

*Issue2* | July 2021

ISSN 2672-7900 (print) ISSN 2672-7919 (online)

# CTUROCOLLEGE





# Ctleurocollege SST RESEARCH JOURNAL

July 2021 Issue 2 ISSN 2672-7900 (print) ISSN 2672-7919 (online)

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From the Editor-in-Chief **DR GEORGIOS AFXENTIOU** 

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# **Dr Georgios Afxentiou**

Editor-in-Chief

# SCOPE

The CTL Eurocollege Social Sciences and Technology Research Journal is an academic journal that aims to engage academics and practitioners in developing new thinking processes, theories, good practices, and forums for debating issues and trends in social sciences and technology. The academic work focuses on themes in social sciences and technology in a new dynamic global environment including but not limited to management, innovation, entrepreneurship, strategy, leadership, human resources, marketing, education, digital skills, web technology, cybersecurity, networks. The scholars strive to produce original work that is valuable and applicable to the industry. Academic excellence and merit, professionalism, ethics and integrity of our researchers constitute the foundation of this journal.

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# **Editorial correspondence**

Please direct all editorial inquiries and correspondence to Georgios Afxentiou at afxentioug@ctleuro.ac.cy.

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# **CONTRIBUTING RESEARCHERS**

**Georgios Afxentiou** (DBA), is the Head of Research, an Assistant Professor in Business and a member of the College Council at CTL Eurocollege, Limassol, Cyprus. A Certified Management Consultant (CMC), he also provides consulting services to businesses in Cyprus through the Georgios Afxentiou Research Laboratory. Dr Afxentiou earned a Bachelor of Arts degree in Graphic Design with specialisation in Web Design from Brescia University, in Owensboro, Kentucky; a master of Business Administration degree with specialisation in Global Management from the New York Institute of Technology; and a Doctorate in Business Administration from the University of Gloucestershire in the United Kingdom. He teaches Management, Entrepreneurship, Innovation Strategy, Strategic Management and Operations courses. He is a researcher in Business Administration with interests in Organization Design, Innovation Strategy, Entrepreneurship and publishes articles and papers in academic and professional journals.

**Dr Elena Malkawi** spent her early career at the Novosibirsk University of Consumer Cooperation, Russia, where she was an Assistant Professor of Economics. Since 2010 Elena has been a member of the Business Faculty at CTL Eurocollege, where she has taught a range of courses on Economics and Management to MBA level students. Today she is Head of the Business Field and a member of the CTL Eurocollege Research Team. Her areas of interest include Stress Management, Decision Making and Behavioral Economics.

**George Antoniades** graduated from the University of Akron (OH USA) in 2002 with a B.Sc. in Business Administration/Marketing Management. In 2005 he pursued a postgraduate Diploma in Operations Management. Mr. Antoniades strongly believes in non-stop learning and contributing to education, and for that he is currently pursuing a PhD in Business Administration at the European University of Cyprus. His focus of research is in Consumer behavior. Mr. Antoniades has gained hands-on experience in the business field. Among others, he has worked as a Marketing Manager for a developing company, Merchandising Officer for a telecommunications company and Sales Manager for a wholesaler. In 2008 he entered the teaching profession in higher education. Since then, he has lectured on a variety of business courses for educational institutions based in Cyprus and the United Kingdom. Finally, he joined the CTL Eurocollege in 2014 where he dedicates himself to the delivery of high quality education.

**Dr. Maria Hadjielia Drotarova** received her Ph.D. from the Department of Educational Research of Lancaster University, UK. She is a Programme Coordinator and Lecturer in the Field of Business, as well as the Hospitality & Tourism, at CTL Eurocollege, Cyprus. Maria has substantial experience in EU-funded projects under Erasmus+ and Horizon 2020. Her research focuses on arears at the intersection of education and tourism, drawing on longitudinal qualitative research approach and focusing on topics such as educational research, Social Learning, Dark Tourism, and Sharing Economy.

**Dr. Nikos Karfakis (PhD)** studied BA in Business Economics at the University of Glamorgan (UK) and MSc and PhD in Management at the University of Leicester (UK). He is the MBA Programme Coordinator and Lecturer in the Field of Business, as well as the Hospitality & Tourism, at CTL Eurocollege, Limassol,

Cyprus. He teaches Management, Organisational behaviour and Marketing. His research interest focuses on the organisation of work and organisation studies, specifically on organisational change, downsizing, leadership, and job satisfaction. He has published in and serves as ad hoc reviewer for several academic journals.

**Katerina Christophidou's** undergraduate studies in Greek Philology (Language and Literature), and her professional career have equipped her with a broad coverage and knowledge in the Education, Leadership and Management disciplines. After completing her Master's degree in Education for Sustainable Development, she found employment in several secondary schools in Cyprus, Greece and the UK. Between 2016-2019, she was the Academic Dean of CTL Eurocollege, whereas in September 2019, she was appointed to the position of Director of Professional Studies. She has been involved in projects and seminars through her postgraduate studies and her professional career for the past ten years. She has been also actively involved in research for ESD and EE since 2010. She is currently on the final stage of her PhD studies in Environmental Education and Sustainable Development, writing up her thesis.

Articles

Article 1

# Digital transformation of the learning environment in higher education

#### Malkawi, Elena; Khayrullina, Marina

# Abstract

Learning through cyberspace is the new reality of higher education across the world and the number of universities who have found themselves unprepared for this new reality is significant. Digital transformation demands life-long learning and reinforces the link between education, training and the world of work. Educators need to adjust to being so called "21st century educators" and to consider a range of new digital skills that will allow students to develop across a variety of professional and personal abilities. To investigate elements of digital learning process and to examine human skills that are required by digitalization, this study intended to explore elements of existing digital learning environments at a university using feedback from Spring 2020 students. The research is grounded on connectivism learning theory proposed by George Siemens in 2005 and on recent contributions from the multidisciplinary human-computer interaction (HCI) field. The mixed research method of this study is supported by data provided by a total of 2347 university through an online survey. The study revealed that students identified three types of problems in online learning: the process of concentration and self-regulation; the process of getting feedback from tutors and peers; and the technical difficulties of staying connected. The study intended to suggest ways to improve the quality of digital higher education and to shed light on self-regulation as an essential human skill that is required for successful performance in a digitalized environment.

Keywords: digital learning environment; connectivity; human-computer interaction; selfregulation; quality of higher education.

### Introduction

The global impact of technology has changed the role that educators play in teaching the skills that students need to acquire to become active citizens in modern digital culture.

In response to hyperconnectivity, human skills and the dynamic of learning process are reshaping and, consequently, effective learning design requires a very different approach. By raising awareness about an integrated view of digital skills, educators and other professionals in the field of education will benefit from learning about the range of skills that will allow students to develop across a variety of professional and personal abilities. These are the students who will bridge the digital gap and use the abilities of modern technologies to address, communicate, and challenge the contemporary issues that pervade digital economy and society.

This research explores the experiences of 2347 students who took online courses in spring 2020 in Novosibirsk State Technical University (NSTU), which offers about 100 programs of study in technical, economics and humanitarian fields from bachelor's to post-doctoral levels. The research intended to suggest ways to improve the quality of digital higher education and to shed light on self-regulation as an essential human skill that is required for successful performance in a digitalized environment.

# **Research methodology**

The research tool is an online questionnaire survey which was answered by 2347 university students. The survey gauged the participants' demographic information, as well as participants' opinions

regarding learning problems related to the design of online courses in spring 2020 (15 items of multiple choice answers and one open-ended answer); opinions regarding learning efficiency and course design (11 items of multiple choice answers) and attitude towards technology (with five-point Likert scale, 15 items). Average time taken to answer the questions was about 20 minutes.

Statistical analysis was done with the use of SPSS. First, the normality of the data from each section of the questionnaire was tested by calculating the values of Skewness and Kurtosis. It is commonly accepted that data are normally distributed when Skewness and Kurtosis are respectively within the range of  $\pm 1$ and  $\pm 3$  (Tabachnick and Fidell, 2013). The results revealed that the distribution of the all the data was close to normal distribution.

The statistics employed for the analysis of the scale of reliability of the questionnaire was Cronbach's Alpha. The initial reliabilities of the variables were 0.803 and 0.801 respectively, which indicate good internal consistency. Additionally, content validity was assessed by carefully checking the measurement methods against the concept of effective course design. The qualitative descriptive analysis described by Silverman (2017) was used to understand and summarize the specific experiences of students in this study. The themes of participants' answers to the open-ended question were generated and described by coding the text data, developing a description, and defining the main themes from the data. The coding was mainly completed by the first author, and second author checked and reviewed the codes and themes to ensure that the coding processes were consistent and the data matched the codes and themes that had been set.

The purpose of the survey was to investigate university students' recent experience in online learning. It was administered to all 11517 students of NSTU as a convenient sample and 20% of them participated. Of the participants, 40% were females, and 60 % were males. The majority of them (97%) were between 17 and 25 years old (weighted mean 20 years old). Forty two percent of participants were students studying toward a master's degree and 20% toward a bachelor's degree.

#### Data analysis and results

The technology acceptance model (TAM) is one of the theories primarily used by existing studies on students' attitudes towards online courses. This model examines students' willingness to use technology based on their perceptions of ease of use and usefulness. Students who are less willing to accept technology are more likely to report having negative experiences when taking part in online learning. This research applied a survey to find out students' attitudes towards technology. The results of the survey with 3.38 points out of 5.00 (Likert scale) revealed that participants on the whole appreciate and accept technology. Consequently, their personal intentions towards technology may not have a negative influence on their perceptions of online learning process.

Moreover, only about 30 percent of participants had previous experience of online-education on platforms like Coursera, edX, Stepik, and currently 46% of participants stated that they prefer to substitute some of their offline courses with online courses. This illustrates a positive dynamic in students' opinions regarding their online learning experiences. Analysed students' opinions about learning design, tabulated in Table 1, support the above statement, as 49% of participants noted that "the mode of study (online/ F2F) is not important as long as it serves the purpose of study" and only 12% of participants stated that "the best way to study in university is F2F".

# Table 1. Students' opinions regarding learning<br/>design in university

	%
Mode of study (online/F2F) is not important as long as it serves the purpose of study	49.0
It is very important to have open communicational channel with the tutor and peers for effective learning	25.7
The best way to study in university is F2F	12.2
It is very important to involve into research while studying the course	8.6
I don't know	4.5
TOTAL	100

Source: Authors, based on Han et al (2020)

In general, 56% of participants reported that they didn't have any learning problems by taking courses online. Although 1039 students (44 %) acknowledged different types of learning problems caused by learning online design. Difficulty points are allocated in descending order in Table 2, according to the frequencies they are mentioned by students. The most frequent difficulty that students are faced with is related to self-regulation of the online learning process, and the least frequent is related to the technical devices needed to study online.

	I found difficult to: N	umber of answers	Frequency, %
1	Manage my self-study process	1039	100.00
2	Study at home	987	95.00
3 G	et feedback from tutor	979	94.23
4	Have a discussion with the tutor	907	87.30
5	Provide and justify my points of view to instructors	819	78.83
6	Manage technical issues	774	74.49
7	Communicate with peers	711	68.43
8	Remain focused during video lessons	538	51.78
9	Feel connected to society while staying mostly online	491	47.26
10 H	ave a group discussion regarding a subject	469	45.14
11 F	ind a suitable place to study at home	360 3	4.65
12 U	se a web camera at home	292	28.10
13 G	et familiar with UI of online learning applications	225	21.66
14 H	ave a suitable devise or internet connection to study online	124	11.93
15 O	ther	94	9.05
Т	otal number of students who answered this part of survey	1039	100

#### Table 2. Difficulty points in online learning process.

Source: Authors, Based on Silverman (2017)

Statements that are tabulated above were presented to participants as multiple choice answers. In the open-ended section of the survey the participants were asked to describe the problems that they had been faced with in detail. Two hundred and eighty six students answered the questionnaire in open-ended answer format. An analysis of the main themes of their answers can be found in Table 3 below, where items are grouped according to identified points of difficulty together with the items from the multiple choice section.

Quantitative results of the survey and qualitative analysis of the quotes revealed the following list of negative experiences that students had during the online learning process: (1) unestablished process of communication with tutors and peers; (2) insufficient level of self-regulating and technical skills of the student; (3) tutors' online teaching skills are of an insufficient level; (4) the difficulties in creating a suitable learning environment when self-isolating at home.

# Table 3. Negative experiences that students hadin the online learning process.

Multiple choice answers		Open-end answers		
Statement of questionnaire " I found difficult to:"	Friquency, Number, (%)	Themes identified	Example quote	Friquency, Number, (%)
1. Self-regulating and	technical skills	of students		
Manage my self-study process	1039	Massive load of materials for self- study that are difficult to manage	"the load of the materials for self-study increased and I don't know how to manage my time efficiently"	58 (20%)
Manage technical issues	774	Technical problems related to online learning processes		34 (12%)
Remain focused during video lessons	538	Self-management of personal productivity when studying online	"impossible to concentrate on learning materials when surrounded by family"	30 (11%)
Get familiar with UI of	225			
online learning applications	2576			122 (428/)
Total group 1	25/6			122 (43%)
2. Communication an	d interactions			
Get feedback from tutor	979	Difficulties in	"feedback from the teacher	95 (33%)
Have a discussion with the	907	contacting an	takes too long and this makes	
tutor		instructor for	the learning process very slow	
Provide and justify my points	819	feedback and to	and boring";	
of view to instructors		discuss matter with	"	
Communicate with peers	711	peers	most of the teachers are not	
Feel connected to society	491		available for contact in case of	
while staying mostly online	460	-	students are facing in calf	
Have a group discussion	469		students are facing in sen-	
regarding a subject	(38)		study process	05 (330())
1 otal group 2	43/6			95 (33%)
3. Location				
Study at home	987	Self-isolation	"it's difficult to focus on the	35 (12%)
Find a suitable place to study	360		studying process in the comfort	
at home			of my home"	
Use a web camera at home	292			
Have a suitable devise or	124			
internet connection to study				
online				
Total group 3	1763			35 (12%)
4. Skills of the tutor				
		Course design and requirements	"inconsistence of course design and instructors' requirements across different subjects"	77 (27%)
		Tutor' skills	"instructors need training in online teaching"	17 (6%)
Total group 4	0			94 (33%)
Total number of students who answered this part of survey	1039			286 (100%)

Source: Authors, Based on Silverman (2017)

Regarding the problems related to self-isolation at home (group 4), there is not much that could be done by universities. Nevertheless, the other remaining problems could be managed in two parts. One is by establishing an appropriate level of connectivity. The other is by developing the digital human skills of students and academic staff.

#### **Discussion** Connectivity

Living in a digitalized connected world changes how we live, how we communicate, and how we learn. For example, a major part of cognitive information processing can now be delegated to technology; the reliability and expiration of information today is more important than ever before. Know-how and know-what is being supplemented with know-where - the understanding of where to find knowledge needed (Siemens, 2005). George Siemens put forward Connectivism learning theory which states that the process of getting information we "need for tomorrow is more important than what we know today" and to provide a learning theory that is more relevant to the next generation of learners due to their increasingly connected nature. Principles of Connectivism are formulated by the author as follows (Siemens, 2005):

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is itself a learning process.

Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in

the information climate affecting the decision. The principles of Connectivism are partially applied in a community of inquiry (CoI) and a community of practice (CoP). They are both excellent examples of the applied principle "Learning and knowledge rests in diversity of opinions" (Garrison, 2018; Lee, 2018; Hare, 2019).

Instructional designers and course facilitators who use the community approach do several things. First, they create a cohort of students who are engaged collaboratively to learn about the material. Secondly, they create an environment where there is an emphasis on cognition and critical thinking, which provide the students with the ability to not only exchange knowledge, but to expand upon it through discussion. Finally, when the students become emotionally involved in the information, it fuels an intrinsic motivation to learn and discover more, which in turn benefits the community.

The principles of Connectivism states that "Learning is a process of connecting specialized nodes or information sources" and "Learning may reside in non-human appliances". This assumes that learners have open access to the sources of information and can practice their data literacy skills, discussed later in this chapter. In this context, open data and open educational resources (including games) have great potential values.

Open data is "digital data that is made available with the technical and legal characteristics necessary for it to be freely used, reused, and redistributed by anyone, anytime, anywhere" (Open Data Charter, 2020). This concept made diverse data sets from various organizations publicly available, including government spending, research outcomes, archives, surveys, environmental sensing, and museum collections. While sharing data online is not new, the formalization of open data has created a global movement and led to a huge growth in the breadth and depth of data available (Coughlan, 2020). However, approaches to connecting open data to learning design are not in mainstream use. Detailed thematic analysis was conducted by Tim Coughlan to identify patterns and relationships in open data-based practices that have already emerged (Coughlan, 2020). Results and framework presented in his research offer a conceptual starting point to adapt open data to learning design.

Open educational resources (OER) are "teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and repurposing by others. OER include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge" (Hewlett Foundation, 2020). The fact that learning materials have open access makes them a valuable element of the digital learning environment, where every learner is encouraged to connect specialized nodes of information sources and exercise ability to see connections between fields, ideas, and concepts.

# **Digital human skills**

Connectivism theory considers three principles, speaking about digital human skills: "capacity to know more is more critical than what is currently known", "ability to see connections between fields, ideas, and concepts" and "decision-making is itself a learning process".

Our research reveals that students found it difficult to focus on learning materials when surrounded by online disruptions. A person working on an information-related task can be easily distracted by other activities, such as checking e-mails or surfing the web. A massive volume of functionality that is available promptly often makes it difficult for the

users of information communication technologies (ICTs) to focus on their current task and avoid being distracted by notifications or habitual check-ins (Thomas et al, 2016). While information technology provides a vast number of benefits, a growing amount of research attention on the visible disadvantages (Wu, 2016; Alter, 2017; Tiku, 2018). Specifically, a recent movement in human-computer interactions (HCI) research has called to examine the intentional 'non-use' of ICTs (Hiniker et al, 2016). A substantial body of related research has now recognized that a majority of users feel conflicted about the time they spend with internet-connected digital technologies and struggle with effective self-control (Sleeper et al. 2015; Ko et al, 2016; Lyngs et al, 2019). Connectivity provided by technology poses a constant dilemma of time and attention allocation among work and nonwork demands because they create extrinsic pressure to be aware of work while engaging in nonwork activities. Research suggests that in reality, "flexible work boundaries" often turn into "work without boundaries," compromising employees' and their families' health and well-being (Becker et al, 2021).

Secondly, students have reported that they don't know how to manage an increased load of material and time efficiently as well as being unaware of how to take advantage of the technology available for information management and self-regulated learning. Related research that investigates whether university students really use digital technologies to plan, organize and facilitate their own learning shows that students are not inclined to use technologies when regulating their own learning process, even when they are regular users of digital technologies for social, personal and leisure activities, among others (Yot-Domínguez and Marcelo, 2017). This can be partly explained by the limited awareness of students of how to apply familiar technologies to the learning process. Although ICTs are universal at work and in education, not all employees and students have the

skills to take advantage of it in terms of the richness of activities and the variety of learning opportunities ICTs offer (Van Laara et al, 2019). Although students know how to use technologies, they are lacking in how to efficiently use them to support their own learning process. For example, social networks have a low level of use for learning because it is not perceived as a tool with a high educational potential (Swanson and Walker, 2015).

Consequently, addressing a self-regulation concept is necessary when preparing students to gain the experiences, skills and knowledge to be successful in the 21st century. An online learning environment demands more from students' self-regulation skills (Boor and Cornelisse, 2021). Self-regulation and time management as well as past online learning experience are additional factors that have been shown to be related to satisfaction with and usefulness of online learning (Landrum, 2020). Self-regulating learners maintain an active and ongoing awareness of task demands, the effectiveness of learning strategies, and their progress toward task completion (Van Laar et al, 2019). Self-control processes help individuals to concentrate on the task and to optimize their efforts (Senkbeil and Ihme, 2017).

A very important aspect of self-regulation is the relation of this concept to human digital skills of the 21st-century. In a systematic literature review paper (Van Laar et al, 2017) 21st-century digital skills of knowledge workers are synthesized and conceptualized, and the following skills were identified: information. communication. collaboration, critical thinking, creativity, and problem-solving skills. These skills are generic skills with specific importance in digital contexts (Kereluik at el, 2013). Several studies show that people vary greatly with regard to their digital skill levels (Van Deursen and Van Dijk, 2015; Verhoeven at el, 2016). Research that aims to explain differences in the level of various 21st-century digital skills by examining potential personal, motivational, and social

determinants at the level of the individual worker found that self-regulation contributes positively to information management, communication expressiveness and creativity (Van Laar et al, 2019). This means that an effective self-regulation process can be a determinant of successful performance when people use information communication technologies to access and disseminate information, to interact and exchange experiences with experts and learning communities, and to generate and refine their ideas. This determinant can, up to a certain level, be developed by ICT users themselves, although it must be promoted and influenced by policy makers and educators as well.

As Boor and Cornelisse stated: "In order to achieve effective learning in an online environment, we argue that increasing students' self-regulatory skills must be a central tenet in designing online education" (Boor and Cornelisse, 2021). University teachers must favor self-regulation of learning, offer the students the opportunities to discover the usefulness of digital technologies and foster their incorporation into the actual learning process (Yot-Domínguez and Marcelo, 2017).

Teachers need to recognize and account for different types of learners and encourage and scaffold students' effective use of self-regulation strategies (Alt and Naamati-Schneider, 2021). Even students with a high degree of digital competencies need information about how to use digital technologies that favor their own learning and support, advice and motivation from teachers becomes crucial. Although it is possible to develop self-regulatory competence through personal discovery, this path is often tedious, frustrating, and limited in its effectiveness. Fortunately, self-regulatory processes can be acquired from and are sustained by social as well as self-sources of influence (Zimmerman and Schunk, 2011). At the same time, a practical application of recent contributions from the multidisciplinary humancomputer interaction field will help to improve human digital skills with the use of self-regulation. Currently the challenge of supporting self-regulation and selfcontrol over online disruptions has become widely discussed and a growing number of studies have developed and evaluated new design interventions. Researchers within HCI have started to design, implement and test new tools for supporting selfcontrol over online disruptions.

Some of these tools are using interventions such as gamification and social sharing of total time spent on one's smartphone (Ko et al, 2016) or visualization of laptop use (Whittaker et al, 2016). And some of these 'digital self-control tools' have gathered millions of users. For example, Forest (Seekrtech, 2018) is a piece of software which encourages users to develop self-control through the growth of virtual trees. As a theoretical lens to organize and evaluate new tools and provide a deeper understanding of self-control challenges in cyberspace, recent research (Lyngs et al, 2019) reviews 367 apps and browser extensions for digital self-control from the Google Play store, Chrome Web, and Apple App stores, and identifies common design features and strategies. Another research founded on self-regulation theory argues that the characteristics of music (i.e., musical key, tempo, complexity, volume) influence job performance through cognitive self-regulatory processes and describe implications for organizations with regard to allowing or even encouraging employees to listen to music at work (Keeler, 2020).

However, an understanding of how to best approach the challenge of self-control in cyberspace remains limited (Cox et al, 2016; Whittaker et al, 2016; Mark et al, 2018;). Future research directions in HCI fields aim to clarify how specific design features may work to support successful self-control.

# Conclusion

The digital transformation of economy demands life-long learning and reinforces the link between education, training and the world of work. Living in a digitalized connected world changes the dynamic of the learning process and reshapes human skills that are required by the digital economy and society. The researchers attempted to investigate elements of existing digital learning environments at universities. Theoretical studies and best practices in the areas related to students' negative experiences suggest that a digital learning environment should be carefully constructed to implement a community of inquiry and/or practice where students can collectively assemble information, discuss it and determine its importance and relevance. Well-established conceptual frameworks and pedagogical strategies of higher education can and should be extended to meet the new challenges posed by the digital environment. Students reported that they experienced difficulties when focusing attention if they were surrounded by online disruptions and if their knowledge of technology available for information management and self-regulated learning was inadequate.

Those issues can be addressed by understanding the concept of self-regulation online and by promoting different tools to stimulate self-regulated learning. Self-regulation is determining a number of human digital skills of the 21st-century that will allow students to develop across a variety of professional and personal abilities demanded by the digital economy and corporate development.

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# Entrepreneurs' well-being and mental health during the pandemic crisis

#### Afxentiou, Georgios

# Abstract

Entrepreneurs are expected to face constructively the crises caused by nature such as viruses, earthquakes, floods, fires, tornadoes as well as manmade destructions such as wars, climate change, and political instability in countries. They should be healthy and intelligent to create, implement and evaluate solutions to keep their businesses afloat and at the same time to generate revenues for them. A crisis forces entrepreneurs to become more innovative and share their entrepreneurial spirit with customers, suppliers, partners and the society. The entrepreneurs' well-being and mental health during a crisis play a significant role in the development of new businesses and the sustainability of existing businesses.

Keywords: Entrepreneurship, crisis, pandemic, wellbeing, mental health, innovation, sustainability.

# **1. Introduction**

This research focuses on the well-being and mental health of entrepreneurs and innovators in a crisis and subsequently on the development of new businesses and the sustainability of existing businesses. The paper includes literature, statistics, analysis and conclusions sections. In the literature section, terms and research studies on well-being, mental health, resilience, business sustainability and development, the pandemic crisis and a roadmap of theories are presented and referred in the context of the research. In the statistics section there are three reports from the Global Entrepreneurship Monitor (GEM) of 2020 about the impact of Covid-19 on revenues, finance and the working hours of employees in businesses of the G6 countries and specifically, in Canada. The analysis section explains the relation of the statistical reports and the theories on well-being, mental health, resilience, development and sustainability of entrepreneurs in a crisis. Additionally, the analysis section includes a conceptual framework of the research findings while the conclusions section includes a summary of the findings of the research. Entrepreneurs are generally unaware that their health is a resource which can influence their long term business performance. They define health from a negative side (i.e. not being sick) and perceive health as a means to perform their tasks (Volery & Pullich, 2009). The question remains about the realisation of their health and mental conditions during a major crisis and the impact on the innovation of products/services/processes, the development and sustainability of businesses. How do they think, feel and react to a difficult economic situation considering their well-being and mental health status.

Entrepreneurs are mainly aware of the physical dimension of health and well-being, and are able to identify the threats and opportunities pertaining to this dimension. They are less aware of the mental and social dimensions of health. Given the demands of starting and growing a business, entrepreneurs often feel that they are too immersed in their business and hence, have no time for nonwork activities (leisure). Consequently, stress is a major factor affecting the mental well-being of entrepreneurs (Volery & Pullich, 2009). The investigation of entrepreneurs' well-being and mental health in a crisis supports academics when evaluating on innovation and finance of businesses. In addition, this study is beneficial to practitioners for improving the management methods and the financial outcomes of their businesses.

# 2. Literature

#### **2.1 Introduction**

An entrepreneur is a person who sets up a business and takes on financial risks in the hope of making a profit. Entrepreneurs typically invent new products or services and introduce them to the marketplace by launching a business venture (Gartner, 2001; Volery & Pullich, 2009). They are willing to take risks and meet many challenges in order to succeed in promoting their products or services in the market. Entrepreneurship can be extremely stressful due to high levels of uncertainty, change and risk, and the vast array of responsibilities entrepreneurs must navigate whilst working long hours (Baron, Franklin & Hmieleski, 2016; Hahn et al., 2012; Uy, Foo & Song, 2013; Newman et al., 2018). Being an entrepreneur has been characterised as one of the most stressful jobs (Cardon & Patel, 2015; Patzelt & Shepherd, 2011), with average earnings that are lower than if one were to work as a paid employee (Van Praag & Versloot, 2008; Stephan, 2018). Entrepreneurship can offer freedom from restrictions and unsatisfactory work conditions (Al-Dajani et al., 2015; Rindova, Barry & Ketchen, 2009), and provide the autonomy to pursue passions and engage in meaningful work (Baron, Franklin & Hmieleski, 2016; Cardon et al., 2009; Newman et al., 2018). Naughton (1987) found that entrepreneurs reported higher levels of job satisfaction and autonomy than salaried managers despite the fact that the selfemployed spent significantly more hours on the job. In the mid-1990s, Jamal (1997) investigated the differences between salaried employees and selfemployed people. He found that the self-employed experienced higher job stress, nonwork satisfaction, and psychosomatic health problems, and spent more time on voluntary organisations than the non-selfemployed. However, no significant differences were found in job satisfaction and mental health between the self-employed and salaried employees (Volery & Pullich, 2009).

#### 2.2 Entrepreneurs' well-being

Entrepreneurs define health from a negative perspective (i.e. not being sick) and perceive health as a means to perform their tasks. At the beginning of this study a research question has been arisen about the thinking, feelings and reactions of entrepreneurs in a difficult economic situation in regards to their wellbeing and mental health. In general, entrepreneurs are mainly aware of the physical dimension of health and well-being, and are able to identify the threats and opportunities pertaining to this dimension. They are less aware of the mental and social dimensions of health. Given the demands of starting and growing a business, entrepreneurs often feel that they are too immersed in their business and are, hence, deprived of leisure time. Consequently, stress is a major factor affecting the mental well-being of entrepreneurs. Consistent with previous research (Boyd & Gumpert, 1983), we found that stress arises from loneliness, immersion in business, and interpersonal problems with business associates and subordinates. Only a minority of entrepreneurs are aware of emotional support as a form of interpersonal coping and a way to improve their social well-being (Volery & Pullich, 2009). The increasing startup activities across the world resulted in an ever growing body of research on entrepreneurial well-being (Cooper & Artz, 1995; Morris, Kuratko, Schindehutte, & Spivack, 2012; SáizÁlvarez, Corduras Martínez, & Cuervo-Arango Martínez, 2014; Shir, 2015; Olcay & Kunday, 2017). Entrepreneurial well-being is typically measured in terms of general life satisfaction and satisfaction in entrepreneurial domains such as business growth, and work-life balance (Shir, 2015). Challenging and stressful conditions, combined with the high attrition rate in entrepreneurship, can adversely affect entrepreneurs' stress and well-being (SWB) (Baron, Franklin & Hmieleski, 2016). The ability to deal with stress and maintain high SWB is, however, important for the effective functioning of entrepreneurs and

can influence the performance of entrepreneurial ventures (Shepherd & Haynie, 2009). For example, recent work suggests that entrepreneurs with lower SWB demonstrate less personal initiative, a central factor in the success of entrepreneurial ventures (Hahn et al., 2012, Newman et al., 2018).

Well-being is based on cognitive appraisals and is an emotional state of mind, and well-being at work is pleasant judgments in positive attitudes or pleasant experiences in positive feelings, moods, emotions, flow states at work (Fisher, 2010). Therefore, wellbeing research should be integrated across a variety of disciplines (Judge and Kammeyer-Mueller, 2011). It can be conceptualized through three core dimensions: physical well-being, psychological wellbeing, and social well-being (Grant, Christianson, and Price, 2007). Physical well-being refers to physical functioning and bodily health that can be influenced by individual's health status and healthrelated behaviors (Glajchen, 2012). Psychological well-being focuses on the subjective experience and functioning of an individual, and is concerned with the fulfilment and realization of human potential (Grant, Christianson, and Price, 2007). Furthermore, social well-being is regarded as the appraisal of one's own circumstances and functioning in society, such as the quality of one's relationships with family, friends, and communities (Pilkauskaite-Valickiene & Gabrialaviciute 2015). Wiklund et al. (2019) and Erdogan et al. (2012) supported that happier people have more satisfying work, tend to have more psychologically fulfilling lives (Helliwell et al., 2013), and more likely to live longer and healthier lives (Chida and Steptoe, 2008; Diener and Chan, 2011; Wiest et al., 2011). They also tend to be more creative and productive and stay more socially connected. These benefits, in turn, flow back into their families, workplaces, and communities, creating a virtuous well-being cycle (Helliwell et al.,

2013). In that sense, psychological well-being can promote productivity, creativity, and cooperation in the workplace.

Numerous studies have shown that stressful work situations, including high work demands and low control, are related to poor individual health and well-being (Kahn & Byosiere, 1992; Lee & Ashforth, 1996; Van der Doef & Maes, 1999; Volery & Pullich, 2009). The job demand-control-support model (Johnson & Hall, 1988; Karasek, 1979; Morrison, Payne & Wall, 2003; Van Yperen & Hagedoorn, 2003) has become a dominant model of the relationship between work and well-being. According to the model, employees working in jobs characterised by high job demands, low job control and low social support will experience a higher than average number of health problems over time than workers in other jobs. The model focuses on specific aspects in the complex psychosocial work environment to explain how individuals perceive and react to their job. Karasek and Theorell (1990) also stressed the importance of using a broader perspective for the relationship between work and health, and proposed a dynamic version of the demand-control model, which integrates environmental effects with personbased information such as self-esteem.

Research has highlighted the importance of wellbeing to entrepreneurs' stress handling and motives for new venture creation (Carree & Verheul, 2012). Well-being is a broad category of phenomena that includes people's emotional responses, domain satisfactions, and global judgment of life satisfaction (Diener et al., 1999). Indeed, happy entrepreneurs tend to be more innovative over the long run, generating better goods and more fulfilling services for their customers and the others with whom they interact and do business (Gavin and Mason, 2004). Well-being allows entrepreneurs to broaden their attention and focus on future opportunities; therefore, well-being signals that long-term goals are

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an opportunity not to be overlooked and will result in a broader perspective on the news (Labroo and Patrick, 2009). Remarkably, well-being plays a pivotal role for creative entrepreneurs to facilitate their creative ideation for product or service development and their abilities to identify the right opportunities for new businesses (Chen et al., 2019). In fact, wellbeing is important in the entrepreneurship process, which can strengthen their inherent motivation to recognise more opportunities and absorb new knowledge. Well-being research has shown that the sense of belonging by reinforcing social relations will eventually increase the individual's level of wellbeing and happiness (Rojas and Lopez 2014; Ryan and Deci, 2000), leading to a broader perspective on the news and opportunity seeking (Labroo and Patrick, 2009).

Empirical evidence exists of higher job satisfaction or life satisfaction of the self-employed compared to wage earners (Andersson, 2008; Carree & Verheul, 2012;

Mahadea & Ramroop, 2015; VandenHeuvel & Wooden, 1997). Within this stream of research, an interesting point is made that the increase in satisfaction happens despite the lower incomes of the self-employed (Binder & Coad, 2013; Hamilton, 2000). Shir (2015) calls this a puzzling situation as the self-employed usually has higher income fluctuations and lower average salaries than wage earners (Carrington, McCue, & Pierce, 1996; Hamilton, 2000; Van Praag & Versloot, 2007). While average income is found to be significantly related to national happiness at country level (Deaton, 2007), the nexus between income and the well-being of the self-employed quests for factors such as human capital, and other intrinsic and extrinsic motives of this relationship.

#### 2.3 Mental health

#### Definition of mental health

In medical terms, the most widely agreed definition of health is "... a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1986:2). Mental health is an integral and essential component of health. An important implication of this definition is that mental health is more than just the absence of mental disorders or disabilities. MacIntosh, MacLean, and Burns (2007) remarked that the WHO definition of health is adequate for most purposes.

Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community. Mental health is fundamental to our collective and individual ability as humans to think, emote, interact with each other, earn a living and enjoy life. On this basis, the promotion, protection and restoration of mental health can be regarded as a vital concern of individuals, communities and societies throughout the world.

#### Determinants of mental health

Multiple social, psychological, and biological factors determine the level of mental health of a person at any point of time. For example, violence and persistent socio-economic pressures are recognised risks to mental health. The clearest evidence is associated with sexual violence. Poor mental health is also associated with rapid social change, stressful work conditions, gender discrimination, social exclusion, unhealthy lifestyle, physical ill-health and human rights violations. Mental stress leads to increased muscle tension, which – without enough time for recovery – can cause metabolic disturbances and degenerative processes as well as muscle pain (Lundberg et al., 2002; Stephan & Roesler, 2010).

Furthermore, McEwen (2000) showed that the neuroendocrine changes (e.g., increases in cortisol levels) accompanying a state of allostatic load lead to structural changes in the central nervous system, which in turn seem to facilitate the development of mental disorders.

Mental health promotion involves actions that improve psychological well-being. This may involve creating an environment that supports mental health. An environment that respects and protects basic civil, political, socio-economic and cultural rights is fundamental to mental health. Without the security and freedom provided by these rights, it is difficult to maintain a high level of mental health.

#### 2.4 Resilience

Resilience takes into account the processes by which different actors build up and utilize resources before, during and after a crisis (Williams et al. 2017; Hobfoll, 2001). Resilience enables organizations and employees to respond to adversity or recover more quickly following adversity, to develop more 'unusual' ways of doing business and bounce back (Sutcliffe and Vogus, 2003; Vogus and Sutcliffe, 2007; Luthans et al., 2010; Shin, Taylor, and Seo, 2012; Linnenluecke, 2017). Another aspect of resilience is embodied in the notion of bricolage, the ability to create order out of disorder and fashion a solution on the spot, from the resources available (Levi-Strauss, 1962; Weick, 1993; Mallak, 1998). What is certain is that businesses everywhere, in a forthcoming brave new post-COVID-19 world, will need to increase their capacity to adapt, improving their flexibility, resiliency and responsiveness. This is exactly where small-to-medium business owners' strengths tend to lie. Conversely, large corporate entities find it much more difficult to adapt quickly: the difference between turning around the Titanic versus a small yacht with the wind in its sails. Perhaps in the postCOVID-19 era we will see entrepreneurs come into their own across the business landscape as never before (GEM, 2020).

#### 2.5 Business Sustainability and Development

Sustainable development is a dynamic concept that requires a sound understanding of the complex interplay of ecological, social, and economic factors at various levels ranging from local to global. As industry is a major driver of socioeconomic growth, growing ecological and social consciousness among entrepreneurs has led to a paradigm shift from traditional to sustainable entrepreneurial practices, which relies on a mix of social and ecological goals along with profit maximisation (Haldar, 2018). Richard Cantillon (1755) and Jean-Baptiste Say (1803), often regarded as the founding fathers of entrepreneurial theory, disclosed in their studies that they were not only interested in the economy, but also in the managerial aspects of enterprises, business development, and business management (Kim, El Tarabishy, & Bae, 2018). SMEs have the flexibility to adapt easily to changes in the business environment because of their more manageable size, and they can compete perfectly with large firms through specialization and networks provided by new technology (Ribeiro & Roig, 2009). According to Audretsch and Thurik (2001), SMEs do not become obsolete as a result of globalization, but rather they need to change their role as the world has shifted toward knowledge-based economic activity (Liñán, Paul & Fayolle 2020).

Globalization has created a knowledge-intensive economy (Teagarden and Schotter 2013), making firms' search for the foreign market opportunities necessary in order to survive (Brenes 2000). In this era of globalization, small- and medium-sized enterprises (SMEs) are crucial to any country's development (Amini 2004). Changes in the global economy have

brought about challenges and opportunities for SMEs (Dominguez & Mayrhofer, 2017). It is widely recognised that small firms make a substantial contribution to an economy. Despite their smallscale output and relatively high production costs, SMEs contribute significantly to the employment growth and the economy (Pavitt and Robson, 1987). SMEs appear to have an edge over large firms due to their quick and flexible decision making processes. Nevertheless, SMEs face competition from large local and foreign firms. Small firms' relative strengths are mostly behavioral, including entrepreneurial dynamism, flexibility, efficiency, and quick decisionmaking. By contrast, the strength of large firms is economies of scale, scope, marketing skills, and financial and technological resources. Large firms, equipped with more resources, respond better to trade barriers than SMEs, which gives them a competitive advantage in international markets (Beamish, 1990; Wolf & Pett, 2000; Liñán, Paul & Fayolle, 2020).

#### 2.6 Crises and the Pandemic

A technical or economic breakdown might consist of an industrial accident or economic crisis, whereas a riot or act of terrorism is more social in nature, human induced (Quarantelli 1982, 1993, 1985). A natural disaster constitutes an extreme event or major crisis, whereas an employee illness represents a more minor everyday one (Gorski, 1998). Consequently, all of these events, however they might seem to an observer, can constitute crises of varying magnitudes to the individuals, organisations, or communities that experience them and elicit varying degrees of response.

Economic shocks, such as the financial crisis of 2008, severely disrupt existing economic relationships, destroy established firms and create the need to identify new opportunities for growth. A key concept that has emerged in the analysis of such shocks is that of resilience, which essentially refers to the ability of a system or organisation to recover from a disturbance (Martin, 2012). Building upon the work of Hudson (2010), Davies (2011) distinguishes three dimensions of resilience in a regional context: the ability of a region to withstand an external shock, the capacity to positively respond to a shock and the longterm adaptability of the region in generating new development paths. Entrepreneurship may be a key factor across all these dimensions as withstanding, responding and adapting to change necessitates flexibility and innovation, traits that are often associated with entrepreneurs (Williams, Vorley, and Ketikidis, 2013; Williams and Vorley, 2014). However, successful entrepreneurship also requires identifying and exploiting new opportunities. Regions benefitting from strong local knowledge stocks and associated knowledge spillovers may be best placed to generate these new opportunities. Indeed, a recent study of European regions by Bristow and Healy (2017) concludes that the regions' most resilient to the 2007-2008 economic crises had the greatest level of innovative activity. In a more detailed comparative case study of the UK cities of Cambridge and Swansea, Simmie and Martin (2010) conclude that the resilience of Cambridge to shocks was driven by local entrepreneurs utilising endogenously created knowledge. Conversely, the relative weakness of Swansea reflected a lock-in to outdated and narrow technologies and a reliance on external knowledge imported through multinational companies. This created an environment which limited the endogenous knowledge available to local entrepreneurs and reduced the capacity of the area to adapt to shocks.

The gravity of the COVID-19 crisis is such (Baker et al., 2020) that it could potentially be wreaking such devastating economic and societal consequences we may be witnessing the greatest crisis period

facing humankind since the World War II. Such is the uniqueness of the current crisis; some label it a metaphorical 'Black Swan event' for entrepreneurship (Kuckertz et al., 2020), as it encompasses virtually every sector and every country spanning the entire global economy simultaneously (Goodell, 2020; Brown, Rocha & Cowling, 2020). Owing to lockdowns and remote working, digitalisation accelerated significantly during the first six months of the pandemic. Masses of people moved to working from home. Remote working and online education are likely to become a permanent feature of our lives — again presenting opportunities for entrepreneurs (GEM, 2020).

A case study in the Nursing sector in China revealed that the impact of COVID-19 crisis has dramatically affected entrepreneurial finance in a great magnitude surpassing those businesses in the U.S.A. It shows that the firms hardest hit are start-ups who benefit the foremost from early-stage seed finance. The empirical setting for this study is China that was the first country to encounter a significant natural event of the COVID-19 virus, probably offering valuable empirical insights into however different countries across the world may be equally affected (Himani et. al, 2020).

#### 2.7 Roadmap of Theories

AUTHORS	MODEL	QUALITIES
Grant, Christianson,	Well-being can	Dimension 1: Physical well-being.
and Price (2007)	be conceptualized through three core dimensions.	Dimension 2: Psychological well-being. Dimension 3: Social well-being.
Hudson (2010),	Three	Dimension 1: The ability of a region to withstand an
Davies (2011)	dimensions of	external shock.
	resilience in a regional context.	Dimension 2: The capacity to positively respond to a shock. Dimension 3: The long-term adaptability of the region in generating new development paths.
Johnson & Hall	The job demand-	Employees working in jobs characterised by high job
(1988), Karasek	control-support	demands, low job control and low social support will
(1979), Morrison,	model.	experience a higher than average number of health
Payne & Wall (2003)		problems over time than workers in other jobs. The
Van Yperen &		model focuses on specific aspects in the complex
Hagedoorn (2003)		psychosocial work environment to explain how
		individuals perceive and react to their job.

# 3. Statistics

The three statistical reports are harvested from the Global Entrepreneurship Monitor (GEM) 2020; 1. Working hours of employees in businesses in G6 countries, 2. Revenues of businesses in Canada and 3. Financial status of businesses in Canada during the Covid-19 crisis.

#### Figure 1: Working hours of employees in businesses of G6 Countries during Covid-19 crisis.



Source: Global Entrepreneurship Monitor (GEM) 2020

Figure 1 presents the reduction of working hours of employees in businesses in the G6 countries; 1. Canada, 2. USA, 3. Korea, 4. Sweden, 5. Japan, 6. Australia. A comparison is made on the global financial crisis and the pandemic crisis in those six countries. In Canada, for instance there is a sharp decrease of -22.67 working hours from the previous months during the Covid-19 crisis compared to a decrease of -2.00 working hours during the global financial crisis. In the USA there is a decrease of -15.72 working hours from the previous months during the Covid-19 crisis and a decrease of -1.69 working hours during the global financial crisis. The decrease of -5.74 working hours from the previous months during the Covid-19 in Australia is the lowest number of working hours in the group of six countries. In addition, Australia presents the lowest negative number of -0.20 working hours during the global financial crisis.

or more. This figure almost doubles for smaller businesses, where nearly 60% of those with 1-4 employees and nearly 56% of those with 5-19 employees reported declines in revenue of 20% or more. In Canada, layoffs were widespread. Nationally, nearly 41% of all businesses reported that they had laid off staff. In some cases, these cuts were very deep. Data shows that almost one in five of these firm actions led to staff reductions of 80% or more! Furthermore, when firm size was taken into account, it was shown that, once the decision to cut staff was made, smaller firms were more likely to make deep cuts of 80% or more. Deep cuts like these represent an existential threat to these firms. In comparison, 18% of businesses with 500+ employees and nearly 30% of businesses with 100+ employees that laid off at least one employee, laid off 80% or more of their staff (GEM, 2020).

Figure 3: Financial status of businesses in Canada during Covid-19 crisis.



Source: Global Entrepreneurship Monitor (GEM) 2020

Figure 3 presents the businesses in Canada that applied for credit from financial institutions during the Covid-19 crisis. Forty per cent of small businesses with 5–19 employees and nearly 31% of businesses with 20–99 employees reported that they requested credit from a financial institution. These types of small business were most likely to request credit to cover operating costs due to revenue shortfalls caused by COVID-19, in comparison to larger

Figure 2: Revenues of businesses in Canada during Covid-19 crisis.



Source: Global Entrepreneurship Monitor (GEM) 2020

Figure 2 presents the effect on the revenues of all businesses based on the number of their employees in Canada. The percentage of revenues is changed compared to the previous financial year. In a major study carried out in March 2020, Statistics Canada found that 32% of businesses with 500 or more employees reported declines in revenue of 20%

enterprises that responded to the survey. A study by a major bank (CIBC) found that the majority (81%) of Canadian small business owners say COVID-19 has negatively impacted their operations, and many (32%) worry about the viability of their business over the next year (GEM, 2020).

# 4. Analysis

Entrepreneurs are courageous people willing to take up on new opportunities and to develop new ventures. They are risk takers, hard workers and patient with the creation of new businesses and also persistent to succeed with existing businesses. They usually work long hours to satisfy their passion for the products/ services offered to customers and often times they make lower than average earnings compared to salaried employees. Being an entrepreneur has been characterised as one of the most stressful jobs (Cardon & Patel, 2015; Patzelt & Shepherd, 2011), with average earnings that are lower than if one were to work as a paid employee (Van Praag & Versloot, 2008; Stephan, 2018).

The research question addressed is about the realisation of entrepreneurs' health and mental conditions during a major crisis such as the pandemic for the innovation of products/services/processes, the development and sustainability of businesses. The well-being and mental health of entrepreneurs are decisive factors in developing new ventures and sustaining existing businesses. It is imperative for entrepreneurs to hold these qualities in order to sustain their businesses during a crisis. Well-being plays a pivotal role for creative entrepreneurs to facilitate their creative ideation for product or service development and their abilities to identifying the right opportunities for new businesses (Chen et al., 2019).

Good thinking and sound decisions depend on whether business owners are physically and mentally healthy. Mental health is fundamental to our collective and individual ability as humans to think, emote, interact with each other, earn a living and enjoy life (WHO, 2018). Therefore, entrepreneurs can apply better management practices in their businesses and innovate new products/services/processes if they retain a good state of mind and a good level of health. The balance of well-being and mental health supports entrepreneurs in managing stress and making rational decisions for their businesses. The performance of their organisations depends on the well-being, mental health, resilience and abilities of the entrepreneurs. Research has highlighted the importance of wellbeing to entrepreneurs' stress handling and motives for new venture creation (Carree & Verheul, 2012). Well-being allows entrepreneurs to broaden their attention and focus on future opportunities; therefore, well-being signals that long-term goals are an opportunity not to be overlooked and will result in a broader perspective on the news (Labroo and Patrick, 2009). Remarkably, well-being plays a pivotal role for creative entrepreneurs to facilitate their creative ideation for product or service development and their abilities to identifying the right opportunities for new businesses (Chen et al., 2019).

Happy entrepreneurs tend to be more innovative over the long run, generating better goods and more fulfilling services for their customers and the others with whom they interact and do business (Gavin and Mason 2004). According to the Global Entrepreneurship Monitor (GEM, 2020) companies have examined liabilities such as expensive real estate and are rethinking office space and use. At the same time, they will be concerned about the psychological effects of working from home, and having to deal with loneliness, isolation, anxiety, stress and pressure on a daily basis, which have created new challenges for many of their employees. Resilience and crisis analysis skills are added values for robust entrepreneurship and good business

management. Resilience enables organisations and employees to respond to adversity or recover more quickly following adversity, to develop more 'unusual' ways of doing business and bounce back (Sutcliffe and Vogus, 2003; Vogus and Sutcliffe, 2007; Luthans et al., 2010; Shin, Taylor, and Seo, 2012; Linnenluecke, 2017). The well-being and mental health state of entrepreneurs contribute to the actual level of resilience. The internal balance of individuals determine the analysis of data and the soundness of decisions. Resilience to a crisis is meaningful and supportive to organisations when entrepreneurs analyse accurately the events in the economic and political environments.

At the beginning of this study, a question was raised about the consequences of irrational decisions. An inaccurate or false analysis of a crisis leads to misallocation of resources, wrong investments and therefore increases the risks of business closures. The reports by the Canada Statistics (2020) and the Global Entrepreneurship Monitor (GEM) (2020) reveal that unemployment had doubled to 2.4 million by April 2020. Even though there is limited information available about the impact on entrepreneurs, but some reports show that women and minority entrepreneurs have been most severely affected. Also, one-third of businesses reported a decline in revenue of 40% or more in the first quarter of 2020 compared to the previous year; 90% of entrepreneurs saw a loss in revenue; and 54% of entrepreneurs in one survey had experienced physical or mental health issues.

As of mid-May, there were no reports of a significant increase in bankruptcies, but a surge is expected in the fall. Additionally, Canada's extensive tourism industry has shut down almost completely. Anecdotally, many entrepreneurs and small businesses have been in "survival mode" and doing all they can to preserve cash. There is also anecdotal evidence that entrepreneurs who are parents of preschool and school-age children have been finding it difficult to maintain regular working hours (Lim SK D., Morse A.E. & Yu N., 2020).

However, the pandemic has also created new perspectives. In Japan, for example, university students are showing increasing preference for startup businesses. According to the survey of the Global Entrepreneurship Monitor (2020), during the lockdowns and thereafter, they observed a pronounced change in the mindset of young people. Japanese university students formerly had an extraordinarily strong tendency to want to work primarily for large companies. Pre-pandemic, even highly profitable SMEs were experiencing many difficulties recruiting new graduates. However, faced with the multiple disruptions and volatility caused by this crisis, young people's preferences have shifted from stability to potential as SMEs and entrepreneurship are increasingly becoming viable career options. This paradox reveals that entrepreneurship faces many challenges during a crisis but eventually finds the way to shine in the minds of young people.

The well-being and mental health of entrepreneurs are important aspects in compacting a crisis from an economic and social perspective. The decision making process for better management practices depend on the physical and mental state of entrepreneurs. The accurate analysis of a crisis is a key foundation of rational decisions and therefore the efficient deployment of resources to innovate products/services/processes and to sustain businesses.

### **5.** Conclusions

The study aims to investigate entrepreneurs' wellbeing and mental health in a crisis. The physical and mental health state, resilience, innovation, analytical

and decision making skills are core competences to innovate new products/services/processes and to sustain businesses in a crisis. The evaluation of entrepreneurs' well-being and mental health during crises and economic shocks support their efforts to make solid decisions about the businesses' role in the market. An accurate analysis of a crisis and the application of good management practices could help businesses overcome extremely difficult economic situations. Despite the causal effects of a crisis such as the Covid-19 pandemic, businesses are expected to sustain revenues, safeguard cash flow, secure job positions and work with employees, partners and customers to face challenges in the market.

#### Figure 4: Conceptual framework



Source: Author's own

The conceptual framework above shows the analysis of the characteristics of well-being and mental health of entrepreneurs in a crisis. The well-being category was divided into three dimensions: 1. Physical wellbeing, 2. Psychological well-being, 3. Social wellbeing and was based on theories in the literature review (Glajchen, 2012, Grant, Christianson & Price, 2007, Pilkauskaite-Valickiene & Gabrialaviciute 2015). The mental health category was analysed thoroughly to reveal characteristics that possibly affect innovation and the sustainability of businesses. Through the well-being and mental health analysis. a separate set of characteristics that affect the innovation of products/services/processes and the sustainability of businesses are identified. This set of characteristics include: 1.Stress handling, 2. Happiness, 3. Motivation at work, 4. Social relations, 5. Creativity for new products/services/ processes, 6.Knowledge dynamism, 7.Job specialization, 8. Resilience in a crisis, 9. Adaptability to a new economic environment, 10.Recognition of new opportunities and 11.Rational decision making. In effect the new set of characteristics causes a change in the following outcomes: 1. Revenues, 2. Expenses, 3. Profitability, 4. Creditrisk, 5. Liabilities, 6. Operating costs, 7. Working hours, 8. Financing of operations, 9.Unemployment. Entrepreneurs might consider studying and managing their businesses based on the mentioned set of characteristics. It is essential for business owners and other stakeholders to understand the importance of certain characteristics that can improve the businesses' outcomes. The case study of Canada showed that entrepreneurs' well-being and mental health should be taken into consideration. The working hours of employees have been reduced dramatically during the Covid-19 crisis and the revenues have been reduced by up to 60% for small businesses. In addition, forty percent of small businesses (5-19 employees) requested credit for operating costs from financial institutions.

For these reasons, entrepreneurs need to be in good physical and mental health state to combat a crisis and implement strategies to innovate and to sustain businesses.

While this research investigates the effects entrepreneurs' well-being and mental health have on the innovation of products/services/processes and the sustainability of businesses in a pandemic crisis, it is limited to exploring the consequences in the society and specifically, to the well-being of families in the communities. Hence, future research is suggested that further investigates the impact of innovation and sustainability of businesses in a crisis and how this affects the well-being of families concerned in a number of countries. The research outcomes might support local leaders, policy makers, social partners and other stakeholders when implementing policies to alleviate social injustice and providing financial aid to people in need.

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#### DEVELOPMENTAL PAPERS Paper 1

### Leisure industry and family segmenting

#### **Antoniades George**

# Abstract

This article derives from a research in progress, which tries to identify: 1) the factors influencing the leisure time of women with underage children, 2) products and services most influenced by the lack of leisure time of the population under study.

In this article the author describes the benefits leisure has on individuals, the needs that leisure can satisfy, and factors that can effect leisure time of women with children since they are an important segment of the market. Since leisure is associated with needs, the business sector and more specifically the leisure industry is involved in satisfying these needs. The leisure industry as explained in this article consists of many sectors. For the purpose of this research, the focus is on parents, and more specifically on women that have underage children. This is because this specific segment has less time to spend on leisure and satisfy its desire/need for leisure, as the literature review indicates.

The money spent on the leisure industry is quite substantial as the information provided shows, and the hospitality sector of leisure Industry is one of the largest in Cyprus as it makes up 33% of GDP according to 2018 data.

*Keywords: Leisure industry, Leisure time, parents, segments.* 

# Introduction

In order to understand the significance of leisure time in our lives, and the role of the leisure industry in consumers' lives, we first need to understand some concepts which form the main focus of the article. First we need to define and understand the concept of "Leisure". According to Cambridge dictionary, leisure refers to the activities people do when they are not working, to relax and enjoy themselves. This brings us to the second important concept of the article which is Leisure time. Collins Dictionary states that leisure time is the time dedicated to enjoying and relaxing oneself.

Having this in mind, one can see that needs related to self-esteem and self-belongingness are fulfilled by time spent on leisure activities. The benefits of spending time in such activities can be both physical and mental. According to a related study, people who spend time on leisure activities are less likely to develop illnesses (Cohen, Doyle, Turner, Alper, &Skoner, 2003), and they even live longer. It is clear that leisure activities, even if they do not require one to be physically active, have positive benefits in living a healthy and happy life. Another study finds that physical and outdoor leisure activities positively contribute to growth in math skills, while sedentary activities and screen time in its various manifestations exhibit the opposite effect (2018, Laidley, Conley). In addition to these, Iwasaki and Mannell (2000) believe that leisure activities can regulate stress, especially when the stressful situation is "treated" with leisure activities shortly after the experience that caused it.

# **Literature Review**

As we see, spending time on leisure is not as timewasting as some people might think, but it actually brings well-being and satisfaction to the participants. Fulfillment of needs that are associated with leisure, opens up the road for business activities.

In fact, activities that are associated with leisure form a whole new industry called the Leisure industry. By Leisure Industry we mean the segment of business

focused on recreation, entertainment, sports, and tourism (REST)-related products and services (Lavanchy, 2018).

Countries spend a considerable amount of their home income on leisure activities (Perett, 2021). For example the citizens of England spend 8.3 bln per month on leisure activities.

Considering that the leisure industry includes sectors of tourism as well, and that for Cyprus tourism contributes about 33% of the nation's GDP, we see that this industry is vital to the economy. Cypriot households spend 8.7 % of their total expenditure on restaurants and cafes, and about 8.8 % on hotels as part of leisure activities (Eurostat, 2018). In other words 17.4% of their total expenditure goes on this particular sector of tourism in the leisure industry. We can expect the percentage to increase if we take into account the money spent on sports and recreation activities.

The importance of leisure time in people's lives in combination with the leisure industry's role in the economy and business, has creates a need for the better understanding of the market and finding ways to create value for the industry's market segments.

One segment the Cyprus leisure industry needs to consider more carefully parenthood. Today's demanding environment, limits the amount of time people have at their disposal to spend on other activities apart from work and other responsibilities. This seems to be more of a reality for people who have children, since responsibilities grow as the family expands. According to a study, fifty six percent (56%) of working parents say they find it difficult to balance their time between work and family (Gale 2017). This does not mean though that finding time for onesself stops being a need. The shortage of time is more severe for women, as Miller and Brown (2005) suggests. Their article "Determinants of Active Leisure for Women with Young Children—an "Ethic of Care" Prevails", claims that women with dependent children have the least amount of free time for physical activities. As the article discusses, gender and cultural ideologies make women less likely to engage in physically active leisure. This fact creates an even bigger need for women to seek products and services to satisfy their needs and/or wants for leisure time.

This is because mothers have less leisure time than fathers do, and of less quality according to Craig and Mullan (2010). Women who have children find that they must combine their duties as mothers with their leisure activities more often than fathers do (Milkie et al 2009).

For this particular segment of the market, leisure activities are more restricted, and/or of lower quality. This new study being undertaken of the specific target segment is aiming to uncover the factors influencing leisure time of women with underage children, and discover which factors have a direct impact on the industry's products and services in order to help both the industry and this specific segment benefit from each other. The study so far has found several factors effecting leisure time for women. From these factors, we expect technology to play a role. In order to socialize women tend to seek the internet as a means of technological leisure (Parry, Penny 2014). On-line connectivity is an important part of mothers' leisure time, as they can form friendships, and have fun (Parry et al., 2013). One other factor that seems to affect the leisure time of mothers is their marital status, which has an effect on the time required for house work and employment demands (Cooke and Baxter 2010). Married women with children are expected to have more leisure time than single mothers. According to Vernon

(2010) married women have half an hour more per day for leisure activities than single mothers do. An additional factor that can contribute to the leisure time of mothers is education. It appears that people with higher education can give priority to those activities that offer human and social capital (Gupta et al. 2009).

If we consider that women of higher education possess higher level incomes, and can therefore afford to pay for help with child care, or even outsourcing some required labor, we expect that the time spent on leisure activities will be greater than those women who do not have this possibility. (deRuijter et al. 2005).

One other factor to be examined is motivation. Dillard and Bates (2011) attempted to evaluate the effect of motivation on leisure/recreation activities. Their study contained a table identifying "items" that would trigger/ motivate people into taking part in leisure/recreation activities.

By understanding those factors, the industry can offer appropriate services and products tailor-made for the segment under study and thus ensure a continuous flow of future high-value customers.

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#### ABSTRACTS Abstract 1

#### Nurturing the next generation within dark tourism: Insights from Death Valley, Slovakia

#### Drotarova Hadjielia Maria; Christou Prokopis

Our research study draws on activity theory and parenting literature to research abductively 'why parents/grandparents nurture the next generation of dark tourists?'. Our research study took place in the 'Death Valley' in Slovakia, a dark tourism site which is famous for its rich history on Second World War. 'The Death Valley' is located in Svidník, and encompasses the battlefield where some of the heaviest tank battles took place between 25th and 27th October 1944. In this battlefield, known as 'Carpathian Operation', the Czechoslovak army led by General Svoboda and the Soviet Army (about 300 000 soldiers) fought against the German troops. This battle was one of the bloodiest battles of the Second World War, which brought the German defeat. This battle resulted in the destruction of 150 tanks, the death of 180,000 soldiers and the obliteration of the town of Svidník.

Further, using a theoretical sampling process we collected 26 semi-structured interviews with visitors in 'The Death Valley'. The collected data were analysed through thematic analysis, drawing on coding process and guided by activity theory and parenting literature. Our research findings shed light on three types of drivers that lead grandparents/ parents to introduce their children to dark tourism sites, such us the Death Valley: 'obligational', 'educational', and 'ethical'. Our research study brings a novel and, yet, unexplored understanding of dark tourism as a collaborative activity between grandparents/parents and the younger generation.

Through our study we provide directions for future research on dark tourism and family-oriented tourism, new knowledge on the way families influence or facilitate the learning of the next generation of dark tourists and new perspectives of the role of education in dark tourism. Additionally, there are new insights on the way dark tourism can be seen as a family activity which provides benefits beyond the individual tourist. Last, through our study we provide practical implications for tourist providers and educational institutions such as schools, which seek to incorporate dark tourism within the curriculum. For instance, the school subject of history which is an important and relevant subject at secondary school level.

#### Keywords: The Death Valley, Second World War, Dark Tourism, Parenting, Children, Next Generation.

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#### Abstract 2

#### Wine tourism a route to cultivate regional entrepreneurship and innovation in rural areas

#### Afxentiou Georgios; Liasidou Sotiroula; Socratous Maria; Pericleous Katerina

Wine tourism acts as an alternative form of tourism in Cyprus integrating a diversity of stakeholders. The contribution of wine tourism in wine regions is imperative for the economic development of Cyprus in the tourism sector. The aim of the paper is to provide an understanding on the impact of wineries in nurturing regional entrepreneurship and innovation in the rural areas of Cyprus. Self-administered questionnaires were distributed to family-owned wineries. The results of the study are indicative and suggest that further enhancement of wine tourism will have multiple social and economic effects. Wine tourism can create an economic circle that benefits the communities and entrepreneurs that strive to grow and develop their businesses. Additionally, wine tourism provides the opportunity to young people to develop new ideas around the tourism industry. However, winery owners suggest that a robust tourism policy is needed, with the aim of promoting wine villages and creating opportunities for locals. Establishing Cyprus as a wine destination will create a plethora of prospects with the establishment of multi-faceted tourism activities.

#### Keywords: wine tourism, innovation, entrepreneurship, regional development.

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**Student Thesis** 

Thesis 1 IoT implementation in Modern Transportation & Logistics

Kuska Viktor

### Abstract

The Internet of Things, further referred to solely as IoT, is the system of interconnected devices which are able to communicate, by exchanging data between them over a network, without requiring input or interaction with humans. IoT has many applications in daily life, such as in home applications or at workplaces, simplifying the way we live or work. However, this project aims to utilize IoT equipment affecting the transportation of goods and people, emerging into a new era. This article focuses primarily on the use of IoT in public transportation, emergency services, and logistics, as well as the way IoT is changing these areas and how it is achieved. Moreover, in the project are included general world scenarios as well as use cases in specific cities, where IoT has been implemented. It also analyses how the implementation of IoT has changed the public's perception and the entities which use such services. Finally, it examines how modern technologies are aiding the aforementioned areas, such as logistics, emergency services and the general public, is been presented. With this in mind, the way that IoT could affect businesses and cities, which have not implemented such technologies yet is discussed. A case in point is the Republic of Cyprus. The article studies the potential use of IoT in the republic, the current infrastructure, and the technologies and solutions required to overcome any challenges or issues.

### Introduction

In an expanding world of technologies and great globalization, there is an increasing demand to share data within an extremely short window of time; current information found on the world wide web is now available to millions of people around the world simultaneously and people do not have to rely anymore on accessing the internet from internetcafés, from university campuses, from libraries, or even from desktops at their homes. Information can now be gathered with the use of simple smartphones, from almost anywhere in the world with the use of 4G radio towers and more recently 5G implementations as well, along with the aid of satellite communication Technological revolution has created meshes. access for smartphones or even smartwatches from almost any place on earth; however, this is merely the beginning, and there are more improvements to come, most notably with the recent deployment of 5G infrastructure and communications [1]. This evolution will enable a rapid and much smoother implementation of IoT devices (using Wi-Fi connection, whereas outside it may be Zigbee, LTE or LTE-MTC (Machine Type Communication) and the ability to relate to each-other at much higher speeds and clarity.

IoT devices usually create a network and communicate with the internet. They are all unique devices with a unique MAC and IP address, mostly using the IPv6 technology. There is a vast range of such devises, ranging from simple sensors that measure temperatures and proximities, to autonomous devices such as industrial grade robots and autonomous vehicles. IoT devices may also be solutions for home appliances creating the wellknown "Smart House"; they are not limited to fitness devices such as heart rate monitors, step counters etc. They all transfer data wirelessly and seamlessly. Most of these devices are "plug and play" requiring

very little setup and they are able to connect to their data center or cloud automatically for further process and then send data back to the user with information that is clear and understandable. The location where all this data comes together is also known as the "gathering point" of all the data transmitted by the IoT devices.

Although most data processing takes place on the cloud and data centers are equipped with the necessary facilities for increasing redundancy and reliability. There is always the risk of having faults, unexpected shutdowns, downtime etc., which may cause great delays in the provision of information to the end user. To help cut down the risks of downtimes and long periods of data return, the "edge-computing" technology as a solution can be implemented into the devices. When data is processed directly inside the device, the data servers and clouds release an exponential amount of data that needs to be computed and analyzed. This method will greatly decrease the risks of faults and downtimes, and even if this happens, the data, which is compressed and much smaller in size than previously, when it was unprocessed, it may be routed to backup servers which can forward the information to the end user, reducing a lot of potential delay.

In this framework, the article will investigate the ways that 5G and IoT technologies may improve the workflow of numerous agencies, both public and private entities, and the lives of the general commuting public. In particular, the combination of IoT technologies and logistics in transportation will be presented, including a comparison with legacy methods used, breaking down the infrastructure. However, it excludes solutions, advantages and disadvantages, as well as current architectures, methods and possible use of IoT.

# Methodology

Numerous cities around the world have begun to implement IoT in their systems. However, there are many factors affecting the possibilities and the extent to which they can be used, the simplicity or difficulty of the implementations and the end result, which would prove its sustainability and positive outcomes. Positive and sustainable outcomes are produced when the system is successfully commenced, when its use is met with positive feedback from the shareholders, i.e., the operators and general public, and when it is updated with bug fixes, patches, as well as new feature updates at regular intervals.



Figure 1: Statistics for the estimated increase of the IoT Devices.

Source: https://www.statista.com/statistics/471264/ iot-number-of-connected-devices-worldwide/

The European Commission has brought forth a strategy of various methods of implementation of modes to further enhance urban life and get closer to achieving "smart cities" within the European Union, which includes the establishment of interconnectivity between vehicles on the road and people's smart phones devises. This strategy and system have been named the "Cooperative Intelligent Transport Systems," abbreviated as C-ITS, and outlines the possibilities of sharing information about live traffic situations between road users and traffic operators and managers to improve the safety, efficiency and comfort of using the road networks in urban areas. [4]

The use of IoT in public transport is being implemented on a wide scale as there is a growing need for relieving congestion and decreasing pollution in cities from all over the world. Making schedules accurate and reliable is a top priority operators commuters and potential tourists, who need transport to be well organized but comfortable and easy to use as well.





Source: https://mapa.pid.cz/

The public transportation system of the city of Prague (PID – Pražská integrovaná doprava translated Prague Integrated Transport) could serve as a paradigm for setting up an integrated transportation system in Cyprus. Central Prague is crisscrossed by old, narrow, two-lane roads. Consequently, traffic is heavily congested, especially during the rush hours. The problem is compounded further by these roads having to share space with tramlines and bus lanes. There was therefore an urgent need to come up with a traffic system that was smooth, quick and effective for all users.

From the early stages of the project, the city authority's aim was to automate public transport as

much as possible. One of the first steps was to install ticket machines at bus and tram stops. This eliminated queues, as passengers did not have to wait in line to pay the drivers and tickets were simply validated by time-stamping machines on the vehicles.

In 2018, a smartphone application that allowed passengers to purchase time-dependent tickets remotely was integrated in to the system. This application includes timetables and an interactive map, which makes travelling on public transport much more efficient. It also informs travelers about different tariffs and tickets valid fr varied lengths of time. Travelers without this application can pay for their fares at contactless ticket machines installed on buses and trams.

#### Figure 3: Schedule of Bus Line 101 of PID in Prague [8]

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	x Myšlins	ká	528	5:43	5.58	6:13	6:28	6:43	6.58	7:13	7:43	7:58	8:13	8:43	9:13		10:13							13:28	13:43	14:13	14:28	14:43	15:13	15:28
	x Mokřan	ská	529	5:44	5.59	6:14	6:29	6:44	6.59	7:14	7:44	7:59	8:14	8:44	9:14		10:14							13:29	13:44	14:14	14:29	14:44	15:14	15:29
	x Plošná		5:30	5:45	6.00	6:15	6:30	6:45	7.00	7:15	7:45	8:00	8:15	8:45	9:15		10:15							13:30	13:45	14:15	14:30	14:45	15:15	15:30
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The Prague Public Transport Network has also installed smart priority systems on their vehicles. They are equipped with a GPS transmitter which communicates with a satellite, which in turn transmits data back to the traffic control center in Prague, where this information is shared with the vast network of traffic light systems around the city. According to the data received, these sensors have an algorithm for changing the traffic lights to accommodate any given situation of oncoming public transport vehicles depending on the actual situation on the road. These

sensors communicate with optical recognition sensors mounted on traffic lights which monitor the flow of traffic and depending on all the given factors, they operate the traffic lights to provide the most effective transition through the intersection.

**Example:** On a 4-way intersection, a public transport vehicle is incoming from the northbound direction and the heavy traffic ahead front has stopped at a red light, while westbound traffic has the green light and is moving. The sensor on the northbound traffic lights receives information about the incoming PT vehicle. It recognizes from the optical sensor that there is a highly congested situation in front, it therefore triggers the sequence of changing the traffic light on the westbound lane to red, and on the northbound lane to green, for the traffic to begin moving and thus prevent the PT vehicle from being delayed. [6] Prague transport recently publicized an interactive map which shows users the current locations of all its current vehicles in and around Prague. This system utilizes the information from the GPS transmitters built into the vehicles and plots it on their online map, along with useful information about the route, such as the current delay, which is color coded giving the user a visual representation of the situation. The information includes the vehicle type, model and make, it's origin station and departure time, it's final station and expected arrival, the next stop and its ETA, along with details about the vehicle's accessibility options, such as hearing aid, or if it is wheelchair accessible, whether it includes air condition and contactless payment options for purchasing tickets

### Implementation

Unfortunately, the current systems in Cyprus depend on legacy technology compared to most of the developed countries in Europe and North America. Until recently, public transport in Cyprus, especially in Limassol, relied solely on estimated schedules, and only used times from the station of departure, with no real estimates for intermediate stops. In contrast, bus line 101 from the Prague public transport company PID provides detailed times for each stop highlighting day and night services. In Cyprus, on the other hand, before the introduction of bus operators, there was no real system at all. Bus drivers used their own buses and would operate at their own discretion. This created great distrust in public transport in Limassol, as the service was extremely unreliable, people would go to bus stops not knowing when their bus would arrive.

There were no printed schedules or timetables at the bus stops which would have given commuters at least a rough idea. As a result, many started using private vehicles to commute to work, to school and for other purposes; according to Eurostat, in 2018 Cyprus had the 3rd highest number of passenger vehicles per 1000 people, specifically 629 cars/1000 people, while the EU average was 529 cars/1000 people. [7] Many households in Cyprus also prefer having multiple cars, as they are generally more comfortable and suitable than public transport. Moreover, the huge number of vehicles has a negative impact on the traffic situation, as many urban roads have not been designed for heavy use. Many intersections are put in place without the correct field studies such as the number of vehicles passing through, which would influence how many lanes the intersection would need and which parts of the intersection should be prioritized, such as the straight lanes or turning lanes. There are many in Cyprus, especially in Limassol which make vehicles stop without a valid reason such as the westbound lanes at the intersection of Arch. Makarios III and 28 October Avenues. Vehicles receive a red light without any cross traffic in the opposing lanes, which in turn creates great congestion and the preventable delays

of public transport. All these reasons combined make travelling on public transport in Limassol difficult and inconvenient

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40	16:05	16:30	17:00	10:45	11:30	12:15	13:05	16:35 1	17:00	17:25	17:55	11:25	12:10	12:55	

Figure 4

The implementation of IoT in this environment would create a more sustainable service which would be friendlier to its current users and more attractive to potential new passengers. A simple study of the routes would and should include the usage of GPS tracking systems built into vehicles, as well as a smart passenger counter to collect data about the demand of buses at individual bus stops and different areas in the cities.

# **Results and Experiments**

Let us consider the coastal bus line 30 of EMEL in Limassol. This route has 26 traffic lights. Each traffic light can keep a red signal for up to 1 minute and 30 seconds, the busier ones tend to have a set time of 45 seconds. On average a PT bus in Limassol needs to stop at 75% of the intersections. This amounts to about 1300 seconds or 21 minutes. According to cyprusbus.com, the official travel time from start to finish for line 30 is 59 to 60 minutes. The route is approximately 23km long, which means the average transit speed is 23km/h.

According to a study made in Prague concerning the accuracy of transit times and the schedule provided by the PT company, Urban Bus Line 109, which is 13km long and takes approximately 21 minutes to complete consists of 14 intersections in total. The bus used smart IoT equipment which enabled it to pass through 6 traffic light intersections and was stopped for an average of only 24 seconds at the remaining traffic lights. Without such technology, it would have been stopped for an approximate duration of up to 45 seconds per intersection amounting to an increased transit time of up to 10 minutes. The Study was done by Viktor Kuska and Jiri Krejci on the 10th of October 2018.

With the implementation of smart systems in these routes, travel can become smoother and faster, saving the company on fuel usage and creating a more comfortable atmosphere for its passengers, while creating a sustainable bus network which would be attractive to more people, increasing its ticket sales and profitability, merely by modernizing its fleet and technology.

According to the proposed solution, it is estimated that:

- Old-fashioned timetables and schedules can be upgraded, with more accurate information about the route start times, end times and arrival times at individual bus stops, calculated from the monthly and yearly averages.
- The creation of a smart application would improve the quality of bus services and bolster tourism.
- Smart traffic lights and systems as a whole should be implemented as with Prague. IoT devices such as GPS transmitters can be installed in vehicles which can transmit the location of a vehicle to

the relevant satellite, the data can then be relayed further to a cloud service or in-house servers, depending on the transport company's choice, where it is processed to provide the operator with real time location updates.

• An Artificial Intelligence (A.I.) learning capability in the future could help to decide when is the best time to change traffic lights and increase the speed of the bus based on the speed of PT vehicles, the time of day and the amount of traffic on the bus route.

### Conclusion

Up to now, the integration of IoT into public transport and the Emergency Response Services has been limited. Considerable work needs to be done to bring it up to an acceptable level on par with cities from across Europe and the USA. It has been seen that the usage of modern technology can greatly improve the level of satisfaction and effectiveness by minimizing delays and providing the public newer provisions and friendlier ways of travelling throughout urban areas, without the need to use their personal vehicles.

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### **SPECIAL SECTION – SHORT ESSAYS**

#### Essay 1

#### Remote work and the future of work

#### Karfakis Nikos

It has been almost one and half years since the World Health Organization (WHO) declared COVID-19 a pandemic. Due to the pandemic and the lockdowns, millions have lost jobs and many have been forced to work from home (the terms 'remote work' and 'telework' are used interchangeably although the latter implies that there may be some on-site work done by the worker). Although the notion of 'telework' has been around for years (e.g., Stanworth, 1997; Peters et al., 2016; Nakrošienè et al., 2019), due to the pandemic it has become a major issue for firms and workers alike. An interesting discussion has been initiated about what the world of work will look like after the pandemic.

Many scholars and business experts seem to believe that remote work has been normalized and that the days of the 9-5 'office-centric' work are over, and that this is mainly a good thing (see BBC, 2020). But predictions are extremely difficult and we should be wary of claims about the 'brave new world' of work. The British economist John Maynard Keynes famously predicted in 1930 that by the early 21st century we should have a 15 hour work-week (Keynes, 1963). Despite some attempts, even if as pilot programs, to implement a 35-hour week in France and Sweden, for example, this sounds, at least for the time being, nothing more than wishful thinking. Many, due to either stagnant wages or the long hours culture, work between 40 and 55 hours per working week. Similarly, futurist discourses about Artificial Intelligence (AI), Robotics, etc. making humans obsolete and leading to mass unemployment are exaggerated. Although low-skilled workers will face the greatest challenges, it is more likely that occupations 'will evolve rather than be eliminated, and new ones will emerge in the long run' (Dellot and Wallace-Stephens, 2017: 42; see also Wajcman, 2017).

Beyond the media hype about the impact of new technologies on work and employment and the advent of the virtual world, remote work may indeed stick (Barrero et al., 2020). In any case, I think, there are a number of issues that we should draw our attention to.

First, the issue of productivity. Although many reports and scholars suggest that remote work increases employee productivity (e.g. Barrero et al., 2020; Bevan, 2021), there is no consensus over whether 'telecommuting' makes workers more productive (Behrens et al., 2021). Trust is important here. Employers need to trust that the employees will do their tasks effectively and efficiently; indeed, when they feel trusted they feel appreciated and work better. Second, the issue of a 'hybrid' way of working. A number of business leaders and policymakers are already proposing or expecting a 'hybrid' way of working, i.e. working time being split between the office and the home. This seems like a win-win situation as many workers seems to prefer remote work (avoiding the hassle of commuting is one of the obvious reasons) and, on the other hand, employers will significantly minimize their estate costs (although not all employers seem to find this tempting). However, as Cary Cooper, Professor of Organizational Psychology & Health at Manchester University, points out, office socialization will still be needed because face-to-face meetings both create a sense of belonging and make work easier and faster (BBC, 2020). The latter is the result of information and knowledge spillover, something that is empirically well documented (Liu et al., 2018;

Rosenthal and Strange, 2020). Moreover, although less commuting seems appealing to many workers, additional room is required to work from home. This increases workers' expenses, who might even have to relocate in some cases. Third, the issue of gender equality. Not only was it more likely for women to lose their jobs during the pandemic, but there is also the long-standing problem of women being burdened with most responsibilities at home. Some would argue that remote work can help women have better work-life balance and, if fathers work at home, family responsibilities will be more equally shared. This can, in turn, help women advance professionally (BBC, 2020). Fourth, the issue of vulnerable workers. During the pandemic it is a 'privilege' to work from home while vulnerable workers like those in transportation, cleaning and maintenance, food service, and personal care are exposed to Covid-19. Those workers need to be protected by having safety nets built for them, but also, to the extent that these sort of jobs may be decreased in the near future, they will need to be educated and trained so that they are not left behind (BBC, 2020; Cetrulo et al., 2020). Fifth, the issue of health and legal protection. While productivity should be ensured, the health of and legal protection for workers also need to be ensured. Health risks for those working remotely range from musculoskeletal problems due to unergonomic work environments to psychosocial and behaviour risks, especially those associated with addictions (Bouziri et al., 2020; see also Bailenson, 2021). Additionally, the boundary between office and personal space has become far more fluid and, as some evidence suggests (Countouris and Di Stefano, 2021), workers end up having shorter breaks and working more. Lastly, to some extent, low-skilled online workers have been replaced by bots and AI and high-level workers respectively by independent workers and freelancers (Countouris and Di Stefano, 2021). In both cases, some form of legal protection seems required.

All in all, remote work may be a 'mixed blessing' for both workers and firms (Bechrens et al., 2021). Although this is by no means an exhaustive list or treatment of the challenges that Covid-19 has brought to the world of work, it surely is a starting point for further reflection, discussion and research.

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# Essay 2

# The impact of employee engagement and psychological contract in a workforce

#### Michael Nastasia

# Introduction

Over the last few decades, we have noticed a significant positive change in the business world, where Organisations and HR Professionals pay increasing attention to employee engagement. How to interact with employees? How to invest in them? How to engage with them? and how to make them get involved in the organisation?

Researchers have investigated the outcome of employees' engagement, as highly engaged employees are more willing to contribute to the organisation's further evolution. According to Sung & Ashton (2005) "It has a simple formula, that is, with success, you need to reward hard work, innovation and commitment handsomely". According to Harvard Business Review (2013) research about Employee Engagement (EE) showed that organisations with highly engaged employees have double the rate of success compared to less engaged organisations with an increase in productivity by 22%.

Additionally, HR Professionals deal on a daily basis with written contracts and signatures with everything agreed upon between the employer and the employee. However, the other side of the coin is the psychological contract "the unwritten set of expectations between the employer and the employee which includes informal arrangements, mutual beliefs, common ground and perceptions between the two parties" (HR Exchange, 2018). Both topics of EE and psychological contract are explained in detail in order to clearly understand the relationship both theories have in common such as involvement, commitment, participation, communication and productivity.

**Engagement: Definitions and Comparison** (Involvement, Commitment, and Participation)

Determining the essence of Employee Engagement (EE) as a phenomenon is a rather tricky task. Because of the elusive nature of the subject matter, as well as the array of factors that affect it, it is comparatively hard to detect the components of EE. Therefore, providing a definition for the concept is also a rather intricate process.

CIPD (2015) asserts that the Utrecht University Group has captured the essence of EE and provided an impeccable definition for the concept. According to the findings of the study conducted by the Utrecht experts, EE can be summarised as "a positive, fulfilling, work-related state of mind" (Bailey et al., 2015, p. 52).

However, CIPD members also stress that the current definition could use refinement when applied to the workplace environment. For instance, the focus on maintaining a consistent performance quality could have been included in the description provided above. CIPD suggests that the following should be viewed as the model explanation of what EE is: "being positively present during the performance of work by willingly contributing intellectual effort, experiencing positive emotions and meaningful connections to other" (Chartered Institute of Personnel and Development 2016a, para. 5).

One should distinguish between the concepts of EE, involvement, commitment, and participation (see

Image I). According to CIPD (Image I: Chartered Institute of Personnel and Development 2016a), while EE implies positivity and connection, involvement concerns primarily being informed about the company's progress. Commitment is traditionally rendered as loyalty, whereas participation does not incorporate enthusiasm as opposed to EE. Therefore, involvement, commitment, and participation can be viewed as the components of EE (Chartered Institute of Personnel and Development 2016a). Image I Surveys show that EE rates have been comparatively stable over the past few years.

#### Image 1: Change in EE rates (UK, 2012-2015) (Chartered Institute of Personnel and Development 2016b)



# Engagement Practices and Their Significance: HR Differentiation

Importance of Engagement Practices: As a recent report published by CIPD shows, the significance of engagement practices is very high as it helps not only their performance rates but also the quality of the product and the services provided (Chartered Institute of Personnel and Development 2015c).

Specifically, the application of the HR differentiation tool sets the premises for a detailed analysis of the unique needs that the employees have. Indeed, applying a uniform approach toward addressing the employees' demands is barely sensible as each of the employees have their unique aspirations. Granted that there are similarities between the goals of the target audiences (e.g., the necessity of a financial gain, the urge to be recognised for professionalism and workplace performance, etc.), the ways, in which the organisation can deliver the necessary items are very numerous, and the efficacy of the chosen strategies hinges on the cultural context in which they are applied. Therefore, I have conducted a detailed research on the specifics of the target audience should be interpreted as the priority of the organisation.

#### **Psychological Contract: Definition and HR Approach**

The idea of the psychological contract as the mutual awareness of the parties involved in signing the contract about their obligations toward each other, as well as their responsibilities in the context of the agreement (Chartered Institute of Personnel and Development 2016b) is not new. However, it was not until the 1990s that the concept started being used actively by organisations. Nowadays, the psychological contract is considered one of the most essential building blocks for successful organisational performance (Marescaux et al. 2015).

HR Professionals in various organisations should believe the phenomenon of the psychological contract as it is used sometimes to enhance the employee loyalty rates. However, the organisations not always

seem to be very trustful to the employees, since rigid supervision is a part and parcel of the work-related processes. Also, inform them about important topics and invite them for conferences that interest them due to the reason that some of our employees have a British nationality.



#### Figure 1: The Psychological Contract

### **Future of the Psychological Contract: On the Edge of Change**

In light of the fact that I believe that the organisation leaders need to learn more about the needs and aspirations of its staff members, the enhancement of the psychological contract significance in the corporate environment must be viewed a necessity. Although each employee has a unique set of needs and characteristics, designing the approach that will help meet the requirements of all personnel is a possibility. Specifically, the entrepreneurship should change the current corporate values and vision so that both could reflect its attitude toward the needs of employees. It is essential that the company's vision and mission should reflect its understanding of the significance of the staff's personal and professional development, as well as a friendly and favourable workplace environment. As soon as the necessary changes are introduced into the firm's design, a significant change in the performance quality is expected.

Another crucial change that needs to be carried out for the company to build the path to establishing a psychological contract with the staff members and convincing them to excel in their performance is focusing on information management. The identified step includes both providing the tools that will enhance the process speed contributing to connectivity and the redesign of the current communication patterns adopted and used by the employees. For example, the fact that the personnel tends to prevent the process of data sharing can be considered detrimental to the organisation's success. By refusing to share essential pieces of information, the employees cause corporate strategies to fail on a number of levels, including the marketing processes, customer communication, logistics, etc. Therefore, the introduction of the basic concepts of knowledge sharing and the reduction in the competition rates I believe the organisation must be viewed as the next essential step in improving the firm's performance indicators. Furthermore, the promotion of an entirely new communication approach based on the principles of data sharing, clarity, transparency, and trust will build the environment in which the staff members will be inclined to communicate with the managers efficiently. As a result, feedback will be collected from the target audience faster and processed successfully. Herein lies the premise for a psychological contract to be implemented in the company's' design.

# Changes Assessment: What a Manager Should Be Aware of

Employee Expectations: As an employee continues working in the environment of a particular company, their goals and aspirations are likely to change. The company's strategy, in its turn, must be in chord with the changes that the employees experience. By coordinating the process of the company's evolution with the employees' professional and personal

growth, the firm creates a psychological contract with its employees, therefore, paving the way to their further successful collaboration (Chartered Institute of Personnel and Development 2005).

# Instrumentalism and its Dysfunctional Consequences:

Problem-solving and not the focus on the description of objective reality can be viewed as the philosophy of instrumentalism. Therefore, the use of instrumentalism in the managerial strategies is likely to have an oppositional effect on employee engagement, making the employees see themselves as tools.

Task Simplification: On the one hand, creating the environment, in which the employees are not exposed to the workplace burnout, is imperative to maintain the employee's engagement rates high. On the other hand, it is crucial to make sure that the employees could complete challenging tasks that compel them to learn more and grow professionally. Therefore, the simplification of tasks is not to be viewed as the goal of the company. In other words, it is crucial that the employees could have an opportunity to make a discretionary effort when completing job-related assignments (Chartered Institute of Personnel and Development 2008).

Scientific Management: The use of essential theories related to the behavioural science domain is imperative to construct the strategy that will later on be used to motivate the employees. Scientific management will help understand by what the employee are driven.

# Conclusion

Everything mentioned underlines the importance of EE and Psychological contract for organisations and HR professionals to consider in order to create an

environment that encourage and enhance employees to get involved in their workplace.

EE is all about high levels of involvements, commitment, motivation, trust and empowering the employees' efforts for productivity and effectiveness. This is precisely the importance of EE which is even more essential in today's completive workplace and for the stability of the organisations today.

In light of the fact that HR professionals believe that the organisation leaders need to learn more about the needs and aspirations of its employees, the enhancement of the psychological contract significance in the corporate environment must be viewed a necessity. Although each employee has a unique set of needs and characteristics, designing the approach that will help meet the requirements of all personnel is a possibility. It is essential that the company's vision and mission should reflect its understanding of thesignificance of the staff's personal and professional development, as well as a friendly and favourable workplace environment.

In summary, overall organisations and HR professional need to understand the role and the importance of EE and psychological contract has in the future of the organisation. It is vital that the fact both theories address employees' involvement, commitment, participation, communication and productivity is taken into account.

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### Essay 3

# Cyprus SMEs need more intensive focus on innovation

#### Afxentiou Georgios

Cyprus SMEs need to improve their focus on product and process innovation. They should also increase collaboration and communication between all stakeholders, which is imperative for the success of product and process innovation.

For now, Cyprus's SMEs, with a score of 25 points, are below the EU average of 32 points in terms of innovation performance, according to the European Innovation Scoreboard for 2020. This puts Cyprus below Portugal on the ranking, but at the same level as Croatia, Czechia, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, and Spain. These countries are "Moderate Innovators," according to the terms of the scoreboard.

The management of SMEs in Cyprus should infuse the development of new products and processes into their organisations. They need to engage employees, partners, suppliers and customers in the product and process innovations.

# What is Innovation?

Innovation is the process of taking a creative idea and turning it into a useful product, service, or method of operation (Robbins, DeCenzo, Coulter, 2013). Innovation is not just about developing new technologies, but also about adopting and reorganising business routines, and internal organisation or external relations. The focus of process innovation can therefore be said to be a focus on internal customers, and the objectives may be reduction of production costs, higher production yields, improvement of production volumes, environment-friendly production, and improvement of flexibility in production. The company's product development can also be considered as an internal customer for process innovation.

# About one-third of EU SMEs are innovating with products or processes

According to the European Innovation Scoreboard 2020: Annex B - Performance per indicator (European Commission, 2020), the introduction of new products (goods or services) and processes is traditionally seen as the most important type of innovation in industry. Higher shares of product and/or process innovators reflect a higher level of innovation activities.

More than 34 per cent of EU SMEs have innovated by introducing at least one new or significantly improved product or process. In Portugal, Norway, Finland and Montenegro, more than 50 per cent of SMEs have introduced a product or process innovation. This share is only 5 per cent in Romania, and below 11 per cent in Ukraine.

# **Analysis of performance**

Compared with reference year 2012, performance has increased for 21 countries and decreased for 14 countries. Performance has increased most in Norway and Lithuania, and has decreased most in Iceland, Germany and Spain. Compared with the previous year, performance has increased for 24 countries, most strongly in Estonia, Norway and Portugal, and decreased for 10 countries, most strongly in Ireland, Cyprus and Malta.

Hervas-Oliver J.L, Sempere-Ripoll F., Boronat-Moll C. (2014) explained that a firm's innovation strategy depends on its existing capabilities or knowledge stock. A firm's innovation capability is highly correlated with its innovation strategy, and both depend on its repository of internally and externally generated resources and competences.

The creation and implementation of the product and process innovations are connected to the resources and competences, but they are also dependent on the business development thinking and culture of SME managements.

Cypriot SMEs need to build a culture of innovation, by developing skills and resources that feed into it. As this process improves, so will the innovation performance of Cypriot SMEs.

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### Essay 4

# The impact of Brexit on European citizenship

#### Christophidou Katerina

# Introduction

The Institution of Citizenship in the EU legal system appears for the first time in Community Texts with the Maastricht Treaty. The relevant regulations were not changed by the Lisbon Treaty and thus the introduction of the Institution of Citizenship clearly signals the release of the individual from the purely economic context of the internal market. Therefore, the elevation of the individual to a citizen of the Union is created.

According to Article 20 of the Treaty on the Functioning of the European Union, "a citizen of the Union is any person who holds the nationality of a Member State". Therefore, Union legislation does not provide a direct definition of who is a citizen of the Union, but that definition is determined by the provisions of the national legislation in question. Obviously, once a citizen acquires the citizenship of a Member State, they automatically acquire European citizenship. Furthermore, the Treaty on the Functioning of the European Union states that "citizenship of the Union shall be added and shall not replace national citizenship". For the citizen of the Union, the acquisition of European citizenship creates rights but at the same time obligations. Specifically, in Article 20 (2) of the Treaty on the Functioning of the European Union, it is stated that "citizens of the Union have the rights and obligations which are defined in the Treaties".

It is noteworthy that the acquisition of European citizenship creates a special legal relationship between

the citizen and a peculiar supranational organization. In no case is the full legal bond of a citizen and a state reflected and this special relationship is not exclusive. In the sense that the Union does not claim the exclusivity of the legal bond since the citizen's relationship is formed primarily by its membership in a certain Member State . In addition, this special relationship is not a primary creation but is derived in the sense that the acquisition of European citizenship is a prerequisite for acquiring the citizenship of a Member State.

At this point it is noteworthy that in addition to the rights set out in Article 20 of the Treaty on the Functioning of the European Union, citizenship of the Union ensures, first and foremost, the general prohibition of discrimination due to nationality under the Article 18 of the aforementioned Treaty. Besides, Article 26 et seq guarantees fundamental freedoms and rights.

# The impact of Brexit on European citizenship with regard to education

The United Kingdom is the first country to leave the European Union. This fact alone has affected the balances in Europe and has been the subject of many studies aimed at determining the impending consequences of this exit. As a natural consequence of the United Kingdom's withdrawal from the European Union, the single market and the customs union created barriers to trade and cross-border trade that did not exist before 1st February 2021.

The Exit Agreement entered into force on 1 February 2020 and has legal effect under international law. The Union will fully comply with its obligation under this agreement. This applies in particular to Article 138 of the Exit Agreement, which provides, in respect of Union programmes and activities for which commitments under MFF 2014-2020 or

previous financial perspectives have been made, that applicable Union law will continue to apply in the United Kingdom after 31st December 2020 until the end of such Union programmes and activities.

Under this Article and other provisions of the Exit Agreement, this means that legal entities established in the United Kingdom will continue to be fully eligible for participation and funding under current European Union programmes for the period 2014-2020, including Erasmus+ and the European Solidarity Corps, as would be the case if the United Kingdom were a Member State, by the time these programmes are completed.

The consequences for public administrations, businesses and citizens were inevitable, significant and far-reaching despite the conclusion of the Trade and Cooperation Agreement between the European Union and the United Kingdom. In addition, the Commission has provided training and guidance to both Member States' administrations and stakeholders, and will also continue to organize sectoral technical seminars with all Member States to help improve the implementation of preparedness measures, particularly in the areas of border controls, on persons and goods.

In summary, it is clear that the effects of Brexit are mostly focused on and reflected in Higher Education. These effects affect European citizens (citizens of the European Union) on the one hand, and British citizens on the other, and focus mainly on the following areas:

# Free mobility of students, academics and researchers

Until 1st February 2021 students, academics and researchers could travel from other Member States to

Great Britain and vice versa through the simple predefined procedures, known to everyone, using their national identity card and passing through the airport gate of the correspondent Member State accordingly. This facility no longer exists and the mobility to the UK is now a mobility to a third country with all the passport control procedures and so on. The same, of course, applies to the mobility of British nationals to the Member States of the European Union. It is also possible that for some European Union countries, the United Kingdom may require a visa to enter the country and, on the contrary, some European Union countries may require a visa for British citizens.

#### Free mobility of study programmes

The European Union has in recent years promoted a policy of cross-border education, which the United Kingdom has taken advantage of more than any other Member State because of the language advantage. Cross-border education is currently applied in various forms such as the creation of branches of Higher Education institutions, the offer of crossborder programmes with the method of franchise and certification, programmes such as double degrees and joint degrees, the offer of distance education programmes, the offer of MOOK's and other similar programmes. All of these are cross-border training methods that can be applied between Member States of the European Union and are recognized in all Member States. With the exit of the United Kingdom, there is a serious issue of recognition of even the right to offer these cross-border programmes from the United Kingdom to the Member States and vice versa.

#### **Recognition of qualifications**

All Member States of the European Union are part of the Bologna Process and the European Agency

for Quality Assurance in Higher Education (ENQA). The Member States' Higher Education Systems are therefore adapted to the regulations and procedures as specified in the Bologna Process and in accordance with the European Agency for Quality Assurance in Higher Education. As a result, the curricula offered by the Member States are transparent and receive (almost) automatic recognition between Member States. With the exit of the United Kingdom, there is now an issue of recognition of British degrees in the Member States and vice versa.

# ERASMUS + Programmes / Funding / Recognition of training

The new ERASMUS+ programmes, which amount to more than €130 billion, cannot be exploited by the United Kingdom as it is no longer a Member State of the European Union. In addition, although Member States may transfer students, researchers or academics to third countries under the new programmes, this may be up to 20% of their mobility. On the other hand, for programmes where students take part in a one or two-semester mobility from a Member State of the European Union to the United Kingdom, the issue of recognizing their education credits in the United Kingdom arises because it is now considered a third country.

#### Research projects funded by the European Union

There are hundreds of research projects each year (for example Horizon 2020, Marie Curie and others) funded by the European Union and addressed to its Member States. Higher education institutions and research centres in the Member States raise many millions of euros through these programmes, either on their own or as joint ventures with other institutions and organizations. The United Kingdom can no longer, as a third country, apply for and raise such funds (Directorate-General for European Coordination and Development Programs, 2021). Its small participation is now limited to being chosen by some institutions among third countries. It is worth noting that participation in these programmes, in addition to the economic aspects, has its social dimension as they employ thousands of researchers and other staff throughout Europe, offer work and support thousands of families.

As it was previously mentioned, Brexit is a major threat to education. The European university sector is working together to maintain the deep relationship between the UK and other European universities despite the recent Brexit result. Admittedly, universities are dependent on cross-border work and are particularly sensitive to situations where societies are turning to a limited, national horizon.

The United Kingdom is a leader in research cooperation and student mobility. It is by far the most productive country in the European Union in terms of research and is arguably the most popular destination for student mobility in Europe. British universities often offer learning environments to institutions that are renowned for their high level of research, making them a very attractive choice for studies abroad. More than 200,000 European students are in UK universities either because of mobility or for their entire degree, which accounts for about 30% of all student mobility in Europe. This attractiveness is due, as mentioned earlier, in part to the language, but also due to the rapid expansion of the English language supply to the rest of Europe, as well as to the excellent quality of education offered by UK universities.

For this reason, there is strong support for the UK's future involvement in the Erasmus programme as well as for the research programme framework. It is

pointed out that these programmes are open to the participation of third countries and that the United Kingdom plays such a crucial role that it would have consequences for the whole of Europe if it abandoned these programmes. It would therefore be preferable if, as part of the financial arrangement, the United Kingdom could continue to pay and be eligible for funding from these programmes until they are completed and then join these new programmes immediately thereafter.

In addition, when it comes to student mobility, it will be difficult to make up for lost capacity if Brexit creates financial or administrative barriers for students wishing to go to the UK. In the short to medium term, a substantial number for students would not be able to afford the costs of mobility. The mere thought of logistics involved in finding alternatives to almost a third of Europe's student mobility would be indulgently frightening. British universities will also be hit hard, as a very small and limited portion of them will be able to provide an international experience to students within the UK. So it is clear that both sides will be hit rigid by Brexit.

Apart from these, citizens' rights and free movement will also be an important issue for universities. As a sector, universities are highly dependent on recruitment capacity that extends beyond national borders. A solution must be found immediately to the current unequal situation, where UK researchers and students, and their families, have privileged access to the European Union through the special directive on entry into these groups (Directive 2016/801). Generally speaking, this directive guarantees thirdcountry students or researchers who have a European Union host institution certain rights once they have obtained their visa, including the right to bring their family members to the European Union, free travel within the European Union and the right to stay and find work after the end of the study period.

In conclusion, European Union students and researchers, however, will be subject to potentially difficult immigration procedures to get to the UK. They will not necessarily have rights comparable to those given to British researchers and students in the European Union. For an area that depends on the free flow of ideas and people, this would not be an attractive scenario. While it could lead to access to a larger group of potential students for European Union universities, it would not be good for Europe to lose the excellent learning and research environment currently established in the United Kingdom.

# Conclusion

In conclusion, the impact of Brexit on European citizenship is obvious and reveals a worrying dysfunction in modern democratic societies. Simultaneously, there is no doubt that the United Kingdom will suffer a huge blow due to the exit from the European institutional structures and its economy will be severely affected as it leaves the world's largest market. In addition, the current international influence of the United Kingdom will be significantly reduced.

Certainly, the effects of Brexit are not limited to the narrow context within the United Kingdom, but it is extended and affects both trade, the economy, the European Union's Common Security and Defence Policy (CSDP), and transatlantic cooperation in which the United States are also involved including the North Atlantic Alliance. It is therefore doubtless that Brexit will lead to a reshuffling of the existing International System. Based on what has been said in this paper, there is no evidence that Brexit could end the era that opened about 200 years ago with "Pax Britannica" but on the contrary it appears that in the near future at least the existing US-dominated International System and auxiliary from the United Kingdom will continue to protect the integrity of the world liberal order.

The United Kingdom's decision to go its own way, leaving the large family of the European Union, has had a major impact on all areas of the European Union. Undoubtedly, education is an area that bears the brunt of the impact of retirement, and the consequences are already being felt. The European Union must study in depth the already emerging consequences and act proactively to preserve its cohesion and prevent the negative scenario of the weakening of transatlantic relations as a result of Brexit.

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118 Spyrou Kyprianou Avenue 3077 Limassol P.O. Box 51938, 3509 Limassol

T: +357 25736501 F: +357 25736629 college@ctleuro.ac.cy

ctleurocollege (f) ctleurocollegecy (20) ctl eurocollege (20) ctleuro.ac.cy (20)

