Pages: 127 – 137 | **Vol.** VIII, **No.** I (Winter 2023) | **DOI:** 10.31703/ger.2023(VIII-I).12

URL: http://dx.doi.org/10.31703/ger.2023(VIII-I).12 | Global Economics Review (GER)

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The Impact of Technology-induced Role Overload and Technology Induced Role Ambiguity on Job Performance: A Mediating Role of Technostress

Tayyaba Mehmood [*] Aisha Naeem [†] Junaid Arshad [‡]

p-ISSN: 2521-2974 | **e-ISSN:** 2707-0093 | **L-ISSN:** 2521-2974

Citation: Mehmood, T., Naeem, A., & Arshad, J. (2023). The Impact of Technology-induced Role Overload and Technology Induced Role Ambiguity on Job Performance: A Mediating Role of Technostress. *Global Economics Review, VIII*(I), 127-137. https://doi.org/10.31703/ger.2023(VIII-I).12

Abstract: *The purpose of this research is to examine employees in software businesses are subjected to a high degree of technological stress, as well as multiple strains such as excess, role unpredictability, conflicts over responsibilities for people participation, a dearth of input, and maintaining up with advances in technology. We first theorize the linear and curvilinear relationships for each of the ICT-enabled employee innovations and then test the proposed relationships by conducting a survey on institutional employees. This study looks into the relationship between technostress, role ambiguity, technology-induced overload, and job performance among workers of Pakistani software organizations. The response data were examined using correlation and regression to ensure reliability. The results indicate a substantial positive link between technology-induced role overload, role ambiguity, technostress, and job performance. The findings provide a deeper understanding of the character of distinct technostress drivers and their interactions with ICT-enabled staff creativity.*

Key Words: Technology Stress, Employee Innovation, Technology induced Overload, Job Performance and Technology-Induced Role Ambiguity

JEL Classification:

Introduction

Since the outbreak of (COVID-19), an unstoppable illness produced by the serious intense respiratory disorder Covid 2 (SARS-CoV-2) a changed infection that is less destructive in India, the world has shifted to remote working or work-from-home idea anywhere feasible (Sellberg & Susi et al, 2014). The availability of tools like group watcher, splash top, Microsoft remote work area, zoom, Microsoft Groups, and Owl are parts of the specialized devices required for remote working, work prioritization is accounted for, and plans are provided. According to the SCIKEY Mind Match survey, 99.8% of IT workers are unprepared for long-distance work, as reported in the Economic Times (Tarafdar, & Turel et al, 2014)

The globe has been hit by the ramifications of the covid 19 epidemic as early as 2020. Pakistan is one of the affected countries; will sectoral steps be implemented

[*] PhD Scholar, Department of Economics, Superior University, Lahore, Punjab, Pakistan.
[†] Deputy Director Academic, Director General Secretariat, Superior University Sub Campuses, Lahore, Punjab, Pakistan.
[‡] Lecturer, Department of Economics, Superior University, Lahore, Punjab, Pakistan.

Corresponding Author: Tayyaba Mehmood (PhD Scholar, Department of Economics, Superior University, Lahore, Punjab, Pakistan. Email: Tayyba.mehmood@superior.edu.pk)

to avoid the spread of the disease? Job performance is the quantity and quality of work expected from a staff member to do well during a particular job, which is usually determined by incentive and thus reflects the employee's will and capacity to try to excel. Technology and the part it plays in our daily actions have advanced steadily in recent years. As a result, there is a rising notion that rapid technological development is to blame for the inclusion of symptoms of tension in our lifestyles. (Azlina AB & Siti et al, 2019)

Like the word "stress," "technostress" has been described in many different methods- sometimes by the same researcher - that its usefulness as a concept is debatable. (Fisher, 1996). Craig Brod's description, which is still widely used, characterizes technology stress in our lives as "a modern disease of adaptation caused by an inability to deal with new technologies in a healthy manner". According to Brod's definition definitely deserves more investigation than it has gotten.

Job Overload "has extensive coverage with work overload". It occurs when reps are faced with numerous job requirements based on the time available. (Taber, 1976). Representatives are motivated to work harder and modify their plans as a result of innovation. (Boyle, 2002). The company should spend additional time learning how to incorporate developments into its daily techniques. This requirement frequently results in an excess of tasks to complete well (Król, 2017), which generates or increases work overburden. A notably excessive number of tasks may also occur if dubious innovation empowers representatives to repeat the computerized framework.

Furthermore, by generating uncertainty about expected work practices, technology may encourage employment ambivalence. (Beehr et al., 1976). Role uncertainty can be triggered by a dearth of knowledge about particular authority roles, but it can also be ascribed to the raising incorporation of technology into governmental experiences. For instance, when there are a few instructions to assist FLEs in working with disseminated technology, they must depend on data to finish their duties.

Furthermore, position uncertainty can occur when a client's demands contradict fundamental evaluations of the communicated technological advances or when clients gripe about automated measures. (Zhang, 2010). Ambiguity about whether and how much employees of an organization should handle technology-related problems instead of the core tasks of their specific employment is referred to as technology-induced role uncertainty. Job overload and job uncertainty are both examples of "obstruction work requests," which are unwelcome constraints that prohibit lofty goals from being met. (LePine, 2005). In accordance with the COR theory, representatives perceive this job demands as risky to their valuable possessions and thus upsetting. (Wijnberg, 2017). If the use of technological developments and the rate at which they are implemented cause work-related worry.

There is still a gap in the writing on tension caused by technology (Tarafdar, 2015). Yet there have been many requests for research into the tense conflict between the utilization of ICT and novel forms of labour. Recognizing technology-induced stress and its link to role abundance and role uncertainty is critical. It is particularly true during times of intense shift, such as right now, where the natural catastrophe has had psychological ramifications for people and has impacted several employment-related operations. Employment conditions deteriorated, while many workers' family and work obligations grew.

As a result, it is critical to investigate the region in which digital advancement in technology expectations up-shot in FLE technostress. As people recognize job overload resulting from the frequent utilization of technology in different ways (Eckhardt, 2015). FLEs with significant personal resources, such as aversion to technology, may be able to handle specific performances more effectively and efficiently. The goal of this research is to

look into how techno stress impacts worker performance and the link between technology-induced role overload and technostress.

Literature Review

Many workers across the world are facing the tough temper of reconsidering their working techniques and methods. Since the pandemic incident (COVID-19), the enterprise environment has altered for the moment, and everyone expects to gather suddenly and quickly. The awkwardness of managing personal well-being, family issues, and work responsibilities does not appear to be simple. Unexpectedly, the labourers encounter new obstacles and issues from one day to the next. How they handle these challenges will have a major impact on their effectiveness and their friends' success.

The advancement of technology is the path towards joining and revamping information in order to generate innovative ideas; the rapid digital innovation of digitalization will impact the display of enterprises (Caro et al, 2020). There are technical developments arising from domestic progress (Pavitt, 2019), with internal progress resulting from reps' ability. Technological advancement and labour productivity are inextricably linked. (Alam & Murad, 2020). When combined with other assets by HR or when done successfully, and utilizing innovation profitably and ethically, technology can spur increased profitability or better execution. (Singh & Verma, 2019).

Despite the fact that increased technology use leads to increased revenue, such use can have unintended and detrimental consequences for representatives. If they believe that the expectations of technology are in conflict with their abilities and characteristics, this results in technology-related stressors. (Purvis, 2011).

Job overload "has impressive coverage with work overload" (Ayyagari et al., 2011). It occurs when employees are faced with a significant number of job requirements based on the time available. (Taber, 2019). Technology allows sales representatives to work longer hours and alter their schedules. (Boyle, 2020). They should set aside additional time at work to learn how to work on improvements and merge them into their everyday schedule. This prerequisite often outcomes in a surplus of duties and generates or increases work overload (Król, 2017).

An overabundance of tasks may also occur if faulty technology compels representatives to review advanced resources of information or restart a framework. Furthermore, technology may contribute to job insecurity by generating ambiguity about expected work methods. (Beehr et al., 2018).

Work overload is the most frequent sign of techno strain, according to Ayyagari et al. (2011). The former is defined as "the person's mental reaction" to upsetting demands (Ayyagari et al., 2011), whereas technostress is associated with the value-driven loop while using technology. (Weitzel, 2019). To capture the overall pattern, we will now use the word techno stress rather than techno strain. We anticipate that clear activity requests resulting from technology use, technology-initiated work overload, and position ambiguity will be directly related to s' degree of technostress.

Technology advancement is the process of connecting and reorganizing information in order to generate novel ideas. The advancement of innovation has an impact on business performance. (Mumford, 2016). Mechanical progression results from inside headway, and internal progression results from representational ability (Pavitt, 1990). As a result, there is a cosy relationship between inventive advancement and worker execution. (Huselid, 1995). When combined with other assets viably managed by HR or when done properly, innovations can potentially provoke increased revenue or better execution. (Akingbade, 2011). Progression makes employees more appealing and the company more competent. (Anderson, 2015). Innovative

advancement can also enhance company execution. (Li & Deng, 1999). Preparation allows workers to acquire new knowledge and advance their skills more rapidly. (Chi et al., 2020).

The representative's inspiration has a direct influence on technological advancement. (Amabile, 1998). The representative's display is inextricably linked to the advancement of innovation. Representatives can effectively supervise innovative advancement. The asset-based hypothesis suggests that a company's assets are crucial to its success and that human resources are a unique advantage. This asset's capability is dependent on the workers' ability and eagerness, as well as the leaders' skilled human assets. (Mumford, 2010). Innovative advancement has a massive effect on representative performance. (Gulati, 2016). Mechanical progression is a major element influencing execution growth. (Hitt et al., 2020). The overwhelming majority of studies have repeatedly demonstrated a positive relationship between an organization's inventive progression and execution and concluded technological progress.

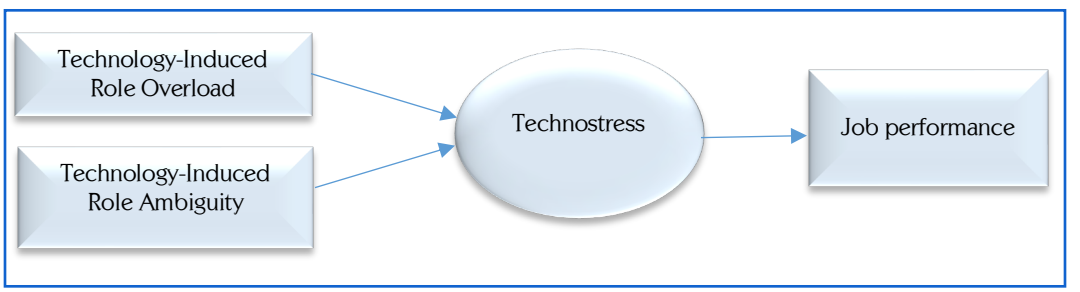
Customers are stressed out as an outcome of the utilization of systems of knowledge in a structured environment. (Ayyagari et al., 2011). With the rapid growth of information technology in practical fields, it has emerged as an important subject for educational research in a variety of contexts. Technostress generators, or the causes of how individuals experience technostress, have been identified, and it has been established that technostress manifests itself as increased job overburdening, job ambiguity, exhaustion and fatigue, and decreased work execution (Ayyagari et al., 2011), providing a broad and general fictitious with the basis for investigating technostress.

The investigation of stress at work has concentrated on various perspectives that include the pressure issue. These include job overburdening and job ambiguity, as well as challenging behaviour failing at work, absence of employment unity, and weak occupation execution (Ivancevich & Matteson 2010). (Kahn & Bysosiere 1992). Situational variables that can mitigate the effect of stresses comprise hierarchical methods for coping with pressure circumstances for workers.

According to Hunter and Perrault (2010), "innovation jobs affect different parts of execution" of IT employees. The elements of technostress creators, in particular, limit their ability to use apps to better their professional development. As an illustration, due to technological overload, they execute a variety of tasks using only a few applications and data handling obligations. In order to complete initiatives on schedule, the administration must be creative. (Amabile et al., 2016).

Theoretical Framework

Figure



Hypotheses

H1: There is an association between technology-induced role overload and job performance.

H2: There is a link between position technology-induced ambiguity and job performance.

H3: Techno stress mediates the link between job performance and technology-induced overload.

H4: Techno stress mediates the link between technology-induced role ambiguity and job performance.

H5: There is a link between technology-induced overload, technology-induced role ambiguity, and job performance, with technostress acting as a moderator.

Methodology

We used observational and quantitative methods in this research to scrutinize the effect of technology role ambiguity and technology-induced overload on work performance, with technostress acting as a moderator. We determine the steps before data collection and study design using Saunders' research onion layer. First and foremost, in these layers, we discuss ideologies related to positivism because we use a survey method for data gathering in this article that is related to positivism. For this study, we will employ a service strategy linked with the deductive method. We use a quantitative technique in the choices layer, which is typically preoccupied with the mono method. Because it is appropriate for this topic, cross-sectional research is used. We obtained the survey questionnaire from established research in our area when developing the survey questionnaire. We are conducting a poll of many software companies. Data was gathered from various areas of Lahore, so workers hailed from diverse backgrounds, which will aid in data reliability.

The sample size for our research is 232, in accordance with Green's formula, and data were collected from approximately 221 software house employees. The community sample for this study was collected using simple random sampling methods for data collection. In our study, we used those surveys.

Scale Type

Table 1

Parameters	Items	Biographer
Technology Induced Role Overload	4	Beehr et al., 1976
Technology Induced Role Ambiguity	5	Kohli & Jaworski,1994
Tecno Stress	6	Ayyagari et al., 2011; Ayyagari 2007
Job Performance	7	Dubinsky & mattson, 1979

Analysis of Data

Table 2

Reliability test.

Reliability (Cronbach's Alpha)	Parameters
.724	Technology-induced role overload
.552	Technology-induced role ambiguity
.629	Technostress
.527	Job Performance

The data presented here demonstrate that technology overload and ambiguity create consistent outcomes. Since the research indicates that the reliability conclusion of

technology role ambiguity is.552 (which is higher than.7) and the reliability conclusion of technology role overflow is.724 (which is greater than.7), (which is not a credible result but can be analyzed). The dependable outcome of technological stress, according to the dependability visualization, is.629, which is more than.6. The work performance demonstrates that the job performance is untrustworthy.527, but we can examine it.

Table 3

Descriptive Test

Gender					
		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Male	163	73.8	73.8	73.8
	Female	58	26.2	26.2	100.0
	Total	221	100.0	100.0	

Table 4

Age					
		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	21-30	129	58.4	58.4	58.4
	30-40	83	37.6	37.6	95.9
	40-50	6	2.7	2.7	98.6
	50and above	3	1.4	1.4	100.0
	Total	221	100.0	100.0	

The male respondents are 163 in number with a percentage of 73.8 and 58 female respondents with a percentage of 26.2. Employees aged 21 to 30 have 129 respondents and a percentage of 58, those aged 31 to 40 have 83 respondents and a percentage of 37.6, those aged 41 to 50 have 6 respondents and a percentage of 2.7, and those over 50 have 3 respondents and have a value of 1.4%.

Table 5

Correlation Table					
		Tiro	tira	ts	Jp
Tiro	Pearson Correlation	1	.196**	.302**	.207**
	Sig. (2-tailed)		.004	.000	.002
	N	221	221	221	221
Tira	Pearson Correlation	.196**	1	.146*	.283**
	Sig. (2-tailed)	.004		.030	.000
	N	221	221	221	221
Ts	Pearson Correlation	.302**	.146*	1	.334**
	Sig. (2-tailed)	.000	.030		.000
	N	221	221	221	221
Jp	Pearson Correlation	.207**	.283**	.334**	1
	Sig. (2-tailed)	.002	.000	.000	
	N	221	221	221	221

The above table indicates that technology-induced role overload and job performance are favourably and firmly connected, with a highly significant effect (.207**). The link between technology-induced role ambiguity and job performance is both favourable and strong, with a highly significant effect (.283**). The link between technological stress and job performance is favourable and strong, with a highly significant effect (.334**).

Table 6

Regression Test.

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.322[a]	.104	.096	.64341	1.867

Table 7

ANOVA Table					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	10.451	2	5.226	12.623	.000[b]
Residual	90.246	218	.414		
Total	100.697	220			

The score of F in the Anova table demonstrates model fitness, and if it goes higher than 5 (12.623), the framework is significantly fit. The significance level is.000, demonstrating that the framework is also relevant.

Table 8

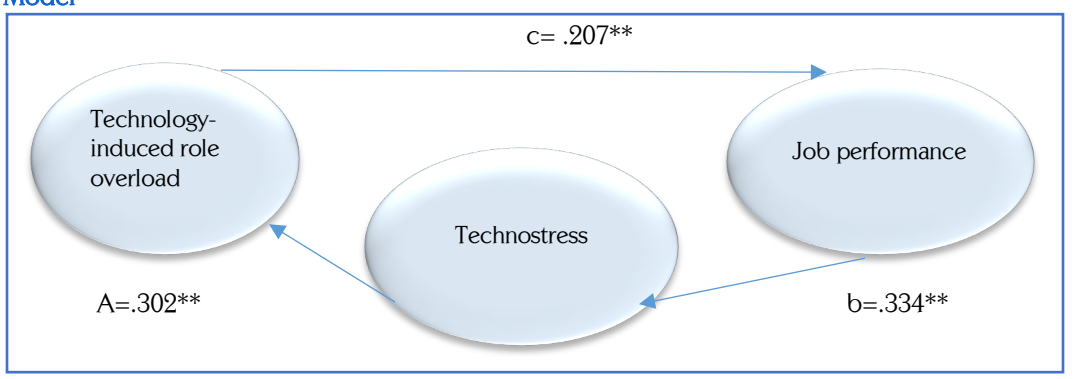
Coefficients Table						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.728	.209		13.075	.000
	Tiro	.105	.044	.158	2.414	.017
	Tira	.206	.053	.252	3.849	.000

The statistic shown above illustrates how one measure of change in technology-induced role overload leads to a shift of .105 units in work performance, signalling that the effect is substantial. The advertisement's wording is slightly modified, but if you're searching for an interesting read, this is where it needs to be.

Mediation Test

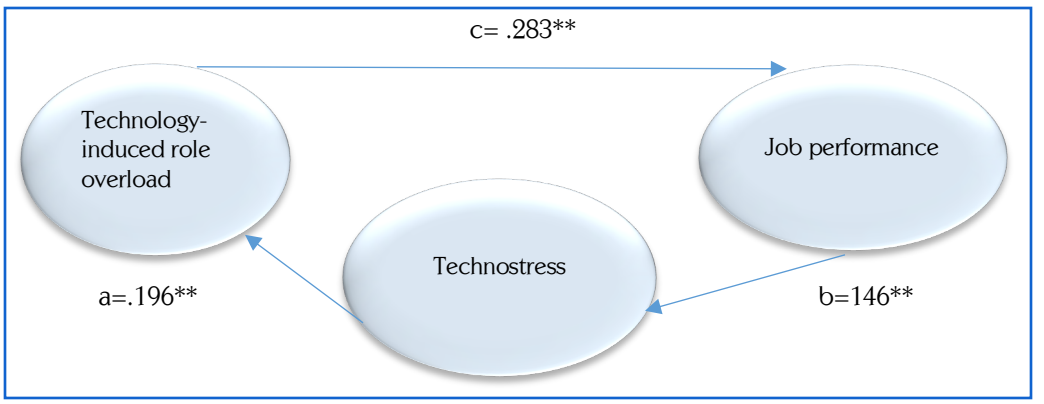
Technostress

Model



According to the model, the 'a pathway' is quite significant (.302**), the 'b pathway' is also quite significant (.334), and the 'c pathway' is also highly significant (.207**), indicating that there is an association within technology-induced overload, technostress, and job performance.

Figure 2



The results of the hypothesis, 'a pathway' is particularly significant (.196**), 'b pathway' is also extremely significant (.146**), and 'c pathway' is also highly significant (.283**), implying that there is interplay within technology-induced overload, technostress, and job performance.

Discussion and Future Directions

The main objective of the research is to describe stress as the unsafe mental and physical symptoms that occur when the task specs do not match the labourer's skills, possessions, or necessities. (Shields,1999). Technology enables marketers to work longer hours and change their plans. (Thatcher et al, 2002).

"Use of technology has differential effects on various aspects of performance" of IT workers, according to Hunter and Perrault (2007). A shortage of expertise in whether and how much advantages should manage technology-related hurdles rather than the primary responsibilities of their particular position can be described as technology-instigated job performance. We determine the steps preceding data collection and design of the study via Saunders' research onion layer.

The analysis's reliability demonstrates that the data is trustworthy and that an assessment can be performed on the gathered data. According to the study, the level of reliability of technology role ambiguity is.552, which is not an exact result but can be evaluated, and the reliability level of technology role overflow is.724 which exceeds than.7. The dependable outcome of technical stress, according to the reliability visualization, is.629, which is higher than.6. The job performance chart indicates that task execution is unreliable.527, but we can investigate further. Furthermore, the mediation analysis illustrates that mediation within predictors has an effect on job performance. Job performance and technology-induced role overload are favourably and substantially correlated, with the impact being extremely significant (.207**). The relationship between position uncertainty caused by technology and job performance is both positive and powerful, with an extremely significant effect (.283**). The relationship between technical worry and job performance is robust and positive, with an extremely significant effect (.334**). F depicts model fitness, and a value of F higher than 5 (12.623) shows that the framework is numerically fit. The significant

figure is.000b, showing that the framework is also significant. Despite making numerous important contributions to the literature, our research has some limitations that we admit here. We think that these constraints will allow other scholars to investigate technostress further. To begin, we applied a cross-sectional study method to explain stress, comparable to previous research that used the COR. (Westman et al., 2019). Second, we concentrated on recognizing the linear and curvilinear natures of individual technostress producers rather than investigating the impact of associated contextual factors on employee creativity. Future studies could understand the context of our findings by speculating them as moderators or mediators in the link between technostress producers and ICT-based creativity.

Conclusion

In this study, we looked at how a mediating variable impacted work performance, as well as how technology can cause role overload and role uncertainty. Technology-induced role overload and uncertainty impacted the work performance of employees at a software company in Lahore. The study of our data indicates that there is an interaction between all of the factors in this research paper, making it completely dependable and important.

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