Mimoza Pira, PhD

Tempulli Academy, Prishtina, Kosovo
E-mail**:** mimoza.pira@gmail.com
Orcid: https://orcid.org/0000-0001-6305-8611

Bujar Pira, PhD

Full Professor
University of Applied Sciences in Ferizaj, Ferizaj, Kosovo
E-mail: bujar.pira@ushaf.net
Orcid: https://orcid.org/0000-0001-7889-7805

IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY ON WORKLOAD, EXHAUSTION AND EFFICACY AMONG HEALTHCARE WORKERS

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Abstract

This study aimed to examine both the benefits and challenges that Information and Communication Technology (ICT) brings to the workplace among healthcare professionals, in the case of Kosovo. This study involved n=319 Kosovo healthcare employees using a structured questionnaire. Regarding the analyses, correlation and hierarchical regression analyses were conducted. The findings revealed that access to ICT increased workload and efficacy. The results reveal that with an increase in the workload, exhaustion increases too. The results show no significant direct or indirect impact of workload on efficacy. These results are discussed in the context of relevant literature, with consideration given to both the nature in which the health professionals in Kosovo use ICT and the cultural environment of Kosovo. This highlights the need for a better workload management system and self-care practices at the workplace to prevent exhaustion.

Keywords: ICT, Workload, Exhaustion, Efficacy, Healthcare

1. INTRODUCTION

We are witnesses to ever-changing technologies and their close connection with access to information, and usage enabling control, and influence,

but also a strategic advantage. Today, professionals and organizations across different sectors are increasingly adopting various information and communication technologies in order to enhance their skills and efficacy as well as strengthen their competitive positions. The importance of information and communication technology has become particularly evident, with its capabilities recognized as essential across nearly every industry segment (Dunkombe & Heeks 1999).

For years, the use of information technology in healthcare, mostly in the form of patient registers, Hospital information systems or even National health information systems, has been seen as costly, time-consuming, and in some cases even unnecessary. Perhaps, these negative perceptions of the use of technology in information collection, management, and sharing were more of a pretext for some health professionals to hide behind paperwork (Demsash et al., 2023). However, nowadays, this perception has shifted. Over the past two decades, Information and/information and communication technology has increasingly been regarded as a vital tool for improving the overall efficiency, quality, and safety of healthcare delivery (Chaudhry et al., 2006).

ICT offers clear benefits, including quick access to a broad range of information, almost real-time decision-making, cost optimization, etc. However, there are also drawbacks. Evidence suggests that ICT use can bring risks, and requires time to familiarize with, while at the same time providing various challenges like fatigue and stress. In some cases, digital tools and their availability can contribute to exhaustion.

Recognizing the influence of ICT across industries, this study aimed to examine its influence on healthcare services. Thompson & Coovert (2003) argue that with workplaces likely to become even more technologically advanced in the coming years, it is essential to understand the dual role of digitalization, the positive and the negative. Across many sectors, digital technologies have indeed facilitated work and in some cases even the processes, however, the vast dependence on Information and communication technologies and in some instances even excessive use has proven to be a burden by negatively affecting job performance and personal well-being.

Digitalization in the current decade is characterized by the increased adoption of emerging technologies such as artificial intelligence, the Internet of Things, virtual reality, cloud computing and blockchain among others (Kumar et al., 2020). Furthermore, information/communication technologies play an important role in facilitating communication both within the workplace and globally by using a wide array of technologies such as video conferencing, email, and instant messaging as well as telecommunication devices such as cellular phones (Turner et al., 2010).

However, there are diverse criticisms that have arisen regarding the use of technology for communication, for instance, Denstadli et al (2011) argue that although video conferencing and face-to-face meetings achieve similar objectives, the two are however suited for different applications. Another study also showed

there was a change behavior of the participants attending meetings virtually by becoming more concise and rigorous in the time spent in the virtual meetings and demanding a clear agenda before all virtual meetings (Pînzaru & Stoica, 2022).

According to Okundaye et al. (2019) the use of digital technologies can play an important role and provide a competitive advantage to businesses when it is used adequately in their decision-making process. Furthermore, information and communication technology can play a crucial role in the innovation capacity of organizations, especially in problem-solving and outreach (Periša et al., 2017). At the same time, productivity is improved dramatically based on the decision-making processes using modern digital technologies in communication, particularly in the media and creative industry (Kudo et al., 2021).

One of the benefits of using digital/information and communication technology in the workplace is that it facilitates communication and collaboration between different workers (Denstadli et al., 2011). Furthermore, communication technologies have, alongside benefits, introduced us to a lot of challenges including the loss of meaning and context in the messages conveyed (Cakula & Pratt, 2021). At the same time, employee engagement levels vary depending on their attitudes and perceptions toward benefits (Načinović Braje & Kušen, 2016). This may certainly be the case if communication technologies provided to employees are seen as part of the benefit package.

On the other hand, with an increased dependence on digital technologies by many professionals, not all these professionals have the necessary skills, in order to use these technologies during their everyday tasks at their place of work (Afolayan et al., 2015). Furthermore, with the emerging technologies and introduction of new legislation by governments in the areas of collection and protection of personal data, electronic payments, and other online systems, businesses should also ensure to adhere to these new requirements, which further increase the stress level (Sharma, 2012).

Access to digital technologies for communication has increased the staff's expectation to respond promptly to various technological needs. Kao et al. (2020) indicate that the efficiency provided by digital technologies has heightened expectations for employees to remain constantly present in the work environment. The constant overview of the employee's engagement can increase workload, potentially leading to exhaustion and fatigue (Hu et al., 2019).

ICT can also be seen as a tool that enables work flexibility in terms of timing (outside working hours), different locations, etc., making them available for work almost 24/7 (Ninaus et al., 2015). While this expected flexibility can enhance productivity, it can certainly disrupt work-life balance, leading to overwork and eventual exhaustion and Burnout (De Wet et al., 2016).

Moreover, the extensive use of ICT has led to information overload, where employees are exposed to more information than they can process within the available time (Strother et al., 2012). This overload causes stress and hinders

decision-making, as individuals struggle to process the vast information they receive. Consequently, employees may experience exhaustion and burnout due to the stress of making decisions with insufficient resources.

Kosovo, though an independent country since 2008 has inherited a large, fairly centralized healthcare system from the times it used to be part of the Federal Socialist Republic of Yugoslavia, which was known for its numerous shortcomings (Percival & Sondorp, 2010). According to the Kosovo Agency of Statistics (KAS), over two decades after the last conflict, though there have been many improvements in recent years, Kosovo still faces significant economic challenges of which the biggest one is the lack of a health information system.

With regard to digitalization, Kosovo has made notable progress in digital transformation, particularly with the adoption of the Digital Agenda for Kosovo 2030. According to the World Bank (2023), every village in Kosovo is connected to high-speed broadband internet. The internet access in Kosovo has reached an impressive level of 99.55% of the population.

On the other hand, according to the KAS, in 2023 there were 26,636 employees in the health sector in Kosovo. This included 5,287 specialist doctors, 16,134 nurses, 2,448 dentists, 1,221 physiotherapists and 1,546 pharmacists. Of this number 57% are women and 43% are men.

This study focuses on analyzing the impact of Information and Communication Technologies in daily use among healthcare professionals, examining whether it contributes to stress, and affects their well-being. To be more specific, the aim of this research is to explore the impact of ICT (access to information and communication technology) on workload, exhaustion, and efficacy among health professionals in Kosovo

The necessity of continuous learning also places pressure on employees (Hult et al., 2016). Many workplaces offer limited time for learning, so the need for constant skill enhancement can increase employee stress and the likelihood of burnout.

Through a review of the literature, various arguments emerge in support of these five hypotheses.

H1: ICT availability increases Workload.

H2: ICT availability increases Exhaustion

H3: ICT availability increases Efficacy.

H4: Workload increases Exhaustion.

H5: Workload reduces Efficacy.

H6: ICT availability indirectly increases exhaustion through workload.

H7: ICT availability indirectly increases efficacy through workload.

2. METHODOLOGY

2.1. Population, sampling, and sample size

For the purpose of this study, the research population comprises all health professionals employed within the healthcare sector in Kosovo. According to the KAS, there are a total of 26,636 health professionals from all three levels of healthcare, primary secondary, and tertiary, as well as other support services like the pharmaceutical sector. Since the spread of the facilities that the health professionals are operating on countrywide, cluster sampling was selected. Cluster sampling is justified when a research study needs to collect data from a large, geographically dispersed population where accessing individual members directly is impractical or too costly, making it more efficient to sample naturally occurring groups (clusters) that represent the wider population (Thomas, 2023). In this study, the as cluster sample was selected from the Prishtina region since it is the only town that covers all levels of healthcare.

On the other hand, ensuring that the sample included all ranges and levels of healthcare professionals, this study also employed stratified sampling techniques. Stratified sampling is the most efficient among all probability designs, and it is proven to result in the smallest sampling error (Sekaran & Bougie, 2010).

With that in mind, the study included a total of six healthcare units/institutions in such a way that ensures representation of all the levels of healthcare institutions in Kosovo:

- Two clinics from the University Hospital Clinical Center – representing secondary and tertiary healthcare levels
- Three Family Medicine Centers – representing the primary healthcare level
- Kosovo Chamber of Pharmacists – representing support services

In total, 690 questionnaires were distributed between the healthcare professionals, of which 319 questionnaires were collected and validated, with a response rate of just over 46%.

Regarding the sample size, it is essential to determine a sample size that will yield generalized and reliable results for the entire population. A sample size of fewer than 100 is generally considered small, a medium sample size ranges from 100 to 200, and a large sample size is anything above 200 (Hair et al., 1995). Additionally, any sample size should exceed 100 (Garson, 1999). For a population of 3,500, a sample size of at least 346 is recommended (Krejcie & Morgan, 1970).

2.2. Data collection

The process of data collection was realized in person (face-to-face) and online (using Google form) from December 2022 to March 2023. The in-person interviews were carried out at the healthcare facilities, in collaboration with the

head managers of the respective Healthcare and directors of departments inside the Kosova University Hospital Clinical Center (KUHCC), while the online survey was carried out with the pharmacists in collaboration with the head of Chamber of Pharmacists of Kosovo, who distributed the survey to their members across the country.

Before the data collection process, the respondents from in-person interviews were assured that their responses were confidential while the online respondents were informed that their responses were anonymous. After the data were collected, the completed questionnaires were analyzed for correctness and completion and as a result, 28 responses were excluded from the analyses, leaving a total of 319 completed and valid responses.

2.3. Measurable instruments

The instrument consists of a structured questionnaire that is divided into five sections. The first section included demographic questions while the remaining sections included questions about, but not limited to, ICT availability, workload, exhaustion and efficacy.

2.3.1. ICT availability and Workload scales

In order to measure ICT availability and workload, the original scale developed by Day et al. (2012) was adapted and contextualized to suit the time and circumstances. The original questionnaire was in English, which was translated into Albanian language. The items in the scale were organized to effectively capture relevant data using five-point Likert scale: (1) Never, (2) Rarely, (3) Sometimes, (4) Very often, and (5) Almost always. While ICT availability construct has six items, the workload construct has four. Appendix 1 contains the scales used in this study.

2.3.2. Exhaustion and Efficacy scales

Regarding the exhaustion and Efficacy measurement, the Maslach Burnout Inventory – Student Survey (MBI-SS) developed by Schaufeli et al. (1996) was adopted. As in the ICT availability and Workload scales, the original questionnaire was in English, which was translated into Albanian language and the items in the scale were organized using five-point Likert scale ranging from (1) Absolutely disagree to (5) Absolutely agree. Each construct has four items. All exhaustion and efficacy scales can be found in Appendix 1.

2.4. Control Variables

Control variables are factors that are kept constant to ensure that the effect of the independent variable on the dependent variable is accurately measured. For

the purpose of this study, demographic factors like age, gender, educational background, and work experience were adopted as control variables.

Table 1 Sample description

		Sample (n=319)
Gender	Male	117 (37%)
	Female	202 (63%)
Education	PhD	33 (10%)
	Master	178 (56%)
	Bachelor	76 (24%)
	High school	32 (10%)
Age	Mean (SD)	36.65 (10.27)
	Range	19-64
Work Experience	Mean (SD)	7.70 (7.31)
	Range	0-40

Notes: SD = standard deviation

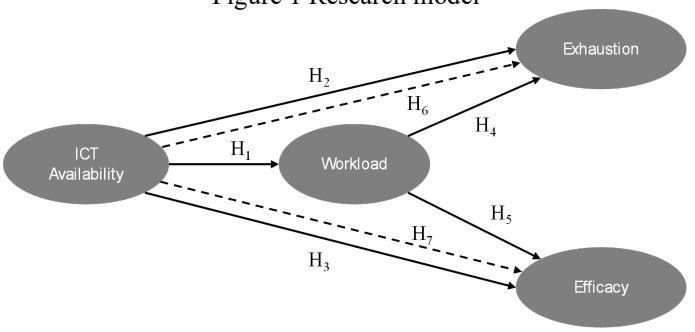
Source: Authors.

From Table 1, it can be seen that the proportion of female respondents is higher than that of males, which is in line with a study by Dill & Frogner (2024), where 77% of healthcare jobs in the United States are performed by women. Additionally, the percentage of respondents with a master's degree exceeds that of all other educational levels combined (due to a large number of doctors and pharmacists among respondents who have to have a master's degree to be qualified as such), while the respondents with either a high school or bachelor's degree make about 20% of the total number. The mean education level is 36.65, with a standard deviation of 10.27. Last but not least, as a control variable, the mean experience of the respondents is 7.70 with a standard deviation of 7.31 (suggesting that the majority of respondents have shorter work experience).

2.5. Research Model

A research model was designed to examine the impact of access/availability of ICT on workload and its subsequent impact on exhaustion and efficacy. In this instance, access/availability of ICT serves as the independent variable, while workload, exhaustion, and efficacy function as the dependent variable.

Figure 1 Research model



Source: Authors.

The research model is constructed to measure the direct impact of the ICT availability (as an independent variable) on workload, exhaustion and efficacy (as dependent variables), as well as an indirect impact on exhaustion and efficacy through workload (as a mediator). The study will also examine the direct effect of workload (in this case as an independent variable) on exhaustion and efficacy (as dependent variables).

2.6. Validity and Reliability

The validity and reliability of the scale were also tested using the Confirmatory Factor Analysis (CFA) model by using the PLS-SEM method. For the purpose of the validity of each of the constructs Cronbach's alpha coefficients were used to measure the internal consistency of each construct and normally values above 0.7 are generally acceptable (Wu et al., 2019).

Table 2 Construct Reliability and Validity

	Cronbach's Alpha	Composite Reliability (CR)	rho_A	Average Variance Extracted (AVE)
ICT Availability	0.846	0.885	0.86	0.565
Efficacy	0.837	0.889	0.90	0.669
Exhaustion	0.82	0.882	0.84	0.654
Workload	0.763	0.845	0.78	0.578

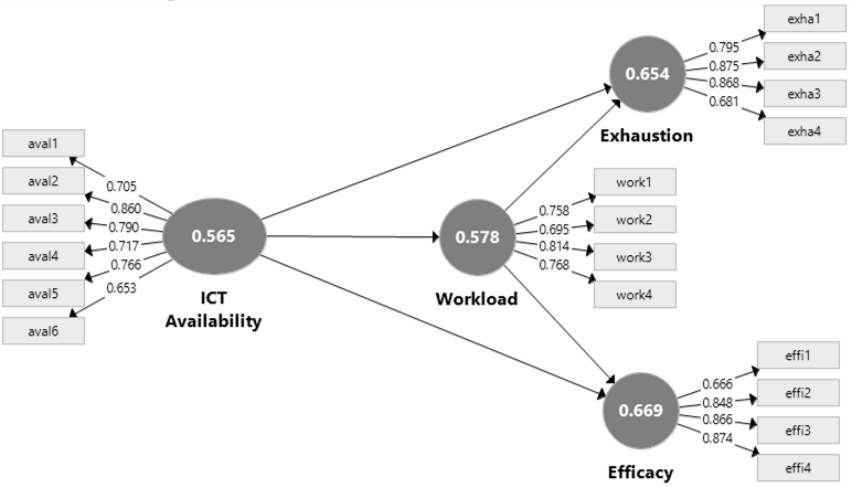
Source: Authors.

On the other hand, in order to assess the reliability of the scale Composite Reliability (CR) and Factor Loading (FD) were used. For CR, the satisfaction criteria are between 0.7 – 0.9 (Nunnally & Bernstein, 1994), however, according to Hair et al. (2021) values between 0.6 – 0.7 are accepted for exploratory research while any value less than 0.6 is considered as low. For the purpose of this study, all values between 0.6 – 0.9 are considered acceptable. From Table 2 it can be seen

that Cronbach's alpha coefficients for all construct values are greater than 0.7. The same goes for CR, where all values are between 0.6 – 0.9.

As for the Outer Loading, as an index, it represents the reliability of the indicators and according to Hair et al. (2010), all values above 0.7 are considered acceptable while Hulland (1999) considers that OL values between 0.4 – 0.7 can be accepted under certain conditions. These conditions depend on the Average Variance Extracted (AVE) and CR. If the AVE values are above 0.5 and CR values are greater than 0.7, in this case, the OL values between 0.4 – 0.7 can be accepted (Avkiran & Ringle, 2018). As presented in Figure 2, all AVE values in the model are above 0.6 and as such are acceptable.

Figure 2 AVE of construct and OL of all indicators



Source: Authors.

3. DATA ANALYSIS AND RESULTS

For the purpose of this study, two types of analyses were conducted:

- General descriptive analysis of the sample characteristics and statistics
- Correlation analysis to find out the relationship between the variables.
- Regression analyses using path coefficient

3.1. Descriptive Statistics

Descriptive statistics for the dataset are presented in Table 3. The results that the average age of respondents was 36.6 years, with a standard deviation of 10.3 years while the mean work experience was 7.7 years, with a standard deviation of 7.3 years.

The distribution characteristics of the data were examined using skewness and kurtosis. Both skewness and kurtosis values for demographic variables skewness values ranged between -0.5 and 1.8, and kurtosis values between -1.7 and 4.1 (gender: 0.5 respectively -1.7, age: 0.5 respectively -0.6, education: -0.5 respectively -0.1 and work experience: 1.8 respectively 4.1.

For other variables, skewness values ranged between -0.6 and 0.7, and kurtosis values between -0.4 and 0.3. (ICT availability: -0.6 respectively -0.4, workload: 0.6 respectively 0.0, Exhaustion: 0.7 respectively 0.3, and Efficacy: -0.7 respectively -0.1).

Table 3 Descriptive Statistics of Variables

	Nr	Min.	Max.	Mean	SD	Skew.	Kurt.
Gender	319	1	2	1.4	0.5	0.5	-1.7
Age	319	19	64	36.6	10.3	0.5	-0.6
Education	319	0	3	1.7	0.8	-0.5	-0.1
Work experience	319	0	40	7.7	7.3	1.8	4.1
ICT Availability	319	1.4	5	3.8	0.9	-0.6	-0.4
Workload	319	1	5	2.3	0.9	0.6	0.0
Exhaustion	319	1	5	2.6	0.8	0.7	0.3
Efficacy	319	2	5	4.1	0.7	-0.7	-0.1

Notes: SD = standard deviation; Min = Minimum; Max = Maximum; Skew = Skewness; Kurt = Kurtosis

Source: Authors.

3.2. Correlations

The correlation analysis was conducted to determine whether or not there is a relationship between the variables and if so, how strong and in what direction (positive or negative) this relationship is. The results of the correlation analysis are presented in Table 4.

Table 4 Correlation Matrix

	1	2	3	4	5	6	7	8
Gender	1							
Age	0.01	1						
Education	0.08	**0.148****	1					
Work experience	-0.11	**0.770****	-0.08	1				
ICT Availability	0.01	0.07	**0.242****	0.02	1			
Workload	**0.176****	**0.176****	0.03	**0.125***	**0.208****	1		
Exhaustion	-0.02	**0.188****	0.03	**0.151****	**0.179****	**0.204****	1	
Efficacy	**-0.131***	-0.05	**0.151****	-0.06	**0.244****	-0.02	0.09	1
**. Correlation is significant at 0.01 level (2-tailed).								
*. Correlation is significant at 0.05 level (2-tailed).								

Source: Authors.

The results show that there are some correlations between demographic variables. The only variables that were correlated were age which is positively correlated with both education ($r = 0.148$, $p < 0.01$) and work experience ($r = 0.770$, $p < 0.01$). On the other hand, there is a correlation between demographic variables and other variables (independent and dependent). Gender was positively correlated with the workload ($r = 0.176$, $p < 0.01$) and negatively correlated with efficacy ($r = .188$, $p < 0.01$). Age was positively correlated with the workload ($r = 0.176$, $p < 0.01$) and exhaustion ($r = 0.188$, $p < 0.01$) while Education was positively correlated with availability ($r = .242$, $p < 0.01$) and efficacy ($r = 0.151$, $p < 0.01$). And lastly, work experience was positively correlated with workload ($r = 0.125$, $p < 0.05$) and exhaustion ($r = 0.151$, $p < 0.01$).

Besides the correlation between demographic variables and other variables, the analyses show that there is a relationship between independent and dependent variables as well. Results showed that ICT availability was positively correlated with workload ($r = 0.208$, $p < 0.01$), exhaustion ($r = 0.179$, $p < 0.01$) and efficacy ($r = 0.244$, $p < 0.01$) while workload was also positively correlated with exhaustion ($r = 0.204$, $p < 0.01$). The results also showed that there is no correlation between workload and efficacy.

3.3. Regression Analyses

Regression analysis using a path coefficient was conducted to examine the possible causal linkage between the variables in the structural equation modelling (SEM) using SMART PLS. This method is commonly used for hypothesis testing and at the same time to examine the relationships between a dependent variable and multiple independent variables. The analysis consisted of the direct effect of ICT availability and workload on exhaustion and efficacy, and the indirect effect of ICT availability on exhaustion and efficacy using workload as a mediating variable.

The results indicate that ICT availability significantly influences workload ($\beta = 0.23$, $p < 0.05$), supporting H1. Additionally, ICT availability significantly influences exhaustion ($\beta = 0.12$, $p < 0.05$), supporting H2, and ICT availability significantly influences efficacy ($\beta = 0.30$, $p < 0.05$), supporting H3 (Table 5). Table 5. Hypotheses 1-3 testing using Path Coefficient.

Table 5 Hypotheses 1 through 3 testing using Path Coefficient

	Path Coefficient	p-value	Result
H1: ICT Availability > Workload	0.23	0	Supported
H2: ICT Availability > Exhaustion	0.12	0.02	Supported
H3: ICT Availability > Efficacy	0.30	0	Supported

Independent variable: ICT availability

Source: Authors.

The results also show that the workload significantly influences exhaustion ($\beta = 0.23$, $p < 0.05$), supporting H4. And last but not least, the results show that there is no significant influence of workload on efficacy, therefore, the H5 is not supported (Table 6).

Table 6 Hypotheses 4 and 5 testing using Path Coefficient

	Path Coefficient	p-value	Result
H4: Workload > Exhaustion	0.23	0	Supported
H5: Workload > Efficacy	-0.11	0.12	Not Supported

Independent variable: Workload

Source: Authors.

Last but not least, the results also show that ICT availability has a positive indirect effect on exhaustion through the mediating role of workload ($\beta = 0.05$, $p < 0.01$), supporting H6. On the other hand, the results show that there is no significant influence of ICT availability on efficacy through the mediating role of workload, therefore, the H7 is not supported (Table 7).

Table 7 Hypotheses 6 and 7 testing using the indirect effect

	Path Coefficient	p-value	Result
H6: ICT Availability > Workload > Exhaustion	0.05	0.01	Supported
H7: ICT Availability > Workload > Efficacy	-0.03	0.13	Not Supported

Mediating variable: Workload

Source: Authors.

4. DISCUSSION

As outlined in the introduction, the primary objective of this research was to evaluate the impact of the regular use of Digital Communication Technologies among healthcare professionals' daily activities as well as its impact on stress elements and how it may affect their well-being. In particular, this study examined the impact of the digital technologies themselves on the workload, exhaustion and efficacy of healthcare professionals as well as assessed the impact of the workload on exhaustion and efficacy. To do this, we will focus on addressing the results of the hypotheses which were developed following the literature review.

The results from the regression analyses (using path coefficient) showed that access to digital technologies increased workload and exhaustion while at the same time also increased efficacy. At the same time, the results from the correlation analyses showed that there is a positive relationship between ICT and the three

dependent variables, workload, exhaustion and efficacy. The results also show that with an increase in the workload, exhaustion also increases. Last but not least, the results do not support the fifth and the seventh hypotheses. This would suggest that the increased workload does not necessarily reduce efficacy or increase it, directly or indirectly (when it acts as a mediator between ICT availability and efficacy).

These findings align with previous studies, which suggested a positive correlation between the variables. For instance, Day et al. (2012) observed a link between access to digital technologies and employee well-being, and Chen et al. (2020) noted that increased work engagement using digital technologies could heighten emotional exhaustion. Portoghese et al (2014) also found a significant relationship between workload and exhaustion, which was most pronounced in low-control job settings. Similarly, Hu et al. (2019) and Ninaus et al. (2015) argue that the use of ICT facilitates the possibility of engaging in working flexible hours, which can disrupt work-life balance, which would certainly lead to overwork and eventual exhaustion. Moreover, according to Strother et al. (2012) the extensive use of digital technologies could expose professionals to more information than they can handle in a short period of time which in turn could lead to an increase in stress and subsequently exhaustion and burnout.

The alignment of these results with previous research can be attributed to several factors. The availability of ICT among healthcare workers, particularly in private healthcare facilities in Kosovo, appears to enhance efficacy, especially through the use of hospital information systems (HIS) in their daily activities, which suggests that as healthcare workers' workload increases, so does their exhaustion.

5. CONCLUSION

This study's contribution focuses on two elements. First, the study tried to align the usage of ICT and how it impacts the employee workload and second, how ICT, together with the workload, impacts exhaustion and efficacy. On the other hand, one of the sectors that was least researched in this field was the healthcare sector, and this is the area in which this study aims to contribute.

Regarding the impact of ICT availability on workload among healthcare workers, the study demonstrated that healthcare workers' access to ICT equipment increases their workload, and this is in line with other research done for different industries. Furthermore, the study showed that access to ICT increases exhaustion (an overload and an inability to disconnect, resulting in higher levels of stress), and on the other hand, it significantly enhances efficacy by providing instant access to information, enabling real-time communication, which streamlines workflows and improves productivity. The pressure to constantly perform well in this ever-growing digital world contributes to mental fatigue, highlighting the need for a work-life balance in order to mitigate its negative effects.

On the other hand, increased workload (as a result of ICT usage) significantly contributes to exhaustion. Increased workload often leads to longer working hours, the

pressure to meet deadlines and the constant demand to stay productive and efficient can result in burnout. This points out the need for a better workload management system at the workplace and better self-care practices to prevent exhaustion.

Last but not least, the study also showed that there is no connection between increased workload and reduction of efficacy. This demonstrates that the results of the study do not align with the predicted outcome (increased workload reduces the efficacy), nor the opposite (increased workload increases the efficacy).

The study also demonstrated that, as expected, the use of ICT equipment increases the employee workload and, in turn, increases exhaustion. However, the expected the same does not apply to the increase of efficacy from the use of ICT through workload. Though access to ICT directly impacts efficacy, the impact is not the same if it goes through the workload.

One potential direction for future studies is to conduct longitudinal research that explores the impact of ICT in the healthcare sector over a longer period. This approach would allow researchers to track changes in the impact of ICT on healthcare workers over time and could offer valuable insights into the evolving relationship between ICT demands, worker performance, and burnout. Such studies could also incorporate time as a variable to understand temporal shifts in the data. Furthermore, a qualitative study could also shed lite into various subjective aspects of stress and potentially digital exhaustion.

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APPENDIX 1

ICT Availability and Workload Scales

Availability	aval1	I am expected to respond to my email messages immediately.
	aval2	I am expected to respond to my text messages immediately.
	aval3	I am expected to be accessible at all times (e.g.: through cell phone, instant messaging).
	aval4	Technology enables people I work with to contact me at any time.
	aval5	I am expected to check my e-mail and text messages when I am out of the office.
	aval6	I am contacted about work related issues outside of regular work hours.
Workload	work1	The technology I use changes at a rapid pace.
	work2	Technology creates more work for me.
	work3	As a result of technology, I work longer hours at and away from the office.
	work4	Using the internet increases my workload.
Exhaustion	exha1	I find it hard to relax after a day's work.
	exha2	I feel drained when I finish work.
	exha3	When I finish work I feel so tired I can't do anything else.
	exha4	It's getting increasingly difficult for me to get up for work in the morning.
Efficacy	effi1	I efficiently solve any problems that may arise in my work.
	effi2	In my opinion, I am good at doing my job.
	effi3	Other people say I am good at doing my job.
	effi4	I am competent in my job.

Source: Authors.

Dr. sc. Mimoza Pira

Akademija Tempulli, Priština, Kosovo
E-mail: mimoza.pira@gmail.com
Orcid: https://orcid.org/0000-0001-6305-8611

Dr. sc. Bujar Pira

Redoviti profesor
Sveučilište primijenjenih znanosti u Ferizaju, Ferizaj, Kosovo
E-mail: bujar.pira@ushaf.net
Orcid: https://orcid.org/0000-0001-7889-7805

UTJECAJ INFORMACIJSKE I KOMUNIKACIJSKE TEHNOLOGIJE NA OPTEREĆENJE, ISCRPLJENOST I UČINKOVITOST ZDRAVSTVENIH RADNIKA

Sažetak

Cilj je istraživanja ispitati prednosti i izazove koje informacijska i komunikacijska tehnologija (ICT) donosi na radno mjesto među zdravstvenim radnicima na Kosovu. Ovo istraživanje uključilo je n = 319 kosovskih zdravstvenih djelatnika koristeći se strukturiranim upitnikom. Provedene su korelacijske i hijerarhijske regresijske analize. Nalazi su otkrili da je pristup ICT-u povećao radno opterećenje i učinkovitost. Rezultati pokazuju da povećanjem opterećenja raste i iscrpljenost. Rezultati ne pokazuju značajan izravan ili neizravan utjecaj radnog opterećenja na učinkovitost. O rezultatima se raspravlja u kontekstu relevantne literature s obzirom na okruženje u kojem se zdravstveni radnici na Kosovu koriste ICT-om i s obzirom na kulturnu sredinu Kosova. Ovim se naglašava potreba za boljim sustavom upravljanja radnim opterećenjem i brigom o sebi na radnome mjestu kako bi se spriječila iscrpljenost.

Ključne riječi: ICT, radno opterećenje, iscrpljenost, učinkovitost, zdravstvena njega.

JEL klasifikacija: H18, J24, M15, O33.