coaching programs. In terms of the technology usage cooper et al. (2001) outline strain as a response (emotional and behavioural) that has arisen in reaction to stressors. Typically, these responses are expressed as uneasiness, weariness and detached behaviour by the employees operating within a technological atmosphere (Salanova, Llorens, Cifre, MartÍNez, & Schaufeli, 2003).

2.6. Theoretical framework

With the help of literature review below mentioned model is suggested for this study. The independent variable is workload, technostress and dependent variable is behavioral stress.



Chapter 3: Methodology

The previous chapter provided the foundation for the development of concept framework based on prior studies. This chapter consist of the methodology and designed adopted for current study. The study is conducted using questionnaire method. The study was conducted in December 2020 and restricted to COVID-19 context in Rawalpindi and Islamabad, Pakistan.

3.1. Research design-cross section

The present study is a cross-sectional study that is the data was collected at one-time point.

3.2. Type of investigation

As there are two types of investigations correlation and causal, the present study is a causal study. Causal studies are those that either investigate the cause and effect or impact of one variable on another (Neuman, 2006). Thus, based on hypothesis testing the study investigates the impact of the Technostress and workload on Behavioral stress of academics working from home during COVID-19 Pandemic.

3.3. Setting

The data was electronically collected from professionals working from home in Rawalpindi and Islamabad.

3.4. Population

The population for the current study is academics working from home in Rawalpindi and Islamabad.

3.5. Sample size

According to HEC there are 21 recognized universities in the twin cities, Rawalpindi and Islamabad of Punjab with the total population of fulltime PhD faculty of around 3000. To According to Morgan and Krejcie (1970) table the sample size for 3000 is 341. Total of 350 people were approached using online survey. Total of 200 filled survey responses were received from faculty members working from home/remotely in Rawalpindi and Islamabad which includes the demographics of both male and female, and age ranging from 21 to above 50.

3.6. Sampling technique

Convenient sampling was used for the current study. As Convenient sampling technique is in which the members who could be easily approached and accessible are taken as participants of the study.

3.7. Unit of analysis

The unit of analysis for the current study is academics working from home during COVID-19 in Rawalpindi and Islamabad.

3.8. Source of data and data collection method

To collect data survey technique was used. To collect data adapted questionnaires consisting of 25 items assessing technostress (Independent variable), workload (Independent variable) and behavioral stress (Dependent variable) was distributed electronically (via WhatsApp and email) among academics working from home/remotely working in Rawalpindi and Islamabad in present.

3.9. Outcome measures/assessment tools

3.9.1. Technostress

Technostress was assessed through eleven items scale: four items for techno-overload, three items for techno-invasion and four items for techno-complexity. Each item is answered in five-point Likert scale from 1 = strongly disagree to 5 = strongly agree (12,13). For present study composite score will be used.

3.9.2. Workload

Workload is referred to the perception of individual of having too much work to do, too diverse tasks to carry out and/or not enough time to accomplish the assigned job (Melin, Astvik, & Bernhard-Oettel, 2014). In the presence of high level of workload, the use of ICTs for work purposes increases as well. Workload was measured through three item scale (Kuei et al, 2002) using a Likert scale from 1 = never to 5 = always. The workload scale has strong Cronbach's alpha (0.85) (Molino, 2020).

3.9.3. Behavioral stress

According to the transaction-based model, technostress creates stress (Lazarus,1995). For the current study behavioral symptoms of stress is being considered. Behavioral stress can be defined as lack of initiative, lack of energy or apatite (Kristensen & Borg, 2003). Behavioural stress was measured through eight items taken from the Copenhagen Psychosocial Questionnaire (2003) with a Likert scale from 1 = never to 5 = always. This scale has strong Cronbach's alpha value (0.86) (Molino, 2020).

3.10. Description of Questionnaire

The questionnaire used for the current study is of adopted one. The questionnaire consists of four sections and at the top of it the title and purpose of the study is mentioned to inform the respondents about of the study. The first section of the questionnaire includes demographic factors of the respondents along with the exclusion question that is 'Are you working from home or have worked from home during locked down?'. The second section includes 11 items assessing Technostress among academics. Third section of the questionnaire contains 8 items assessing behavioral stress among respondents. The fourth and last section of the questionnaire contains 6 items assessing workload of the academics working from home during COVID-19 pandemic.

Chapter 4 Results and Findings

In this chapter the results and finding of the study is described. This contains reliability and normality analysis followed by correlation and regression analysis. For statistical analysis, following descriptive and inferential statistics are computed. The reliability of the data is assessed through Cronbach's Alpha value. Through Skewness and kurtosis values normality of the data has been assessed. For hypothesis testing Regression and correlation analysis is done. To carry out these statistical tests, Statistical Package for Social Sciences (SPSS) version 20.0 is used.

4.1. Frequency tables and Demographics

Table 1: Demographics of study participants (N=183)

Demographic variables	***f*(%)**
Age (mean[SD])	30.51[6.93]
Gender	
Male	64 (35)
Female	119 (65)
Education (in years)	
16 years of education	11 (6)
Above 16 years	94 (51.4)
PhD	78 (42.6)
Profession	
Teaching	46 (25.1)
Administration	25 (13.7)
Health sector	33 (18)
IT & business	40 (21.9)
Others	39 (21.3)
Are you working from home? or have worked from home during lockdown?	
No	51 (27.9)
Yes	132 (72.1)

Graph 1: Are you working from home? or have worked from home during lockdown? (N=183)

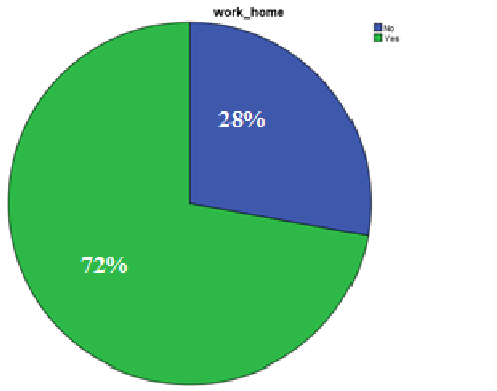


Fig: 1

The demographic features of the current study sample are Gender, Age, Education, Profession and Experience of work from home during COVID-19 Pandemic. In the sample the percentage of male respondents were 35% and female respondents were 65%. The mean age of the respondents was 30. Out of 183 respondents, 6% had fourteen years of education, 51% had sixteen years of education, and 42% belonged to eighteen years of education. 25% of the sample belong to teaching profession, 13% belonged to administration, 18% to Health sector, 21% to IT and business, and 21% had other broad professions with no single category or sector. Respondents also vary in their experience of work from home during COVID-19 pandemic as out of 183 respondents 72% were working from home or have worked from home during locked down. Whereas, 27% of the population had not worked from home. These 27% of the sample were not asked further questions as they have not worked or were not working from home during COVID-19 pandemic.

4.2. Descriptive Statistics

For normality analysis of the current study following tests were run; mean, standard deviation, Skewness and Kurtosis. Table. 2 shows the results of these tests. The mean value Technostress scale was (M =34.89, SD = 8.98), workload (M =19.84, SD = 5.85) and Behavioral stress is (M =23.90, SD = 7.34). Other than these tests values of skewness and kurtosis are also important in assessing the normality of the data. If values of skewness and Kurtosis lie within range of +3 and -3 then it means the data is normally distributed (Thode, 2002). The Table.2 shows all the values of skewedness and kurtosis lie within a range of +3 and -3 which means the data is normally distributed.

Table 2: Descriptive statistics of scales (n=132)

Scale	Range	*M(SD)*	*Skewness*	*Kurtosis*
Technostress	12-53	34.89 (8.98)	-0.63	0.41
*Techno-overload	4-20	14.10 (4.13)	-0.71	-0.04
*Techno-invasion	4-15	11.68 (3.04)	-1.06	0.36
*Techno-complexity	4-20	9.10 (4.38)	0.54	-0.63
Behavioral stress	8-40	23.90 (7.34)	-0.19	-0.18
Workload	6-30	19.84 (5.85)	-0.54	0.07

Notes: * Subscales of technostress scale

4.3. Reliability Analysis of all variables

Reliability analysis was conducted to determine the internal consistency among items of the variables of the scale. Correlation coefficient for each item of the variable is determined by reliability analysis.

Table 3: Reliability analysis of scales (n=132)

Scale	*A*
Technostress	0.87
*Techno-overload	0.83
*Techno-invasion	0.76
*Techno-complexity	0.96
Behavioral stress	0.87
Workload	0.88

Notes: * Subscales of technostress scale

Reliability analysis helps determine not only the consistency but the pragmatic questions as well (Gerber, Finn & Finn, 2005). For the present study, reliability test has been carried out without excluding any item. As Cronbach's Alpha values for all the variables (presented in Table. 3) are more than .06 thus the data for all the variables is reliable (Cronbach,1951; Nunnally, 1978). Cronbach Alpha values for all the variables are as follow; Technostress with 11 items is $\alpha = .87$, (subscale; Techno-overload with 4 items is $\alpha = .83$, Techno-invasion with 3 items is $\alpha = .76$, Techno-complexity is $\alpha = .96$) Behavioral Stress with 8 items is $\alpha = .87$, and Workload with 6 items is $\alpha = .88$). Alpha values of all the variables indicate internal consistency of the items and good overall reliability of the measure (Cronbach,1951; Nunnally, 1978).

4.5. Correlation

Correlation analysis is used to determine the linear relationship between two variables. Correlation analysis depicts the dependency of the two variables, If the data is normally

distributed then Pearson coefficient is used to measure the correlation among variables (Cohen, Manion, & Morrison, 2013). The r value, correlation index, measures the strength of the relationship between two variables. The range of the Pearson Coefficient is between +1 and -1. The closer the value to the + 1 the stronger the relationship. If the value of r = 0 this means no relationship exists and if the value is + 1 this means perfect correlation between variables exist. The sign of the correlation coefficient r depicts the direction of the relationship between two variables. If the sign is positive, it means there is a direct relationship between variables. And if the sign is negative it means inverse relationship exists between the variables i.e. ifone variable is increasing the other variable is decreasing and vice versa. There are different ranges of r to depict strength of correlation between variables (whether positive or negative). The r value from .1 to .3 depicts weak correlation, .3 to .5 depicts moderate correlation and from .5 to .1 depicts strong correlation between variables. The significance of the value is determined by the p-value (p<.05**, p<.01*) which is indicated by the star sign next to the value.

Table 4: Correlation co-efficient between technostress and workload (n=132)

Scale	Techno-stress	*Techno-overload	*Techno-invasion	*Techno-complexity	*Behavioral stress	Workload
Technostress	-	0.84**	0.77**	0.71**	0.55**	0.56**
*Techno-overload	-	-	0.67**	0.32**	0.45**	0.44**
*Techno-invasion	-	-	-	0.24**	0.48**	0.53**
*Techno-complexity	-	-	-	-	0.37**	0.37**
Behavioral stress	-	-	-	-	-	0.74**
Workload	-	-	-	-	-	-

Notes: **p<0.01; * Subscales of technostress scale

Table .4 shows the correlation coefficient (r) values of all the variables. The correlation coefficient between Technostress and Behavioral stress is r = .55 indicating strong correlation with significant p value (0.05). The sign of the coefficient is positive which means positive (direct) relationship exists between these variables, which means if one is increasing then other is increasing as well. The correlation coefficient between Technostress and workload is r = .56 indicating strong positive correlation which is significant p value. The correlation coefficient between Behavioral stress and Workload is r = .74 indicating strong positive correlation with significant p value. The positive sign indicates that there exists a positive relationship between these variables.

4.6. Regression Analysis

After determining the correlation coefficient which indicated a positive correlation (but it does not recognize and differentiate between Independent and dependent variables) between independent variable Technostress, Workload and Behavioral stress, Regression analysis was carried out to analyze the impact of Technostress (Independent variable) and Workload (Independent variable) on Behavioral Stress (Dependent variable). Linear Regression operation in SPSS was used. In simple linear regression analysis, Technostress abbreviated as Tech and workload was regressed on Behavioral stress abbreviated as Beh_stress. Before running the test, assumptions of the regression was carried by checking normality, linearity, homoscedasticity and independence (the graphical presentation of the normality of the data is present in appendix).

Table 5a. Model Summary

Model	R	R Square	AdjustedR Square	Std. Error of the Estimate
1	.760[a]	.577	.571	4.81483

a. Predictors: (Constant), total_techno_stress, sum_workload

Table 5b. Coefficients

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**p**
		B	**Std. Error**	**Beta**		
1	(Constant)	2.554	1.791		1.426	.156
	sum_workload	.788	.087	.628	9.021	.000
	total_techno_stress	.164	.057	.200	2.876	.005

a. Dependent Variable: beh_stress

In the Table. 5a, adjusted R square value shows the level of prediction of dependent variable, in this case the value of R is .571, which is significant. The value of R square explains the level of variance in dependent variable due to independent. Table. 5b presents the unstandardized and standardized beta coefficients and significant value of the model. In model

1, the beta value of technostress (b = .20) shows positive value and p value (p<0.05) shows significance at all three levels (this means 95% t distribution closer to the mean) which means coefficients are not zero and they are different than zero. Thus, In this case, Independent variable Technostress accounts for 20% variance in dependent variable. The adjusted R square value identifies the exact change that is produced in dependent variable, which means that 1 unit change in independent variable, will cause 20% change in dependent variable. In this case, adjusted R square value identifies 20% change in dependent variable. The positive beta value shows there is direct relationship between Independent (Predictor) and dependent variable (Outcome Variable) that is for every 1-unit change in Technostress (Predictor), the dependent variable (Behavioral Stress) will decrease by .20 units (20%). These significant values (p<.05) support the fist Hypothesis, H1 that is: Higher technostress will lead to higher behavioral stress among academics working from home during COVID-19 pandemic.

Thus, first hypothesis is accepted. Simple linear equation would be:

Thus, b (.20) is the slope of the line and A (2.552) is the Y intercept

Where Y is dependent variable (Behavioral Stress) that is being predicted by independent variable (Technostress), and b (.20) is coefficient of the independent variable that tells the effect Technostress (Independent variable) have on Behavioral Stress (Dependent variable). The regression equation is showing that Behavioral Stress is predicted to increase by .20 (20%) when there is 1-unit increase in Technostress.

Similarly, Table 5a shows regression analysis of workload and Behavioral stress. In the Table. 5a, adjusted R square value shows the level of prediction of dependent variable, in this case the value of adjusted R square of workload is .571, which is significant. The value of R square explains the level of variance in dependent variable due to independent. The table. 5b presents the unstandardized and standardized beta coefficients and significant value of the model. In model 1, the beta value of workload (b = .628) shows positive value and p value (p<0.05) shows significance at all three levels (this means 95% t distribution closer to the mean) which means coefficients are not zero and they are different than zero. In this case, Independent variable workload accounts for 62% variance in dependent variable. The adjusted R square value identifies the exact change that is produced in dependent variable, which means that 1 unit change in independent variable, will cause 62% change in dependent variable. In this case, adjusted R square value identifies 62% change in dependent variable. The positive beta value shows there is direct relationship between Independent (Predictor) and dependent variable

(Outcome Variable) that is for every 1-unit change in workload (Predictor), the dependent variable (Behavioral Stress) will decrease by .62 units (20%). These significant values ($p<.05$) supports the seconds Hypothesis, H2 that is: Increased workload will lead to increased behavioral stress among academics working from home during COVID-19 pandemic.

Thus, second hypothesis is accepted. Above regression analysis is done without including moderator and interaction term and simple linear equation would be:

Thus, b (.62) is the slope of the line and A (2.552) is the Y intercept

Where Y is dependent variable (Behavioral Stress) that is being predicted by independent variable (Workload), and b (.62) is coefficient of the independent variable that tells the effect Workload (Independent variable) have on Behavioral Stress (Dependent variable). The regression equation is showing that Behavioral Stress is predicted to increase by .62 (20%) when there is 1-unit increase in Workload.

Table. 6 Summary of Results

Hypothesis	**Results**
H1: Higher technostress will lead to higher behavioral stress among academics working from home during COVID-19 pandemic	**Accepted**
H2: Increased workload will lead to increased behavioral stress among academics working from home during COVID-19 pandemic.	**Accepted**

Chapter 5: Discussion and Conclusion

5.1. Discussion of the Findings

The current study was conducted to identify the significant relation that exists between Technostress, Workload and Behavioral Stress of academics who have worked or are working from home during COVID-19 Pandemic. The impact of Technostress and workload on behavioral stress of employees during COVID-19 has been investigated in Italy (Molino et al., 2020), but not in Pakistan. Also, no study has been empirically conducted on Technostress and Behavioral stress during a pandemic or in humanitarian crisis. As conceptual framework on technostress creators, workload and behavioral stress was proposed by Molino et al., (2020) but the study does not practically investigate the relationship of technostress and Behavioral stress instead it proposes indirect relationship between workload technostress creators (where techno creators act as mediators) and Behavioral Stress. Thus, this is the one of its own kind of study that is conducted in Pakistan which proposes and practically investigated the impact of technostress, workload as independent variables on Behavioral Stress during a pandemic.

5.1.1 Technostress on Behavioral Stress

The results of this study revealed that there exists a strong positive (direct) relationship between technostress and Behavioral Stress. This means that Technostress positively impacts the Behavioral stress of the employees during COVID-19 emergency i.e. when technostress is high the behavioral stress is high as well i.e. when employees are feeling technological anxiety and stress they will show more behavioral symptoms of strain such as anger, frustration, lack of initiative, eating disorder, agitation and lack of social activity. The descriptive analysis of the study showed mean and extreme responses of the respondents. Most of the respondent scored high on items that describe physical fatigue, tension and anxiety. This could be interpreted from the results that due to continuous use of technology in daily office work could cause tension, fatigue and anxiety among employees. However, some respondent showed extreme score on Techno-complexity which can indicate social desirability factor i.e. people want to maintain good image and do not response self-evaluating questions objectively. Rather it is possible they may respond what they believe is socially desirable than their true responses. The overall score of the respondent lie on the average which explains the moderate level of technostress among employees.

The results of the study are consistent with previous literature that showed positive relationship between technostress creators and physical stress (Tarafdar et al., 2007; Tarafdar et al., 2011). They collected data from 223 organizations and the result of the study indicated

when there is high level of technostress among employees, due to intrusion of technology in personal lives, consistent and over usage of technology in their daily office work, which is consistent with the results of current study. As Weinert (2016) said that individual when receive excessive emails and messages experience negative psychological effect such as anxiety which reduces their performance. In the organizational context Tafadar et al. (2005) studied the impact of technological stress in American organizations. The results of the study revealed that employees are not only suffering from technology related stress but in fact its reducing their productivity.

Tarafdar et al. (2011) explains that when people get anxious, and stressed by technologies they show negative physical behavior such as lack of initiative. Also because of their negative association with the technology they are unable to adopt technology related work requirement (Weil & Rosen, 1997). This finding is also evident in present study as most of the responses of the employees were high on anxiety and physical pain. Another study on library managers and their new technology usage and handling in daily office work was done by Van Fleet and Wallace (2001). The findings of the study showed that due to constant change in technology at work caused technostress among librarians'. The results of the present study are certainly in accordance with results of the previous studies (Wallace et al., 2001; Tarafdar et al., 2011). As both identified increase technological anxiety and stress among employees.

Another supporting evidence for the current study is from the findings of the studies done by Agboola (2011) and Yap, Chia, Tan, Ter and Toh (2013). They studied the impact of technological stress among auditors. The results of the study are also supported by the findings of Yuvaraj and Singh (2015) who evaluated the impact of daily usage of technology on the job performance of librarian. The study was conducted on 200 librarians in Dehli, India. The findings of the study revealed that due to daily usage of the technology in their work, they suffer from sever technostress. These results are in accordance with the claim made by Ragu-nathan et al. (2008) who explored the effect of stress caused by computer and information technology on the individual productivity. The paper highlights different dimensions of technostress and their relationship with the stress.

The findings of his study are supported by work-related stress model (Kompier & Marcelissen, 1990). The model explains the consequences of the over usage and exposure to technology and its stress factors.it also explains that the reactions shown by employees' due to increase stress could be of various form, like emotional reactions, cognitive and behavioural

reactions. The model also explains the long-term consequences associated with the technostress. MacLeod (1996) suggested that anxiety affects the cognitive process of the individual thus affecting his cognitive performance (task Performance) as most of the mental ability is being used in irrelevant information processing. Thus, districting the individual from performing the tasks at hand. Thus, supporting the results of the current study.

One plausible explanation of increased anxiety and tension could be that; although technology has provided an alternative and quick solution to organizations during a pandemic but the increase IT inclusion in the work has caused employees to be available 24/7. Now due to these technologies employees can be reached by organizations all the time, this 24/7 availability could be another cause of anxiety as it is invading their personal life. As employees are quarantine they are confronted with family obligations at the same time (Molino, 2020). Also, they are not physically visible to the employers they might be expected to work harder than before to meet new technological demands (Suh & Lee, 2017). This all-time availability of the employees and usage of technology to do their office work during COVID-19 emergency caused anxiety, fatigue, and physical pain among employees working remotely from home.

5.1.2. Workload and Behavioral Stress

The results of the current study revealed an interesting finding that is workload acting as an independent variable accounts more stress alone among academics than technostress. There exists a positive direction relationship between Workload and Behavioral Stress. This means that there if there is more workload, employees will experience more behavioral stress. That is, when employees are faced with increase work assignments, overtime at work and have to work on holidays, they feel tired, agitated lack of energy and concentration to complete work. These findings are consistent with previous studies (Molino, 2020; Hoeven & Zoonen, 2015).

Another supporting evidence for the underlying cause of the technostress comes from the findings of Rosen, Chang, Djurdjevic, and Eatough (2010). The findings of his study indicate different stress creating situations that add into technostress for employees like workload, work role, job control and interpersonal characteristics etc. These factors cause stress among employees.

A study conducted on police employees revealed that during uncertain times such as the current one (COVID-19 emergency) police employees have to work extra hours as they are responsible for the law and order. The results of the study indicated direct effect of workload on employee stress level (Sadiq, 2020).

Drawing upon transactional model of stress and coping, the current study argues that workload is the external demand or a stressor which is consuming employee's psychological energy. As employees when unable to meet such demands due to constrain of resources at their disposl, they experience stress (Lazarus & Folkman, 1984). For example, in the current quarantine situation where employees are confronted with household responsibilities and work tasks within the same environment, individual experience lack of resources to meet such demands and thus, may experience stress. As explained by Cherniss (1980), individuals experience work related stress in the form of physical tension when job demands exceed individual resources.

The results of the study fill the gap that exists in literature of technostress and its impact on employee wellbeing in an emergency situation like the current COVID-19 Pandemic. It is to be well noted here that, the current COVID-19 emergency situation in Pakistan has been better than any other country and recently the Government of Pakistan has lifted the complete locked down and implemented smart locked down in COVID-19 hot spots (Government of Pakistan, 2020).

5.2. Conclusion of the study

The aim of the current study was to investigate the impact of Technostress and Workload on Behavioral Stress of academics working from home during COVID-19 Emergency. The purpose of the study was to fil the gap that was identify and to study the impact of technostress in uncertain and international emergency situations like a pandemic. The study used transactional model of stress and coping (Lazarus, 1984) as a theoretical base. The proposed hypotheses of the model were tested. The data analysis was done using Statistical Program for Social Sciences (SPSS) 20.0 version and regression analysis was conducted.

The research on technostress in an organizational context is in its initial stage. There exists a lack of theoretical background and empirical studies that explain the work-related stress phenomenon that effects the employee performance. This lack of knowledge about technostress in an organization could be fatal to the decrease employee performance. As the study done by Tarafdar et al. (2007) explained that technology related stress is indirectly related to the employee productivity at work. Other than that, increased usage of technology and its intrusive nature creates an imbalance between work life and personal life which also contributes to the technological stress. The results of the study showed that increased level technology usage in

organizations cause stress and confusion in employees and this stress and increased work requirements effect the employee ability to work effectively.

The findings of the study, explaining the relationship between technostress, workload and behavioral stress were in accordance with the results of the previous researches. However, the study is unique in a form that it informs the literature when it comes to investigating technostress and workload during an emergency situation like a pandemic in Pakistani context. The results of the study indicate that Technostress has strong positive (direct) impact on behavioral stress of the academics working from home during COVID-19 emergency. This means when technostress experienced by the employees is high, the behavioral stress of the employees will be high. Also, the results of the study indicated that workload is also a strong predictor of behavioral stress among employees working from home during Covid-19 pandemic. This means that when workload is high, the behavioral stress experienced by the employees will be high. The interesting finding of the study was that workload alone predicts more stress in employees than technostress. This means that employees experienced more behavioral stress due to workload than the technostress. The one possible explanation of this could be that as although employees are working from home and are given flexible working hours, however, this might mean employee have no specific start and off time and thus, they might be working more than they would usually do in office settings with specific start and off time. Now due to technology and quarantine the employees are accessible 24/7 at homes (Molino, 2020).

5.3. Limitations of the study

The current study is subjected to many limitations and addressing them will make the study more refined, and reliable in nature. As the current study is being conducted during a pandemic under a lockdown, thus all the data collection was done remotely using online platform google.docs. This limits the sample of the data. Due to limited time constraint of the study, the sample size was 183 restricted to academics working in Rawalpindi and Islamabad, which is one of the limitations of the study. Also, an exclusion criterion has been applied in which people not working from home have been excluded. The second limitation of the study is convenient sampling technique used for data collection. Another limitation of the study is that it is cross-sectional research that is the data was collected at one point in time, other study designs such as longitudinal can be applied to test causal relationships among these variables across time. Another limitation of the study is that there was no inclusion of control variables such as type of the organization, communication used in the organization, experience and

gender which could possible effect the results of the study. Another limitation is self-reporting of the data which can include personal bias in answering the questions especially complexity of technology and work productivity related questions. As it is possible that responded may have responded what they believe is socially desirable than their true responses.

5.4. Future recommendation

There is still lack of empirical literature around technostress at organizational and employee level especially in emergency situations. There are many areas that could be study to understand technostress.

The current study was conducted to investigate the impact of technostress and workload on behavioral stress of the academics working from home during COVID-19 pandemic. However, further studies can be conducted to understand the moderating or mediating factors on the technostress and workload on behavioral stress.

Also, the current study is being conducted in COVID-19 emergency situation, further should be conducted in a traditional setting to conform the findings of the study in traditional settings. Future researches can check the generalizability effect of the present study. Future researchers can include dimensions of the technostress (such as technology hassles) to identity its impact at organizational level that showed technological break downs caused stress among employees (Day, Paquet, Scott, & Hambley, 2012).

Further, investigation in identifying antecedents of technostress is need to better understand the underlying factors of technostress. As this will also help human resource professionals to develop trainings and programs tailored to reduce the effects of technology.

Additional, there is a possibility that the current pandemic situation might have accelerated the stress level or high work or social demands and working behavior of the people. Thus, people might have adopted some unhealthy patterns which need to be investigated as they might contribute towards stress experienced by employees.

Further, understanding factors like role conflict, work-family conflict and social demands can be investigated to understand the impact of technostress and workload on employee well-being. Future studies can also investigate the work-life balance as an outcome measure to better understand the impact of technostress and workload. Previous studies (Wang et al., 2008; Yuvaraj & Singh, 2015) it is observed that organizations with more technological

involvement experience more technostress thus, further studies can incorporate control and conditional variables such as organizational type, experience and profession.

5.5. Implications for practice

5.5.1. Theoretical implications

The current study contributes to the literature of technostress and workload in the context of emergency situations like pandemic. Previously, technostress and workload has been study in the usual work environment thus, studying the effect of technology and workload in the unprecedented environment such as current COVID-19 emergency provides the study a unique setting. One of the interesting find of the study that workload has more effect on behavioral stress of the employees than technostress Thus, further studies can be conducted to investigate the moderating or mediating role if workload on stress.

5.5.2. Practical Implications

Remote working solutions are aimed at facilitating the employees and improving quality of work and personal life of employees. Nevertheless, technology has its negative consequences as well as confirmed by the current study. Thus, practical steps could be taken by organizations, managers and supervisor to combat such effects.

Firstly, managers and supervisor need to monitor the workload levels and work requests made to the employees. Due to 24/7 availability of the workers due to remote working and technology (internet connect) has created a lot of mental and physical challenges for the employees. Because of the home-based nature of the remote working, work related demands always exceed normal working workload and timings which can cause unprecedented consequences on employees' wellbeing (Molino, 2020). To combat this change, there is need to be a boundary or a balance between work and home life. Such changes are to be made at the cultural and organizational level. Since the COVID-19 emergency has already forced work from home, organizations can take this opportunity to develop new norms and practice to make remote working effective in terms of health outcomes.

However, in the midst of the pandemic there is likely to be more job demands and thus employees would need more support from the organization to maintain a balance. Thus, employee wellbeing plans such as scientific interventions to provide psychological support to employees becomes critical. Immediately psychological and wellbeing resources could be providing counselling service training to assist in work, feedback, support, encouragement from managers and supervisors etc.

Further works and supervisor should be aware of the harmful side effects of ICTs. Over usage of these ICTs in the emergency situations like the current one can increase stress among employees working remotely. Thus, it becomes important that training and communication programs are developed to help employees and managers understand phenomenon of technostress.

Understanding technostress phenomenon can help managers and organizational leaders to develop training and prevention programs and interventions and human resource practices around technostress problems at workplace.

Remote working during COVID-19 emergency situation has helped organizations save operational costs and develop new human resource management practices. Thus, organization can involve employee in development and implementation of remote working programs. Also, the pandemic may have caused organization to redesign job in the context of COVID-19 emergency.

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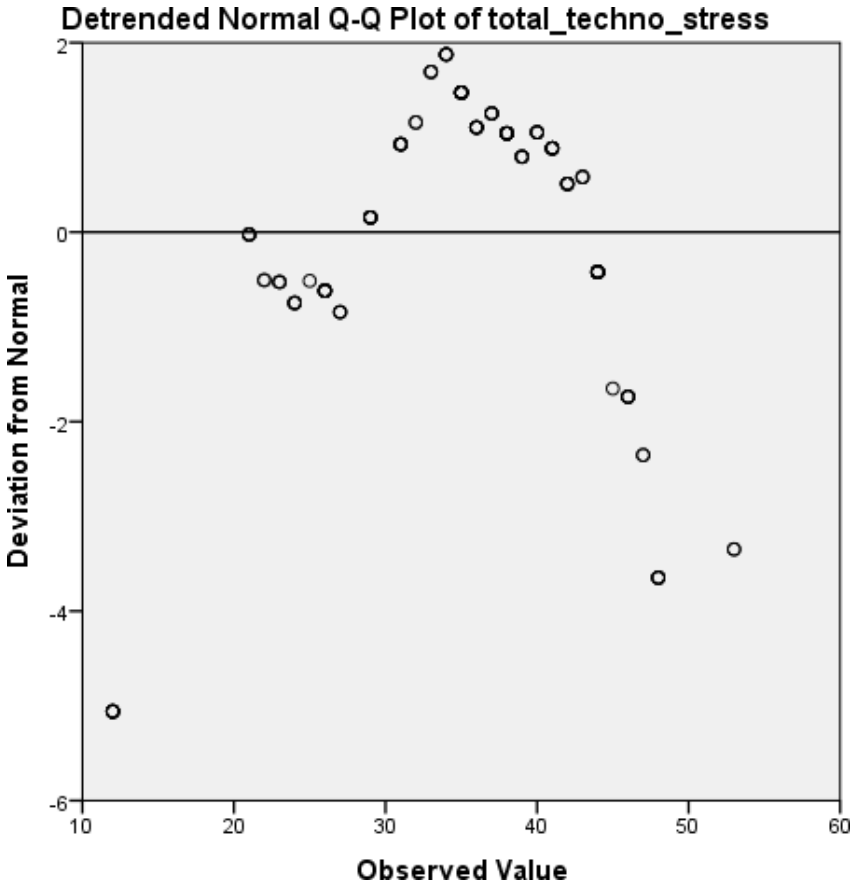
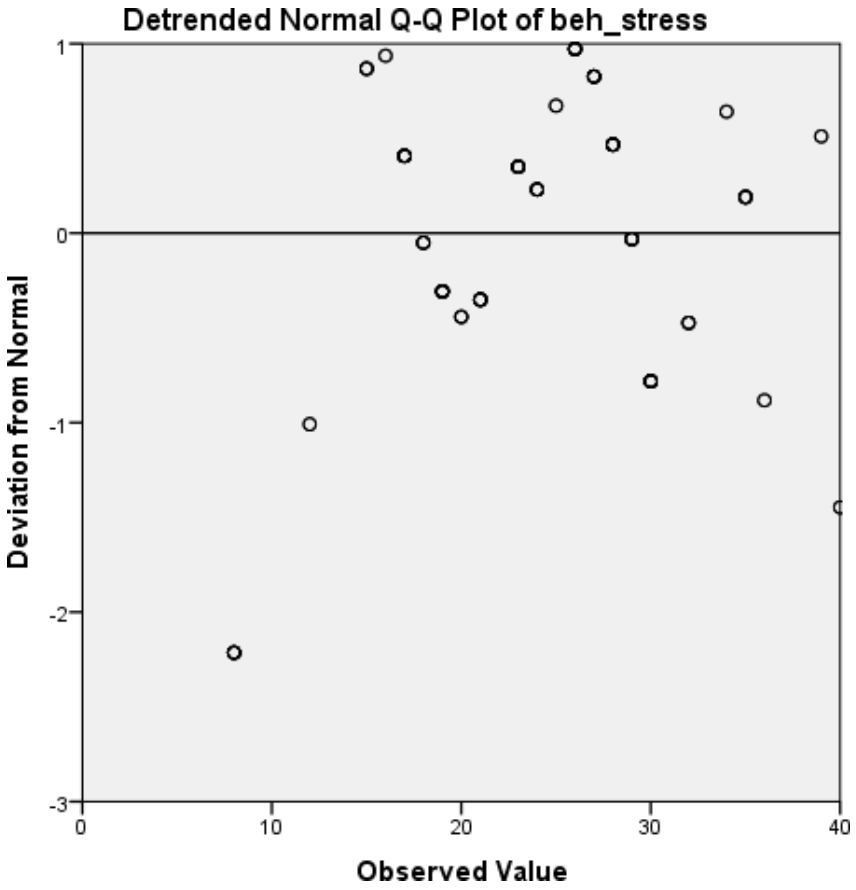
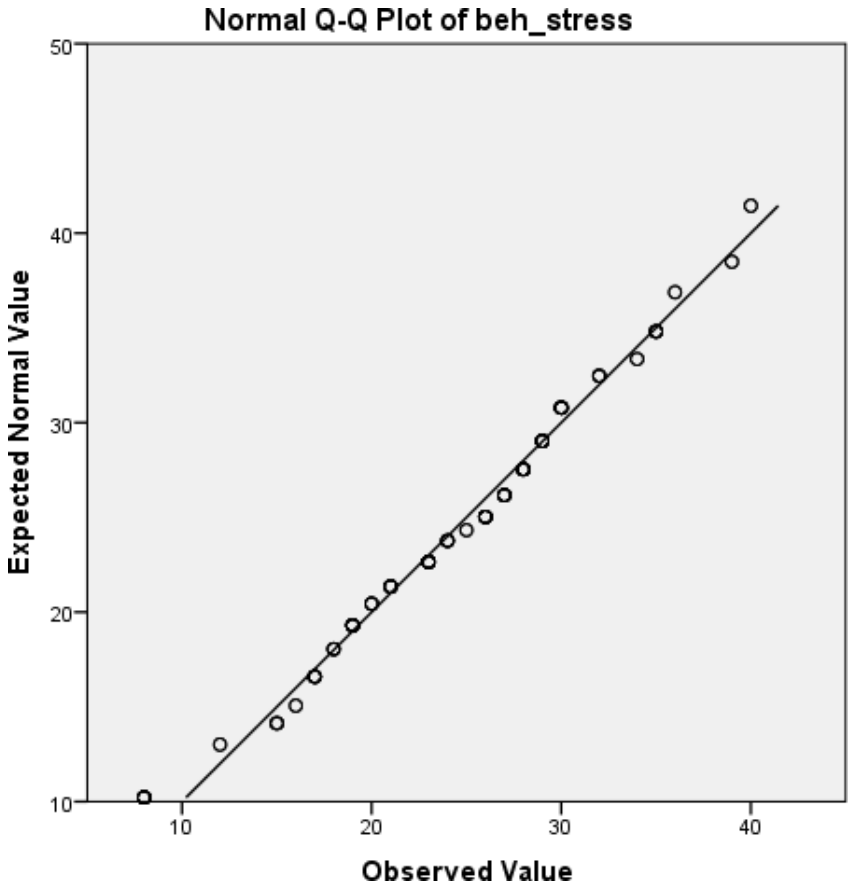
Appendixes

Assumptions of regressions




Detrended Normal Q-Q Plot of beh_stress
Deviation from Normal
Observed Value
1
0
-1
-2
-3
0
10
20
30
40


Normal Q-Q Plot of beh_stress
Expected Normal Value
Observed Value
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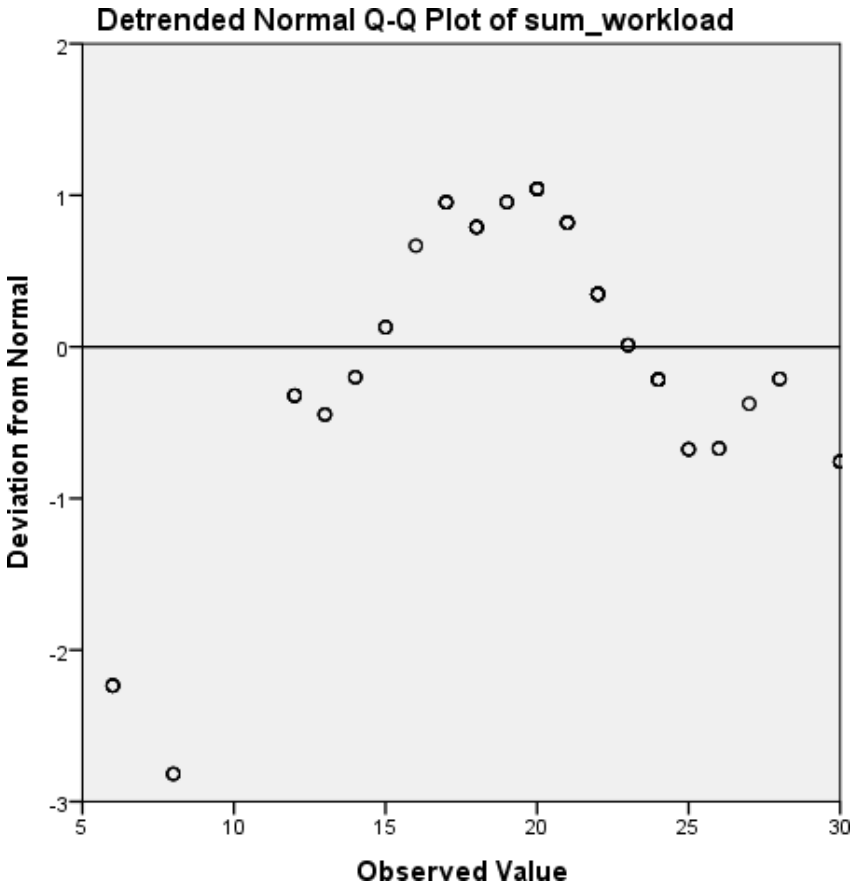
30
20
10
10
20
30
40


Detrended Normal Q-Q Plot of sum_workload
Deviation from Normal
Observed Value
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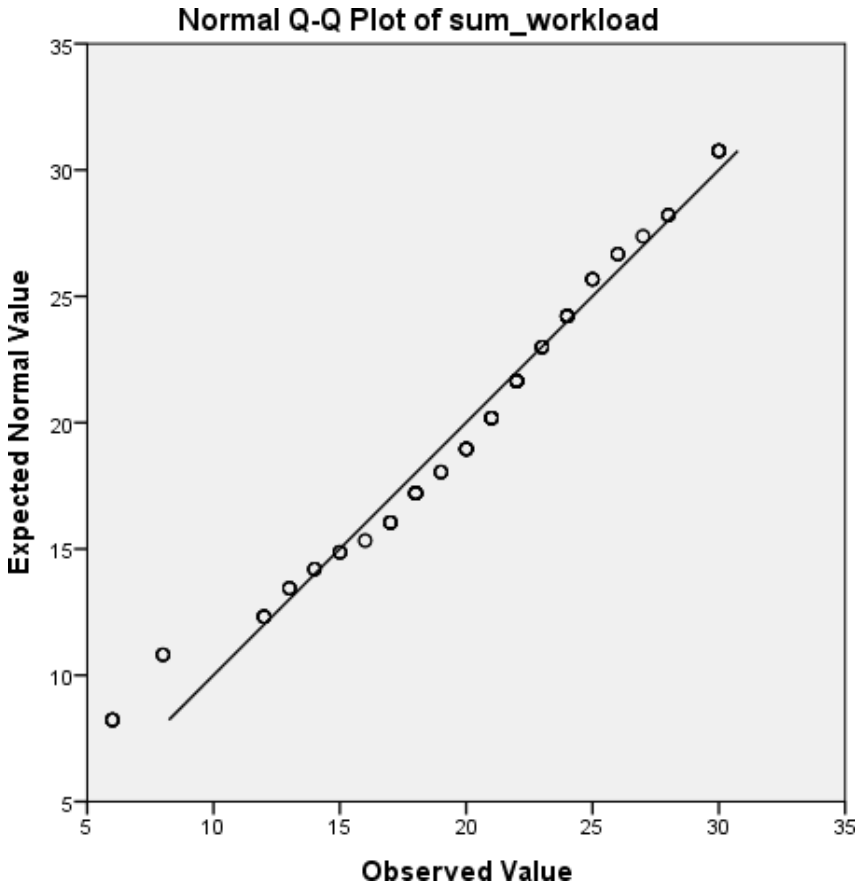
-1
-2
-3
5
10
15
20
25
30


Normal Q-Q Plot of sum_workload
Expected Normal Value
Observed Value
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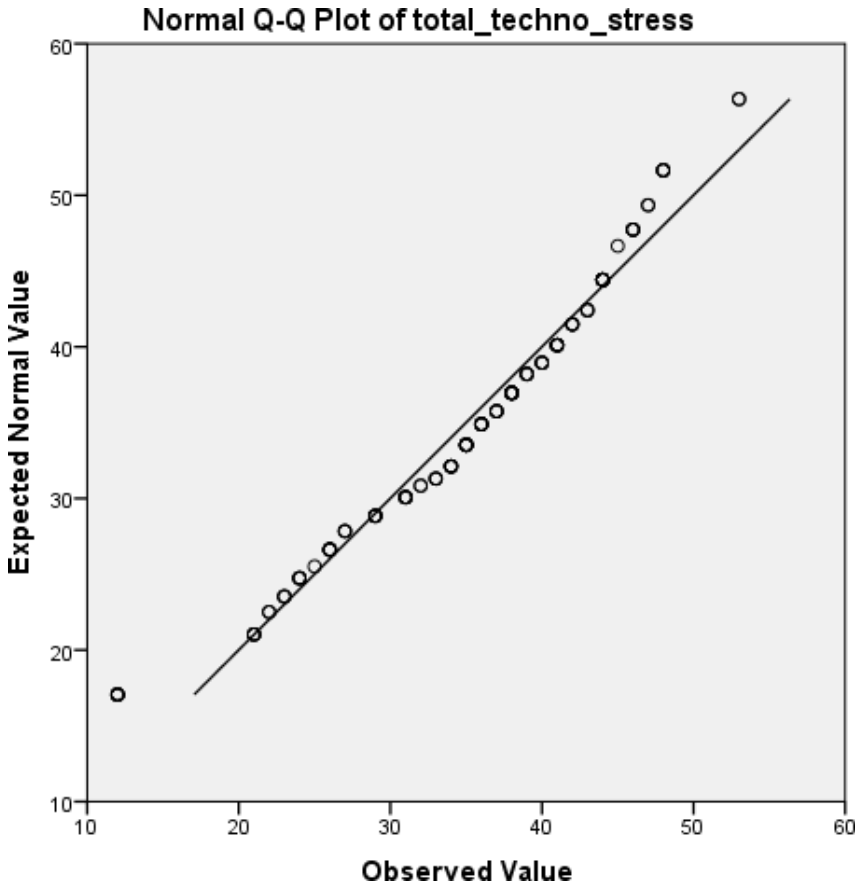
10
15
20
25
30
35


Normal Q-Q Plot of total_techno_stress
Expected Normal Value
Observed Value
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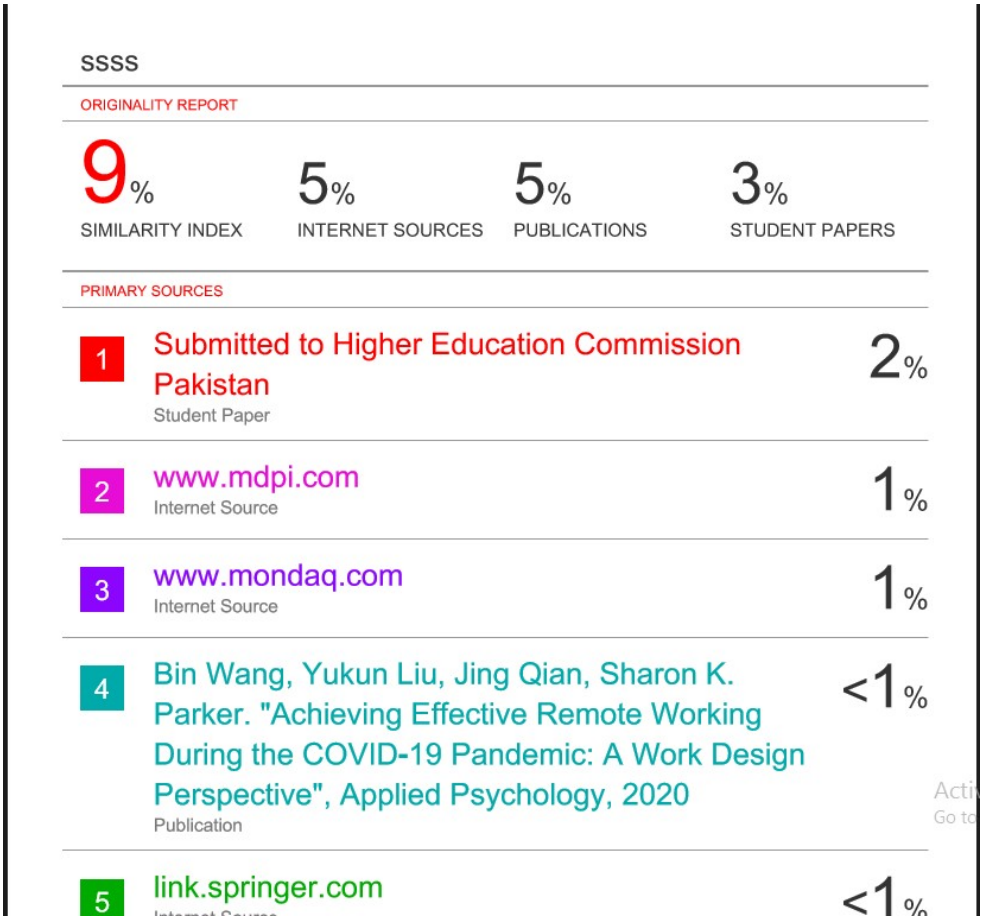
20
30
40
50
60

Plagiarism Report



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Progress Reports

1st Half Semester Progress Report

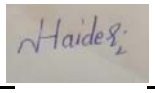
Name of Student(s)	Kaukab Naeem
Enrollment No.	01-321192-049
Thesis/Project Title	Impact of technostress and workload on behavioural stress during Covid-19: A cross sectional study

Supervisor Student Meeting Record

No.	Date	Place of Meeting	Topic Discussed	Signature of Student
1	18th October 2020	Via Zoom	Thesis's topic was discussed and decided	Kaukab Naeem
2	23rd October 2020	Via WhatsApp	Study Initiation (Discussion on the initial approach for starting the study)	Kaukab Naeem
3	26th October	Via Email and WhatsApp	Discussion of literature Review write-up, outcome measures and methodology	Kaukab Naeem
4	2nd November	Via Email	Research Proposal Submission along with finalized outcome measures	Kaukab Naeem

Progress Satisfactory ☐ Progress Unsatisfactory ☐

Remarks: She is hard working student and completed her thesis on time.

Signature of Supervisor:  Date: 30/12/2020

Name: **Dr. Syed Haider Ali**

Note: **Students attach 1st & 2nd half progress report at the end of spiral copy.**

2nd Half Semester Progress Report & Thesis Approval Statement

Name of Student(s)	Kaukab Naeem
Enrollment No.	01-321192-049
Thesis/Project Title	Impact of technostress and workload on behavioural stress during Covid-19: A cross sectional study

Supervisor Student Meeting Record

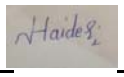
No.	Date	Place of Meeting	Topic Discussed	Signature of Student
5	10th November 2020	Via Email	Revised research proposal as per supervisor's feedback	Kaukab Naeem
6	12th December, 2020	Via WhatsApp	Data Collection	Kaukab Naeem
7	22nd December, 2020	Via WhatsApp	Discussion on results and analysis	Kaukab Naeem
8	30th December 2020	Via WhatsApp	Finalizing the thesis along with approval from supervisor	Kaukab Naeem

APPROVAL FOR EXAMINATION

Candidates' Name: Kaukab naeem Enrollment No: 01-321192-049

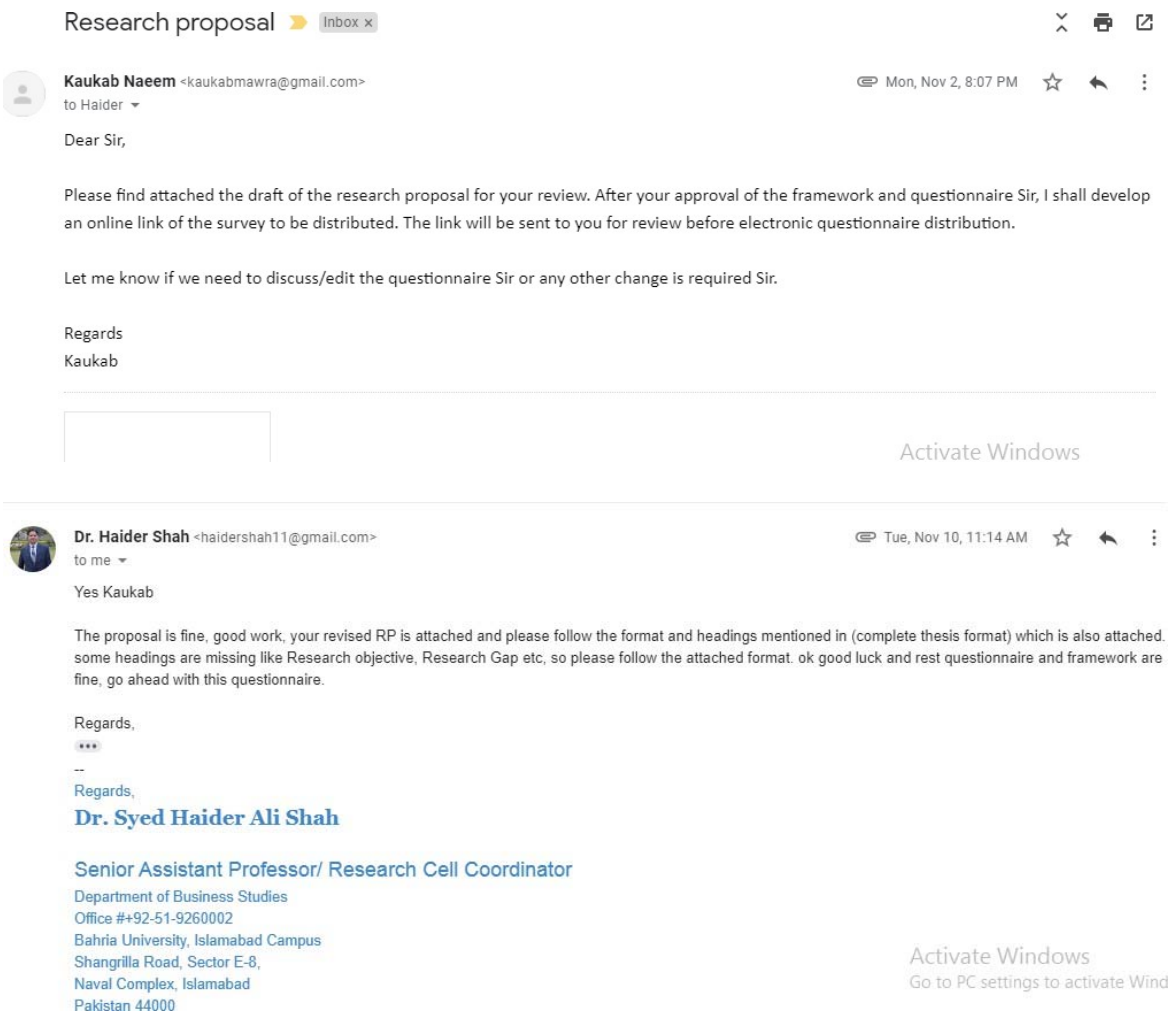
Project/Thesis Title: Impact of technostress and workload on behavioural stress during Covid-19: A cross sectional study

I hereby certify that the above candidates' thesis/project has been completed to my satisfaction and, to my belief, its standard appropriate for submission for examination. I have also conducted plagiarism test of this thesis using HEC prescribed software and found similarity index at_ that is within the permissible limit set by the HEC for thesis/ project MBA/BBA. I have also found the thesis/project in a format recognized by the department of Business Studies.

Signature of Supervisor:  Date: **30th December 2020**

Name: **Dr. Syed Haider Ali**

Submission of proposal



Research proposal Inbox ×

Kaukab Naeem <kaukabmawra@gmail.com> Mon, Nov 2, 8:07 PM
to Haider

Dear Sir,

Please find attached the draft of the research proposal for your review. After your approval of the framework and questionnaire Sir, I shall develop an online link of the survey to be distributed. The link will be sent to you for review before electronic questionnaire distribution.

Let me know if we need to discuss/edit the questionnaire Sir or any other change is required Sir.

Regards
Kaukab

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Dr. Haider Shah <haidershah11@gmail.com> Tue, Nov 10, 11:14 AM
to me

Yes Kaukab

The proposal is fine, good work, your revised RP is attached and please follow the format and headings mentioned in (complete thesis format) which is also attached. some headings are missing like Research objective, Research Gap etc, so please follow the attached format. ok good luck and rest questionnaire and framework are fine, go ahead with this questionnaire.

Regards,
•••
--
Regards,
Dr. Syed Haider Ali Shah

Senior Assistant Professor/ Research Cell Coordinator
Department of Business Studies
Office #+92-51-9260002
Bahria University, Islamabad Campus
Shangrilla Road, Sector E-8,
Naval Complex, Islamabad
Pakistan 44000

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Table 1. Questionnaire Design

Variable	No. of items	Adopted from
Technostress (Techno-overload)	**Question No1**: I am forced by technology to work much faster	Tarafdar et al., (2007)
	Question No2: I am forced by technology to do more work than I can handle	
	Question No3: I am forced by technology to work with very tight time schedules	
	Question No4: I am forced to change my work habits to adapt to new technologies	
Techno-invasion	**Question No5:** I spend less time with my family due to technology	
	Question No6: I have to be in touch with my work even during my vacation due to technology	
	Question No7: I feel my personal life is being invaded by this technology	
Techno-complexity	**Question No8:** I do not know enough about technology to handle my job satisfactorily	
	Question No9: I need a long time to understand and use new technologies	
	Question No10: I do not find enough time to study and upgrade my technology skills	
	Question No11: I often find it too complex for me to understand and use new technologies	
Behavioural stress	**Question No1:** I have not wanted to speak with anyone/have been withdrawn	Psychosocial Department, National Institute of Occupational Health,

		Copenhagen, Denmark (2003)
	Question No2: I have not been able to stand dealing with other people.	
	Question No3: I have not had the time to relax or enjoy myself.	
	Question No4: I have found it difficult to be happy.	
	Question No5: I have eaten for comfort. **Question No6:** I have been a bit touchy	
	Question No7: I have lacked initiative.	
	Question No8: I have felt harassed.	
Workload	**Question No1:** I experience excessive work pressure	Kuei et al, (2002)
	Question No2: I work for long hours, on overtime and even on holidays.	
	Question No3: I am unable to meet out the demands of my job.	
	Question No4: I spend so long at work that my outside relationships are suffering.	
	Question No5: I'm so busy I find it increasingly difficult to concentrate on the job in front of me.	
	Question No6: I feel tired during the day due to excessive work load.	