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THE IMPACT OF TECHNOLOGICAL STRESS ON ACADEMICS' LIFE SATISFACTION

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Abstract

Increasing research reveals the impact of technostress on life satisfaction among academics. In line with the determined purpose, it is first determined whether there is a significant difference in terms of technostress and life satisfaction between demographic variables such as age, gender, field of science and years of experience. Secondly, an answer was sought to the question of whether there was a significant impact of technostress on life satisfaction. To achieve the determined research purpose, the relational scanning model was used. The study involved 342 academic participants working at different universities in Kyrgyzstan who agreed to participate voluntarily. The research was conducted with 342 academics, 207 women and 135 men. To analyze the data obtained, t-test, one-way ANOVA, Pearson's correlation analysis and linear regression analysis were used. As a result of the research, it was determined that there was a low level of negative association between life satisfaction and the socially focused technostress sub-dimension score among the technostress sub-dimensions. Life satisfaction and general technostress level were determined to be permanent and significant among the technostress sub-dimensions such as profession-oriented, technical subject-oriented learning-teaching process-oriented and personal technostress sub-dimensions. The regression analysis revealed that general technostress emerged, but the sub-dimensions showed no influence on life satisfaction, and that single socially focused technostress had a negative predictive impact on life satisfaction.

Keywords*: academic productivity, life satisfaction, technostress, learning-teaching process*

Introduction

In the contemporary era, technology has become an integral aspect of our lives, particularly in education, where it has swiftly emerged as a paramount tool, especially amid the COVID-19 pandemic. To deliver a high-quality education in today's information age, there is a pervasive use of information and communication technologies to streamline academic processes across various dimensions of the educational journey, thereby enhancing the teaching and learning experience (Upadhyaya & Vrinda, 2021). Beyond its role in curricula and assessments, promoting the incorporation of technology in teaching is essential to facilitate learning, making it unavoidable for educators to embrace technological tools and stay abreast of their ongoing development. Technology offers substantial benefits in terms of heightened productivity and efficiency, concurrently shaping new living conditions (Lee et al., 2016). However, the positive impacts of technology-driven changes are accompanied by negative repercussions, such as stress, fear and anxiety, as individuals endeavor to stay abreast of these advancements (Fernández-Batanero et al., 2021; Maples-Keller et al., 2017). The insufficient technological proficiency of teachers or their challenges in handling technical issues can lead to disappointment and psychological pressure, constituting adverse outcomes of information

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and communication technologies (Chiappetta, 2017). The adverse effects of technology were first conceptualized as "Technostress" by the American psychologist Brod in 1984. According to Brod (1984), technostress is an adaptation disease that happens when people have trouble dealing with new computer technology. Alternatively, Weil and Rosen (1997) characterized technostress as the unfavorable effect of technology on individuals' attitudes, behaviors, thoughts, and psychology, whether directly or indirectly. Despite the varying definitions, Jena (2015), Kim and Lee (2021) have agreed that stress and anxiety caused by changes in information and communication technologies can be called technostress.

It is increasingly apparent that adverse consequences stemming from technology can impact various aspects of life. Examining recent studies investigating the correlation between technostress and other phenomena reveals a diverse range of subjects explored in the literature. These encompass studies on job satisfaction (Aktan & Toraman, 2022; Ranathunga & Rathnakara, 2022; Toraman & Aktan, 2022), professional motivation (Akman & Durgun, 2022), academic productivity (Akman & Durgun, 2022; Fernández-Fernández et al., 2023), well-being and academic achievement (Whelan et al., 2022), techno-pedagogical competence (Gökbulut, 2021), professional burnout (Gökbulut & Dindaş, 2022), perceived organizational support (Solís et al., 2023), job condition satisfaction and perceived work balance (Al-Ansari et al., 2023), job condition satisfaction and perceived performance (Al-Ansari et al., 2019), psychological capital (Efilti & Çoklar, 2019), and work-family conflict (Shaukat et al., 2022). Furthermore, there are studies investigating the correlation between technostress and life satisfaction (Lee et al., 2016; Le Roux & Botha, 2021; Shaukat et al., 2022). Lee et al. (2016) and Le Roux and Botha (2021) observed in their research that technostress negatively influences life satisfaction. However, Shaukat et al. (2022) asserted a positive association between technostress and life satisfaction. The findings have demonstrated that the utilization of technology can lead to favorable outcomes for individuals, contributing to increased life satisfaction in certain cases. The different results have shown that it may be due to the differences in the research methods used in the studies, sample sizes, different characteristics of the participant groups and other variables.

Introduced by Neugarten in 1961, the concept of life satisfaction is defined as individuals' positive assessment of their lives based on criteria they establish (Diener et al., 1985). Put differently, life satisfaction arises from the comparison of individuals' life expectations with their actual situations (Özer & Karabulut, 2003), that is, the individual's conscious experience of positive emotions against negative emotions (Frish, 2005). Greater contentment with one's circumstances and life situation correlates with higher levels of life satisfaction. This situation affects people's family life, work, and other areas of their lives equally (Diener & Seligman, 2002; Leung & Leung, 1992). Based on this definition, negatively affecting the life satisfaction of individuals can negatively affect their work and family life and other areas of their life.

Research Aim and Research Questions

The aim of the research was to determine the impact of technological stress (technostress) on academics' life satisfaction. The starting point of this research was the proliferation of information communication technologies across organizations and therefore affecting non-technologist people and the limited number of studies conducted on academics on the subject focused on experts (academics). Furthermore, this study addresses existing gaps by examining the levels of technostress among teachers (academics) and determining the impact of technostress on life satisfaction within a developing country such as Kyrgyzstan. In this context, in Kyrgyzstan, online teaching is a relatively recent concept, and universities have only recently begun to develop and provide online programs. The research endeavors to provide valuable insights into the dynamics of technostress and its effects on the well-being of educators in a context where online education is still in its early stages of implementation. In this context,

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the researcher used the following research questions to achieve the main purpose of the study:

1. What are the academics' technostress and life satisfaction levels?
2. Are there significant differences in technostress and life satisfaction levels among academics based on variables such as gender, age, science field, and seniority?
3. Is there a significant association between academics' technostress and life satisfaction levels?
4. Do academics' technostress levels impact their life satisfaction levels?

Research Methodology

General Background

The research falls within the realm of quantitative research, with a focus on examining technostress and life satisfaction among academics in Kyrgyzstan during the year 2023. To achieve the determined research purpose, the relational scanning model was used. The quantitative research approach, categorized as research approaches aiming to depict a current or past situation, particularly highlights the relational scanning model's function, which is to identify and measure the existence or extent of associations between two or more variables (Karasar, 2014). The study was grounded in the work-life balance theory, which emphasizes a balance between work and life. This framework informed the development of research tools and analysis techniques, promoting a holistic understanding of the issues studied.

Sample Selection

The study's population comprises academics employed at universities in Kyrgyzstan during the 2022-2023 academic year. According to the latest report, a total of 12039 academics work in universities in Kyrgyzstan (National Statistics Committee of the Kyrgyz Republic, 2022). The participants were selected through the convenience sampling method, a non-probability sampling approach that involves selecting individuals based on their convenient accessibility or availability to the researcher. (Ekiz, 2015). The research was conducted with 342 academics, 207 women and 135 men, from four universities in Kyrgyzstan, who participated in the study voluntarily. Table 1 outlines the demographic and descriptive statistics of the sample group.

Table 1
Some Demographic Characteristics of the Participants (n=342)

	Group	*n*	%
Gender	Female	207	60.5
	Male	135	39.5
Age	27-40 years	116	33.9
	41-55 years	143	41.8
	56 and over years	83	24.3
Science Field	Social Science	104	30.4
	Science	238	69.6
Seniority	1-15 years	123	36
	16-30 years	137	40
	31 and over years	82	24

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60.5% (n = 207) of the sample of the study was female, and 39.5% (n = 51) were male academics. Reviewing the age ranges of the participants, 41.8% (*n* = 143) of the participants were 41-55 years old, 33.9% (*n* = 116) were 27-40 years old, and 24.3% (*n* = 83) were 56 years old and over. While 69.6% (*n* = 238) of the participants are in the field of social sciences, 30.4% (*n* = 104) are in the field of sciences. According to the variable of seniority years, 40% (*n* = 137) of the participants had 16-30 years, 36% (*n* = 123) 1-15 years, 24% (*n* = 82) had 31 years and more than ten years of seniority. Participation was ensured by obtaining a consent form from the participants, in which they declared that they participated voluntarily.

Instrument and Procedures

The researcher collected the study data with the Personal Data Form, "Defining Teachers' Technostress Levels Scale" developed by Çoklar et al., 2017) and adapted to Kyrgyz by Efilti and Zhumgalbekov (2023), and "Life Satisfaction Scale" developed by Diener et al., (1985) and adapted to Kyrgyz by Borkoev et al. (2019).

1. *Personal Data Form*

This form, created by the researcher, includes the demographic information of the participants (gender, age, science field, seniority).

2. *Defining Teachers' Technostress Levels Scale*

The scale comprises 28 items categorized into 5 factors. The factors are "Profession Oriented", "Learning-Teaching Process Oriented", "Personal Oriented", "Technical Subject Oriented" and "Social Oriented". The scale items are 5-point Likert type and are "Totally Agree", "Agree", "Partly Agree", "Disagree" and "Strongly Disagree". The Cronbach's alpha coefficient for the entire scale was found to be .917, signifying a robust level of internal consistency. Additionally, the Spearman-Brown coefficient, computed when the scale was divided into two halves, was found to be .845. These coefficients serve as measures of the reliability of the scale, demonstrating its consistency in assessing the underlying construct. The internal consistency coefficients (Cronbach's alpha) for the individual factors comprising the scale range from .712 to .788. The interpretations of the findings obtained are reliant on calculations made using the arithmetic mean score during the analysis of the data. The criteria for evaluating the technostress levels of academics in the scale are as follows: 3.68 – 5.00 – high level, 2.34 – 3.67 – medium level, 1.00 – 2.33 – low level (Çoklar et al., 2017). A strong positive correlation was identified between the initial Turkish version and the Kyrgyz adaptation of the scale ($r = .798$, $p < .01$). Following the analysis, a measurement instrument comprising 27 items and 5 subscales, elucidating 63.74% of the total variance, was derived. Furthermore, it was observed that the items within the sub-dimensions precisely corresponded to those in the original form. The internal consistency coefficient of the Kyrgyz version of the scale was calculated as $\alpha = .95$ and the internal consistency coefficient of the 5 subscales ranged between 0.77-0.85. The correlation value of the test-retest method was calculated as .811 (Efilti & Zhumgalbekov, 2023).

3. *Life Satisfaction Scale*

The Life Satisfaction Scale, formulated by Diener et al. (1985), was adapted into the Kyrgyz language by Borkoev et al. (2019). The original version of the scale is a self-assessment scale comprising 5 Likert-type items, ranging from "I totally agree" (5) to "I totally disagree" (1). In the Kyrgyz adaptation of the scale, 5 items remained hidden, but its type was changed to 7 Likert. A general score is obtained by summing the values of the options marked on the scale, and the maximum score that can be obtained is 35. In scoring the original scale, the arithmetic mean of the group is used to determine those with high and low life satisfaction. Those who are above the arithmetic average are determined as having high life satisfaction, those below the arithmetic average are determined as low life satisfaction. The coefficient of

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internal consistency of the Kyrgyz-language version of the life satisfaction scale was calculated as α = .751. The correlation value for the test-retest method was computed as .642. A positive significant association was found between the two results of the life satisfaction scale.

Data Collection

In order to collect the data, the researcher created the instruments electronically on Google Forms and sent the prepared form to the target audience via the Internet and applied it. The participants took care to include information on how to answer the questions on the first pages of the instruments.

Data Analysis

To decide whether to employ parametric or non-parametric tests for data analysis, an assessment of the data's normal distribution was conducted. In studies conducted in the field of social sciences, understanding whether the data has a normal distribution feature is mostly provided by the values of skewness and kurtosis. Tabachnick and Fidell (2013) articulated that if these values are between -1.5 and +1.5, it is accepted that the data satisfies the condition of normal distribution. Statistics package application was used in the analysis of the data.

Table 2
Kurtosis and Skewness Values of the Data

Variables	Skewness	Kurtosis
Technostress (Total Score)	.106	.041
1. Learning – teaching process oriented	-.008	-.102
2. Profession oriented	.366	.123
3. Technical subject oriented	.137	.033
4. Personal oriented	.247	-.207
5. Social oriented	.330	-.092
Life Satisfaction	-1.099	1.412

As seen in the table, the skewness and kurtosis values of the data are between -1.5 and +1.5. The researcher analyzed the results of the histogram, Q-Q Plot, Boxplot charts and Kolmogorov-Smirnov (K-S) (significance value was insignificant for all scales) test ($p \geq .05$) to decide on the normal distribution. Accordingly, with the data meeting the normal distribution criterion, the decision was made to employ parametric tests. Having normal distribution in measurements and using parametric tests give stronger results (Pallant, 2017). In this framework, the researcher applied the Pearson Product Moment Correlation Test for correlational analysis between dependent variables, a t-test for Independent Samples a One-Way ANOVA test for analysis of demographic variables, and Simple Linear Regression analysis to look at the predictive status among dependent variables. If the researcher found a significant difference according to the results of the t-test, the effect size of the significance was determined with the eta square (η^2) formula and reported with the eta square value (Table 2).

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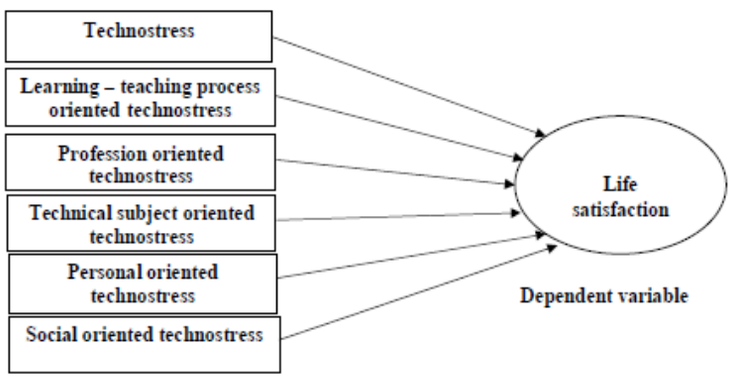
Figure 1
Conceptual Model of the Research



Research Results

The findings of the research are presented below in order.

Table 3
Cronbach's Alpha Values and Descriptive Statistics for All Variables

Variables	*N*	$\bar{x}$	*SD*	α	Level
Technostress (Total Score)	342	2.69	.508	.918	Medium
1. Learning – teaching process oriented	342	2.75	.595	.757	Medium
2. Profession oriented	342	2.41	.636	.786	Medium
3. Technical subject oriented	342	2.96	.626	.784	Medium
4. Personal oriented	342	2.40	.665	.825	Medium
5. Social oriented	342	2.94	.671	.796	Medium
Life Satisfaction	342	537	1.010	.763	High

Note. $\bar{x}$ = Mean, *SD* = standard deviation, α = Cronbach alpha reliability

The mean score for technostress of academics was 2.69, and the mean score for life satisfaction was 5.37. The mean scores of the technostress subdimensions were determined to be 2.75 for the learning-teaching process oriented, 2.41 for the profession oriented, 2.96 for the technical subject oriented, 2.40 for the personal oriented and 2.94 for the social oriented dimension. The data show that the personal oriented and profession oriented subdimensions have the lowest mean scores, while the social oriented and technical subject-oriented dimensions have the highest mean scores. On the other hand, participants generally have moderate technostress levels and high levels of life satisfaction. The Cronbach's Alpha coefficients of the variables show that the data are at a very reliable level (Table 3).

In order to analyze whether the life satisfaction and technostress levels of the academics differ by the gender variable, a *t*-test was performed for independent samples (Table 4).

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Table 4

t-test Results for Independent Samples Regarding the Difference of Technostress and Life Satisfaction Levels by the Gender Variable

Variables	Gender	*n*	$\bar{x}$	*SD*	*t*	*df*	*p*
Technostress (Total Score)	Female	207	2.72	.46	1.175	340	.24
	Male	135	2.65	.57			
1. Learning – teaching process oriented	Female	207	2.76	.56	0.218	340	.,83
	Male	135	2.75	.65			
2. Profession oriented	Female	207	2.45	.58	1.397	340	.16
	Male	135	2.35	.70			
3. Technical subject oriented	Female	207	3.04	.59	1.611	340	.11
	Male	135	2,.89	.66			
4. Personal oriented	Female	207	2.43	.64	0.991	340	.32
	Male	135	2,.36	.70			
5. Social oriented	Female	207	2.96	0.65	.617	340	0.53
	Male	135	2.92	0.71			
Life Satisfaction	Female	207	5.36	1.04	-.261	340	0.79
	Male	135	5.39	0.97			

Note. *SD* = standard deviation, $\bar{x}$ = Mean, *df* = degree of freedom

Table 4 shows that the general technostress levels of academics do not differ statistically from the gender variable [$t(340) = 1.175$; $p > .05$]. The scores of the technostress subdimensions did not differ significantly by the gender variable ($p > .05$). Among the technostress subdimensions, the highest mean score of females and males was in the social oriented subdimension, and the lowest mean score was in the personal oriented subdimension. However, the level of life satisfaction in academics did not show a statistically significant difference by the gender variable [$t(340) = -.261$; $p > .05$]. However, both females and males had a moderate technostress score and a high level of life satisfaction.

Table 5 shows the differences in the technostress and life satisfaction levels of the participants by the age variable.

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Table 5

One-Way ANOVA Test Results Regarding the Differences in Technostress and Life Satisfaction Levels by the Age Variable

Variables	Age	*n*	$\bar{x}$	*SD*	*F*	*df*	*p*	Levene's Test	Significant Difference
Technostress (Total Score)	1) 27-40	116	2.62	.49	1.822	2	.16	.322	
	2) 41-55	143	2.72	.48					
	3) 56 and more	83	2.74	.55					
1. Learning – teaching process oriented	1) 27-40	116	2.73	.58	0.348	2	.71	.139	
	2) 41-55	143	2.75	.57					
	3) 56 and more	83	2.79	.66					
2. Profession oriented	1) 27-40	116	2.29	.64	3.450	2	.03*	.181	1-3
	2) 41-55	143	2.46	.59					
	3) 56 and more	83	2.50	.69					
3. Technical subject oriented	1) 27-40	116	2.86	.64	2.331	2	.10	.620	
	2) 41-55	143	2.99	60					
	3) 56 and more	83	3.04	.64					
4. Personal oriented	1) 27-40	116	2.28	.64	3.222	2	.04*	.839	1-3
	2) 41-55	143	2.45	.68					
	3) 56 and more	83	2.48	.65					
5. Social oriented	1) 27-40	116	2.97	.70	1.676	2	.19	.315	
	2) 41-55	143	2.99	.63					
	3) 56 and more	83	2.83	.69					
Life Satisfaction	1) 27-40	116	5.26	1.12	1.199	2	.30	.136	
	2) 41-55	143	5.38	.94					
	3) 56 and more	83	5.49	.95					

Note. SD = standard deviation, $\bar{x}$ = Mean,*: $p < .05$

Table 5 indicates that the overall technostress levels among academics did not exhibit a statistically significant difference based on the age variable [$F(2) = 1.822$; $p > .05$]. The learning-teaching process oriented [$F(2) = .348$; $p > .05$], technical subject oriented [$F(2)= 2.331$; $p > .05$] and social oriented [$F(2)= 1.676$; $p > .05$] technostress levels did not differ, while the profession oriented [$F(2) = 3.450$; $p < .05$] and personal oriented [$F(2) = 3.450$; $p < .05$] technostress levels differed statistically significantly by the age variable. The Tukey test was employed to identify between which groups this difference existed, as the result of Levene's test did not yield significance. As a result of the test, there was a significant difference between the academics aged 27-40 and the academics aged 56 and over. The eta-square effect size coefficient analysis showed that this difference had a low effect on the variance ($\eta 2 = .02$).

The results of the analysis showed that the level of life satisfaction of academics did not differ statistically by the age variable [$F(2)= 1.199$; $p > .05$].

The differentiation status of the participants' technostress and life satisfaction levels according to the field of science variable is given in Table 6:

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Table 6

T-test Results for Independent Samples Regarding the Variation of Technostress and Life Satisfaction Levels by Science Field Variable

Variables	Science Field	*n*	$\bar{x}$	*SD*	*t*	*df*	*p*	(η^2)
Technostress (Total Score)	Social Science	104	2.67	.48	-.228	340	.82	
	Science	238	2.69	.52				
1. Learning – teaching process oriented	Social Science	104	2.77	.56	.482	340	.63	
	Science	238	2.74	.61				
2. Profession oriented	Social Science	104	2.32	.65	-1.862	340	.06	
	Science	238	2.45	.63				
3. Technical subject oriented	Social Science	104	2.98	.61	.373	340	.71	
	Science	238	2.95	.64				
4. Personal oriented	Social Science	104	2.31	.68	-1.758	340	.08	
	Science	238	2.44	.66				
5. Social oriented	Social Science	104	3.07	.66	2.338	340	.02*	.02
	Science	238	2.88	.67				
Life Satisfaction	Social Science	104	5.09	1.03	-3.510	340	.001**	.04
	Science	238	5.50	.98				

Note. SD = standard deviation, $\bar{x}$ = Mean, **: p < .05, **: p < .01*

While the general technostress levels of academics and the scores of the subdimensions of profession-oriented, learning-teaching process-oriented, personal-oriented, and technical subject-oriented did not differ by the science field variable ($p > .05$), the social oriented subdimension score differed statistically significantly [$t(340) = 2{,}338$; $p < .05$]. The result shows that academics in the field of social sciences have higher social-oriented technostress levels. The eta-square effect size coefficient of this difference was computed as $\eta^2 = .02$, and the difference had a low effect on the variance (Table 6).

The results of the analysis showed that the level of life satisfaction of academics differed statistically by the variable of the science field [$t(340) = -3.510$; $p < .01$]. The result shows that academics in the science field have higher levels of life satisfaction. The eta-square effect size coefficient for this difference was computed as $\eta^2 = .04$. The result shows that this difference has a low effect on the variance (Table 6).

The differentiation status of the participants' technostress and life satisfaction levels by the seniority variable is given in Table 7.

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Table 7

One-Way ANOVA Test Results Regarding the Variation of Technostress and Life Satisfaction Levels by Years of Seniority Variable

Variables	Year	*n*	$\bar{x}$	*SD*	*F*	*df*	*p*	Levene's test	**Significant** difference
Technostress (Total Score)	1) 1-15	123	2.66	.48	1.042	2	..35	.346	
	2) 16-30	137	2.67	.49					
	3) 31 and more	82	2.75	.56					
1. Learning – teaching process oriented	1) 1-15	123	2.79	.55	1.466	2	.23	.059	
	2) 16-30	137	2.68	.59					
	3) 31 and more	82	2.81	.66					
2. Profession oriented	1) 1-15	123	2.35	.63	1.428	2	.24	.085	
	2) 16-30	137	2.41	.58					
	3) 31 and more	82	2.50	.72					
3. Technical subject-oriented	1) 1-15	123	2.88	.61	2.161	2	.12	.997	
	2) 16-30	137	2.96	.63					
	3) 31 and more	82	3.06	.63					
4. Personal oriented	1) 1-15	123	2.30	.68	3.143	2	.04*	.726	1-3
	2) 16-30	137	2.42	.63					
	3) 31 and more	82	2.53	.66					
5. Social oriented	1) 1-15	123	3.01	.68	.985	2	.38	.365	
	2) 16-30	137	2.93	.62					
	3) 31 and more	82	2.88	.73					
Life Satisfaction	1) 1-15	123	5.21	1.14	2.517	2	.08	.143	
	2) 16-30	137	5.44	.93					
	3) 31 and more	82	5.49	.92					

Note. $\bar{x}$ = Mean, *SD* = standard deviation, **: p<.05*

In Table 7, as a result of the ANOVA test conducted to determine the group differences, the general technostress levels of the academics and the scores of the profession-oriented, learning-teaching process-oriented, social-oriented, and technical subject-oriented subdimensions did not differ by the seniority variable ($p > .05$), but the score of personal oriented subdimension differed statistically significantly [$F(2) = 3.143$; $p < .05$]. The Tukey test was utilized to identify the specific groups between which this difference existed, as the result of Levene's test did not reach statistical significance. The test results revealed a significant difference between academics with 1-15 years of seniority and those with 31 or more years of seniority. The result shows that academics with 1-15 years of seniority have lower personal technostress levels. The eta-square effect size coefficient analysis showed that this difference had a low effect on the variance ($\eta^2 = .02$).

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The analysis results indicated that the life satisfaction level of academics did not exhibit a statistically significant difference based on the seniority variable [$F(2) = 2.517$; $p > .05$].

Table 8 shows the findings of the correlation test, which was conducted to determine the associations between the participants' technostress levels and their life satisfaction levels:

Table 8
Results of Pearson Test (n =342)

	Technostress (Total Score)	1	2	3	4	5	6
Technostress (Total Score)	1						
1. Learning – teaching process oriented	.787**	1					
2. Profession oriented	.832**	.564**	1				
3. Technical subject-oriented	.812**	.506**	.553**	1			
4. Personal oriented	.817**	.498**	.688**	.583**	1		
5. Social oriented	.752**	0.98**	.491**	.616**	.528**	1	
6. Life Satisfaction	-.091	-.050	-.048	-.081	-.068	-.139**	1

***: p<.01*

In Table 8, the statistically significant associations show that there is a low level of negative statistically significant association between life satisfaction score and socially oriented technostress subdimension score [$r = .139$; $p < .01$]. Accordingly, as the socially oriented technostress level increases, the life satisfaction level score decreases. Life satisfaction score and general technostress level score [$r = -.091$; $p > .05$], learning-teaching process oriented [$r = -.050$; $p > .05$], profession oriented [$r = -.048$; $p > .05$], technical subject oriented [$r = -.147$; $p < .01$] and personal oriented [$r = -.147$; $p < .01$] subdimensions scores were not found to be statistically significant. Nevertheless, statistically significant positive correlations were observed between technostress and its subdimensions.

Table 9 presents the findings regarding the prediction of life satisfaction by technostress and its subdimensions:

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Table 9
Results of Linear Regression Analysis

Independent Variable	B(b)	SE of B	Beta	*t*	*p*
Technostress (Total Score)	-.181	.107	-.091	-1.687	.093
Invariant (a)	5858	.293		19.966	.001
			R^2=0,008 F= 2,846 p=.093		
1. Learning – teaching process oriented	-.085	.092	-.050	-.930	.353
Invariant (a)	5.607	.259		21.661	.001
			R^2= .003 F= .864 p= .353		
2. Profession oriented	-.077	.086	-.048	-.890	.374
Invariant (a)	5.557	.215		25.899	.001
			R^2= 0.002 F=.793 p= .374		
3. Technical subject oriented	-.130	.087	-.081	-1.495	.136
Invariant (a)	5.757	.264		21.842	.001
			R^2= .007 F= 2.234 p= .136		
4. Personal oriented	-.103	.082	-.068	-1.254	.211
Invariant (a)	5.619	.205		27.450	.001
			R^2= .005 F=1.571 p= .211		
5. Social oriented	-.210	.081	-.139	-2.597	.010
Invariant (a)	5.989	.244		24.559	.001
			R^2= .02 F=6.743 p= .010		

Note. *SE* = Standard Error, *a* = Dependent variable: Life satisfaction

As a result of the linear regression analysis to analyze the impact of technostress and its sub-dimension scores on the total life satisfaction score, the fixed parameter was statistically significant ($p < .001$), and among the technostress sub-dimensions, only the slope parameter of the socially oriented sub-dimension score ($t = -2.597$; $p < .01$) was statistically significant. Following the F-test ($F = 6.743$; $p \leq .01$), it was concluded that the model is generally significant, and the coefficient of determination was .02. 2% of the participants' life satisfaction score is explained by the life satisfaction score, and when other variables are kept constant, a 1-unit increase in the social oriented subdimension score will decrease the life satisfaction score by -.210 points.

According to the results of general technostress and profession oriented, learning-teaching process oriented, personal oriented and technical subject-oriented sub-dimensions, the regression is not important, since the significance value of the F test is greater than .05 ($p > .05$). Thus, it is the case that this regression equation cannot predict. However, since the significance value of the t-test is greater than .05 ($p > .05$), the parameter is not important. This result shows that general technostress, profession oriented, learning teaching process oriented, personal oriented and technical subject-oriented technostress do not have a significant impact on life satisfaction.

Discussion

In the study, the impact of technostress on life satisfaction was analyzed. In the Kyrgyz literature, no studies were found to compare the results obtained. Therefore, research from other countries is often used in the evaluations and discussions in this section.

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The participants exhibited a moderate level of technostress, as determined by the study. However, it was observed that the participants generally reported a high level of life satisfaction. This suggests that their scores on the scales surpassed the mean scores of the maximum possible score. In alignment with the study's findings, Çoklar et al. (2016) and Gökbulut (2021) similarly identified moderate levels of technostress in their research involving teachers. These results imply that the stress associated with technology use among academics and educators is moderate, falling neither excessively high nor exceedingly low. A moderate level of technostress may indicate that participants encounter some challenges in adapting to technology, but this circumstance does not significantly impede their overall job performance or life satisfaction.

The study revealed that there was no statistically significant difference in the overall technostress levels among academics, and the scores for technostress subdimensions did not vary significantly based on gender. This finding aligns with outcomes from various studies on the topic available in the literature. Çoklar et al. (2016), Gokbulut (2021), Le Roux and Botha (2021), and Akman and Durgun (2022) reported that gender did not play a significant role in teachers' technostress levels. Similarly, Gökbulut and Dindaş (2022), employing the same scale in their research, found no notable difference between gender and factors related to the teaching-learning process or the profession. However, contrary to these findings, they identified a significant difference in gender concerning overall technostress and subdimensions like technical subject-oriented, social-oriented, and personal-oriented factors. In their study, female teachers exhibited higher technostress levels than their male counterparts, a result supported by other studies as well. Abd Aziz et al. (2021), Ahmad and Amin (2012), Aktan and Toraman (2022), Shaukat et al. (2022), Solis et al. (2023), and Upadhyaya and Vrinda (2021) all found that gender significantly influenced teachers' technostress levels, with females experiencing higher technostress than males. In conclusion, while this study indicates no significant gender-based difference in technostress levels, it is noteworthy that the association between gender and technostress can be intricate and diverse, as different studies yield varying results. Nonetheless, it was established that the life satisfaction levels of academics did not exhibit a statistically significant difference based on the gender variable. In parallel with the study findings, Ergün and Nartgün (2016); Yurttaş and Hırlak (2023) found that the life satisfaction levels of academics did not differ by the gender variable. On the contrary, Toker (2012) found that the life satisfaction levels of academics differed by the gender variable, and life satisfaction levels of males were higher than females.

It was found that the overall technostress levels among academics did not demonstrate a statistically significant difference based on the age variable. While the technical subject-oriented, learning-teaching process-oriented and social-oriented technostress levels did not differ, the personal-oriented and profession-oriented technostress levels differed statistically by the age variable. The personal-oriented and profession-oriented technostress levels of the academics in the 27-40 age range are lower than those in the other age ranges. Akman and Durgun (2022), Le Roux and Botha (2021) found that teachers' technostress levels did not differ by the age groups, while Shaukat et al. (2022) identified an age group distinction in the technostress variable, with teachers in the older age group experiencing higher levels of technostress. Based on this result, teachers in the older age group may have adopted technology in a later period and this may cause them to resist changes and innovations related to technology. In addition, it can be inferred that the need for new skills and knowledge regarding the use of technology can increase technostress for teachers who have been teaching with traditional methods for many years.

However, it was determined that the life satisfaction levels of academics did not differ statistically by the age variable. Contrary to the study result, Nair et al. (2021); Toker (2012); Yurttaş and Hırlak (2023) found that the life satisfaction of academics differs by the age

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variable. Across the literature, it was consistently observed that the older age group exhibited higher levels of life satisfaction than other age groups.

It was found that while the general technostress levels of academics and their subdimension scores of the profession oriented, learning-teaching process oriented, technical subject oriented, and personal oriented did not differ by the science field variable, the scores of the social oriented subdimension differed statistically. It was also determined that the social science academics' social-oriented technostress levels are higher than those of the scientists. The reason for this result may be that the technology use requirements of social sciences are higher than those of science and that social scientists use technology more frequently and in a complex way. Intensive use of digital technology may be required in data collection, analysis and sharing processes of research in social sciences, which may increase socially oriented technostress in academics. No studies were found in the literature that analyzed the differentiation status of technostress levels among academics based on the science field variable.

The life satisfaction levels of academics differ by the science field variable. Academics in the field of science exhibit higher levels of life satisfaction compared to those in social sciences. In the literature, no studies were found in which the differentiation status of the technostress levels of academics by the science field variable was analyzed.

As a result of the study, it was determined that while the general technostress levels of the academics and their scores of the profession oriented, learning-teaching process oriented, technical subject oriented, and social oriented subdimensions of the academics did not differ, the scores of the personal oriented sub-dimension differed statistically by the seniority variable. It was concluded that a significant difference existed between academics with 1-15 years of seniority and those with 31 or more years of seniority. This situation shows that academics with 1-15 years of seniority have lower personal technostress levels. Aktan and Toraman (2022), Çoklar et al. (2016); Gokbulut (2021); Gökbulut and Dindaş (2022) found no significant difference between teachers' technostress levels and their professional seniority levels, indicating that seniority had no impact on technostress levels.

It was determined that the life satisfaction levels of academics did not differ statistically by the seniority variable. In parallel with the study findings, Yurttaş and Hırlak (2023) determined that the level of life satisfaction of academics did not differ by their professional seniority. In contrary to the study findings, Ergun and Nartgun (2016); Nair et al. (2021), Toker (2012) found that there was an association between these two variables. Teachers with more years of seniority were found to have higher levels of life satisfaction.

There was a low level of negative statistically significant association between life satisfaction and social oriented technostress subdimension score. Accordingly, as the level of social oriented technostress increases, the level of life satisfaction decreases. However, it was determined that there was no statistically significant association between life satisfaction and general technostress level and profession oriented, learning-teaching process oriented, technical subject oriented and personal oriented technostress subdimensions. In their studies, Lee et al. (2016) and Le Roux and Botha (2021) discovered that technostress exerts a negative impact on life satisfaction. However, Shaukat et al. (2022) determined that there was a positive association between technostress and life satisfaction. These results showed that the use of technology can also have positive results among people, and technology can increase life satisfaction of people in some cases. These different results show that it may be due to the differences in the methods used in the studies, sample sizes, different characteristics of the participant groups and other variables.

As a result of the study, it was determined that the general technostress level and the profession oriented, learning-teaching process oriented, technical subject oriented and personal oriented technostress subdimensions did not have a significant impact on life satisfaction. However, it was identified that the social-oriented technostress subdimension had a negative

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predictive impact on life satisfaction. Lee et al. (2016) and Le Roux and Botha (2021) determined that technostress had a negative effect on life satisfaction. However, Shaukat et al. (2022) indicated that technostress positively affected life satisfaction.

Conclusions and Implications

Online teaching is a very new method for Kyrgyzstan, which is a developing country trying to catch up with innovations in academic life in this process. Due to this, this study aimed to determine the impact of technostress on the life satisfaction of academics working in university education in Kyrgyzstan. As a result of the research, it was determined that there was a low-level negative, statistically significant association between life satisfaction and the socially focused technostress sub-dimension score among the technostress sub-dimensions. It has been determined that there is no statistically significant association between life satisfaction and general technostress level, and among the technostress sub-dimensions.

As a result of the regression analysis, it was determined that the general technostress level and its sub-dimensions had no impact on life satisfaction, and that single socially focused technostress had a negative predictive impact on life satisfaction. One particularly striking issue among the findings is that academics in the field of social sciences experience much more technostress. Depending on this result, it is important to eliminate the technological deficiencies of academics working in the fields of social sciences and to equip them with equipment suitable for the rapidly changing technology of the 21st century. In this digital age, where information increases at a much faster rate than in previous periods, every academician needs to acquire the knowledge and skills to master innovations. Encouraging academics and providing them with supportive opportunities in this regard will help control technostress levels.

The examination of technostress and its impact on life satisfaction is a crucial area that warrants further academic investigation. This issue holds significant relevance as it intersects with key aspects like job satisfaction, performance, productivity, and burnout. Conducting studies on technostress and life satisfaction within the academic context has the potential to provide valuable insights for university administrations and educators, ultimately contributing to the enhancement of educational quality. By delving into the dynamics of technostress and life satisfaction, academia can gain a nuanced understanding of how these factors influence job stress, job satisfaction, burnout, job performance, intention to leave, and managerial support. Such comprehensive studies have the potential to offer actionable insights that can inform strategies to improve the overall well-being of university faculty and staff, leading to a positive impact on the quality of education provided. It is advisable to consider repeating these studies within specified time frames to capture evolving trends and dynamics in the academic environment.

Declaration of Interest

The authors assert no conflicts of interest.

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