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## The effect of technological unemployment anxiety on employee burnout

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**Abstract:** In this research, the effect of technological unemployment anxiety on employee burnout has been examined. Structural equation modelling method was chosen to analyse multidimensional models with both direct and indirect interactions. The hypotheses have been tested by using structural equation modelling method. As the result of the analyses performed, out of nine hypotheses, six of them were supported. It has been empirically proven that lack of technical skill has a direct effect on emotional exhaustion and depersonalisation, incremental technological improvements have a direct effect on all dimensions of burnout and emotional exhaustion is directly impacted by technological disruption. Although employee burnout is a subject that has been researched for years, this research is an original study investigating how the burnout perception of employees is affected within the framework of technological advances. Therefore, research demystifies the mechanism behind employee burnout linked to technological unemployment anxiety.

**Keywords:** technological unemployment anxiety; TUA; emotional exhaustion; depersonalisation; lack of personal accomplishment; employee burnout.

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## 1 Introduction

Technological unemployment anxiety (TUA) is a concept with historical roots. Throughout past, people have always been worried that technological developments will create unemployment. The latest technological developments including automation and digital technologies are significantly affecting business processes. Business lines and jobs are subject to change globally. Consequently, employees are also getting affected by this evolution. On the organisational perspective, there might be several outcomes of this situation and burnout could be one of the most important results. Therefore, in this research, the burnout concept has been discussed within the framework of TUA.

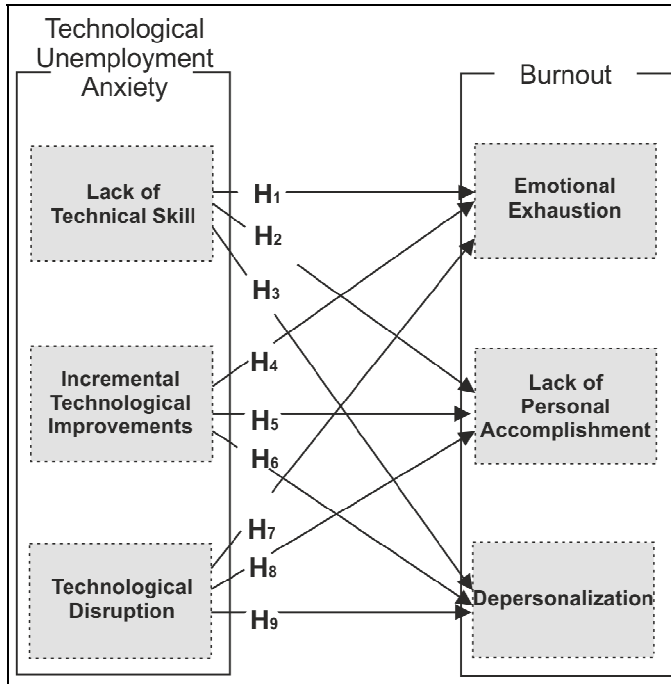
Economic problems and recent pandemic conditions experienced by the whole world have shown how important digitalisation is. The current situation has highlighted the prominence of the technical skills of the employees. Businesses question the competences, quality and needs of human resources to move forward with confidence. In this business environment, TUA might have an impact on employee motivation, performance and commitment. Research on the changes in industries, jobs and skills required by the new industrial revolutions provide generic overviews on employee competencies, however more research needs to be done on preventing losing the workforce. On this matter, reviewing the anxieties of employees in terms of technological and emotional with a quantitative approach might provide essential results. Within this context, as proposed for future research topic in a past study by Pehlivanoğlu (2020), the purpose of the study is to clarify the effect of TUA on employee burnout.

In this research, Maslach and Jackson's (1986) Maslach burnout inventory (MBI) and Civelek and Pehlivanoğlu's (2020) TUA scales were used to obtain data from the respondents. This study has made a valuable contribution to the literature by attaining a more comprehensive knowledge of the development of employee burnout by conducting research analysis with respect to the anxiety created by today's technological improvements.

## 2 Conceptual background

The relationship among the dimensions of TUA and employee burnout has been tried to clarify in the research. A theoretical model was developed in accordance with the theoretical underpinnings of these notions, as shown in Figure 1.

Figure 1 Theoretical model



### 2.1 Technological unemployment anxiety

As an economical concept, technology-induced unemployment was defined by Keynes (1931) in the article entitled ‘Economic possibilities for our grandchildren’. Keynes (1931) regarded the future as age leisure and pretended that there would be no need to work. The roots of technological unemployment concept depend upon the first industrial revolution period and Luddite movement (Pehlivanoğlu and Civelek, 2022). Industrial revolution brought mechanisation to the world and created many changes in social life. Luddism was originated at the end of the 18th century by British handweavers. The handweavers had fears of losing jobs due to technology-related unemployment, and Luddite upsprings targeted to destroy textile machines (Lehman, 2015). However as contrary to the expectation machines created new jobs and workers were hired by either different companies or industries. Economists viewed this as the idea of sustained technological unemployment proved unfounded. Therefore, this incident has been called as Luddite fallacy (Campa, 2014). The opinion that technology will cause to long-term unemployment has always been discussed by economists. Recently, although technological developments increase prosperity for humanity, it is also leading markets to

digital industry, and there is increased support for the view that the fallacy may be correct.

The past approaches are not valid for the digital economy of today. From the first industrial revolution and on, the need for human labour constantly decreased because of the technological developments. This trend carried further with each subsequent industrial revolution. The technological developments, especially on automation and artificial intelligence, continue to lead to changes in production methods. The more efficient and effective ways of production is expected to cause considerable increase in unemployment. The rising unemployment will eventually lead to demand uncertainty. This is the vicious cycle of the post-digital ecosystem. This cycle inevitably collapses the current economic system. In the recent years, excess fiat money has been injected to revive the economy and personal debt ratio of individuals has increased. Increasing inequality is the main feature of the post-digital ecosystem and digital divide leads to economical divide. Digital divide is the inequality in access to technological communication facilities especially the internet. In digital economy, knowledge has become production factor and the digital divide causes economic inequality (Civelek, 2009, 2018). As the outcome, inequality and unemployment might cause chaos because consumers would constantly lose their jobs and purchasing power.

Artificial intelligence and robot technologies are advancing at an accelerated pace. It is predicted that job loss may take place in three consecutive stages: algorithm, augmentation, autonomy (PwC, 2018; Grønsund and Aanestad, 2020). Algorithm stage means that automation of simple computational tasks and it is currently happening. Augmentation stage means that automation of repeatable tasks like autonomous aerial drones and robots in warehouses. This stage is expected to reach maturity until the end of 2020s. Autonomy stage denotes that robots are predicted to have manual dexterity and problem-solving ability by the end of 2030s (PwC, 2018). This stage has strong potential to disruption that could affect all citizens (Wright and Schultz, 2018). Predictions show that because of automation in the next 15–20 years, 14% of the existing jobs may be removed and another 32% are likely to change sharply (OECD, 2019). Digital technologies, especially platform markets, can suddenly scale companies up and down. These changes in businesses quickly lead to organisational change and can easily cause employees to lose their jobs. As technology reshapes the skills needed for work, some human skills can be replaced by technology (The World Bank, 2019).

It is very difficult to predict how the size of unemployment will follow in the face of developing technologies. Unemployment rates in countries fluctuate every year. Unemployment rates in countries show that various regions of the world are struggling to cope with the problem at different levels. Looking at the OECD harmonised unemployment rate data for December 2021, the average unemployment in member countries was 5.4%. In the Euro area, the unemployment rate was 7.0%. The rates in some countries from different geographies are as follows: the USA 3.9%, Australia 4.2%, Canada 6.0%, Turkey 11.4%, Colombia 12.6%, Greece 12.7% and Spain 13.0% (OECD, 2022).

In this research, TUA scale introduced by Civelek and Pehlivanoglu (2020) is used. The scale has three sub-dimensions: lack of technical skill, incremental technological improvements and technological disruption.

### *2.1.1 Lack of technical skill*

The first dimension of TUA is lack of technical skill. This dimension comes from the individual perception that due to technological advances people has difficulties in improving themselves and feels uncomfortable using new technologies and systems (Civelek and Pehlivanoglu, 2020). Technical skill is the technical and functional ability and knowledge and to apply them in practice to execute a job. Lack of technical skill is the perception that the employee cannot improve self-due to technological developments. The employee feels uncomfortable using new technologies and systems while doing the job. The factors of this perception of the individual comes from several conceptions such as: the current professional technical knowledge will not be sufficient due to technological developments; the existing education will be insufficient to meet future professional needs; the difficulties in adapting to the technological systems will increase every day; it will be harder to be at peace with internet and mobile technologies; the individual job performance will fall as technology keeps developing. TUA levels of individuals due to lack of technical skills may differ from profession to profession. Employees who think that they have professions that cannot replace technology may feel this anxiety less than others. This anxiety is mostly felt by workers who have weak technical skills. These people are often unable to develop their skills due to technical inadequacies. Another reason for this situation is the generation gap among the employees (Pehlivanoglu and Civelek, 2022).

### *2.1.2 Incremental technological improvements*

The second dimension of TUA is incremental technological improvements. The technological developments are in search of solutions to meet the new demands of human beings. This is an inevitable and continuous process by the beginning of human history. Numerous technological innovations have entered the business and social life of human beings. Especially in the last half century, this evolution incrementally fastened from the first simple hand tools to modern computers under the management of artificial intelligence. The main factors of this perception is that the person thinks that the continuous improvement of the systems used in the workplace will reduce the need for people over time; the person thinks that the current job description will change in a way that negatively affects the employees as a result of the continuous development of technology; the person thinks that changes in business processes due to technological developments will make employees unhappy in the future; the person's thinking that his working life will be shortened owing to technological developments; these person think that the rate of the human power in the business unit will decrease as a result of technological developments (Pehlivanoglu and Civelek, 2022).

### *2.1.3 Technological disruption*

The third dimension of TUA is technological disruption. The main factors of technological disruption perception are that individuals have the perception that technological advancements will eliminate some of the business lines, many people will be unemployed in the rest of their lives, the school education that people have received might be invalid, and many organisations will close in the future. Although technological developments stand out as a constructive factor in changing traditional life, it has also

destructive results. The pace of change demonstrated by technology with Industry 4.0 has never been experienced so much at any stage in human history. Although technological developments have positive reflections on human life in many areas, there are also some negative examples such as the harmful effects of industrial wastes to environment and the use of nuclear power in wars. When examined from this perspective, it is quite natural and inevitable for some people to approach technological developments with anxiety (Pehlivanoğlu and Civelek, 2022).

## *2.2 Employee burnout*

Employee burnout occurs due to unsuccessfully managed persistent workplace anxiety. It is defined by state of emotional, physical, and mental exhaustion and might have physical, psychological, behavioural impact on the individual (Maslach and Jackson, 1981). Burnout term was first used by Freudenberg (1974) in the literature and described as the condition of internal resources being depleted due to failure, wear, energy and power reduction. The symptoms of burnout are multidimensional with several social and psychiatric disorders such as chronic fatigue, continuous exhaustion, concentration and memory disturbances, anxiety, personality changes including cynicism and aggressiveness (Weber and Jaekel-Reinhard, 2000). Also, according to World Health Organization (2019) mentions three main aspects of the syndrome as: energy depletion, cynicism and diminished professional efficacy.

Burnout affects the work contribution of the individual directly leading to low morale, stress and depression. Therefore, it lowers job satisfaction and deteriorates the quality of organisational services provided by the individual, as well as social life. By time, the individual abandons the work duties and rate of absenteeism increases, and on the organisational perspective all actions result by decreased productivity and job turnover at the end (Carod-Artal and Vázquez-Cabrera, 2013). The primary characteristic of employee burnout is emotional exhaustion. It is mostly encountered with feelings of depersonalisation or cynicism and sometimes the feelings of lack of personal accomplishment (McCormack and Cotter, 2013).

Empirically, the most common approach to the theoretical concept in the literature has been studied by Maslach and Jackson (1981) where the researchers evaluated employee burnout with the Maslach burnout inventory (will be named as MBI). The MBI has been used as a measurement tool of burnout for various occupations around the world. The original MBI scale contains 25 items and four dimensions (emotional exhaustion, depersonalisation, lack of personal accomplishment and involvement). MBI was revised in 1986, and this second version contains 22 items with three dimensions where the optional dimension 'involvement' was omitted (Maslach and Jackson, 1986). After some years, a more generic version of MBI was developed, and the dimensions were relabelled in more general terms as follows: 'emotional exhaustion' to 'exhaustion', 'depersonalisation' to 'cynicism', lack of personal accomplishment to 'inefficacy' in social and non-social businesses (Maslach and Leiter, 2008). Intensive exhaustion and depersonalisation, and lower professional accomplishment are the indicators of employee burnout (Salanova and Schaufeli, 2000).

### *2.2.1 Emotional exhaustion*

The first dimension of employee burnout is emotional exhaustion. Exhaustion is the essential element and key aspect of burnout. It is easier to measure the outcomes of this dimension with medical diagnosis and disability compared to other dimensions of burnout (Leiter and Maslach, 2016). Emotional exhaustion could be defined as wearing out, lack of energy and depletion of the individual (Leiter and Maslach, 1988) resulting from excessive workload and continuous stress. A person feeling emotional exhaustion would have low concentration on the job, carry out minimal relationships with other people and feel less commitment to the job (Maslach and Jackson, 1981). Emotional exhaustion can be depicted as the first stage of employee burnout (Boles et al., 1997).

### *2.2.2 Lack of personal accomplishment*

The second dimension of employee burnout is lack of personal accomplishment. This dimension is characterised as reduced productivity or capability of the individual (Leiter and Maslach, 2016). Diminished personal accomplishment is the declined feelings of competence and success on the job, usually stemming from being ineffective or unappreciated (Lewin and Sager, 2009). The individual would have reduced feelings of success in human relations (Leiter and Maslach, 1988). Losing the mental connection with job has some negative results on self-motivation and identity (Leiter and Maslach, 2016). The feelings of insufficiency to perform, low morale, carelessness, having tendency for expressing negative self-evaluations, and showing low level of commitment to the profession are the self-indicators of lack of personal accomplishment.

### *2.2.3 Depersonalisation*

The third dimension of employee burnout is depersonalisation. It is the state of feeling detached from one's self, to have a set of callous behaviours towards clients, and also described as dehumanisation in the literature (Wright and Cropanzano, 1998). Depersonalisation is identified as negative or inappropriate attitudes, cynical behaviours, irritability, loss of idealism, impersonal manner while interacting with colleagues or other people, withdrawal, and alienisation from the job (Leiter and Maslach, 2016; Schutte et al., 2000). The individual would have indifferent and callous attitude towards the organisation while feeling exhaustion and disappointment (Polatçı et al., 2014).

## **3 Hypothesis development**

Research in the literature links burnout to technological developments. Much of the research has concentrated on the use of new technologies in organisations. These studies primarily use research samples with a focus on physicians. Also, a recent research topic in this field that attracts attention after the pandemic is the digital burnout of individuals due to technology. Examples of some studies investigating technology-related causes of burnout in the literature are as follows: according to a research on the employee perception on the implementation of a new technology in the organisations, the new technologies' perception is found to be an organisational factor that negatively explains burnout and presenteeism (Knani, 2013). In another research, conducted on a samples of physicians, younger generations of physicians are observed to be adapting to current

technology and new technologies more fluently than previous generations, by referring to the burnout syndrome symptoms of many physicians due to new technologies such as the usage of electronic medical record system. The older generations of physicians are evaluated risky for increased burnout syndrome and as well technology's increasing role in healthcare is seen to help to create a more resilient young generation of physicians to burnout (Nakagawa and Yellowlees, 2020). Similarly, in another research on physicians, the use of electronic health records have found to reduce job satisfaction, increase the employee burnout and cause to decrease clinical practice (Ehrenfeld and Wanderer, 2018). Regarding to the recent form of burnout, which is referred as digital burnout, research mention that especially after the pandemic using the new technologies became a necessity. However, the excessive use of digital tools creates digital burnout by increasing stress, anxiety, and depression levels of individuals (Göldağ, 2022).

Many different samples and industry studies in the past have shown the global nature of burnout (Zhao and Ding, 2020), but further research is needed to understand the causes of burnout that are connected to technology. It is important to note that technological developments create unemployment anxiety to many employees. Unemployment anxiety is the insecurity feeling of employees about their future. This feeling causes an increased level of stress on individuals, lowers self-motivation, decreases commitment to job and work performance, and leads to less participation of employees in the decision-making processes (Civelek and Pehlivanoğlu, 2020). Research mention that job-insecure employees are usually in an uncomfortable situation among unemployment and employment (Niesen et al., 2018), job insecurity certainly reduces the quality of work-life (Erdem, 2020). Job insecure individuals have more psychological complaints compared to short-term unemployed and secure permanent employees (Griep et al., 2016). In the managerial context of TUA, managing the burnout situation of employees is a difficulty for organisations while achieving to desired goals. Therefore, it is evident that studies should be conducted to determine why the burnout syndrome develops in employees given the detrimental effects it has on the psychology and productivity of individuals. Understanding how the current situation – characterised by a fast-paced pace of technological change, rising automation and digitalisation – affects employee burnout levels can be a significant contribution to the literature. Due to this, it is important to compare the three components of burnout syndrome with each of the three TUA dimensions. Depending upon the current literature, following hypotheses have been developed for this research:

- H<sub>1</sub> Lack of technical skill has a direct effect on emotional exhaustion.
- H<sub>2</sub> Lack of technical skill has a direct effect on lack of personal accomplishment.
- H<sub>3</sub> Lack of technical skill has a direct effect on depersonalisation.
- H<sub>4</sub> Incremental technological improvements have a direct effect on emotional exhaustion.
- H<sub>5</sub> Incremental technological improvements have a direct effect on lack of personal accomplishment.
- H<sub>6</sub> Incremental technological improvements have a direct effect on depersonalisation.
- H<sub>7</sub> Technological disruption has a direct effect on emotional exhaustion.



H<sub>8</sub> Technological disruption has a direct effect on lack of personal accomplishment.

H<sub>9</sub> Technological disruption has a direct effect on depersonalisation.

#### 4 Research methods

The scales developed in former studies have been adopted. A questionnaire with a five-point Likert scale was used to collect quantitative data. Structural equation modelling (SEM) method was selected to reveal complex relationships. As first step, confirmatory factor analysis has been performed to indicate the existence of convergent validity. Composite reliability and average variance extracted (AVE) values were obtained to reveal reliability and discriminant validity. By using AMOS statistics programme, hypotheses were tested in SEM. The theoretical model's hypotheses have been tested using this technique (Meydan and Şen, 2011). SEM also reveals the indirect and direct relationships in one model (Civelek, 2018). Measurement errors decrease in SEM method (Byrne, 2010). The analyses used the statistical software packages SPSS and AMOS together.

**Table 1** Statements of the TUA scale

<i>Title of sub-dimension</i>	<i>Statement</i>
Lack of technical skill	I think I will lag behind in terms of performance as technology advances.
	I do not feel comfortable using the technologies such as the internet and smartphones.
	I do not think I will be able to improve myself aptly so that I can adapt to technological advances.
	I find it difficult to adapt to the systems I use while doing my job.
Incremental technical improvement	I think that the change in the business processes due to the technological advancements will make me unhappy in the future.
	I think that the continuous improvement of the systems used in the workplace will reduce the need for me over time.
	I think my business life will become shorter as a result of the technological advancements.
	As a result of the continuous advancement of technology, I think my current job description will change in a way that will affect me negatively.
Technological disruption	I am worried that I may spend the rest of my life as unemployed due to the new technologies.
	I think that the education I have received at school will be invalid due to technological advances.
	I think that technological advances may cause the organisation I am working for to close down in the future.
	I think that technological advancements can completely eliminate the business line I have trained.

#### 4.1 Measures and sampling

The dimensions of the initial model of this research were formed by the scales adapted from former studies. More than 350 were filled and 258 valid questionnaires were collected from the employees of 23 trade companies in Turkey. To measure TUA, the scale suggested by Civelek and Pehlivanoglu (2020) with 12 items was used. To measure employee burnout, the scale suggested by Maslach and Jackson (1986) with 22 items was used.

**Table 2** Confirmatory factor analysis results

<i>Variables</i>	<i>Items</i>	<i>Standardised factor loads</i>	<i>Unstandardised factor loads</i>
Lack of technical skill (TLTS)	TLTS0303	0.708	1
	TLTS0505	0.815	1.408
	TLTS0404	0.586	0.795
Incremental technological improvements (TITI)	TITI0410	0.689	1
	TITI0309	0.777	0.957
	TITI0511	0.579	0.975
	TITI0107	0.767	1.213
Technological disruption (TTDS)	TTDS0516	0.684	1
	TTDS0213	0.851	1.134
	TTDS0112	0.762	1.138
	TTDS0314	0.800	1.041
Emotional exhaustion (BEEEX)	BEEEX0420	0.753	1
	BEEEX0319	0.704	0.949
	BEEEX0824	0.734	0.954
	BEEEX0117	0.746	1.108
	BEEEX0925	0.800	0.998
	BEEEX0622	0.862	0.962
	BEEEX0521	0.876	1.090
Lack of personal accomplishment (BPAC)	BPAC0833	0.588	1
	BPAC0328	0.559	1.031
	BPAC0530	0.709	1.035
	BPAC0126	0.780	1.233
	BPAC0227	0.848	1.264
Depersonalisation (BDPR)	BDPR0437	0.688	1
	BDPR0235	0.629	0.830
	BDPR0134	0.607	0.741

Note:  $p < 0.01$  for all items.

#### 4.2 Construct validity and reliability

Initial step was purification. Therefore, exploratory factor analysis (EFA) was performed (Anderson and Gerbing, 1988). Twenty-six items remained after EFA. After that for

remained items, confirmatory factor analysis applied and results of this analysis were found satisfactory (i.e.,  $\chi^2/DF = 2.118$ , CFI = 0.925, IFI = 0.927, RMSEA = 0.066) (Civelek, 2018). In Table 2, factor loads for each item can be observed. To determine discriminant validity, the square roots of AVE values of each variable have been obtained. The results of this calculation are indicated in Table 3. AVE values have been obtained within the limit (i.e., 0.5) (Byrne, 2010). Results show that the convergent validity of the constructs is acceptable. In Table 2, the diagonals demonstrate the square root of AVE values. In same column, all the square root of AVE values is greater than the correlation values. Results indicate that the discriminant validity is proved (Civelek, 2018). The reliability of the constructs was determined by using composite reliability and Cronbach  $\alpha$  values. These values are in the limits defined in literature (Fornell and Larcker, 1981).

In Table 3, descriptive statistics of the constructs are shown. Cronbach  $\alpha$ , composite reliability, AVE values and Pearson correlations among the dimensions can be followed respectively.

**Table 3** Construct descriptives, reliability and correlation

<i>Variables</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
1 Lack of technical skill	(0.709)					
2 Incremental tech. imp.	0.338*	(0.724)				
3 Technological disruption	0.332*	0.575*	(0.776)			
4 Emotional exhaustion	0.177*	0.376*	0.176*	(0.784)		
5 Lack of personal accomplishment	0.172*	0.399*	0.279*	0.432*	(0.705)	
6 Depersonalisation	0.177*	0.278*	0.158*	0.408*	0.402*	(0.642)
Composite reliability	0.749	0.845	0.858	0.918	0.829	0.677
Average variance ext.	0.503	0.525	0.603	0.615	0.498	0.412
Cronbach $\alpha$	0.756	0.840	0.852	0.923	0.803	0.651

Notes: \* $p < 0.05$ .

Values in diagonals are the square root of AVEs.

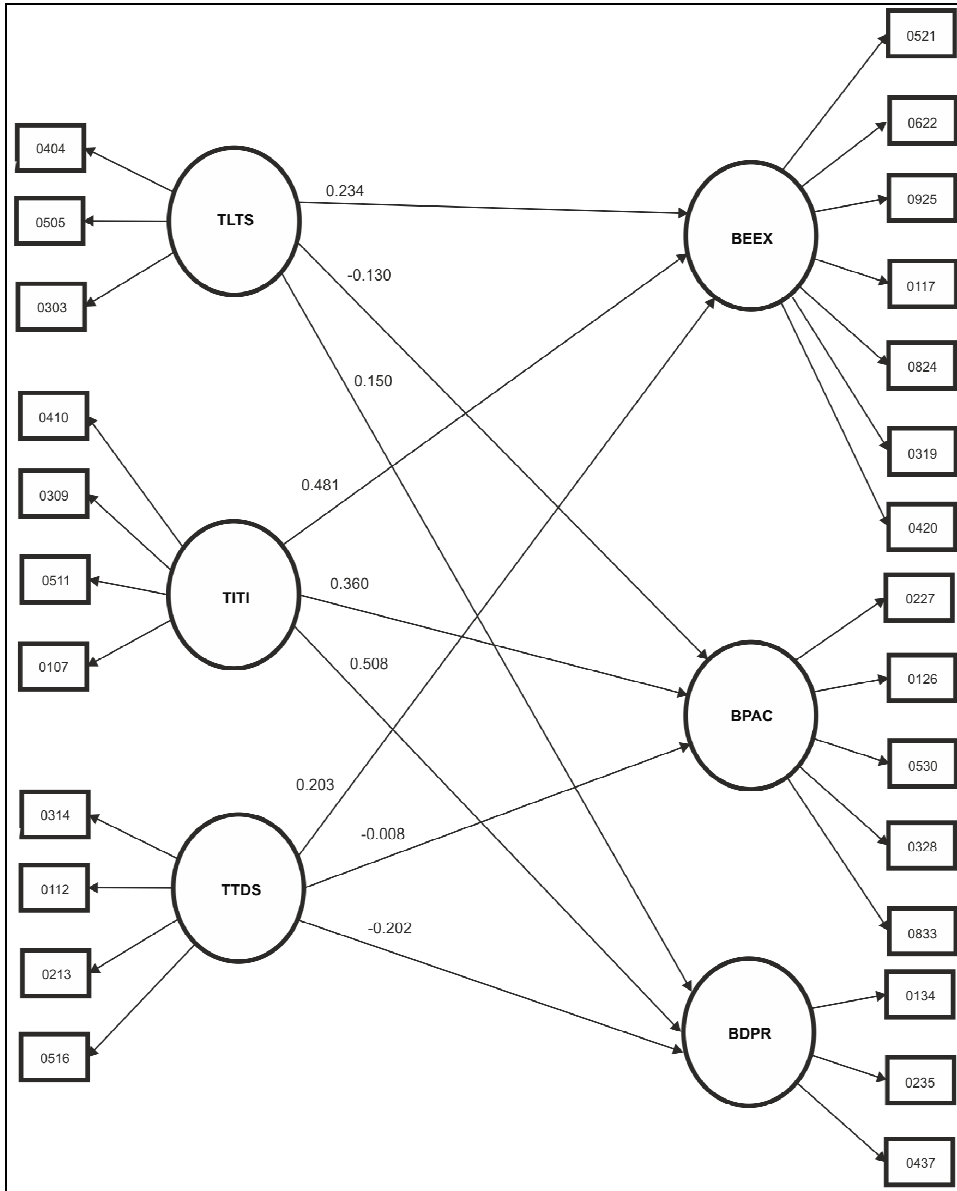
### 4.3 Test of the hypotheses

Covariance-based structural equation modelling (CB-SEM) is essentially a confirmatory method (Civelek, 2018). As a result, it is employed in this study to support the hypotheses that were developed using literature-based foundational ideas. The goodness of fit indices values of the model is satisfactory (i.e.,  $\chi^2/DF = 2.010$ , CFI = 0.933, IFI = 0.935, RMSEA = 0.063) (Civelek, 2018).

H<sub>1</sub> hypothesis is supported. This means lack of technical skill (TLTS) has a direct effect on emotional exhaustion (BEEX). H<sub>2</sub> hypothesis is not supported. This means lack of technical skill (TLTS) does not have a direct effect on lack of personal accomplishment (BPAC). H<sub>3</sub> hypothesis is supported. This means lack of technical skill (TLTS) has a direct effect on depersonalisation (BDPR). H<sub>4</sub> hypothesis is supported. This indicates that incremental technological improvements (TITI) have a direct effect on emotional exhaustion (BEEX). H<sub>5</sub> hypothesis is supported. This indicates that incremental technological improvements (TITI) have a direct effect on lack of personal accomplishment (BPAC). H<sub>6</sub> hypothesis is supported. This indicates that incremental

technological improvements (TITI) have a direct effect on depersonalisation (BDPR). H<sub>7</sub> hypothesis is supported. This indicates that technological disruption (TTDS) has a direct effect on emotional exhaustion (BEEX). H<sub>8</sub> hypothesis is not supported. This refers to technological disruption (TTDS) does not have a direct effect on lack of personal accomplishment (BPAC). H<sub>9</sub> hypothesis is not supported. Technological disruption (TTDS) does not have a direct effect on depersonalisation (BDPR).

Figure 2 Results of the SEM analysis



Note:  $\chi^2/DF = 4.003$ , CFI = 0.958, IFI = 0.959 and RMSEA = 0.079.

**Table 4** Hypotheses test results

<i>Relationships</i>	<i>Standardised coefficients</i>	<i>Unstandardised coefficients</i>	<i>Hypotheses</i>	<i>Results</i>
TLTS → BEEEX	0.234*	0.332	H <sub>1</sub>	Supported
TLTS → BPAC	-0.130	-0.084	H <sub>2</sub>	Not supported
TLTS → BDPR	0.150*	0.165	H <sub>3</sub>	Supported
TITI → BEEEX	0.481*	0.554	H <sub>4</sub>	Supported
TITI → BPAC	0.360*	0.190	H <sub>5</sub>	Supported
TITI → BDPR	0.508*	0.455	H <sub>6</sub>	Supported
TTDS → BEEEX	0.203*	0.264	H <sub>7</sub>	Supported
TTDS → BPAC	-0.008	-0.005	H <sub>8</sub>	Not supported
TTDS → BDPR	-0.202	-0.204	H <sub>9</sub>	Not supported

Note: \* $p < 0.05$ .

## 5 Discussion

The feeling of burnout has been a broad research interest topic during the past few decades. Many theoretical models have been developed and studies from various geographies have provides more understanding about the causes and consequences of employee burnout. Burnout at work affects professionals in multiple industries. The common use of technology can lead to technological overload, which may negatively impact the employee burnout level. Technology is good for accelerating business and daily life, however for some people it may create a dysfunctional work outlook. The findings of the research indicate that lack of technical skill has a direct effect on emotional exhaustion and depersonalisation. Incremental technological improvements have a direct effect on emotional exhaustion and lack of personal accomplishment and depersonalisation. Technological disruption has a direct effect on emotional exhaustion. This could be interpreted as that employee feels stress, emotional exhaustion, and psychological distress due to technological anxiety. Especially incremental technological improvements affect all the dimensions of burnout.

Examples of some studies from the literature indicating that technology increases employee burnout were provided in Section 3. Although there are studies showing that technology triggers burnout, there are also studies stating the opposite. According to these studies, technology can also positively help employees to reduce burnout. For example, Davis (2020) mentions that using web and mobile application systems could reduce clinician burnout caused by job stressors by decreasing stress, anxiety and depression. Ter Hoeven et al. (2016) indicate that technology use and employee well-being is intimately related to communication efficiency and accessibility. Therefore, the use of technology reduces employee burnout. In another research conducted by Berg-Beckhoff et al. (2017) examined stress, burnout and mental health depending on employees' evaluations of information communication technology in terms of being a threat or as an opportunity. Contrary to the expectation, there was no evidence that older workers were more stressed or burned out. Salanova and Schaufeli (2000) investigated whether technology exposure is inversely correlated with burnout in terms of time and

frequency of use. As the result, attitudes and perceived competencies are found to be related to the exposure of technology, however no significant indirect relationship was seen among exposure to technology and the exhaustion. Researchers recommended more research on the effect of exposure to technology and exhaustion is required.

## **6 Conclusions**

Burnout is an important discussion topic in the current business environment as the use of technology create chronic stress overload. During the pandemic, the workplace setting changed, and traditional working boundaries are blurred. Some jobs shifted to remote working and new implementations still occur. Technological anxiety feelings of the workforce in various parts of the world after the current changes in the working environment are a broad topic to be investigated for future years.

This study has key contributions to the literature. The research sheds light on the relationships between the two theoretical concepts by using an original measurement tool, the TUA scale, developed by two of the article's authors in prior studies. Since the results of the hypotheses tests indicate that there are relationships among some of the dimensions of TUA and employee burnout, to reduce burnout levels of employee's technological anxiety perceptions should be considered as a pivotal issue. The study adds a new perspective to the literature to comprehend the causes of burnout. The negative consequences of TUA feeling have costs on individuals and on organisations. Especially in the pandemic period, the isolation of the employees from the social environment has led to the alienation of the employees of the workplace. In this context, TUA is expected to increase. This study confirmed the effect of TUA on employee burnout. It is observed that burnout has become widespread in employees during the pandemic period. However, scientific studies on this subject in relation to technology are still insufficient. To weaken the impact of this negative TUA perception on employees, organisations are ought to act. To mitigate the anxiety of the employees, digitalisation trainings should be organised. Elimination of lack of technological knowledge in daily and business life may increase the technology tendencies of employees. Therefore, managers should not expect every employee in the organisation to have the same technological skill competence. Without viewing this as a performance criterion, managers can be advised to create a specific task distribution for each employee based on their competencies to maximise the efficiency of their different abilities.

All the outcomes are exclusively applicable to this research sample size. The study has some limitations, and the findings must be assessed in this context. The outcomes of the study are based on the perspectives of 258 employees. By working on a diverse sample, a more comprehensive analysis can be conducted. The results of this study indicate that TUA is associated with the level of employee burnout. In future research, it can be investigated whether employees become more committed to their jobs or not as they are more exposed to technology.

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