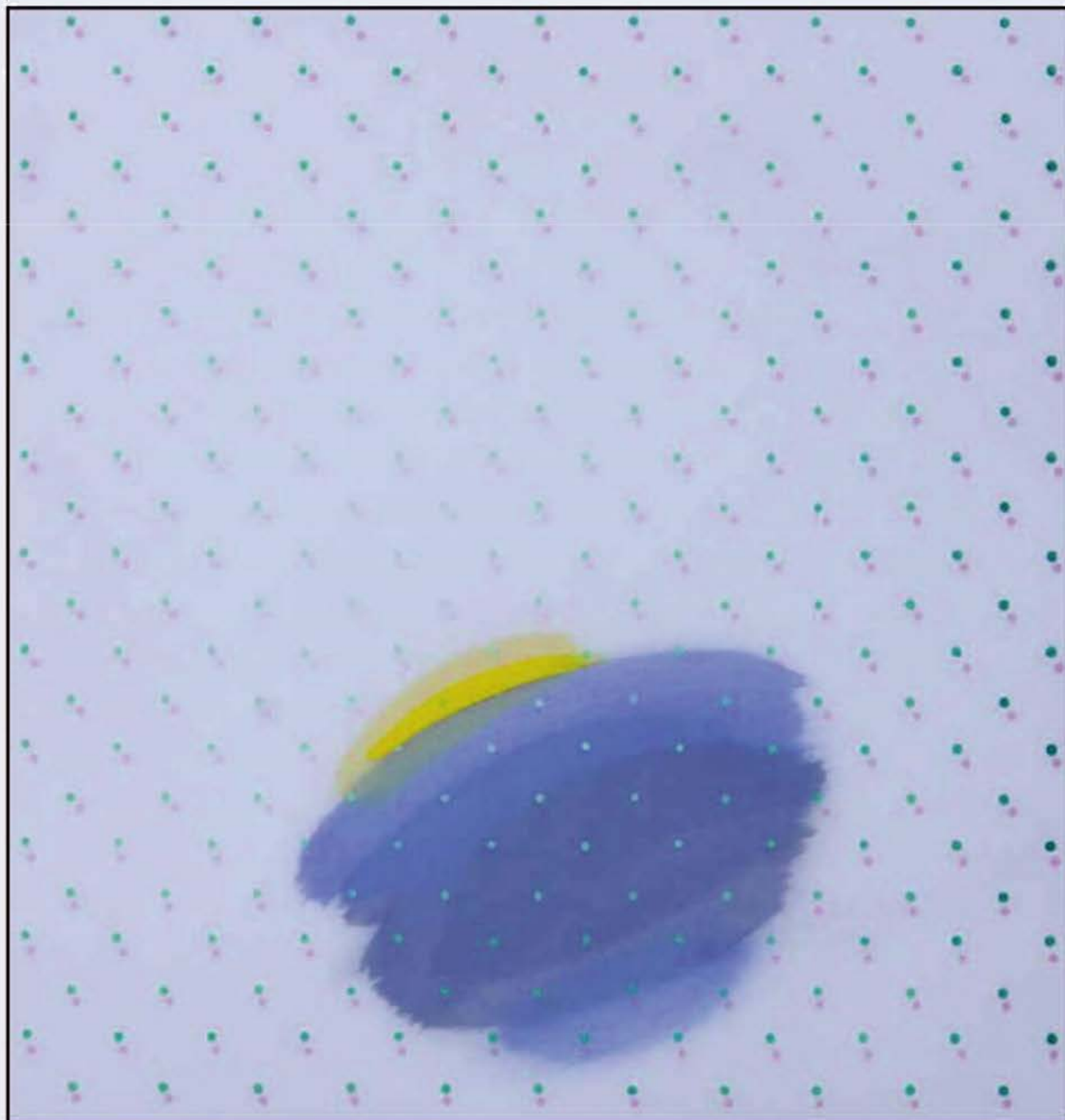


SEEJSD

SOUTH EAST EUROPEAN JOURNAL OF SUSTAINABLE DEVELOPMENT

Vol. 5 (1/2021)



Skopje, North Macedonia

Editor in Chief: Aziz Pollozhani, PhD (Republic of North Macedonia)

Editorial Board

Robert Pichler, PhD (Austria)
Iraj Hashi, PhD (England)
Mimoza Dushi, PhD (Kosovo)
Quirico Migheli, PhD (Italy)
Alfonso Vargas Sanchez, PhD (Spain)
M. M. Sulphey, PhD (India)
Adem Bektashi, PhD (Albania)
Gëzim Karapici, PhD (Albania)
Agni Dika, PhD (Kosovo)
Sermin Senturan, PhD (Turkey)
Mirko Perano, PhD (Italy)
Salvatore Rubino, PhD (Italy)
Ruzhdi Sefa, PhD (Kosovo)
Rizvan Sulemani PhD (North Macedonia)
Zpran Trifunov PhD (North Macedonia)
Sani Demiri, PhD (North Macedonia)
Zoran Popovski, PhD (North Macedonia)

Agim Mamuti, PhD (North Macedonia)
Kalman Mizsei, PhD (Hungary)
Bekim Fetaji PhD (North Macedonia)
Fiona Todhri, PhD (Albania)
Shaban Buza, PhD (Kosovo)
Nezir Kraki, PhD (France)
Marc Hill, PhD (Austria)
Inge Hutter, PhD (Netherland)
Yavuz Emre Arslan, PhD (Turkey)
Ayhan Oral, PhD (Turkey)
Valentina Gogovska, PhD (North Macedonia)
Anton Stoilov, PhD (Bulgaria)
Afrim Hamidi, PhD (Kosovo)
Mehmed Ganic, PhD (Bosnia and Hercegovina)
Bashkim Ziberi, PhD (North Macedonia)
Mesut Idriz, PhD (United Arab Emirates)
Isak Idrizi, PhD (North Macedonia)

**South East European Journal of
Sustainable Development**

SSN (print) 2545-4463

ISSN (online) 2545-4471

is published twice a year.

Account No. 160016267778815

723019 – 45

Tax No. 4080016561272

Bank: Narodna Banka RM

Phone: +389 2 3161 004

E-mail: seejsd@unt.edu.mk

Web: www.seejsd.unt.edu.mk

Managing Editors:

Bekim Fetaji, PhD

Rizvan Sulejmani, PhD

Zoran Trifunov, PhD Bedri

Ademi, PhD

Olga Popovska, PhD

Urime Demirti-Shaipi,

PhD Radmila Tomovska,

PhD Murat Aliu, PhD

Stoja Kitanov, PhD

Technical Editing/Layout:

Korab Ballanca

Editorial Office:

South East European Journal
of Sustainable Developmen

Mother Teresa University in Skopje, Republic of North Macedonia

Mirce Acev 4, VII floor, Skopje, North Macedonia

Editorial

Two main attributes ubiquitous to dedicated researchers are the curiosity to explore novelties and the ability to anticipate changes of circumstance in their field. Over the past year, humanity has been shaken into alert by a historic wake-up call and made to face what has doubtlessly been one of the greatest challenges in its existence. The pandemic caused by the coronavirus has brought about tectonic changes in all segments of daily life and moved the symbolic Doomsday Clock closer than ever to apocalyptic values in its measure of global risk. Moreover, a pervasive speculation is that humankind must brace itself for similar and potentially even more dramatic challenges in the future. As well as the whole world, the Republic of N. Macedonia and its citizens felt on their own skin the unrelenting vehemence of the pandemic through lost human lives, economic collapse, inadequate education, desocialized, isolated and lonely population, and neglected social activities such as science, culture, sports, art and many others.

As with any major global event of little or no precedence throughout history, an enterprise that had to act promptly to deal with this catastrophe was science. Despite all the fascinating advances of science over the past centuries and decades, science's response to the pandemic has, dishearteningly, been neither rapid nor fully effective. On the contrary, the inevitable spotlight on the functioning of the scientific ecosystem has at once shone a light on all the civilization's imperfections, even in the world's most developed countries. The lesson we need to learn from this plague is that civilization needs a new concept of life based on solidarity and knowledge. The future will no longer tolerate or sustain improvisations and subterfuges that will return to humanity like a boomerang.

In such circumstances of bridled activity, everyone, including researchers in science and academia, has endeavored to continue to function by contributing to overcoming this global crisis. The impossibility of performing direct research and gaining first-hand experiences in many fields seems to have left more time for scientists to pause, reflect and overview their previous research engagements and to determine new directions for their further action in the field of science. So we, in the Editorial team of SEEJSD, continued to publish new achievements related to sustainable development, a continuity that has seen the Journal celebrate its fifth anniversary of promoting the dissemination of quality research across Southeastern Europe. We are not pausing at this milestone; rather, it gives us additional momentum to work towards the establishment of SEEJSD as an internationally recognized journal indexed in international databases of scientific publications.

I sincerely expect that in the coming period the situation will slowly return to normal and that, with lessons learned from this bitter experience, we will come out stronger and better equipped to overcome any future challenges that our society may face. Finally, allow me, dear authors, editorial board members and followers of SEEJSD, to wish you good health and hope for a better tomorrow.

Cordially,

Dr. Azis Pollozhani, PhD

Editor-in-Chief



Contents

Analysis of the Relationship Between Biochemical Markers, Gender and Body Mass Index	7
Zimere S. Musliji, Arita S. Haxhijaha, Azis Polozhani, Eva Vlaski, Jana Serafimovska, Zoran T. Popovski	
<hr/>	
The interface between Trademarks and Geographical Indications: Could the CJEU solve the long-standing issue?	13
Albulena Uka	
<hr/>	
Statistical Analysis of Student Achievement Using Different Ways of Learning	21
E. Karamazova, M. Kocaleva, M. Kertakova	
<hr/>	
The hybrid system of combination of hydro plant and floating PV systems in the artificial lakes of North Macedonia	28
Musah F., Vjollca K., Blerant R., Artan Z.	
<hr/>	
Computer Vision in Aerial Scene Recognition	34
Biserka Petrovska, Tatjana Atanasova-Pacemska	
<hr/>	
The division between “WE” and “OTHERS”, in the era of mobility and migration - in the case of Albanians	48
Rizvan Sulejmani	
<hr/>	
Thermal bridges as a problem toward energy efficiency and sustainable architecture, their inadequate application in the construction of individual residential buildings in the Republic of Northern Macedonia	60
Valmir Dalipi M.	
<hr/>	
Le principe de subsidiarité dans la sécurité sociale - aspects normatifs, sociaux et politiques	71
Abdulah Ahmedi	
<hr/>	
The effect of pandemic on service-learning courses	78
Mejreme Ymeri, Arta Sejdiu	
<hr/>	
Confined body versus body as mobile border: banned people, barriers and impossible boundaries in times of global Covid-19 pandemic	83
Natasha Sardzoska	

Analysis of the Relationship Between Biochemical Markers, Gender and Body Mass Index

Zimere S. Musliji¹, Arita S. Haxhijaha¹, Azis Polozhani¹, Eva Vlaski², Jana Serafimovska², and Zoran T. Popovski³

¹ Faculty of Technological Sciences, UMT, N. Macedonia (zimere.musliji@unt.edu.mk)

² Public Health Center – Skopje, Polyclinic Idadija – Biochemical laboratory, N. Macedonia

³ Faculty of Agriculture and Food Sciences, UCAM, N. Macedonia

Abstract

Obesity is a major and growing problem worldwide. The aim of this study is to determine the relationship between the body weight and gender with biochemical parameters suspected to be related with obesity. Our sample consisted of 26 adolescents from North Macedonia. Obesity was measured using the body mass index (BMI) and weight groups were determined according to the World Health Organization (WHO) guidelines. We collected blood samples for biochemical marker analysis (glucose, total cholesterol, triglycerides and total proteins). Tukey's Honest Significant Difference test was used to test each pair of groups for the parameters where ANOVA showed statistically significant differences among groups. High BMI was positively associated with blood glucose levels. Statistically significant relationship was found between weight group and blood glucose level ($p = 0.042$). No statistically significant relationship was found between weight group and the remaining biochemical parameters. The main implication of our study is that obesity is a potential risk factor for diabetes.

Keywords: *obesity, BMI, glucose, lipid profile, total proteins.*

Introduction

Overweight and obesity are a major problem worldwide growing remarkably even in developing countries [1-3]. Obesity is a result of multiple factors and the interaction between them. The factors that lead to obesity are a combination of genome, environmental, nutritional, and behavioral [4-8].

In short, obesity can be defined as the imbalance between energy intake and energy expenditure leading to fat accumulation. As simple as it sounds to measure, however in practice it is complex and challenging phenomena and the mechanism of its development is not unequivocal [9-10].

Obesity has a huge negative impact on physical, mental, and social health. It can lead to many chronic diseases such as: different types of cancers, diabetes, heart disease, hypertension, and different mental disorders such as anxiety, depression, etc. [11-14].

To measure obesity, Body Mass Index (BMI) is commonly used. The BMI equals a person's weight in kilograms (kg) divided by the square of their height in meters (m) (kg/m^2). According to the World Health Organization (WHO): “a BMI greater than or equal to 25 is overweight and a BMI greater than or equal to 30 is obesity” [14, 15]. However, this indicator does not consider age and sex as important variables [9].

The increased fat in obese people is associated with a misbalance of biochemical parameters such as glucose, triglycerides, LDL, HDL and cholesterol [1]. This association between biochemical parameters and BMI has been analyzed in many studies [16]. However, the results can be contradictory.

Kromhout, D. [17], in his study on epidemiology of cardiovascular diseases in Europe, concluded that BMI, cholesterol, HDL cholesterol are risk factors for cardiovascular disease which are major causes of death in Europe.

Gostynski, M. et al. [18] have conducted a study of analyses of the relationship between cholesterol, age, BMI in both genders and has revealed that age does not affect the relationship of cholesterol with BMI in both genders. Cholesterol is also present in all cells of our system and is an essential substance for many functions. High levels of cholesterol affect the flow of blood which leads to difficulties for the heart to get sufficient amounts of oxygen. Cholesterol travels around the body in two types of lipoproteins, LDL (low density lipoproteins) and HDL (high density lipoprotein) Obesity is linked with high level of LDL and low level of HDL in the blood [19]. The disorder levels of LDL and HDL usually comes as a result of high intake of fat in the diet and reduced physical activity. However genetic factors have been also studied [20]. Several genetic variants with unknown functions have been identified [20, 21]. Also, certain medical conditions can result in an increased level of cholesterol [20]. There is a widespread belief that cholesterol rises as BMI rises but many studies have not shown this relationship [18]. Hereditary disease named as familiar hypercholesterolemia is strictly related to the high blood level of cholesterol and is caused by the mutation in the gene for cholesterol metabolism. In this case, the correlation of obesity with the level of cholesterol in the blood is not present.

The main body's source of energy is glucose. In a recent study conducted by Cheng, P. et al., a strongly positive correlation between BMI and high blood sugar level has been found [23] has studied the correlation of obesity and metabolic syndrome which includes insulin resistance and

hypertension, type 2 diabetes, and other metabolic disorders and found a strong positive correlation between BMI and glucose levels.

Gepstein, V. et. al [23] studied the association between BMI and serum proteins for underweight, normal, and overweight individuals. No significant changes of proteins have been found in overweight individuals. However, changes have been found in underweight individuals where low BMI results in lower total protein levels.

The aim of our study is to determine the correlation of biochemical parameters related to obesity with body weight and gender.

The main objective of this study was to explore the relationship between the level of glucose, triglycerides, total cholesterol, and total proteins in the blood and BMI levels for adult male and female individuals.

The results of this research will contribute to clarifying the contradictory results from earlier studies, which have analyzed biochemical markers and BMI, considering age and gender.

Experimental section

Weight groups were determined using the calculated body mass index (BMI) and based on thresholds values for adults from WHO. The study samples were grouped into three weight categories: normal weight, overweight and obese.

The blood collection was performed in Idadija Medical Center in Skopje. The total proteins were determined in the Laboratory of Food Engineering at Mother Teresa University in Skopje, using an appropriate kit for quantification of total proteins on DLab SPV 1100 spectrophotometer. The remaining biochemical parameters were also determined on ChemWell2902 analyzer device in the PHC-PI-Biochemical laboratory using kits with the standards for validated methods. The Shapiro-Wilk normality test was used to test the sample distributions for normality. The ANOVA technique was used to test for differences in biochemical parameters between weight groups and gender and Tukey's Honest Significant Difference test was used to test each pair of groups where ANOVA showed statistically significant differences among groups.

The statistical analyses were performed with the R programming language and a p-value of 0.05 was considered as statistically significant.

Results and discussion

From an initial sample of 30, only 26 satisfied the criteria for inclusion and were included in the final analysis. Among those, 20 were females and 6 males. According to BMI thresholds 10 of females were normal, 10 of females overweight and 4 of females obese. None of the male subjects had normal weight, 4 were overweight and 2 were obese. These patients were visiting the Medical Center for routine health check-ups. The glucose, lipid and protein profile of the subjects by demographic (gender and weight group) is shown in Table 1 below. The p-values of the normality

tests for the parameter in the table are all higher than 0.05 which means we can assume normal distributions. Normality of these distribution is a prerequisite for ANOVA.

Table 1. Parameter values by demographic (range, count), sample sizes and normality tests

Parameter	Female			Male			Normality p-value
	Normal	Overweight	Obese	Normal	Overweight	Obese	
BMI limits	(18.68-24.97]	(24.97-29.67]	(29.67 -	(19.62-25.45]	(25.45-29.72]	(29.72 -	-
BMI (n=26)	20.3-24.9 (10)	26.6-29.4 (6)	29.7-32.4 (4)	-	26.7-28.3 (4)	31.8-32.1 (2)	0.1664
Glucose, mmol/l (n=26)	4.4-6.1 (10)	4.8-6.1 (6)	5.5-6.8 (4)	-	4.8-6.9 (4)	5.2-6.6 (2)	0.0557
Triglycerides, mmol/l (n=26)	0.57-2.18 (10)	0.52-2.69 (6)	1.12-2.46 (4)	-	0.92-2.80 (4)	0.73-1.59 (2)	0.1066
Cholesterol, mmol/l (n=26)	4.0-8.4 (10)	4.4-6.6 (6)	5.4-7.3 (4)	-	6.0-6.6 (4)	5.8-7.2 (2)	0.8472
Proteins, mmol/l (n=18)	52.3-65.6 (8)	53.7-63.5 (3)	58.6-65.2 (2)	-	49.9-70.0 (3)	48.3-63.5 (2)	0.3414

There was no statistically significant relationship found between gender and biochemical parameters as shown in Table 2 (ANOVA p-values: 0.309, 0.477, 0.135 and 0.738, respectively).

Statistically significant relationship was found between weight group and glucose level (p-value = 0.042). No statistically significant relationship was found between weight group and the remaining biochemical parameters (ANOVA p-values: 0.274, 0.532 and 0.923).

Table 2. ANOVA p-values

Parameter	Gender	Weight Group
Glucose, mmol/l (n=26)	0.309	0.042
Triglycerides, mmol/l (n=26)	0.477	0.274
Cholesterol, mmol/l (n=26)	0.135	0.532
Proteins, mmol/l (n=18)	0.738	0.923

The result of testing each weight group pair for differences in glucose levels are shown in Table 3. The source of the significant difference is when comparing the normal weight group with the obese group. The other two pairs don't produce statistically significant differences.

Table 3. Tukey HSD p-values (glucose by weight group)

Pairs	p-value
Obese-Normal	0.034
Overweight-Normal	0.597
Overweight-Obese	0.178

Figure 1 visually summarizes the result of our analysis for the relationship between weight groups (obesity level) and glucose level in the blood.

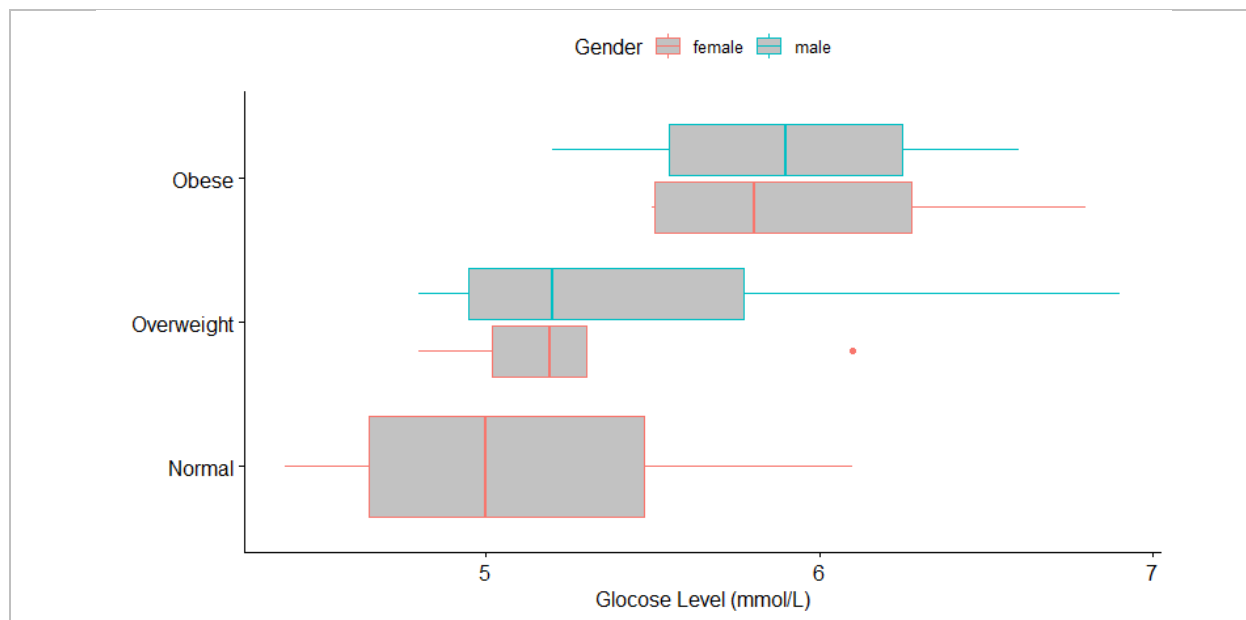


Figure 1. Boxplot of glucose level by weight group and gender

High BMI (in the obese category) is positively associated with blood glucose levels. According to the results of our study, the likelihood of becoming diabetic is higher for obese individuals compared to individuals with normal weight. Although our study did not find a significant relationship between obesity and lipid levels, we should note that triglycerides had a positive trend for higher BMI levels.

High levels of total cholesterol and triglycerides and other biochemical markers are recognized as risk factors for cardiovascular diseases. On the other hand, there is a strong relation between obesity and the occurrence of many these chronic diseases, including cardiovascular, diabetes, musculoskeletal disorders and several types of malignant diseases.

The development of obesity as a phenomenon is complex and has not been fully understood. Understanding the relationship and controlling the factors that lead to obesity is important for preventing purposes. The results of this study represent an important contribution for understanding obesity in the national context in North Macedonia.

It will be of added value to extend this study and include additional factors believed to be related with obesity such as obesity genes. A future study should also consider other dimensions of obesity such as waist circumference, for a more accurate characterization of obesity and also whether any of the individuals in the study group is under any medications (e.g., statins for cholesterol management).

References

- [1] Klop, B., Elte, J. and Cabezas, M., 2013. Dyslipidemia in Obesity: Mechanisms and Potential Targets. *Nutrients*, 5(4), pp.1218-1240.
- [2] Yaturu, S., 2011. Obesity and type 2 diabetes. *Journal of Diabetes Mellitus*, 01(04), pp.79-95.
- [3] T Nair, B., R Simalti, G. and Kumar, A., 2017. Correlation of Biochemical Variables to Obesity and Prediction of Cardiovascular Risk Factors in Children. *Annals of Medical and Health Sciences Research*, Vol 7(1).
- [4] Froom, S., Johnston, L., Matteson, C. and Finegood, D., 2013. Obesity, Complexity, and the Role of the Health System. *Current Obesity Reports*, 2(4), pp.320-326.
- [5] van Vliet-Ostaptchouk, J., Snieder, H. and Lagou, V., 2012. Gene–Lifestyle Interactions in Obesity. *Current Nutrition Reports*, 1(3), pp.184-196.
- [6] Ang, Y., Wee, B., Poh, B. and Ismail, M., 2012. Multifactorial Influences of Childhood Obesity. *Current Obesity Reports*, 2(1), pp.10-22.
- [7] Stein, C. and Colditz, G., 2004. The Epidemic of Obesity. *The Journal of Clinical Endocrinology & Metabolism*, 89(6), pp.2522-2525.
- [8] Kopelman, P., 2000. Obesity as a medical problem. *Nature*, 404(6778), pp.635-643.
- [9] Sikaris, K., 2007. The Clinical Biochemistry of Obesity—More Than Skin Deep. *Heart, Lung and Circulation*, 16, pp. S45-S50.
- [10] O’Rahilly, S., 2009. Human genetics illuminates the paths to metabolic disease. *Nature*, 462(7271), pp.307-314.
- [11] Hoare, E., Crooks, N., Hayward, J., Allender, S. and Strugnell, C., 2019. Associations between combined overweight and obesity, lifestyle behavioural risk and quality of life among Australian regional school children: baseline findings of the Goulburn Valley health behaviours monitoring study. *Health and Quality of Life Outcomes*, 17(1).
- [12] Biedert, E. and Margraf, J., 2004. *Pharmacotherapy of Obesity. Options and Alternatives., Chapter: Psychosocial Aspects of Obesity.* pp.119-138.
- [13] Sagar, R. and Gupta, T., 2017. Psychological Aspects of Obesity in Children and Adolescents. *The Indian Journal of Pediatrics*, 85(7), pp.554-559.
- [14] Hamad Zaidan, F., Salim Abed, S. and Sathyamurthy, B., 2016. BIOCHEMICAL MARKER ANALYSIS IN OBESE PATIENTS. *World Journal of Pharmaceutical Research*, 5(3).
- [15] Who.int. 2020. *Obesity*. [online] Available at: <https://www.who.int/health-topics/obesity#tab=tab_1> [Accessed 6 November 2020].
- [16] Romero, A., Rezende, L., Romero, S. and Villar, B., 2014. Relação entre obesidade e biomarcadores de risco cardiovascular em adolescentes de escolas públicas do Brasil. *Revista Brasileira de Cineantropometria e Desempenho Humano*, 16(3), p.268.
- [17] Kromhout, D., 2001. Epidemiology of cardiovascular diseases in Europe. *Public Health Nutrition*, 4(2b), pp.441-457.
- [18] Gostynski, M., Gutzwiller, F., Kuulasmaa, K., Döring, A., Ferrario, M., Grafnetter, D. and Pajak, A., 2004. Analysis of the relationship between total cholesterol, age, body mass index among males and females in the WHO MONICA Project. *International Journal of Obesity*, 28(8), pp.1082-1090.
- [19] Laclaustra, M., Lopez-Garcia, E., Civeira, F., Garcia-Esquinas, E., Graciani, A., Guallar-Castillon, P., Banegas, J. and Rodriguez-Artalejo, F., 2018. LDL Cholesterol Rises With BMI Only in Lean Individuals: Cross-sectional U.S. and Spanish Representative Data. *Diabetes Care*, 41(10), pp.2195-2201.
- [20] 2017. *High Cholesterol: Overview*. Cologne, Germany: Institute for Quality and Efficiency in Health Care (IQWiG);.
- [21] Weissglas-Volkov, D. and Pajukanta, P., 2010. Genetic causes of high and low serum HDL-cholesterol. *Journal of Lipid Research*, 51(8), pp.2032-2057.
- [22] Cheng, P., Hsu, S., Tu, S., Cheng, Y. and Liu, Y., 2018. Body mass index influences the plasma glucose concentration during iatrogenic hypoglycemia in people with type 2 diabetes mellitus: a cross-sectional study. *PeerJ*, 6, p.e4348.
- [23] Gepstein, V. and Weiss, R., 2019. Obesity as the Main Risk Factor for Metabolic Syndrome in Children. *Frontiers in Endocrinology*, 10.
- [24] Madhuvanthi, M., 2016. Serum Proteins Alteration in Association with Body Mass Index in Human Volunteers. *JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH*.

The interface between Trademarks and Geographical Indications: Could the CJEU solve the long-standing issue?

Albulena Uka

Faculty of Law, Ghent University, Ghent, Belgium, albulena.uka@outlook.com

Abstract

Intellectual Property represents the creation that derives from the human intellect being materialized as an idea, expression, or device. As such, it is rapidly becoming one of the most innovative fields that is being given a particular interest. Apart from the Intellectual Property Rights which date to earlier times and are considered as the traditional IPRs including Trademarks, Copyrights, and Patents, there are also newer IPRs that have been developed more recently but still secured an important spot. A special emphasis in this latter category should be pointed to the Geographical Indications. However, a very complex, conflicting and intense relationship between Trademarks and Geographical Indications has traditionally developed throughout history due to many similarities the two share. By utilising mixed methods of qualitative and quantitative methods, this paper will mainly focus on the conflict between Trademarks and GIs in the European Union level concerning the refusal of trademarks registration that consist of geographical names and defining the criteria for acquiring a distinctive character by the mark. The key aspect of the paper will be to analyse the role and impact of the Court of Justice of the EU on solving this apparent issue.

Keywords: *Intellectual Property, IPRs, Trademarks, Geographical Indications, CJEU*

1 Introduction

Intellectual Property Rights imply the creation that derives from the human intellect being materialized as an idea, expression, or device. Apart from the Intellectual Property Rights (hereinafter: IPRs) which date to earlier times and are considered as the traditional IPRs including Trademarks, Copyrights, and Patents, there are also newer IPRs that have been developed more recently but still secured an important spot. A special emphasis in this latter category should be pointed to the Geographical Indications. The term Geographical Indications (hereinafter: GIs) even though it has been known in the last decades, in an international instrument was placed only in 1995 when the Trade-Related Aspects of Intellectual Property Rights Agreement (TRIPS) entered into force. Hence, due to similarities that are present through the process of development and enhancement of each IPR, undoubtedly many overlaps have been noticed amidst different IPRs. In this regard, the co-existence of Trademarks and GIs have received the most attention and has been tackled immensely.

To understand where the problem relies on, it is crucial to concisely define each of these Intellectual Property Rights, so that a clearer view will be present. Firstly, the trademarks are defined as names, signs, or symbols that are used to distinguish a product or service of an undertaking from all the other undertakings. Those signs may consist of words, names, letters, numbers, and a combination of colours or a combination of the aforementioned characteristics. Secondly, GIs are expounded as signs that identify a good originating in the territory of a country, region, or a particular locality, and specific quality, reputation or any characteristic of the good is substantially attributable to that geographical origin. This definition given by the TRIPS Agreement is valid to today, however, many scholars have added even more elements to this definition.

From the definitions themselves but from the practice, even more, many similarities between those two IPRs have been noticeable because both of them, in essence, represent distinctive signs that differentiate the goods in the marketplace. In parallel, there are also key distinctions between the two that relate to different aspects. For instance, while the Trademark is an individual right and the ownership is granted to anyone, GIs are in the disposal of any producer in a particular region or locality and the ownership belongs to the producers or the government. Consequently, the trademark can be transferable to anyone and anywhere but the GIs cannot be de-localized because they are linked to that particular geographical origin. The last distinction to be mentioned here relates to the name or sign, for the trademark name, it can be created while the Geographical Indication shall already exist. Whilst the right to name for trademarks is linked with the principle: First in time – first in right, for the GIs, all producers are legitimated to be registered and there is no relevance of the time of application for the name.

In addition, the correlation amid Trademarks and GIs relies on the approaches of the protection of the GIs. Those alternations which apart from diverse are also complex, differ from a country to another. Two of the biggest contrasting approaches on the protection of the GIs include the protection with trademarks and sui generis protection. Some countries have decided to protect GIs with a sui generis system (European Union) whereas many others maintain the trademark

protection (United States).

This paper will mainly focus on the conflict between Trademarks and GIs in the European Union (hereinafter: EU) level concerning the refusal of trademarks registration that consist of geographical names and defining the criteria for acquiring a distinctive character by the mark. The key aspect of the paper will be to analyze the role and impact of the Court of Justice of the EU (hereinafter: CJEU) on solving this apparent issue.

1.2 The legal issue and the landmark case

The relationship between Trademarks and Geographical Indications has traditionally throughout history been very complex, conflicting and intense. As concisely elaborated in the entrance remarks of this paper, those clashing points emerge from the similarities amid the two IPRs and that has been sustained by the legal provisions stipulated in various instruments.

One of the most prominent conflicts between Trademarks and GIs was manifested in the uncertainty of the interpretation of one of the provisions with regards to the grounds for refusal of the registration of the trademark. According to the first Directive of the EU on the approximation of the laws of the MS related to trademarks it acknowledges the necessity to keep particular GIs free proving thereby the possibility to refuse any trademark application or if it is registered already to declare invalid, in case it consists exclusively of a geographical sign or indication or in case the trademark is deceiving the public as to the geographical origin of the product.

The practical conflict deriving from this provision raises in 1997 in a case before the national German Court termed as the Windsurfing Chiemsee case. To get a more profound understanding of the problem in general and this judgment in particular, a compact summary of the main facts of the case will be given. The conflict arises by an undertaking in Germany named “Windsurfing Chiemsee” that produces clothes for sports and has also a registered picture trademark before the German authority, apart from the graphical design has also used a specific name being “Chiemsee” that represents the name of the largest lake in Bavaria. On the other side, two other sellers, an undertaking named “Huber” and Mr Attenberger, also produce sports clothing and in their graphical design use the word “Chiemsee”, however in a format that alters from the Windsurfing Chiemsee Company. Notwithstanding, Windsurfing Chiemsee decides to challenge the use of the name “Chiemsee” by the two other sellers by arguing that the fact that they are using the same word in their products despite having different formats causes confusion to the consumer, hence they should not be allowed to use it. The Landgericht München I (Regional Court of Munich) having doubts on the interpretation and application of the provisions of the EU Directive, decides to stay the proceedings and seek guidance from the Court of Justice of the EU by referring questions through the Preliminary Ruling Procedure. By taking this decision, the German Court conveys the opportunity to the CJEU to provide enlightenment of the directive and clarify this confusion.

CJEU examined the questions referred by the German Court and came to several estimable conclusions. Firstly, the Court began by clarifying that the underlying rationale of the trademark law is to make sure that geographical indications remain available to be used by all, as Court

depicted, it is in the public interest to remain so. But as exceptions were held two different cases, which became prominent principles of GIs and Trademark law being:

A geographical name may not be registered where it designates a geographical location which is famous already or which is known for the category of particular goods and are hence associated with those goods in the mind of the relevant class of persons or may reasonably associate with such goods, as the place where they were or could be produced;

A geographical name that currently has no association in the minds of the persons with the name of particular goods, but such association may be reasonably assumed to be established in the future. In assessing this, several indicators could be taken into consideration such as the level of familiarity with the name amidst the relevant class of persons, characteristics of the place identified by the name, and the nature of those goods.

Besides these stipulated landmark principles, this judgment is also crucial when it comes to the distinctive character of the mark, as the German Court demanded in its questions if the Court could provide specific requirements to assess the distinctive character. The Court thereby does not exclude the possibility of words that also represent geographical names to be registered as a trademark, moreover, that was explicitly stated in the directive likewise, however it limits it by drafting a test of criteria which need to be taken into account in order to be evaluated if it has reached the necessary level of distinctiveness. In essence, to be considered as a mark that has acquired distinctive character the undertaking should distinguish its goods from the goods of all other undertakings. To practically decide on that, the Court set some criteria to be considered in the assessing procedure. These criteria include: the market share carried by the mark; how intensive, widely spread geographically and long-established the use of the mark has been; the quantity invested by the company to promote the mark; the ratio of the relevant persons who, due to the mark, identify goods as originating from a particular enterprise; and statements from professional societies such as committees of commerce and industry or other trade-related associations.

In doctrine, the criteria stipulated by this judgment are termed as the Chiemsee test or the Chiemsee doctrine. The Chiemsee criteria went further from the test used for geographic descriptiveness of the German courts which was mainly based on the fact whether a term is at the present time associated in the mind of the relevant persons in relation with a particular category of goods and as elaborated above the CJEU ruled that it is possible that a term is geographically descriptive even if under reasonable assumptions such an association might be established in the future.

Another principle deriving from this judgment relates to the place where the goods are manufactured. More specifically, in the proceedings of this case, the products of one of the undertakings (the Windsurfing Chiemsee) were designed by a sister company that was based in the same place but was manufacturing the products in another location. The German Court asked whether the goods should necessarily be produced in that particular geographical location in order to be associated with it. The CJEU had the stance that it is not necessary for the products to be manufactured in that particular geographical location in order for them to be associated with the location.

1.3 The influence of the Chiemsee judgment

The landmark case of Chiemsee has had a large and wide impact on the domestic national orders of the Member States and at the EU level. The impact on the domestic orders of the MS was set to the responsible authorities which handle the applications for registration of trademarks and further on to the domestic courts which solve the emerged disputes. In the meantime, at the EU level, the impact was addressed to the Office for Harmonization in the Internal Market (OHIM) which dealt with the applications for the registration of the trademarks since 1994 and now since 2012 being the European Union Intellectual Property Office (EUIPO) which is responsible for managing the EU trademarks and designs. Unquestionably, at the EU level, an emphasis should be adverted to the CJEU that ultimately gives interpretations and rulings on the appeals brought before it.

First and foremost, the Court's ruling was decisive for the settlement of the dispute before the German Court where the proceedings got initiated. Consequently, the German Court objected the use of the word Chiemsee by Huber and Mr Attenberger as interpreted by CJEU.

Additionally, besides the case at hand which was directly affected by the CJEU decision, the German law, in general, was likewise. Precisely, Germany in 1995 adopted its Law on Trade Marks (The Markengesetz) which transposed the Directive of the EU on the approximation of the laws of the Member States relating to trade marks. This Law stipulated that trademarks which are composed exclusively by indications that may serve to designate the GIs in the trade of the goods are refused registration. However, further on, another provision represented an exception from that rule by stating that if the mark, before the time of registration, due to the result of its use for the goods in respect of which has applied for registration, has achieved acceptance amid the relevant class of persons. These provisions after the Chiemsee judgment in the following years were amended. According to the last version of the Act on the Protection of Trade Marks and other Signs of Germany, amended for the last time in July 2017, the exception clause has been amended to merely if prior to the decision on registration, trademark became established as a result of its use for the goods which for the application was filled. Hence, the part where it was foreseen the acceptance among the relevant class of persons has been repealed, and instead, the German Courts have been using the list of criteria set by the CJEU with regards to the distinctiveness of the marks.

As far as the EU law is concerned, the significance of this case is evident in the consequent time when CJEU referred and cited the Chiemsee test and criteria. But, to scrutinize more specifically and see the role that this judgment had to play in the subsequent cases before the Court, the following heading will give further elaborations.

1.4 The impact and the aftermath of the Chiemsee judgment

The fact that the landmark case of Chiemsee set some principles and blueprinted some conditions to solve the conflict between GIs and trademarks, so as all the disputes to be solved before the national courts of the MS, now that the CJEU clarified this issue, it did not happen in the practice of not having further similar disputes before the Court. Contrariwise, the disputes kept arising and so did the preliminary rulings and the appeals before the CJEU.

Following the Chiemsee case, there has been certain tension and counterpoint just two years

later. The case *Procter & Gamble Co. v. OHIM*, known generally as the “Baby-Dry” case that was ruled by the Court in September 2001 brought a new outlook. In this case, the Court directed away the attention from the principle on the prohibition of registration of the descriptive marks which was stressed in the *Chiemsee* judgment and even never refer to it in the entire reasoning. In the *Baby-Dry* case, the Court ruled that the term ‘Baby-Dry’ could be registered despite that the words that compose this term are partly descriptive of the fundamental characteristics of the good concerned. In the groundings, the Court stated that the syntactical unusual juxtaposition is not an expression that is familiar in the English language and as such cannot be regarded as a whole of a descriptive character and finally concluded that it can be trademark subject matter. In this way, the *Baby-Dry* case put into doubt whether the *Chiemsee* criteria are appropriate to be used and whether it shall be further imposed.

To some extent, this tension and controversy amid *Chiemsee* and *Baby-Dry* were solved by another consequent case. In *Dart Industries Inc. v. OHIM*, or known as the *UltraPlus* case, the Board of Appeal of OHIM decided that that the mark ‘UltraPlus’ was descriptive and unable to be registered as a trademark. But the Court of First Instance at that time (now equivalent with the General Court) took another standpoint of this case and concluded that the word ‘UltraPlus’ is composed of two words which are not used in this combination normally, hence it constitutes a syntactically unusual juxtaposition and not even in English but also other EU languages. Therefore, by inferring that ‘UltraPlus’ can be registered as a mark under this term, annulled the decision of the Board of Appeal of OHIM.

Worth noting is the fact that in the *UltraPlus* case, the Court referred to the *Baby-Dry* case but not to the *Chiemsee* one, but generally, it has been perceived by scholars that the Court tried to strike a balance between the two. On the one hand, the strict criteria of *Chiemsee* have been attenuated, while on the other, the broad possibility of registration under the *Baby-Dry* has been restrained.

In a very close correlation with *UltraPlus* case, another dispute arose for a similar combination of words which created the term ‘Doublemint’. In the *OHIM v Wrigley*, the so-called *Doublemint* case, the Court considered that this term was purely descriptive. Bewildering, this time the Court said that this combination of two words gives rise to many meanings and as a result, it is descriptive as a whole. In the reasoning it referred to the *Chiemsee* case, but not to the *Baby-Dry* one, even after *Wrigley* claimed that the conditions of *Baby-Dry* are fulfilled in their submitted argumentation, the Court did not tackle it at any point.

Deriving from all these standpoints conveyed by the Case-law of the CJEU, it is clear that there are still no final conclusions that could resolve this issue amid GIs and Trademarks. In all IPRs in general and in the area of Trademarks and GIs in particular, it has been noted that the Case-law of the Court is continually developing, taking into consideration the dynamics of these industries and the emerging novelties. Perhaps this could be one of the reasons why in the above-elaborated judgments, the Court does not provide one uniform interpretation and reasoning but in particular cases, it emphasizes some features whereas in some other cases in some other features.

All in all, despite endeavours are evident, the Court kept going back and forth, referring *Chiemsee* and then *Baby-Dry* judgment, but not being able to find a “golden middle way”.

Notwithstanding, this has not prevented further cases to be addressed before the Court. On a final note, the principle that clearly depicts all these judgments is the case-by-case analysis, as each and every case has been examined by the Court while considering the most prominent characteristics that distinguished them.

1.5 Concluding remarks

The information provided in this paper aimed to analyze one significant issue that has been part of many debates in the legislators' forums, before the competent authorities, before the Courts and in the papers of scholars. Two crucial Intellectual Property Rights for years have been facing difficulties while co-existing, and that goes for many reasons as elaborated at the beginning of this paper. In impossibility to be solved in other paths, the burden was left to the Court of Justice of the EU to solve this dispute through its Case-law.

The seminal case that addressed this issue is the *Windsurfing Chiemsee* which is significant for many reasons but particularly for interpreting the grounds of refusal of the trademarks that consist of geographical names and that it blueprinted a test with criteria to be used when assessing the applications for the registration of trademarks that claim that have acquired a distinctive character.

After the *Windsurfing Chiemsee* case, several prominent cases of this nature followed. By examining all of those, it can be concluded that there is yet no strict and uniform settled test or criteria estimable when it comes to the distinctive character of a mark. Albeit CJEU did so by the seminal case of *Windsurfing Chiemsee*, by setting a so-called test of criteria that assesses the distinctive character of the mark, this strict approach was not followed thoroughly by the Court itself in the several of the consequent cases. In the latter context, a special emphasis is stressed on the *Baby-Dry* case, which creates a very broad interpretation with respect to the registration of marks and does not follow the reasoning provided in *Chiemsee* judgment. In efforts to find a middle way, the Court came up with another interpretation being more-less a reflection of both *Chiemsee* and *Baby-Dry* cases. This effort was materialized in the *UltraPlus* case, which narrows the broad interpretation seen in the previous *Baby-Dry* case. However, these cases one by one and altogether have proceeded to create a perplexity both in theory and practice of the registration of these IPRs. This means that all those cases criteria and the Court's reasoning shall be taken into account when dealing with a similar dispute.

Something fundamental that can be derived from all the Case-law scrutinized and examined in this paper is that this issue in IPRs reaffirms the immensely important principle of law being the case-by-case analysis. The lesson learned from this conflict amid GIs and Trademarks shows that each case is very specific and peculiar that even very minuscule features can make the difference, hence a divergent conclusion can be derived from it.

References

- [1] Basheer, S., Wilkof, N. (2012). *Overlapping Intellectual Property Rights*. United Kingdom: OUP Oxford.
- [2] Blackett, T. (2016). *Trademarks*. United Kingdom: Palgrave Macmillan UK.
- [3] Blakeney, M. (2019). *The Protection of Geographical Indications: Law and Practice, Second Edition*. United Kingdom: Edward Elgar Publishing.
- [4] Brown, A., Cornwell, J., Kheria, S., Iljadica, M. (2019). *Contemporary Intellectual Property: Law and Policy*. United Kingdom: Oxford University Press.
- [5] Bruun, N. (2018). *Transition and Coherence in Intellectual Property Law: Essays in Honour of Annette Kur*. United Kingdom: Cambridge University Press.
- [6] Calboni, I. (2017). *Geographical Indications at the Crossroads of Trade, Development, and Culture: Focus on Asia-Pacific*. United Kingdom: Cambridge University Press.
- [7] Geiger, C. (2015). *Research Handbook on Human Rights and Intellectual Property*. United Kingdom: Edward Elgar Publishing.
- [8] Giovannucci, D., Josling, T., Kerr, W., O'Connor B., and Yeung, M., (2010). *Guide to Geographical Indications: Linking Products and their Origins*. United States: UN.
- [9] MacQueen, H., Waelde, C., Laurie, G. (2010). *Contemporary Intellectual Property: Law and Policy*. United Kingdom: OUP Oxford.
- [10] Goebel, B., and Groeschl, M.. (2014). *The Long Road to Resolving Conflicts Between Trademarks and Geographical Indications*. *The Trademark Reporter*.
- [11] Masterson, J. T. (2004). *International Trademarks and Copyrights: Enforcement and Management*. United States: Section of International Law and Practice, American Bar Association.
- [12] Michaels, A., Norris, A. (2002). *A Practical Guide to Trade Mark Law*. United Kingdom: Sweet & Maxwell.
- [13] Shippey, K. C. (2009). *A short course in international intellectual property rights [electronic resource]: protecting your brands, marks, copyrights, patents, designs, and related rights worldwide*. United States: World Trade Press.
- [14] Suthersanen, U., Dutfield, G. (2008). *Global Intellectual Property Law*. United Kingdom: Edward Elgar Publishing, Incorporated.

Statistical Analysis of Student Achievement Using Different Ways of Learning

E. Karamazova¹, M. Kocaleva¹, M. Kertakova²

¹Faculty of Computer science, “Goce Delcev” University, Stip, R. S. Macedonia, elena.gelova@ugd.edu.mk

²Faculty of Technology, “Goce Delcev” University, Stip, R. S. Macedonia

Abstract

Education is a part of every human life. Till this year in our country we use to learn on traditional, classical way using whiteboard and presentations to present subject curriculum. But, this year the situation in education environments was dramatically changed. This situation was caused by pandemic which oculte the whole world and she led to online learning. In this paper will be analyzed and compared the results of the final exam for the subject Operating Systems for the students from different academic year: one from academic year 2018/2019 when the teaching was performed in a classical way and the second one from academic year 2019/2020 when the teaching was performed online through the platform Microsoft Teams. Both group of students are from Faculty of computer science at University “Goce Delcev”– Stip and they study the subject Operating Systems in the fourth semester. The aim of the paper is using descriptive statistics and other statistical methods (frequency distribution and correlation) to draw a conclusion which way of learning gives better results in student achievement.

Ccs concepts

- *Probability and statistics • Education • Mathematical analysis*

Keywords: *Education, learning, statistical analysis.*

1 Introduction

Education is one of the most important processes for the development of a society. That is why the education process is researched, described in many papers and is most often a motivation for writing. This paper is also derived from the idea to research education, i.e. to investigate the results achieved by students after the changes in the educational process imposed by the pandemic that occurred with the virus COVID 19 and the introduction of online teaching. The purpose of this paper is to compare the results of students in the final exam after classical teaching and after online teaching in the same subject. The students are from the Faculty of computer science at University Goce Delchev - Stip and an analysis was made for the subject operating systems. The results of the students' achievements will be listed first and then a statistical analysis of the results will be given. In the end a conclusion will be drawn.

University Goce Delchev Stip had policy fully implement ICT in all segments of management, administration and teaching a long time ago [2]. The purpose of [2] is understanding teaching staff acceptance and use e-Learning system. In accordance with this to state that after 2010 year the teaching process at the University "Goce Delchev" Stip has been changing by usage of the e-learning methods. [10] compares the achievements of students in Math 1 who use Moodle as a teaching tool with those who does not. Authors conclude how e-learning impacts on the success of the students based on the results obtained.

The main aim of [5] is to analyze the situation about such educational e-platforms for studying mathematics in Macedonia and neighbored region. [4] is about the habits and competences of IT students in the use of information technology resources. The goal of authors is to assess what the opportunities provided by the Internet have been used for in terms of learning and development. The obtained results can help them to develop and improve virtual learning environments, as well as create an improved form and content of online courses in the future.

Authors in [1] analyse the impact of the knowledge acquired from the previous mathematical education in correlation with knowledge gained from lectures and exercises in Mathematics in technical faculties at University Goce Delchev - Stip so that one part of these students are tested with electronic tests, and the other part are tested on classical way. The authors conclude that both ways i.e. classical and electronic diverge each other and we cannot precisely define what results are less reliable.

The challenge of the modern educational process is to include the multimedia and interactive materials. The educational e-platforms for studying mathematics are helping teachers and students at the same time. The teachers can analyze the students' success after every lesson and can adapt the materials for their needs, students can communicate with the other students and teacher. However, there is a lack of such materials especially in our and the neighbor countries. The main aim of [5] is to analyze the situation about such educational e-platforms for studying mathematics in Macedonia and neighbored region.

Sometimes because students have more partial exams in one session they are not sufficiently

prepared for the exams. So, goal of authors in [6] is to discover whether students achieve better results if we allow them to make corrective partial exam or not? For that purpose, authors chose the subject Digital logic and they analyzed the results of partial exam and corrective partial exam in the academic year 2016/2017.

[3] is focused on processes of modernization of teaching mathematics in primary schools by using ICT. The empirical results from the realized research shows that the Macedonian educational system should introduced and practiced ICT for math teaching. The subject of [8] is determination the students' attitude towards mathematics in the higher classes in the secondary schools, in Stip, Republic of Macedonia. In research [9] authors investigate the factors that affect the motivation of teachers to use ICT in their teaching and maintain the same.

In [7] authors say that demonstration and visualization play an important role in the teaching process of the subject mathematics in primary, secondary schools and universities. They make the teaching content interesting and accessible, especially when technical devices are used. They process mathematical content (algebra, geometry, analysis) in two different ways (some with GeoGebra and on a computer, and others without visualization and GeoGebra) then they done testing, compared the results and a conclusion drawn.

The realizations, with a special review to the educational area in mathematics, have been presented in [11].

2 Statistical data analysis

The aim of this paper is to analyse students' achievements for the subject Operating Systems (OS). This subject is mandatory for Computer Science students in second year of studies. Students are learning some fundamentals for OS, the architecture of OS, types, algorithms for process distribution, they also solve tasks, write shell scripts, terminal commands (in Linux OS) and make some projects. There are two partial exams and final exam for the subject. For data analysing, the results from the final exam from two group of students are used and respectively the grade obtained after the final exam. Two group of students were tested: 43 students in the first group on traditional way and 60 in the second group - online. First group of students studied on classical way using whiteboard and presentations to present subject curriculum. Also, the exams were performed on classical way - in a classroom. Students were physical present in universities, until Marth when disease (CORONA virus) appear. According to the situation the second group of students used to learn from home. They had presentation of subject curriculum online and they used to take exams online. Microsoft Teams platform was used for online studying at all. Students were forbidden to have physical contact with academic staff everywhere in the world, so in our country was the same situation. As academics we respected the situation and we adapted to the new situation.

Table 1: Groups of students

Gender / group	2018/2019	2019/2020
male	26	30
female	17	30
summary	43	60

For each subject student can gain maximum 100 points, 70 from exams – partially and final exam, 10 from paperwork and 20 from presents. To pass the subject they should have minimum 51% or 51 points. According to points students have grade from five to ten. Grade five means that students didn't pass the exam and they must take the exam again. From table 2 for classical students we can see that only six students have grade above eight, 27 under eight and 14 students didn't pass the exam. The table shows that we are talking about weak generation of students, because 32.56% from 100% didn't pass the exam and 53.49% had grade six and seven.

Table 2: Classical students

grades	number of students	cumulative number	valid percent	cumulative percent
5	14	14	32.56	32.56
6	13	27	30.23	62.79
7	10	37	23.26	86.05
8	1	38	2.32	88.37
9	3	41	6.98	95.35
10	2	43	4.65	100
summary	0	43	0	

From table 3 for online students we can see that there are also a few students - only 16 with grade above eight. That is 26.68% from 100%. The number of students who didn't pass the exam is three. The rest of 68.32% had grade six and seven. If we compare two tables table 2 and table 3, we can conclude that according to grades frequencies the group of online students have better results than classical students. There are 12.73% online students more than classical students with grade above eight and 27.56% online students more than classical with grade five. The number of students with grades six and seven is almost the same in both groups.

Table 3: Online students

grades	number of students	cumulative number	valid percent	cumulative percent
5	3	3	5	5
6	28	31	46.66	51.66
7	13	44	21.66	73.32
8	4	48	6.67	79.99
9	4	52	6.67	86.66
10	8	60	13.34	100
summary	0	60	0	

Descriptive statistics give us information about mean, standard error, median, mode, standard deviation. From table 4 we can conclude the following. First the mean grade for online students is bigger than classical students. Median have the same value for both groups of students. From mode we can see that the number of passed students with grade 6 is most represent at online students, but in the group of classical students the number of students who didn't pass the exam is most represent. That means that online students have better results than classical students. Standard deviation is a measure of how far each observed value is from the mean. In our paper the standard deviation is also bigger for online students instead classical students. The range between a maximum and a minimum grade is 5 and is same for both groups of students. The minimum grade is 5, the maximum is 10 for both groups.

Table 4: Descriptive statistics for generation 2018/2019 (classical students) and generation 2019/2020 (online students)

<i>Classical students</i>		<i>Online students</i>	
Mean	6.348837209	Mean	7.033333333
Standard Error	0.212780259	Standard Error	0.193052592
Median	6	Median	6
Mode	5	Mode	6
Standard Deviation	1.395293465	Standard Deviation	1.495378946
Sample Variance	1.946843854	Sample Variance	2.236158192
Kurtosis	0.82722196	Kurtosis	-0.283584323
Skewness	1.154629049	Skewness	0.979500506
Range	5	Range	5
Minimum	5	Minimum	5
Maximum	10	Maximum	10
Sum	273	Sum	422
Count	43	Count	60

Correlation is a statistic that measures the degree to which two variables move in relation to each other. We are going to present correlation between two generation of students, one from academic 2018/2019 when the learning process was classical and on the other side the second generation from academic 2019/2020 when the learning process was online via internet. A correlation coefficient that is greater than zero indicates a positive relationship between two variables. From figure 1 we can see that there is a positive correlation with $R = 0.759126$. This means the two variables moved in the same direction together.

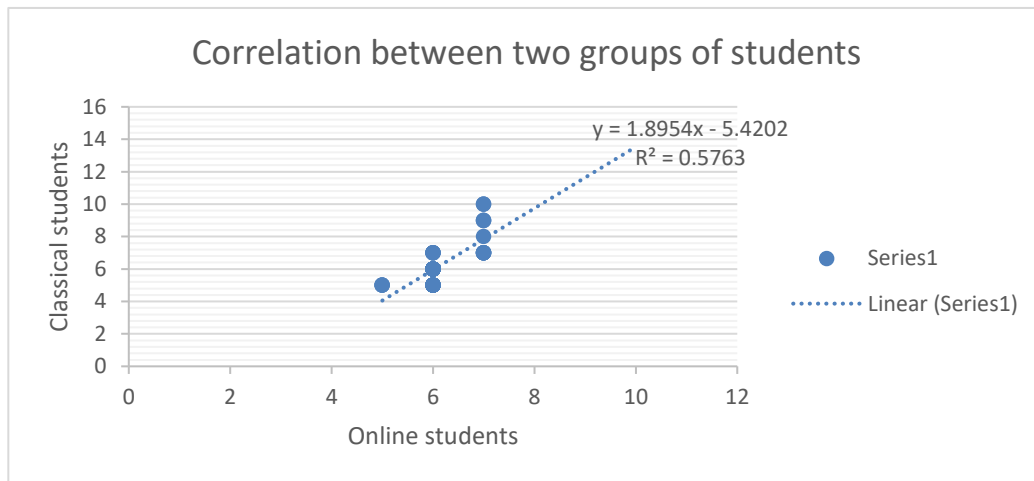


Figure 1: Correlation between two groups of students

3 Conclusion

All over the world teaching is online and students learn from home, without travel expenses and without wasting time. They listen lectures and exercises at fixed time, but also can watch them offline in time they want to. In our university because of CORONA virus, lectures and exercises was conducted from home at fixed time, but also students could record us and listen to our exercises and lectures later.

From statistical analysis we can draw a conclusion that online group of students have better results than classical group of students. According to this we can conclude that online learning is not a bad approach to working with students at all.

We also conducted some questionnaires in the paper [12] to see students' opinion on online teaching. We conclude that students prefer classical teaching vs online teaching. They accepted this style of learning only in this condition (during the pandemic).

References

- [1] Zlatanovska, B., Kocaleva, M., Krstev A., and Zdravev Z., (2016). E - testing against classical testing in subject Mathematics. Yearbook of the Faculty of Computer Science, 4 (4). pp. 29-32. ISSN 1857- 8691
- [2] Kocaleva, M., Stojanovic, I., and Zdravev, Z. (2015) Model of e-learning acceptance and use for teaching staff in Higher Education Institutions. International Journal of Modern Education and Computer Science (IJMECS), 7 (4). pp. 23-31. ISSN 2075-017X
- [3] Pacemska, S., Atanasova-Pacemska, T., Iliev, D., and Seweryn-Kuzmanovska, M. (2014), "Analyses of Student's Achievement Depending on Math Teaching Methods," Procedia - Social and Behavioral Sciences, 116. pp. 4035-4039. ISSN 1877-0428
- [4] Karuovic, D., Tasic, I., Vidacek Hains, V., Glusac, D., Namestovski, Z., Szabo, C., Kocaleva, M., and Milanov, D., (2020). Students' habits and competencies for creating virtual learning environments. Computer Applications in Engineering Education. pp. 1-19. ISSN 1099-0542
- [5] Koceva Lazarova, L., Miteva, M., and Stojanova, A., (2019). Modernization of Mathematics Education by Using Educational E-platforms. In: International Conference on Information Technology and Development of Education – ITRO 2019 June 2019. Zrenjanin, Republic of Serbia, Zrenjanin.
- [6] Kocaleva, M., Stojanova, A., Stojkovic, N., Zlatanovska, B., and Delipetrev, B., (2017). Students' attitude towards learning. In: 14th International Conference on Informatics and Information Technologies, 07-09 Apr 2017, Mavrovo, Macedonia.
- [7] Trifunov, Z., Jusufi Zenku, T., Karamazova, E., and Atanasova-Pacemska, Tatjana (2019). Importance of Visualization in Math Problems at the Universities. South East European Journal of Sustainable Development, 3 (1). pp. 17-23. ISSN 2545-4463
- [8] Atanasova-Pacemska, T., Lazarova, L., Arsov, J., Pacemska, S., Trifunov, Z., and Kovacheva, T., (2015). Attitude of secondary students towards mathematics and its relationship to achievement in mathematics. Proceeding from International Conference on Information Technology and Development of Education – ITRO, June 2015. Zrenjanin, Republic of Serbia, 7. pp. 109-114.
- [9] Vitanova, V., and Atanasova-Pacemska, T., (2014). Determining the basic motivational factors of teachers to use ICT in their teaching using factor analysis. IMVI Open Mathematical Education Notes, 4. pp. 1-8. ISSN 2303-4882 (p), 1840-4383(o)
- [10] Atanasova-Pacemska, T., Pacemska, S., and Zlatanovska, B., (2012). Moodle as a teaching tools in mathematics - case study in Goce Delcev University, Stip. Yearbook, Faculty of computer sciences, Goce Delcev University, Stip, 1 (1). ISSN 1857-8691
- [11] Atanasova-Pacemska, T., and Petrovska, S., (2007). Comparative analysis of the traditional approach and the approach according to the montessori model in the pre-educational institutions in the Republic of Macedonia with a review to the educational area of mathematics. Педагогическото образование в България (1). pp. 595-602.
- [12] Karamazova, E., Jusufi Zenku, T., and Kocaleva, M., (2020). Statistical Data for Modern Communication in Mathematics Subjects at Faculty. In: ITRO 2020, 30 Oct 2020, Zrenjanin, Republic of Serbia.

The hybrid system of combination of hydro plant and floating PV systems in the artificial lakes of North Macedonia

Musah F.¹, Vjollca K.², Blerant R.¹, Artan Z.¹

¹“Mother Teresa” University in Skopje, The Republic of North Macedonia, musah.feizullov@unt.edu.mk

² University of Pristina, Republic of Kosovo

Abstract

The energy sector in North Macedonia has several problems such as the high prevalence of lignite in electricity generation, high energy dependency, inefficiency in energy generation/use and poor condition of the energy system. According to the Macedonian energy strategy the planned share of renewable energy source (RES) in the electricity generation in 2030 is 30%. There have been several researches where different scenarios have been investigated. The scenario, the 50% renewable energy system, has been created for the year 2030 where special attention is given to the intermittent RES and to the storage technologies. In this study the installation of floating solar PV on the surface of artificial lakes of hydro plants in North Macedonia is analyzed. Such technologies are still at an early stage but many projects are being developed across the world. A particular example of Tikves hydro plant is taken which has an installed capacity of 113MW and the surface area of the lake is 14 km². By making use of the PVsyst, it is observed that installation of PV in an area of 78000m² a 9.524 MWp capacity is obtained. This shows that a new generation capacity may be achieved by utilization of the existing transmission system.

Keywords: *floating solar PV, renewable energy, greenhouse gas, artificial lakes, generation capacity*

1 Introduction

There is a global growth in the demand for affordable and reliable energy, parallel to this the world is transitioning to a low carbon energy. The Paris agreement made the energy industry to change, where the natural gas became a cleaner energy source than coal, while simultaneously the renewable energy showed a rapid growth [3]. Actually the most important issues in European energy sector are the security supply and greenhouse gas (GHG) emissions [4]. These emissions are closely related to the energy generation and exploitation. There have been done continuous researches about the reduction of the GHG emission. One of the most promising solutions are the renewable energy sources. North Macedonia is one of the parties to the Paris agreement [6] which means that it is expected that the country will formulate progressively more ambitious climate targets to keep global warming goal well below 2°C and to pursue efforts to limit the temperature increase to 1.5 °C. The energy sector in North Macedonia has several problems such as the high prevalence of lignite in electricity generation (The total installed capacity for production of electricity in North Macedonia is 2.06 GW with ~48% being thermal power plants [3]), high energy dependency (average share of import in 2010-2016 period made up ~30% of total electricity consumption [3]), inefficiency in energy generation/use and poor condition of the energy system. According to the Macedonian energy strategy the planned share of renewable energy source (RES) in the electricity generation in 2030 is 30%. North Macedonia has ~7.3 GW theoretical potential for exploiting RES for electricity, especially solar and wind. The highest share of theoretical potential comes from wind of up to 4.9 GW, followed by solar PV up to 1.4 GW and hydro up to 0.67 GW [3].

In order to tackle this issues the country has to increase the penetration of RES to the power system. The investment in RES is attractive due to the decreasing cost of renewable technology for electricity production. Since 2009, levelized cost of electricity for solar PV and wind has fallen almost for 70% and 20% respectively.

The main goal of this paper is to investigate the potential of installation of floating PV panels on the surface of the artificial lakes of hydro power plant in North Macedonia. As a first step, a reference model of the floating PV in the Tikves Lake is developed. Then comparative analyses are conducted for high penetration of floating PV in North Macedonia.

2 Floating PV

Floating solar photovoltaic (PV) installations open up new opportunities for increasing solar generating capacity. They have certain advantages over land-based systems, including utilization of existing electricity transmission infrastructure at hydropower sites, close proximity to demand centers (in the case of water supply reservoirs), and improved energy yield thanks to the cooling effects of water and the decreased presence of dust [5]. The possibility of adding floating solar capacity to existing hydropower plants is of particular interest, especially in the case of large hydropower plants that can be flexibly operated. The solar capacity can be used to boost the energy yield of such assets and may also help to manage periods of low water availability by allowing the hydropower plant to operate in

“peaking” rather than “baseload” mode.

Other potential advantages of floating solar include:

- Reduced evaporation from water reservoirs, as the solar panels provide shade and limit the evaporative effects of wind
- Improvements in water quality, through decreased algae growth
- Reduction or elimination of the shading of panels by their surroundings
- Elimination of the need for major site preparation, such as leveling or the laying of foundations, which must be done for land-based installations.
- Easy installation and deployment in sites with low anchoring and mooring requirements, with a high degree of modularity, leading to faster installations.

3 Planning of the floating PV in Tikeves Lake

In order to conduct analysis for the floating PV in Tikves Lake the PVsyst photovoltaic software is used which schematic is shown in Figure 1.

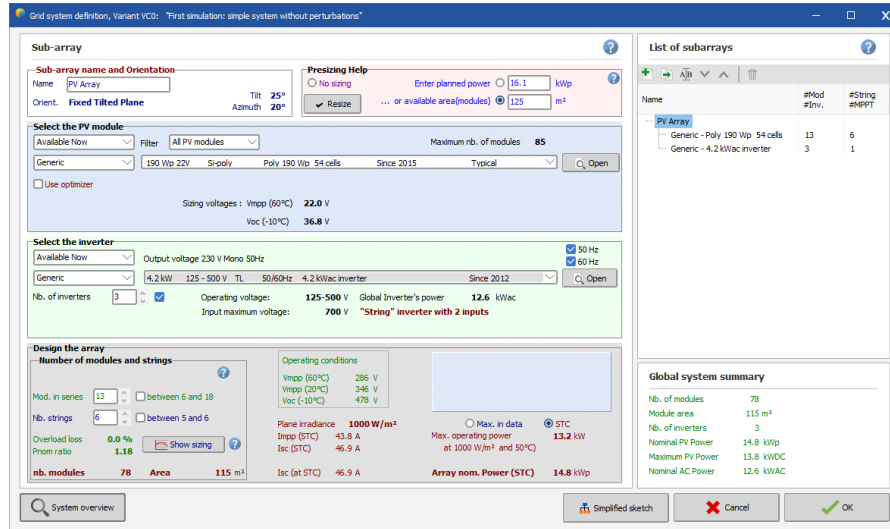


Figure 1: The schematic of floating PV in Tikves Lake

The surface area of Tikves Lake is about 14 km². In our analysis, the floating PV is planned to be installed in an area of 78000m² (0.078 km²) which corresponds to a 0.56% of the total area. The tilt and azimuth angle are 32° and 0° respectively. The weather database about the Tikves Lake is taken from METEONORM. In this model it is planned to use 17 units of 500kWac inverters. The nominal installed power is 10000kW_p, while the nominal ac power is 8500 kW.

4 Results and discussion

The brief results of the simulation are as in the Figure 2:

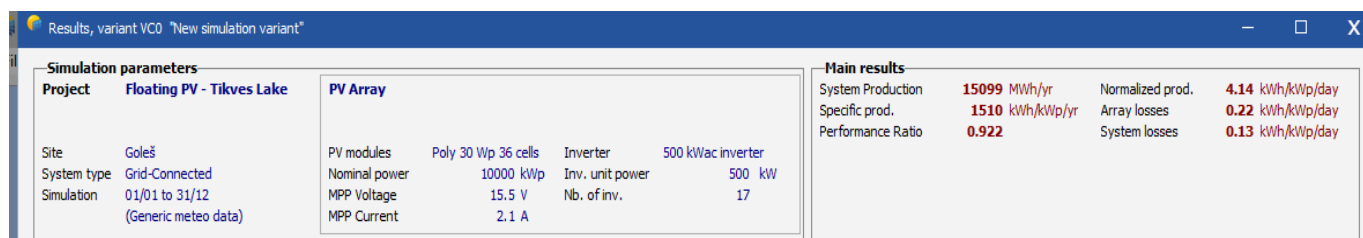


Figure 2: The results of the simulation of floating PV in Tikves Lake

In the following table the monthly energy injected to the grid is shown in the Figure 3:

New simulation variant								
Balances and main results								
	GlobHor	DiffHor	T_Amb	GlobInc	GlobEff	EArray	E_Grid	PR
	kWh/m ²	kWh/m ²	°C	kWh/m ²	kWh/m ²	GWh	GWh	ratio
January	44.6	27.63	1.05	66.6	64.7	0.693	0.670	1.006
February	65.1	33.42	3.61	91.3	88.3	0.933	0.903	0.990
March	100.4	62.18	8.49	117.4	113.8	1.180	1.145	0.975
April	137.5	71.05	12.59	147.9	142.1	1.428	1.384	0.936
May	179.9	84.50	17.97	178.5	170.2	1.672	1.621	0.908
June	202.9	81.46	21.90	192.8	183.3	1.761	1.706	0.885
July	211.0	78.90	25.12	205.6	195.7	1.841	1.785	0.868
August	186.0	77.00	24.71	197.1	188.2	1.786	1.732	0.879
September	134.6	56.69	18.64	160.1	153.9	1.501	1.455	0.909
October	92.2	42.09	13.93	124.2	120.1	1.203	1.166	0.939
November	56.1	28.49	7.39	87.7	85.0	0.890	0.862	0.983
December	40.9	20.53	2.88	68.0	66.0	0.694	0.670	0.986
Year	1451.2	663.95	13.25	1637.0	1571.4	15.582	15.099	0.922

Figure 3: Monthly energy injected to the grid by floating PV in Tikves Lake

In order to have a better view of the analysis in the following table the area of the artificial lakes of the hydro power plants owned by ESM (electric power plants of North Macedonia), their installed power capacity and average yearly energy generation are shown in Table 1:

Table 1: Hydro plants owned by ESM.

	HPP	AREA(KM2)	AGGR. NO.	INS. CAP. (MW)	AVR. PR (GWh/YEAR)
1	TIKVES	14	4	113	114
2	GLOBOCICA	2.69	2	42	180
3	SHPIIJE	13.2	3	84	272
4	MAVROVO SIS.	13.7		200	430
5	KOZJAK	13.5	2	82	130
6	SVETA PETKA	0.62	2	36.4	43
TOTAL		57.71		557.4	1169

The average energy per year of Tikves HPP is 114 GWh. By installing a floating PV on the surface of the lake 15.099GWh extra energy is generated which means that the generated energy is raised by ~13% by only using 0.56 % of the total area of the lake. From the simulation report it is shown that the total installed ac power is 8.5MW (8500kW), namely the installed capacity is increased by 7.52%.

Furthermore, the analysis shows that there is a reduction of 30286.827 tons of CO₂.

In this study, only the artificial lakes owned by ESM are presented, where the total area of the lakes is 57.71 km². Theoretically, the 0.56% of the total lake area is 319760 m², namely this is the assumed area where floating PV could be installed. By making a linear calculation, totally there is a potential of installed capacity of 34.84 MW from floating PV. Similarly the yearly generated energy is expected to be 61.89 GWh.

5 Results and discussion

In this paper the installation of an 8.5 MW_{ac} floating PV in the Tikves Lake was analyzed. The results of analyses show that such a hybrid system could increase the yearly generated energy by 13%. According to the adopted national energy plan, North Macedonia is planning to achieve a 30% share of RES in electricity generation by 2030. Therefore, it is important to take into consideration the floating PV because the theoretical potential is 34.84MW installed capacity by only using 0.56% of the area of the hydro power plant lakes.

References

- [1] Cosic, Boris & Markovska, Natasa & Taseska-Gjorgievska, Verica & Krajacic, Goran & Duic, Neven. (2013). Increasing the renewable energy sources absorption capacity of the Macedonian energy system. *Journal of Renewable and Sustainable Energy*. 5. 041805. 10.1063/1.4812999.
- [2] Cosic, Boris & Krajacic, Goran & Duic, Neven. (2012). A 100% renewable energy system in the year 2050: The case of Macedonia. *Energy*. 48. 10.1016/j.energy.2012.06.078.
- [3] [http://www.economy.gov.mk/Upload/Documents/Energy%20Development%20Strategy_FINAL%20DRAFT%20-%20For%20public%20consultations_MK_29.10.2019\(4\).pdf](http://www.economy.gov.mk/Upload/Documents/Energy%20Development%20Strategy_FINAL%20DRAFT%20-%20For%20public%20consultations_MK_29.10.2019(4).pdf)
- [4] Ćosić, Boris & Markovska, Natasa & Krajacic, Goran & Taseska-Gjorgievska, Verica & Duic, Neven. (2012). Environmental and economic aspects of higher RES penetration into Macedonian power system. *Applied thermal engineering*. 43. 158-162. 10.1016/j.applthermaleng.2011.10.042.
- [5] https://www.google.com/search?q=where+sun+meets+water+floating+solar+market+report+pdf&rlz=1C1AVFC_enMK765MK765&oq=Where+Sun+Meets+Water+FLOATING+SOLAR+MARKET+REPORT&aqs=chrome..69l67j0j4&sourceid=chrome&ie=UTF-8
- [6] https://en.wikipedia.org/wiki/List_of_parties_to_the_Paris_Agreement
- [7] Spencer, Robert & Macknick, Jordan & Aznar, Alexandra & Warren, Adam & Reese, Matthew. (2018). Floating PV: Assessing the Technical Potential of Photovoltaic Systems on Man-Made Water Bodies in the Continental U.S. *Environmental Science & Technology*. 53. 10.1021/acs.est.8b04735.

Computer Vision in Aerial Scene Recognition

Biserka Petrovska¹, Tatjana Atanasova-Pacemski²

¹Ministry of Defense, Skopje, Republic of North Macedonia, biserka.petrovska@mod.gov.mk

²Faculty of Informatics, University Goce Delcev Stip, Republic of North Macedonia

Abstract

Computer vision, as a part of artificial intelligence, gains significant attention from the scientific community in the last decade. Aerial scene classification is a prominent chapter of computer vision with a wide application: military, surveillance and security, environment monitoring, detection of geospatial objects, etc. Monitoring of environment is crucial for mitigating the effects of natural disasters on the environment and human population and can be facilitated by using of unmanned aerial vehicles (UAV), equipped with camera sensors that produce aerial photos of the areas of interest. A modern technique for recognition of events based on aerial photos is deep learning. In our article, we use transfer learning from pre-trained deep Convolutional Neural Networks (CNN) within remote sensing image classification. Transfer learning here is performed through fine-tuning with adaptive learning rates and a regularization method label smoothing. Additionally, to the “end-to-end” training, we performed non-linear classification with SVM (Support Vector Machine) with Gaussian kernel on the extracted features from the fine-tuned CNNs. We demonstrate the potential of this technique on two remote sensing image datasets: AID dataset and NWPU-RESISC45 dataset. Our proposed method obtained competitive results compared to state-of-the-art methods, showing the potential to predict aerial scenes with high accuracy.

Ccs concepts

• Computing methodologies~Machine learning~Machine learning approaches~**Neural networks** • Computer methodologies~Artificial intelligence~Computer vision~Computer vision tasks~**Scene understanding** • Computing methodologies~Machine learning~Machine learning approaches~Kernel methods~**Support vector machines**

Keywords: *Deep learning, Convolutional neural networks, Remote sensing classification, Adaptive learning rates, Label smoothing*

1 Introduction and related work

With the development of Earth observation technology, like Unmanned Aerial Vehicles (UAV), satellite and aircraft platforms, many different types of high-resolution images of the Earth's surface are readily available. Today there are number of publicly available aerial scene datasets, some of them consisted of multi/ hyperspectral (Plaza et al. 2011) and synthetic aperture radar images (Hubert et al. 2013). Aerial scene classification aims to automatically assign a specific semantic label, which is determined upon human interpretation, to each remote sensing image scene. It has vast application value in military and civil areas: urban planning, land resource management, disaster monitoring, weapon guidance, traffic supervision (Cheriyadat et al. 2014, Shao et al. 2013, Estoque et al. 2015, Zhang X. et al 2018). The composition of the remote sensing images is rich space and texture features, and because of it is difficult to obtain the scene information of interest directly from the massive image data. Therefore, it is particularly important to develop more intelligent identification and classification methods of land use and land cover (LULC).

Fine-tuning is technique of transfer learning that calibrates the weights of a pre-trained CNN by restarting the network training with a new dataset. The current dataset might contain images that quite differ from the original one, with various number of classes than the softmax layer of the initial CNN model. Fine-tuning is performed with small initial learning rate and fewer training epochs, compared to a complete training process of the original network architecture. During fine-tuning, it is achieved better classification accuracy compared to a network training with random weight initialization. In the remote sensing research field, there are couple of articles (Yue et al. 2015, Xie et al 2015) that have studied the performances of fine-tuning pre-trained CNNs. Xie et al. (2015) compared the methods of fully-training and fine-tuning of CNNs in the context of aerial scene classification. The approach presented by Yue et al. (2015) employed the fine-tuning technique to classify hyperspectral images. Castelluccio et al. (2015) proposed fine-tuning the convolutional layers' weights of the pre-trained models to extract more suitable image features. The simulation results presented by Hu et al. (2015) and Nogueira et al. (2017) showed that the methods relying on fine-tuning CNNs pre-trained on ImageNet dataset achieve good classification accuracy on remote sensing image datasets. Our previous work (Petrovska et al. 2020a and 2020b) showed that transfer learning techniques, feature extraction as well as fine-tuning, are superb methods for aerial scene classification.

In this paper, we propose a fine-tuning method for remote sensing image classification. We use four different types of CNN (convolutional neural networks) pre-trained on ImageNet dataset (Russakovsky et al. 2015) and two large-scale publicly available remote sensing datasets. In the process of fine-tuning, at the beginning we modify the existing CNNs through so called "network surgery" in order to adjust them to the examined aerial scene datasets. Then new network head is constructed of fully connected layer, dropout and softmax layer. The CNN fine-tuning is performed with adaptive learning rates and label smoothing as a regularization method. In the second part of the research study, we continue with feature extraction from end-to-end fine-tuned CNNs and image classification with RBF (Radial Basis

Function) SVM, that is SVM with Gaussian kernel. The used method generates excellent features for remote sensing scene classification. The achieved classification performance is on par with the state-of-the-art approaches.

The remainder of this article is organized as follows. In Section 2, the materials and methods used for fine-tuning and classification are presented, and how they were empirically evaluated is described. Experimental results obtained from the examined aerial scene datasets classification technique are presented in Section 3. We discuss the factors that have an impact on our method’s results, and we conclude and summarize the paper in Section 4.

2 Materials and Methods

In this research study we exploit four different pre-trained CNNs. Two of them: ResNet50 (He et al. 2016) and DenseNet121 (Huang et al. 2018) are residual based. In their architectures there are short connections between different layers. The main idea behind ResNet was the employment of residual learning block with purpose to learn the difference $F(x)$ between the output $F(x) + x$ and input x of the block, as displayed in Figure 1. DenseNet121 fuses features from different layers with concatenation (Huang et al. 2018). For every layer in DenseNet121 model, its inputs are the feature maps of all preceding layers and each layer’s feature maps are led into all succeeding layers, as their input.

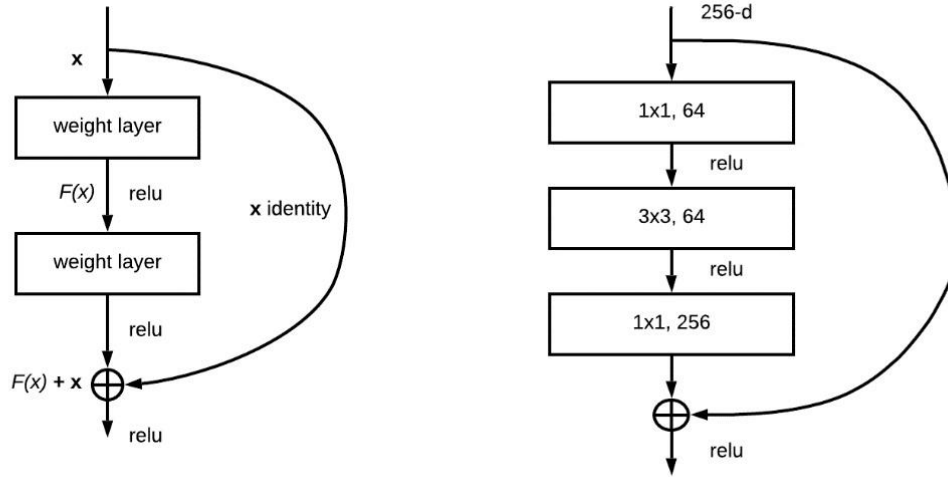


Figure 1 Residual block (left) and “bottleneck” block (right) of ResNet

The other two networks included in the research are inception based: InceptionV3 (Szegedy et al. 2016) and Xception (Chollet 2017). Inception based CNN exploit the inception modules in the design of network architecture, as shown in Figure 2. Inception module contain convolutional layers with different dimensions to cover the larger receptive field and outputs from these layers are then fused into inception module output. Xception, that is “Extreme Inception”, replaces the inception modules with depthwise separable convolutions. Depthwise

separable convolutions separate the mapping of cross-channel correlations and spatial correlations in the feature maps of CNN architecture.

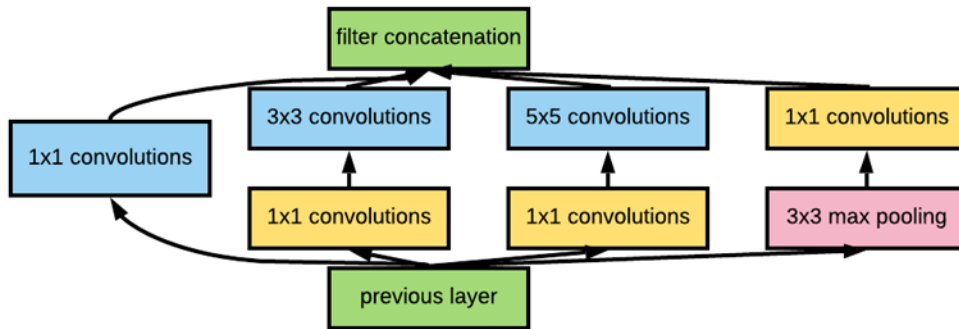


Figure 2 Architecture of a basic inception module

The most important hyperparameter when training a convolutional neural network is the initial learning rate. In this study, we have utilized adaptive learning rates for fine-tuning the neural networks. First type of adaptive learning rate is linear decay schedule, that decreases the learning rate to zero at the end of the last training epoch. The other type of adaptive learning rate is Cyclical Learning Rate (CLR). CLR (Smith 2017) allow for the learning rate to fluctuate between a minimum and a maximum value and thus eliminating the need to identify the optimal value of the initial learning rate. There are 3 policies of CLR: triangular, as shown in Figure 4, triangular2, and exponential range. In our experiments we used CLR with triangular policy.

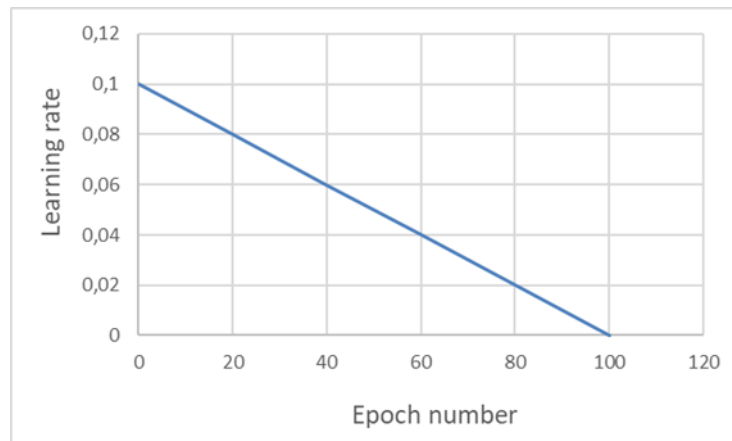


Figure 3: Linear learning rate decay

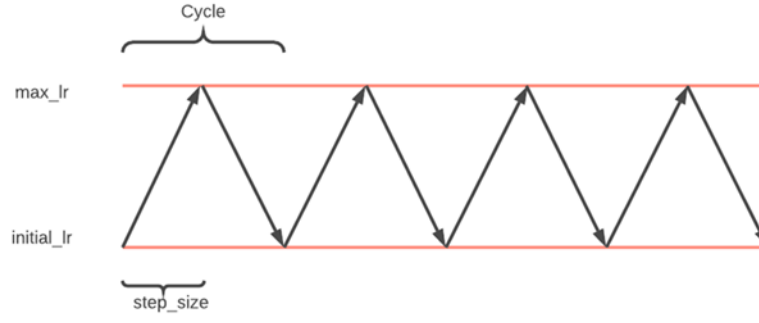


Figure 4: Cyclical learning rate

In order to reduce overfitting during network fine-tuning, we adopted regularization technique label smoothing. Additionally, label smoothing (Szegedy et al. 2016) enables better experimental results. It is performed by adopting a weighted sum of the labels with uniform distribution instead of evaluating the loss function (cross-entropy) with the “hard” labels from the dataset. “Hard” label assignment represents old-fashioned (binary) labels: positive (or one) for one category and negative (or zero) for all the other categories. “Soft” label assignment gives the largest probability to the positive (real) class and very small probability to other classes.

SVM (Support Vector Machine) is a discriminative classifier formally defined by a separating hyperplane. Tuning hyperparameters of an SVM model consists of the kernel choice (linear, polynomial, exponential), impact of regularization, gamma, and margin. In our simulation scenarios we utilized SVM with non-linear (Gaussian) kernel. It is given with

$$K(x, x_i) = \exp\left(-gamma * \sum (x - x_i)\right)$$

where x is the input and x_i are the supporting vectors.

We evaluate our proposed technique on two publicly available aerial scene datasets, the Aerial Image Dataset (AID) (Xia et al. 2017) and the NWPU-RESISC45 dataset (Cheng et al. 2017a). AID consists of about 10,000 remote sensing images with dimensions 600×600 pixels, assigned to 30 classes. The NWPU-RESISC45 dataset contains 31,500 aerial images assigned to 45 classes. Each class has 700 images with dimensions 256×256 pixels. Figure 5 presents sample images of different classes from the both datasets.

Our experimental setup included fine-tuning of four types of pre-trained CNN with adaptive learning rates: linear decay scheduler and CLR, and label smoothing. Images of the datasets were resized according to the requirements of CNN. Before we started the training process of neural networks with each of the remote sensing datasets, a couple of last networks’ layers were adjusted on the datasets of interest (for ex. number of classes). In order to boost the classification accuracy, data augmentation is utilized on training data split. Label smoothing was also done only on training images. Fine-tuning process was performed with Stochastic

Gradient Descent (SGD) and classification was performed with softmax layer. The initial learning rate for fine-tuning was chosen to be 1-2 orders of magnitude lower than the rate used for network training from scratch. The second part of the experiments is relied on image feature extraction by means of fine-tuned networks. The extracted features were used for training of RBF SVM and classification of images with it. In our experimental setup, the datasets were split into train and test sets without stratification. All the simulations were performed with Keras and TensorFlow on Nvidia GeForce GTX 1080 Ti. In this paper we use classification accuracy as evaluation metric. Classification accuracy or Overall Accuracy (OA) is the ratio between the number of correctly classified test images and the total number of test images.

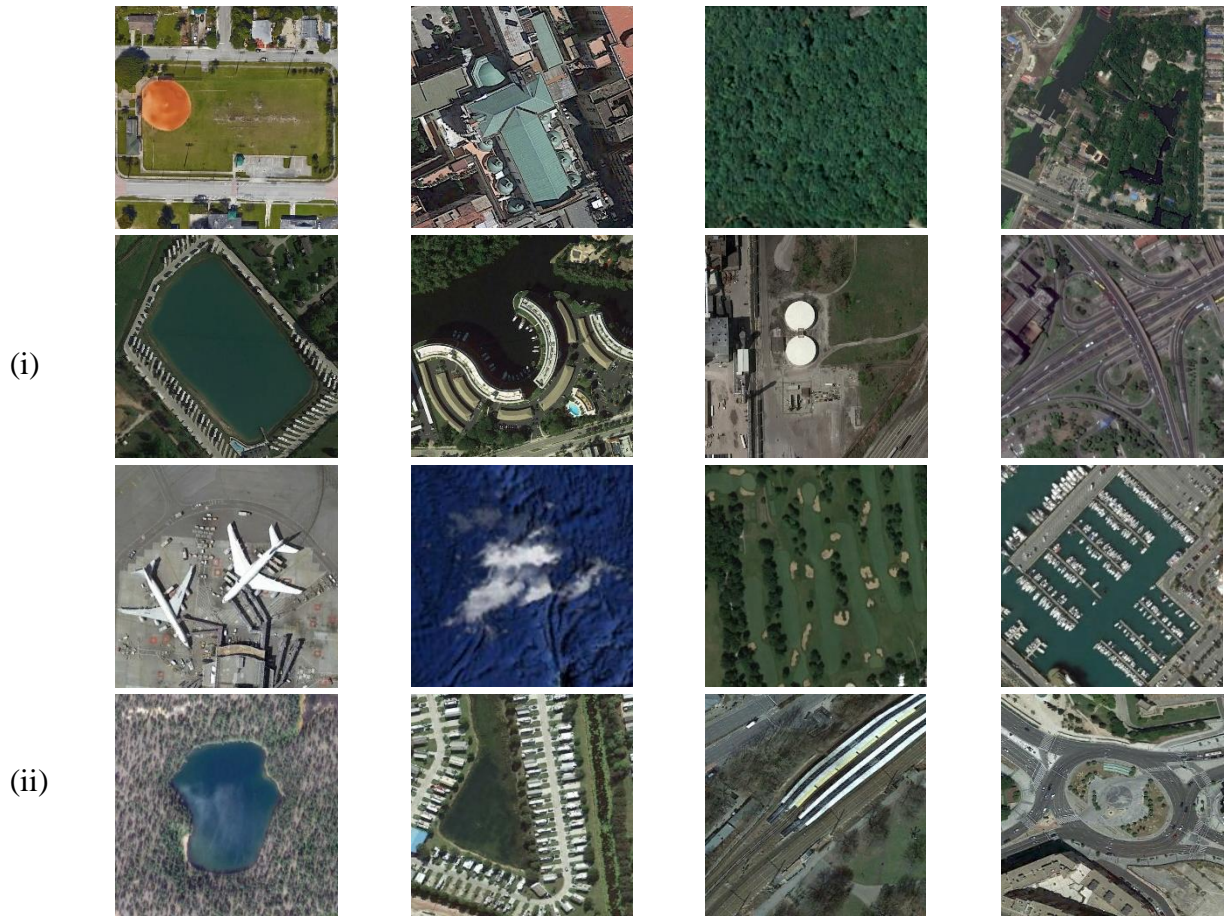


Figure 5: Different classes of images from (i) AID and (ii) NWPU-RESISC45 dataset

3 Results

This section presents the experimental results of the proposed fine-tuning method for the both examined datasets: AID dataset and NWPU-RESISC45 dataset. Table 1 represents the achieved classification accuracy on AID dataset for 50%/50% train/test split ratio and remote image classification with softmax layer and RBF (Radial Basis Function) SVM classifier. The above-mentioned train/test split ratio is common in the literature and it is used in our experiments in order to compare the obtained accuracy with other authors' research.

Table 1: Overall accuracy (%) of the fine-tuning method with a 50%/50% train/test ratio of the AID dataset and RBF SVM.

Method	Softmax classifier	RBF SVM classifier
ResNet50		
Linear decay scheduler	95.66	96.12
Cyclical learning rate	95.64	96.08
Inception V3		
Linear decay scheduler	95.88	95.66
Cyclical learning rate	96.00	96.18
Xception		
Linear decay scheduler	95.96	95.66
Cyclical learning rate	96.28	96.3
DenseNet121		
Linear decay scheduler	96.44	98.03
Cyclical learning rate	96.3	96.6

Table 2 gives a comparison analysis of the proposed method to other state-of-the-art methods found in the literature. Our proposed technique achieved the best classification results on the AID dataset with a 50%/50% train/test split ratio for DenseNet121 convolutional neural network with a linear decay scheduler and an RBF SVM classifier. Compared to other simulation results in the research field, our proposed method for 50%/50% train/test split ratio of AID dataset outperforms all the other techniques in the literature. The standard deviation of the obtained experimental results for AID dataset is in interval $\pm (0.1-0.4)$.

Table 2: Overall accuracy of the fine-tuning method compared to reference methods with 50% of the AID dataset as a training set.

Method	50% training ratio
Fusion by addition (Wang et al. 2017)	91.87
TEX-Net-LF (Anwer et al. 2017)	92.96
ARCNet-VGG16 (Wang et al. 2018)	93.10
VGG-16 fine-tuning (Sun et al. 2019)	93.60
VGG-16+MSCP (He et al. 2018)	94.42
Two-stream fusion (Yu et al. 2018b)	94.58
Multilevel fusion (Yu et al. 2018c)	95.36
InceptionV3-CapsNet (Zhang W. et al. 2019)	96.32
EfficientNet-B3-aux (Bazi et al. 2019)	96.56
GCFs + LOFs (Zeng et al. 2018)	96.85

Method	50% training ratio
D-CNN + VGGNet-16 (Cheng et al. 2018)	96.89
Dense-based CNN + 3D pooling (Zhang J. et al. 2019)	97.19
DenseNet121 with linear decay scheduler and RBF SVM classifier (ours)	98.03

The experimental results of our proposed method for aerial scene classification on NWPU-RESISC45 dataset are displayed in Table 3. Table 3 presents the achieved classification accuracy for a 20%/80% train/test split ratio of the NWPU-RESISC45 dataset with softmax classifier and Gaussian kernel SVM classifier. This train/test split ratio for the analyzed aerial scene dataset is chosen in order to make experimental comparison with other studies in the scene understanding field of research, which use the same proportion of train/test datasets.

Table 3: Overall accuracy (%) of the fine-tuning method with a 20%/80% train/test ratio of the NWPU-RESISC45 dataset and RBF SVM.

Method	Softmax classifier	RBF SVM classifier
ResNet50		
Linear decay scheduler	92.71	92.89
Cyclical learning rate	92.43	92.77
Inception V3		
Linear decay scheduler	93.17	93.35
Cyclical learning rate	92.52	92.82
Xception		

Method	Softmax classifier	RBF SVM classifier
Linear decay scheduler	92.36	92.72
Cyclical learning rate	92.72	92.87
DenseNet121		
Linear decay scheduler	92.98	93.60
Cyclical learning rate	93.11	93.55

Table 4 gives the comparison analysis of the examined fine-tuning method with other state-of-the-art methods. Our proposed method obtained the best classification accuracy with DenseNet121 convolutional neural network with a linear decay scheduler and RBF SVM classifier under 20% training ratio of the NWPU-RESISC45 dataset. The standard deviation of achieved experimental results on the examined dataset is in the range $\pm (0.1-0.3)$. In Table 4 are listed methods that outperform our proposed method. One technique that achieves better classification accuracy than ours is based on fine-tuning of EfficientNet-B3 convolutional neural network with auxiliary classifier (Bazi et al. 2019). Other authors that report better classification accuracy on NWPU-RESISC45 dataset are Zhang J. et al. (2019). Their proposed technique is based on transfer learning with feature extraction.

Table 4: Overall accuracy of the fine-tuning method compared to reference methods with 20% of the NWPU-RESISC45 dataset as a training set.

Method	20% training ratio
AlexNet (Cheng et al. 2017a)	79.85
Two-stream fusion (Yu et al. 2018b)	83.16
BoCF (Cheng et al.2017b)	84.32
Fine-tuning AlexNet (Cheng et al.2017a)	85.16

Method	20% training ratio
Fine-tuning GoogLeNet (Cheng et al. 2018)	86.02
SAL-TS-Net (Yu et al. 2018a)	87.01
VGG-16+MSCP (Wang et al. 2017)	88.93
Fine-tuning VGG-16 (Cheng et al. 2017a)	90.36
D-CNN+VGGNet-16 (Cheng et al. 2018)	91.89
Triplet networks (Liu et al. 2018)	92.33
Inception-V3-CapsNet (Zhang W. et al. 2019)	92.60
DenseNet121 with linear decay scheduler and RBF SVM classifier (ours)	93.60
Efficient-B3-aux (Bazi et al.2019)	93.81
Dense-based CNN + 3D pooling (Zhang J. et al. 2019)	94.95

4 Discussion and Conclusion

We can make several conclusions from our experimental scenarios and simulation results:

- For both aerial scene datasets: AID and NWPU-RESISC45 the highest classification accuracy is obtained for DenseNet121 convolutional neural network. For AID datasets, Xception, InceptionV3 and ResNet50 follow with close classification accuracies. For NWPU-RESISC45 dataset, InceptionV3 follows and then Xception and ResNet50 with close classification accuracies. The obtained classification results are different from the achieved top-1 and top-5 classification accuracies by the examined CNNs on ImageNet dataset. This is understandable because the AID and NWPU-RESISC45 datasets contain dissimilar images

compared to ImageNet dataset;

- Linear decay scheduler and cyclical learning rates show balanced results of the classification accuracy: almost half of them in favour of linear decay scheduler, half of them in favour of cyclical learning rates. But beside the classification accuracies, there are other factors that should be taken into consideration before we decide what kind of adaptive learning rate to choose for CNN training, like: training stability, ability for generalization etc. In the literature can be found that CLR enable more stable network training;

- RBF SVM is a superior classifier compared to softmax classifier. RBF SVM outperforms softmax layer in all simulation scenarios for both examined remote sensing image datasets. In only one experimental case RBF SVM achieved equal classification accuracy with softmax classifier: when it comes to classification of AID dataset with fine-tuning of Xception convolutional neural network with linear decay scheduler;

- In our proposed method for classification of aerial scene datasets along with dropout, we utilized label smoothing as regularization method. We included label smoothing in every simulation scenario, so we believe that boosting of the classification accuracy was partly possible due to this regularization technique.

In this article we propose novel technique for resolving the remote sensing image classification task. It is shown that employing linear decay learning rate schedule or cyclical learning rates combined with label smoothing could produce state-of-the-art method for aerial scene classification. The presented fine-tuning method outperforms all known methods for classification of AID dataset in the literature. Methods that outperform our proposed method on NWPU-RESISC45 dataset are:

- Fine-tuning of EfficientNet-B3 with auxiliary classifier (Bazi et al. 2019). EfficientNet-B3 is convolutional neural network that yields better top-1 and top-5 classification accuracy on ImageNet dataset then the pre-trained CNNs we have used in our research, so this is possible reason for outperforming our method;

- Zhang J. et al. (2019) achieved better classification accuracy then our fine-tuning technique. Their method relies on multiple fusion of features extracted from dataset images or their parts with different scale. On the other side, we have worked with fine-tuning of remote sensing images with one size, that resulted in worse experimental results.

The proposed fine-tuning technique for aerial scene classification can be further explored with: employing of up to date pre-trained CNNs with superior top-1 and top-5 accuracies achieved on ImageNet dataset in the fine-tuning process; training of different parts of network architecture with freezing and unfreezing certain layers and including learning rate finder for optimal value of initial learning rate and limits of CLR. Initial learning rate is a crucial parameter in order not to skip the valleys of lower training and validation loss or not to get stacked in the saddle points of the loss function.

References

- [1] Plaza A., Plaza J., Paz A. and Sanchez S. (2011). "Parallel hyperspectral image and signal processing". *IEEE Signal Process. Mag.*, 28, 119–126
- [2] Hubert M.J. and Carole E. (2013). "Airborne SAR-efficient signal processing for very high resolution". *Proc. IEEE*, 101, 784–797
- [3] Cheriyyadat A.M. (2014). "Unsupervised feature learning for aerial scene classification". *IEEE Trans. Geosci. Remote Sens.*, 52, 439–451
- [4] Shao W., Yang W. and Xia G.S. (2013). "Extreme value theory-based calibration for the fusion of multiple features in high-resolution satellite scene classification". *Int. J. Remote Sens.*, 34, 8588–8602
- [5] Estoque R.C., Murayama Y. and Akiyama C.M. (2015). "Pixel-based and object-based classifications using high- and medium-spatial-resolution imageries in the urban and suburban landscapes". *Geocarto Int.*, 30, 1113–1129
- [6] Zhang X., Wang Q., Chen G., Dai F., Zhu K., Gong Y. and Xie Y. (2018). "An object-based supervised classification framework for very-high-resolution remote sensing images using convolutional neural networks". *Remote Sens. Lett.*, 9, 373–382
- [7] Yue J., Zhao W., Mao S. and Liu H. (2015). "Spectral–spatial classification of hyperspectral images using deep convolutional neural networks". *Remote Sens. Lett.*, 6, 468–477, doi:10.1080/2150704X.2015.1047045.
- [8] Xie M., Jean N., Burke M., Lobell D. and Ermon S. (2015). "Transfer learning from deep features for remote sensing and poverty mapping". arXiv:1510.00098.
- [9] Castelluccio M., Poggi G., Sansone C. and Verdoliva L. (2015). "Land use classification in remote sensing images by convolutional neural networks". arXiv:1508.00092.
- [10] Hu F., Xia G.S., Hu J. and Zhang L. (2015). "Transferring deep convolutional neural networks for the scene classification of high-resolution remote sensing imagery". *Remote Sens.*, 7, 1468014707
- [11] Nogueira K., Penatti O.A. and Dos Santos J.A. (2017). "Towards Better Exploit. Convolutional Neural". *Networks Remote Sens. Scene Classification. Pattern Recognit.*, 61, 539–556.
- [12] Russakovsky O., Deng J., Su, H., Krause J., Satheesh S., Ma S., Huang Z., Karpathy A., Khosla A., Bernstein M. et al. (2015). "ImageNet Large Scale Visual Recognition Challenge". *Int. J. Comput. Vis.*, 115, 211–252
- [13] He K., Zhang X., Ren S. and Sun J. (2016). "Deep residual learning for image recognition". In *Proceedings of the IEEE conference on computer vision and pattern recognition*, Las Vegas, NV, USA, 27–30 June
- [14] Szegedy C., Vanhouck V., Ioffe S., Shlens J. and Wojna Z. (2016) "Rethinking the Inception Architecture for Computer Vision". In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, Las Vegas, NV, USA, 26 June–1 July
- [15] Chollet F. (2017). "Xception: Deep Learning with Depthwise Separable Convolutions". arXiv 2017, arXiv:1610.02357.
- [16] Huang G., Liu Z., van der Maaten L. and Weinberger K.Q. (2018). "Densely Connected Convolutional Networks". In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, Salt Lake City, UT, USA, 18–22 June
- [17] Smith L.N. (2017). "Cyclical learning rates for training neural networks". In *Proceedings of the 2017 IEEE Winter Conference on Applications of Computer Vision (WACV)*, Santa Rosa, CA, USA, March 24–31; IEEE: Piscataway, NJ, USA; pp. 464–472.
- [18] Xia G., Hu J., Hu F., Shi B., Bai X., Zhong Y., Zhang L., Lu and X. (2017). AID: A Benchmark Data Set for Performance Evaluation of Aerial Scene Classification. *IEEE Trans. Geosci. Remote Sens.* 55, 3965–3981.
- [19] Wang G., Fan B., Xiang S. and Pan C. (2017). "Aggregating Rich Hierarchical Features for Scene Classification in Remote Sensing Imagery". *IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens.*, 10, 4104–4115
- [20] Anwer R.M., Khan F.S., vandeWeijer J., Monlinier M. and Laaksonen J. (2017). "Binary patterns encoded convolutional neural networks for texture recognition and remote sensing scene classification". arXiv:1706.01171
- [21] Wang Q., Liu S., Chanussot J. and Li X. (2018). "Scene classification with recurrent attention of VHR

remote sensing images”. *IEEE Trans. Geosci. Remote Sens.*, 99, 1155–1167

- [22] Sun H., Li S., Zheng X., and Lu X. (2019). “Remote Sensing Scene Classification by Gated Bidirectional Network”. *IEEE Trans. Geosci*
- [23] He N., Fang L., Li S., Plaza A. and Plaza J. (2018). “Remote Sensing Scene Classification Using Multilayer Stacked Covariance Pooling”. *IEEE Trans. Geosci. Remote Sens.*, 56, 6899–6910
- [24] Yu Y. and Liu F. (2018). “Aerial Scene Classification via Multilevel Fusion Based on Deep Convolutional Neural Networks”. *IEEE Geosci. Remote Sens.*, 15
- [25] Yu Y. and Liu F. (2018). “A two-stream deep fusion framework for high-resolution aerial scene classification”. *Comput. Intell. Neurosci.*, 13
- [26] Yu Y. and Liu F. (2018). “Dense connectivity based two-stream deep feature fusion framework for aerial scene classification”. *Remote Sens.*, 10, 1158
- [27] Zhang J., Lu C., Li X., Kim H.J. and Wang J. (2019). “A full convolutional network based on DenseNet for remote sensing scene classification”. *Mathematical Bioscience and Engineering*
- [28] Zhang W., Tang P., and Zhao L. (2019). “Remote Sensing Image Scene Classification Using CNN-CapsNet”. *Remote Sens.*, 11, 494
- [29] Bazi Y., Rahhal M.M.A., Alhichri H. and Alajlan N. (2019). “Simple Yet Effective Fine-Tuning of Deep CNNs Using an Auxiliary Classification Loss for Remote Sensing Scene Classification”. *Remote Sens.*, 11, 2908.
- [30] Zeng D., Chen S., Chen B. and Li S. (2018). “Improving remote sensing scene classification by integrating global-context and local-object features”. *Remote Sens.*, 10, 734
- [31] Cheng G., Yang C., Yao X., Guo L. and Han J. (2018). “When deep learning meets metric learning: Remote sensing image scene classification via learning discriminative CNNs”. *IEEE Trans. Geosci. Remote Sens.*, 56, 2811–2821
- [32] Cheng G., Han J. and Lu X. (2017). “Remote Sensing Image Classification: Benchmark and State of the Art”. *Proc. IEEE*, 105, 1865–1883
- [33] Cheng G., Li Z., Yao X., Li K. and Wei Z. (2017). “Remote Sensing Image Scene Classification Using Bag of Convolutional Features”. *IEEE Geosci. Remote Sens. Lett.*, 14
- [34] Liu Y., and Huang C. (2018). “Scene classification via triplet networks”. *IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens.* 509
- [35] Petrovska B., Zdravevski E., Lameski P., Corizzo R., Stajduhar I. and Lerga J. (2020). “Deep Learning for Feature Extraction in Remote Sensing: A Case-study of Aerial Scene Classification”. *Sensors*, 14, 3906.
- [36] Petrovska B., Atanasova-Pacemska T., Corizzo R., Mignone P., Lameski P. and Zdravevski E. (2020). “Aerial Scene Classification through Fine-Tuning with Adaptive Learning Rates and Label Smoothing”. *Appl. Sci.*, 10, 5792

The division between “WE” and “OTHERS”, in the era of mobility and migration - in the case of Albanians

Rizvan Sulejmani

Faculty of Social Sciences, “Mother Teresa” University, Skopje, R. N. Macedonia, rizvan.sulejmani@unt.edu.mk

Abstract

The third globalization in which humanity has entered since 2001, according to Friedman has flattened the world, enabled communication and the movement of population. However, as much as it created benefits, in many cases it has created and continues to create headaches, for the overcoming of which a theoretical approach study is needed. The mobility and migration of the population in many European countries encouraged the division of the population into "we" Europeans, moderates and "they", others, coming from countries that have not experienced modernization and civilization. Albanians did not remain unaffected by the phenomenon of separation and this should not be seen as a side effect of immigrants but more as a polarization over the values of the two main centers of influence, "the West" versus "the East". This aim of this paper is to determine the causes that lead to the division, within the Albanian people by placing emphasis on the Muslim community. Using a theoretical approach and demographic data we find that information explosion during the globalization is one of the reasons for this division; by reducing the individual's ability to systematize and methodologically process the information and phenomena. Faced with a sea of information, the individual forms its own island, which separates it from others to communicate, function and confronting opinions. Hence, consciously or unconsciously, in an attempt to rationalize information chaos, the individual shifts from total information to "informative ghetto". Therefore, instead of giving the necessary explanation, the individuals sink into confusion that manifests itself in cataclysmic forms even in pathological moments. In this way two opposite sides of the understanding of these phenomena are created. As a conclusion the division into "we" and "they" is nothing but the tendency of the individual to rationalize the fear of the unknown that constantly increases the scope of action and spreads as a result of the information eruption

Keywords: *division, "we", "they", globalization, migration*

1 Introduction, Context and concerns of the time in which we live

In the Albanian public opinion, especially in the intellectual circles, now for a longer time, the concerns over the changes occurring within the society in terms of the national identity have been raised. This topic has provoked interest, especially now, while living in a time of total information and globalization when there is penetration of foreign influence, especially those from the East. Many people still identify globalization with modernity, even though there are serious conceptual differences between these two historical moments ¹. This concerns so far has not been sufficiently addressed, nor analyzed in all the dimensions by the academic world. Unfortunately, there hasn't been a serious study on the causes, circumstances (political nor geo-strategic), psychological and sociological aspects that lead to the division of the population that speak the same language and share a common culture and history, which although in certain contexts has experienced division, contradictions and even frictions but has not ever ended in any violent conflict. Currently, those who share this concern particularly emphasize the division among the representatives of the Muslim community who in many segments abandon the "traditional" faith (religion), at least as we have perceived and cultivated Islam in these areas. The differences are expressed through the way of dressing, the manner of worship, devotion or even identification, which give the impression that the well-known slogan on which the establishment of the nation is based, "the religion of Albanians is Albanianism", is getting overshadowed, if not even put in question.

Regarding this concern, the most vocal was the academic from Kosovo, Mehmed Kraja²[2] who through an authorial writing that aroused interest, raised the issue of division into "us" and "them"³ [3] but I have the impression that it was neither elaborated enough nor did it have an effect in raising the level of debate, but much more devaluated in the alignments, pro and contra. Despite the fact that it was presented only as a separate thought with a great precision, it can be said that as a dilemma, despair and intellectual reaction is digested in the mind of many others, which some publicly and some silently express.

In this paper we make an effort, to put the public (media) debate in a theoretical plane, by engaging to firstly identify the factors that have influenced the division. Hence, when the study addresses the geography of our continent only geopolitical and demographic factors will be taken into consideration, which are related to the movement of the population, based upon the views of some American authors but not solely. Moreover, we elaborate some predictions on the global movement and its consequences for the "old continent", as is Europe known, based on the data and forecasts of the author in question. Lastly, we elaborate the concerns that appear in the micro-plan, at national level (Albanian), to conclude by explaining how the individual is found unconsciously locked in one of these "tabors" (camps) for which it is not aware and that is directly being influenced by these global changes.

2 The population movement in the time of globalization, the challenges, how much were they foreseen?

Population settlements and migrations have existed almost throughout the whole history of mankind for a variety of reasons, ranging from the struggle for survival in search of more fertile and suitable land for livestock, the classical wars, natural disasters, and diseases up to the push of personal ambitions for self-realization in an environment that enables it. In this case, our aim is not the history of migration, but we will try to recall the warnings made by certain authors about a population movement towards the West and the possible consequences for Europe.

Huntington was one of those who warned that large differences in birth rates, especially youth as the dominant population in some Muslim countries, in the absence of economic prospects would put pressure to move to richer and more developed countries⁴. In this paper we will not talk about his idea of the clash of civilizations, about which at the time many debates arose and continue even today, but we will only mention that he had warned (alarmed) much earlier about the movement of the population. This prophecy of his was seen during the years 2014, 2015 and especially during 2016-2018, when the great migration of the population took place due to the war in Syria, which manifested itself through a large wave of refugees which in Europe caused a serious shock. A building that deserves every praise for its success in the prevention of wars through the unprecedented development and prosperity in these moments seemed like its falling (ruining). The events of September 11, 2001, the Islamic State, and the population movement that many experienced, seemingly put this author in the role of a prophet.

The explanations of religious books for the rise and fall of a country or people in the blink of an eye, no enlightened mind whose consciousness is built in the circumstances of these days, does not take seriously. The prophetic stories of the type that an entire people were overthrown by a sudden flood of water, or by stones thrown by birds upon them, when they had deviated from the path of God were again actualized when the cataclysmic predictions of this author seemed to appear in the most advanced part of the world, just as he had envisioned. The answer of this phenomenon can be found if you make an effort at least to enter the mindset of the actors of that time, by using your imagination and empathy to enter into their brains, when judgments and experiences are recorded; you can draw valuable conclusions that justify the conviction of more people who rated Huntington's predictions as prophetic. Is this the explanation for the sudden crisis that Europe is experiencing today, when in a rapid way it changed its appearance from the original idea with which it was identified until recently? We do not know. But we must consider the predictions of Zbigniew Brzezinski, who years ago predicated that for Europe it would be very difficult to challenge such a hit. He describes Europe as a giant economic conglomerate but with great difficulty in political management, to explain that:

"Conglomerates have no political vision; they have tangible interests." concluding that, "Bureaucratic structures without the identity of the European Union will not be able to convey the popular sentiment necessary for a political vision" ⁵.

According to this author, in the following decades, the main challenge of the oldest continent will be, how to manage the migration pressure that will come as a result of several factors. Factors such as unequal birth rates across different countries, the unjust and unequal distribution of wealth in the world, problems with social policies that will arise in some of the most developed countries, which come as a result of the increase in life expectancy, asymmetric aging of the population depending on the level of economic development of the countries, according to him will have consequences on the demographic, political, economic structure of the countries but above all on the security. Despite this challenge, the phenomenon of the nation -state and Western cultural exclusivity today is more powerful than ever in the countries of Europe but also beyond in managing the new influx of population from other continents. For this reality Brzezinski, says:

"... until the nineteenth century migration was determined by socio-economic conditions, not by political decisions. The phenomenon of the passport, a product of the twentieth century, symbolizes the loss of the human right – even though in practice difficult to implement - to see the world as a common home ⁶".

Based on the author's conclusion, Europe's challenges are much more serious, multidimensional, requiring a treatment beyond as a security issue, and division of the population for which multidisciplinary studies are required. A statement that at this moment we will only conclude without making an effort to elaborate on them. In the following section we will pose the problem of the de-population of Europe as a provocation for the movement of the population from the poorest parts of the world to the west, as a place of welfare that confirms the findings of these preachers.

2.1 The challenge of Depopulation of Europe

To be able to understand the demographic reality of Europe we will be referring to some data used by the authors that we previously highlighted during the study of this phenomenon. According to Zbigniew Brzezinski, in 1900 Europe had 408 million inhabitants or 25% of the world population while in 2000, it had 727 million or only 12% of the world population. Forecasts are that by 2020 there will be 695 million or, only 9% of the world population, with a negative decline of -32. This does not happen to any other continent. North America holds the same percentage of 5% of the world's population as in 1900 when it had 82 million inhabitants, in 2000 when it had 314 million and in 2020 when it is expected to have 370 million inhabitants. Asia is expected to have an increase of the proportion of 57% of the total world population in 1900 with 947 million inhabitants to 60% of the world population in 2020 with 4,582 million, or, only between 2000-2020 there will be an increase of 910 million. Africa will double its share of the total world population from 8% (133 million) to 16% (437 million) by 20207.

On the other hand, the study of the European Commission, 'Global Europe 2050', 2012, clearly states (concludes) that economic development centers are relocating to the East, Asia, which is still poor, because over 71% of the population lives on less than \$1 per day.⁸ This meant that in the very near future, which is already a reality, if Europe does not undertake something, it would

lose the race in the international arena from these new rising powers. If it wants to remain or even rise to a global factor it must solve the problem of aging and de-population.

Statistics suggest that Europe urgently needs to get rid of "death", or putting it mildly, mass aging. How to overcome the situation when there are no white people within the continent, and public opinion is not ready to accept those who come as refugees. The latest polls conducted by the American agency "Pew", in the first half of June 2016, suggest that 8 countries out of 10, which make up 80% of the population in the EU are not very hospitable towards refugees, but even see them as a risk, since they undermine the core values of the culture of the continent. Studies show that the conviction that the flow of refugees increases the risk not only of Western identity dissolution but also the appearance of terrorism dominates. In Hungary and Poland 76% and 71% of the population, respectively share this concern. These concerns are shared by 62% of the population of Germany, 60% of that of Italy and 52% of United Kingdom. There is an even higher percentage of those who think that the refugee wave will affect employment opportunities. More precisely, 82% of Hungarians, 76% of Poles, 72% of Greeks, 65% of Italians and 53% of French consider refugees as a burden and that they will take their jobs.⁹ In other words, the European population also is divided into "us" old Europeans, who have set and cultivated a culture, and "those" who come to the mainland but along with them bring another culture and identity who "digs", the current-dominant one. Moreover, not only welfare but also security is put into question.

Based on these data, it emerges that the main challenge at the moment in the European Union is how to stop the widening of the gap between "us" and "them" so that a population that is becoming every day more diverse, can coexist with differences as a precondition for the continuation of prosperity and the increase of welfare. This is since the motor force of development in a society according to Anthony Giddens consists of the so-called creative class. This social class constitutes the 2nd and 3rd level of urban society consisted of experts and managers (class 2) and high-tech/information technology experts - "Apple –Mac (class 3)"¹⁰. This finding is not accidental. In order to analyze the distribution of this creative class, in Florida, USA, a "creativity index" has been created based on four indicators: the percentage of the creative class within the workforce, the percentage of this class in the high-tech industry, innovations-based on the number of patents and, differentiation. Research shows that cities with the highest levels of creativity are characterized by three "T's"; "T" -talent, "T" -technology and "T" -tolerance¹¹. The further study explains that the third "T" means that these societies are more cosmopolitan, among them there is a high percentage of the population from migration, of different races and cultures. How to achieve this if we take into account the public opinion data that today dominates in Europe in relation to migration¹².

In search of the formula, the editor-in-chief of DW (Deutsche Welle) polemicized with the German Chancellor Angela Merkel, who for the purpose of preparing the public opinion for such a thing used the well-known slogan, "We can do it". The skeptical editor responds with "We can't do it". The journalist's argument was that a process of this nature takes four generations and Germany is not prepared to create such an environment. Hence, if Germany, as a pillar of the EU, which was more tolerant of migration, lacks "T- tolerance", what can be expected from the other countries throughout Europe that have an aversion and growing

intolerance. Having this in mind, neither the dilemmas nor the non-optimistic predictions for the future of this organization are coincidental.

Moreover, the pessimism comes also from the NATO summit that was held on 8-9 July 2016 in Warsaw where, as risks were defined; migration, terrorism, and Russian expansionism. After the shock experienced by the European Union with the popular vote win over Brexit based upon exactly these reasons, every day there are more voices that require more rational judgments, analysis, and new strategies. Federica Mogherini, EU High Representative for Foreign Affairs and Security Policy, on 12 June 2016, declared: "The purpose of the European Union existence, even its very existence have been put into question, while European citizens and the world as never before need a strong EU ", by suggesting" in difficult times like these, strong is the EU, which thinks strategically, shares a vision and acts as a unique whole "... We need a strategy that connects a shared vision with joint action.¹³". These statements speak a lot. One, how to balance the need for development and welfare that depends directly on new inflows of people who are distinguished by their skin color, culture, or religion for which the public opinion is not prepared. Two, what sort of political system needs Europe to be able to absorb the cultural differences, and not divide itself into "us" Europeans, and "they" the "foreigners" through the establishment of tolerance as a prerequisite for development and welfare. Hence, Europe seems to be at a crossroads having to decide what path to follow. Ignoring this reality is not the solution but can only deepen the crisis. All that remains for it is to act. In what direction will the processes develop, remains to be seen but there is not a lot of time left.

Based on this experience in the following section will not be drawn into this problem but we will try to examine the challenges that Albanians face. Why do they separate, who influences them and how do they appear? In the end we will try to give our explanation for this phenomenon, with the intention to shed light on the complexity of the problem as well as the probable risks if the seriousness and depth of the challenge is not understood.

3 The division into "us" and "them", in the case of Albanians?

If the division of the population in European countries is purely related to the immigrants who come from countries outside the Union, Albanians face a division for which we do not have an explanation based on any serious scientific study. In our case this phenomenon does not directly relate to migration but other factors that we will try to draw out below. Which factor are those?

Our explanation is that we are living in a time of a great change and alignment of new global economic, political, and military powers, which along as an invisible hand extend their cultural and religious influence. As a result of these economic, cultural and religious rearrangements we experience changes that cannot be justified except with cosmological theories. For many of these phenomenon's we have no explanation, therefore, they sometimes create daze and sometimes frustration. We do not know each other, our relatives, our former friends and colleagues, not even our children. We seem to differ in belief, dress code, understanding of the world, philosophy, and religion. We talk about "us" and "them", although we do not have sufficient theoretical knowledge nor credible scientific research to provide with a correct answer to the question, why this happens. If Albanians migrate towards the west, this means that it is

understandable the acceptance of certain European values, but the concern comes from the influence of the East. In the public discourse, pronouncements on the division between "us" and "them" are heard, but who are "us" and who are "they"? What divides us and what unites us?

In the absence of a more presentable and complete definition of this, as a starting point for the defining it, we would take the self-description of an intellectual from Kosovo, which we will embody (name) as "intellectual X", as the most typical representative of those who make up the group, "we". He describes himself in the following,

" I am a secularist, I am not an atheist, the least in the communist sense of the word: I do not insult God, I do not insult anyone's religion, I express respect for everyone's faith. "But I have Western world views (at least that is what I claim) for society, for the secularism of the state, for the freedom of religion and belief, for religious ecumenism and everything else related to these." And "they", from the same person, can be described as, "...., Muslim believers, , regardless of whether you are a traditional Muslim, moderate or not, fundamentalist or not, Wahhabi or not, true believers or manipulated, preachers of the faith or propagandists of religious ideology."

But, if you ask where "they" are and where "we" are, you will find it very difficult to get an answer. The dividing line between these two groups can hardly be drawn unless in the spirit of scholasticism we would have said, if you could know where the salt separates from the seawater, then you would know where their dividing line is. It is difficult to know who "they" are and who "we" are, because even father and son, sister, and brother and cousins and relatives differ from each other. Who should we separate from? On what values will we debate, or even "fight" as some claim that should be done. On religious values, on ideological or perhaps cultural and philosophical ones. On national grounds, blood, no; both "they" and "we" are Albanians. On religious grounds, no, because at least for the most part Albanians do not declare themselves as atheists, but differ in the way they understand, interpret and apply religion. On the basis of classes by anyway not. Aside, people from the lower social classes, you see faculty professors, genuine intellectuals, distinguished students, businessmen and politicians who identify with "them", meaning is not a war of classes.

How can we explain the differences and the inter Albanian divisions, with an emphasis on those within the Muslim community, since there is no flow or influx of population from eastern countries towards the Western Balkan region especially not in the Albanian lands? Yes, the Balkans is a route but serves only as a passageway and not a destination of emigrants because they aim for the West. Hence, we cannot draw a reliable conclusion that the division is influenced by these movements. If the answer cannot be found in the migration of people who come from the East to live and work here, then another runway must be paved. Which is that?

We think that we should go back to where we started. The world is experiencing dramatic changes of different spheres and natures. Not that there have been no changes before, but to the common man they have been unknown. Today, thanks to Internet technologies and means of mass communication they are not only aware but also have the opportunity to experience even to take part in these changes. Ordinary people, intellectuals and politicians perceive and interpret these events in a partisan way. Their judgment of phenomena is influenced by many factors ranging from the level of information, type of knowledge, culture, and tradition in which they

grew up and formed their personalities to intellectual capacity. Their position in the social, economic, and political hierarchy, have a serious influence on the conclusions and actions they take to deal with this new situation. Namely, it suggests that the answer should be sought in globalization, which according to Friedman flattened the world and from small turned it into tiny¹⁴[14] . Globalization and total information, which came as a result of the development of technologies of mass communication, enabled contact, even virtually with other cultures and civilizations, including those with a dominating Muslim population. This imposes the need to seek the answer to the question, how are beliefs created about a phenomenon, culture or even religion with which it comes into contact?

Practice shows that each person in its own microcosmos where he lives and acts creates structures for its little world within the global one, which every day gets reduced more in size to match with the individual one. The boundaries of personal life today are almost identical to those of the global. As the perimeter of rational knowledge "grows", let it be even instrumental, the ends of the global world approach it creates the impression that not only the person knows it, discovers, and even understands it, but even that it controls and possesses it. But is that so? Rather, we can speak of a false imagination that distorts dioptrics of truth and transfers it into illusion in occasions even into schizophrenic ideologies.¹⁵ . How does such a distortion occur? According to Erich Fromm the human beliefs (convictions) and epistemological capacities are closely linked to the criteria on which the moral and ethical values of individuals are built¹⁶ . Consequently, information explosion, instead of expanding the boundaries of knowledge, dramatically only confronts it with more information that, often as a final effect, produces the belief that it has a lot of knowledge about phenomena, but in essence, it increases the individual's contact with the unknown. Being informed or possessing more sources of information does not automatically mean that you are more knowledgeable, perhaps even the opposite. As the size of information increases, the possibility of systematizing and methodologically processing the phenomena decreases, and instead of giving the necessary explanation, we sink into confusion that manifests itself in cataclysmic forms even in pathological moments. In this way two opposite sides of understanding these phenomena are created. One influenced by the East and the other by the West, which we defined as "we", the "Western orientation" and "them" the "Eastern orientation". For us this is the explanation of the division that occurs among Albanians. Given this, bearing in mind what we said in the first chapter, when we tried through some data to give a mirror of the occurring polarization in Europe as well as the possible risks from it, as a result of the migration of the population with non-European origin, in the next chapter we will try explaining in more detail what are the side effects of this polarization in the case of Albanians.

4 How real is the division, how much is it perception, confusion and how much is imaginary?

We started the debate in the chapter above with the questions; Who are "we" and who are "they"? Since the definition of the division of the population in the camps "us" and "them" based on the description of "intellectual X" is very broad through the statement on the "camps" definition, therefore in the further review we will address the two camps with capital letters like

"WE", and "THEY". After a more detailed elaboration of the definitions, we will note the smaller groups within them in small letters such as "we-1, we-2 ... we-n" and "they-1, they -2, they-n" so that we can make a distinction between these categories. We will then describe them more accurately so that we can define more concretely who belongs to one and who to the other subgroup. If "WE" was the group of people we described in the general definition, then by decomposing this we can create a series of subgroups that have more approximate (common) specifics, but which nevertheless belong to this broader group. Hence, within the group there can be people who are secular or even atheist who could constitute a subset of this group as "we-1"; while some others have insulted the religion that make up the group, "we-2"; there are those who have no respect for the faith like, "we-3"; there are those who are secular, but who are also believers in their way that could be grouped in "we-4". Such a string divided according to some of the most common characteristics can continue indefinitely like some of who are neither good believers nor good Albanians, belonging to a subgroup" we- (n-2); modernized and secular but also anti-Albanian, subgroup, "we" - (n-1); who curse religion, curse the nation, do not believe in the east and even less in the west, the subgroup, "we" - (n). The same division into subgroups applies to "THEY", like; "they-1", who are devout Muslims and perform all rituals but neither have beards nor cover themselves; "they-2", who are devout Muslims, have beards but are also good Albanians, ;in "they-3" those who are devout Muslims but also genuine intellectuals. The division into subgroups can continue indefinitely; in; "they- (n-2)", who are devout Muslims wear non-traditional moral clothing that do not divide religion and nation; in "they- (n-1)", who are Muslims in non-traditional clothing, moral, but religion for them is before the nation, and "they- (n)", who have the characteristics of their predecessors but who are able to die for their religion¹⁷ [17] .

So, as you can see, the line of subdivisions is drawn to infinity and I will make the mathematical string infinite, which in essence represents the Albanian people as a union of these two groups separated in infinity and mathematically expressed as; "THEY" U "WE" equation containing all the elements [we1, we2, we3, we (n-2), we (n-1), we (n), they1, they2, they3, they (n-2), they (n-1), they (n)] . Namely, every member of the Albanian people seen as an individual.

5 Conclusion

If we continually, subdivide (atomize) the groups according to their detailed features and specifications, we will reach to the conclusion that there is no division into "we" and "them," and even less into "WE" and "THEY", but there is only I, you, he, she, individuals that possess their own beliefs, personality, dignity, and personal ego. But how do we separate, or more specifically, how we self-perceive ourselves as representatives of one or the other group?

The additional explanation from the one we gave above is that; in the time of globalization and total information we face a “mountain” of unknown, which in many cases creates fear and anxiety to most of us when we need to make a decision. The human being as a rational one, makes an effort to narrow and define the information space to a size in which it will be able in a rational way to optimize the choices that it needs to make. How does this operation take place?

Having no opportunity to conceptualize and understand this space with so many unknowns, we begin to limit it by setting boundaries on "we", which can be an elite, caste, class, social stratum. The phenomenon in psychology is known as the confirmation of prejudice. How does this phenomenon work in practice?

The man of the age of globalization and total information spends hours on the Internet, TV, portals and newspapers that offer corpus of news and data as accurate but much more fabricated or false for propaganda purposes. From all that mountain of information in practice it happens to stop and select only those who confirm or reinforce his beliefs already formed about natural phenomena, society, philosophy or even religion¹⁸.

In this way the individual unconsciously places a shield, a "membrane", semi - permeable (semi-penetrable) that protects him from what he does not want to face. The intellectual and the non-intellectual even though is found in a sea of information, forms its own island, which separates it from others to communicate, function and confront opinions (thoughts). He already communicates and confronts ideas and opinions with only a "small" number of people who confirm or are similar to his beliefs. He has defined this group of people as "we", but he forgets that the group perceived as "we" can be one hundred, one thousand or even several tens of thousands of people, while outside the circle there can be millions or tens and hundreds of millions of people with thoughts about nature, the world, philosophy and religion that are not found in his frame of judgment which he sees as different from him, "they". Consciously or unconsciously, in an attempt to rationalize information chaos, it shifts from total information to "informative ghetto". The others that are outside these limits are, "they", that we do not know, we cannot understand, they are "they", therefore we do not want to have them in our focus as they can confuse our thinking. Beyond this close circle that we have defined as "we" there is something that connects us, identifies us with some of those outside of our us, which may be language, the meaning of the world that we have learned from the same educational source, on which characteristic we draw a wider circle, "WE". But there are also "they" who have another element of identification that is supported by a larger number of the population beyond their group, which comes as a result of another source of their formation, which may be religious identification and together form the wider circle that we called "THEY". So, this division into "us" and "they" is nothing but the tendency to rationalize the fear of the unknown that constantly increases the scope of action and spreads as a result of the information eruption¹⁹.

The risk of division?

What is the concern here? Any attempt to merge, unify or identify my personal "I" with a collective subject, "we", or even more generally with "WE", and the "I" of the other with "they" , or "THEY", does nothing for the individual except trying to compensate its horror (fear) of personal freedom with a stronger identification, group, class, crowd, where it seeks support. We cannot ignore the fact that anyone, can and should be identified with his personal, intellectual,

social, moral and educational characteristics that influence and distinguish him from others. Which means, in essence, we cannot have groups, or, we will have as many groups as there is population, individuals which make up a society, in our case, all Albanians individually one by one make up the nation. Where does the danger lie? The fact that we failed to give a basic definition of who "they" are and who "we" are, but much more accurately we can talk about I, you, he, she, tells a lot. It is as if it puts into question the widely known quote of Kant; every human being is a world in itself, a purpose in itself, therefore no one has the right to use it for any purpose no matter how noble it may be. If in this principle lies the philosophical basis of liberalism for the anthropocentric man where the individual is in the center of attention, any attempt to divide them into "WE" and "THEY" or even into "us" and "they", where the former evaluate that they are called upon to make them as their own, even with good intentions, if it is not done with the free will of the individual, there is a serious problem with Mill . Namely, it is against the basic value of liberalism. Even a more dangerous issue that raises concern is the call of the author for war, "to be or not to be", as can be understood from the writing in question. When my "I", transforms into "we", especially in "WE", a nation that makes a nationalist, the "WE", the people who makes a populist, especially when identifying " THEY", as fanatical believers, religious extremist, we have lost our individuality. At that moment I, you, he, she, cease to exist as individuals, because we immerse ourselves in the crowd, where as the psychology of the crowd explains the first thing that dies is reason. Then we are not guided by our free will, but the crowd leads us. It is not I, you, he, she who decides what ideal and idea we sacrifice for, but the crowd. At that point we are not guided by our free will, but the crowd leads us. It is not I, you, he, she, deciding for what ideal and idea we sacrifice but the crowd. Therefore, it does not matter at all whether the "I" who has been transferred to "WE" will die for the nation, the people, or "he", transferred to "THEY", will die for the religion, God the important thing is that we do not make the decision for it from the Kantian "I" of pure reason. Neither "I" nor "he" will make this sacrifice by free will but will do this or that action, since the "I" has lost its personal freedom, and the "I" has become a slave to an ideal or illusion that is not its selves. Namely while being free, I put the shackles of captivity (slavery). When we have reached this stage, we have all become slaves, we have all become equal in our self-denial, there is none; I, you, he, she and neither "we" and "they". At that moment, the rational man dies. If I have lost my freedom and become a slave, to find inner (spiritual-mental) peace by escaping from freedom through the rationalization of fear by entering into the captivity (slavery) of the community, it does not matter if the one who owns it has the name nation, people, party, ideology or God. The important thing is that from the purpose itself you have become a tool. A genuine liberal does not tolerate and does not justify this.

REFERENCES

- [1] Ahmet Davutoogllulu, "Küresel Bunalım 11 Eylül Komuşmaları, Küre Yayınları, İstanbul, 2002, Albanian translation, "Global Crisis, Debate around 9/11, Logos-A, Skopje 2009.
- [2] Mehmet Kraja, authorial writing, "A letter to the Muslims of Facebook", 8th of July 2016, source: <https://ekonomiaonline.com/opinione/leter-myslimaneve-te-facebook-ut/>
- [3] The author of the text does not explicitly use the division into "we" and "they" but clearly alludes to it and we evaluate that we can treat it as such.
- [4] Anthony Giddens, "Europe in the Global Age", 2007, Serbian translation "Europe in the Global World", Clio, Belgrade, 2009.
- [5] Erich Fromm, "Man for Self, Traces in the Psychology of Ethics", Phoenix, 2003.
- [6] Paul Berman, "Terror and Liberalism" (2004), Macedonian translation, "Terror and Liberalism", (2005), Euro-Balkan Press, Skopje.
- [7] Rizvan Sulejmani, "Globalization and Albanian Identity- How We Were Divided into "Us" and "They"?"
- [8] European Commission, "Global Europe 2050", 2012, pag.133
- [9] Samuel P. Huntington, "The Clash of Civilizations and the Remaking of World Order", translation, Serbian, "Sukob Civilizacija - i prilikovanje svetskog poretka", 2000, CID, Podgorica.
- [10] Thomas L. Friedman, "The World Is Flat - A Brief History Of The Twenty - First - Century", America, 2005.
- [11] Zbigniew Brzezinski, "The choice - global domination or global leadership", Basic Books, New York, 2004.
- [12] For more see, Rizvan Sulejmani, "Brexit dhe e ardhmja e Ballkanit"-translation "Brexit and the future of the Balkans", Shenja, Skopje, August, 2016
- [13] Victoria Prego, President of the Madrid Press Association, Informative bubbles, Source: <https://www.uno-magazine.com/number-27/informative-bubbles/>

Thermal bridges as a problem toward energy efficiency and sustainable architecture, their inadequate application in the construction of individual residential buildings in the Republic of Northern Macedonia

Valmir Dalipi M.Arch.

Faculty of Civil Engineering and Architecture, University Mother Teresa, Skopje, North Macedonia,

valmir.dalipi@unt.edu.mk

Abstract

Nowadays we are confronted with high air pollution in many regions of the Republic of Northern Macedonia, especially during the winter season. A large percentage of air pollution is caused by the energy inefficiency of buildings and the heating needs to fulfill their function, with the emphasis on individual residential buildings.

In this scientific paper we will study the problem of energy efficiency and architectural sustainability in individual residential buildings, treating thermal bridges and their inadequate realization as one of the main problems in construction towards energy efficiency and living comfort at the same time. The paper will show the details of thermal bridges, their inappropriate implementation during the construction of individual residential buildings and their impact on the building envelope, thermal comfort and energy efficiency.

The study is based on important construction details such as foundations, terraces, balconies, flat and pitched roofs, which the author collected during a five-year work with design and supervision in the realization of individual residential buildings.

Correcting the proper implementation details of thermal bridges allows to improve the energy efficiency of individual residential buildings in the Northern Republic of Macedonia and also to follow the objectives of the EU directives on energy efficiency.

Keywords: *Energy Efficiency; Thermal Bridges; Sustainable Architecture; Building Envelope; Thermal Insulation; Individual residential buildings.*

1. Introduction

Based on the Building Energy Performance Directive (EPBD), buildings are responsible for approximately 40% of EU energy consumption and 36% of the greenhouse gas emissions. Buildings are therefore the single largest energy consumer in Europe. At present, about 35% of the EU's buildings are over 50 years old and almost 75% of the building stock is energy inefficient. At the same time, only about 1% of the building stock is renovated each year [1]. Northern Republic of Macedonia as a candidate country in EU, should follow the path of EPBD directives towards a low and zero-emission building stock in the EU by 2050.

According to the set of rules for energy properties of buildings in Northern Republic of Macedonia and scope method for determining the energy performance of buildings, one of the main principles for the design of passive houses, NZEB (near zero energy buildings) and sustainable architecture is the building envelope [2].

In recent years, we are seeing a more serious approach to the envelope of the building with thermal insulation materials (of any kind), especially after the introduction of the regulation on the energy efficiency of buildings [2]. However, although we try to meet the minimum conditions of thermal conductivity through thermal insulation, there are still many shortcomings in the sector and during the realization of the same, which prevent the building from achieving high energy efficiency. One of the main factors that enable this energy inefficiency are the thermal bridges that appear in the building envelope. Thermal bridges are the places, the constructive details, non-well insulated areas of an object, where we have a flow of energy from the heated (indoor) environment to the cold (outdoor).

Recent research has shown that thermal bridges can be responsible for up to 30% of a dwelling's heat loss, and with this finding we can make a lot of correlations with the above information. The more thermal bridges in the building envelope, the higher the demand and the energy consumption, the more we move away from the main objectives of low energy efficiency, NZEB, passive and sustainable architecture of buildings. However, the most important thing is the increase in operating costs over the lifetime of the building.

In NRM individual buildings and the way they are heated during the winter season causes a lot of air pollution and high energy consumption. This can be seen not only in buildings, which are mostly old and without insulated envelopes, but also in newly built individual houses, thermal bridges play an important role in this problem that occur during the realization of the same. In this research we will show the most important characteristic details of individual residential buildings that were built in non-compliance with the rigorous standards for high energy efficiency, and at the same time we will compare how they are built and how they should be built, with a focus on thermal bridges and their thermal insulation. We will explain the research by using technical drawings in which significant errors occur.

2. Purpose of the study

The purpose of this paper is to correct mistakes in individual residential buildings in NRM, where errors occur during construction and implementation due to non-compliance with the rules for designing buildings with high energy efficiency.

The correction of these errors, which are pronounced in both new and old buildings, will improve energy efficiency, reduce energy consumption (regardless of the energy we consume), maintain safe the construction of the building, its longevity and the health of the residents who use it.

Another element of this paper is to raise the awareness of the different actors involved in the process of design and implementing these installations, be they engineers or architects, because even if the same investments are made, they are not properly implemented.

3. Research methods

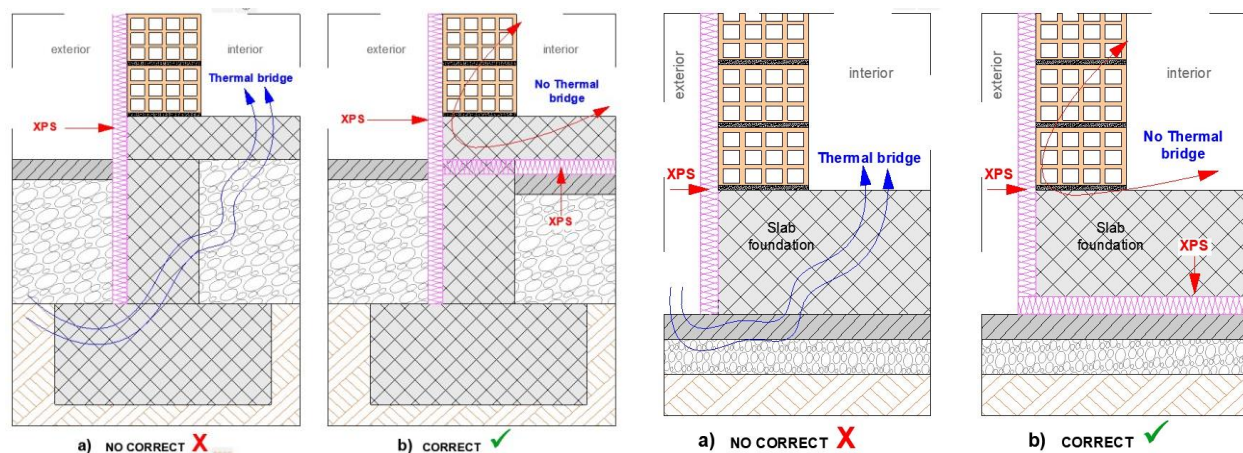
The methods that were used to reach a conclusion on how to achieve energy efficiency, durability, minimization of thermal bridges, prevention of mold growth and cost reductions in building maintenance are theoretical and empirical experiences, which will be described in detail in the following paper on the basis of the NRM regulations for energy efficiency [2] in comparison with the EPBD, the energy saving and thermal insulation standards of Austria [3] and the Swiss standards SIA 380/1 [4].

The research is divided into two parts as follows:

3.1 Inadequate application, errors in the construction and installation of thermal insulation.

3.2 Thermal bridges, thermal insulation in comparison with the above mentioned norms and standards of other countries.

3.1 Inadequate application, errors in the construction and installation of thermal insulation. In most individual houses, thermal bridges occur due to insufficient application of thermal insulation during the construction phase or during the installation of the facade. These errors are caused by a lack of understanding of how sensitive the inner environment of the building is when we make the wrong choice and have many thermal bridges in the building envelope. Below with construction detail figures the most characteristic mistakes are explained, which are repeated in every house from the foundation, terraces to the roof, if it is sloped or flat. We will also explain how it should be.



I) Strip foundation insulation

II) Slab foundation insulation

Figure 1: Type of errors made during installation of thermal insulation in strip and slab foundations

Most of the thermal insulation errors occurred in foundation, which are mostly used in NRM for individual residential buildings, are above (Figure 1). In the strip foundation (I), the foundation should be connected to the underfloor insulation to completely avoid thermal bridges. In the slab foundation (II) the thermal insulation should also be connected as in the strip foundation.

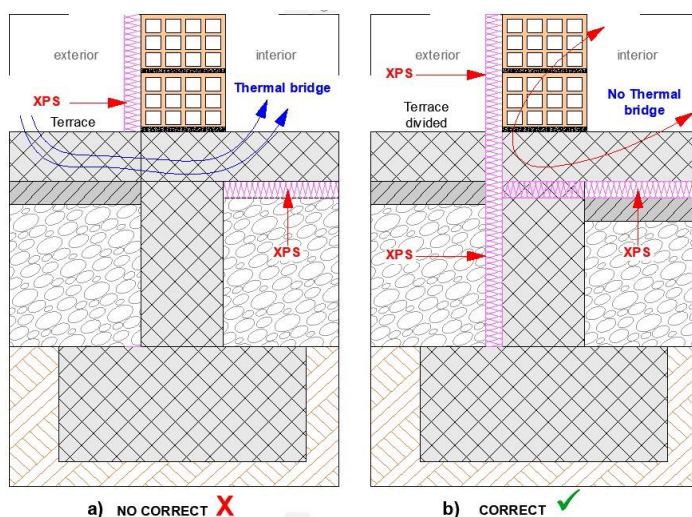


Figure 2: Connection of the outdoor terraces with strip or slab foundations

Terraces in the ground floor as part of the building structure should have continuous thermal insulation or be separated from the structure (Figure 2), and with this choice thermal bridges cannot penetrate the building from the terrace slab.

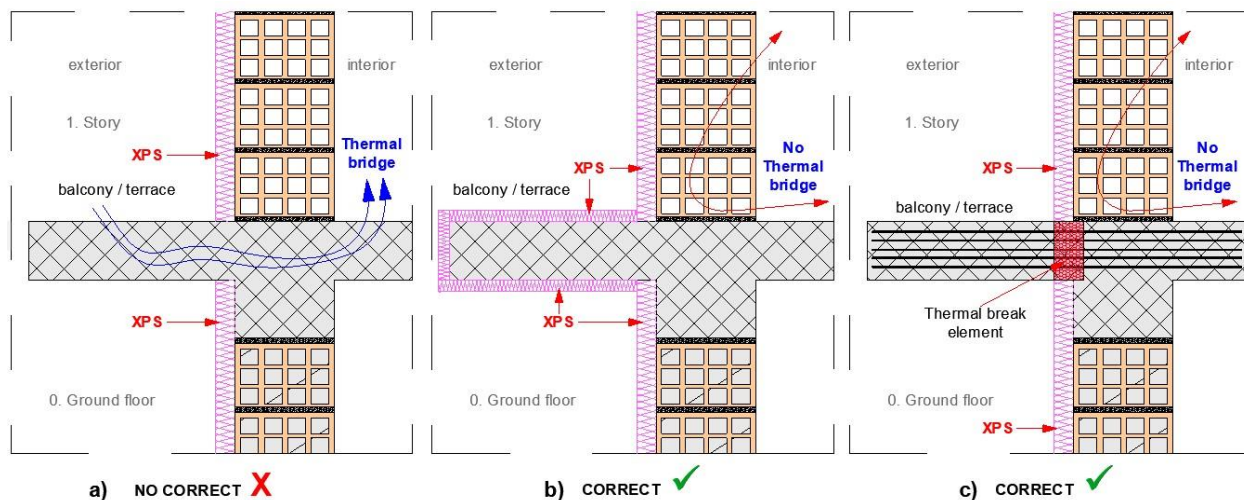


Figure 3: Thermal bridges caused by incorrect installation of thermal insulation in terraces and balconies

The insulation of terraces and balconies on the floors (figure 2) where they are connected to the outer wall of the façade creates thermal bridges that penetrate into the inner floor slabs where mould and moisture occur. There are numerous solutions, two of which are shown above, where (b) we have a complete insulation of the balcony or terrace and (c) where we have a partition with prefabricated elements between the thermal bridge with insulation, but they are not preferred because of the seismic region where we are found.

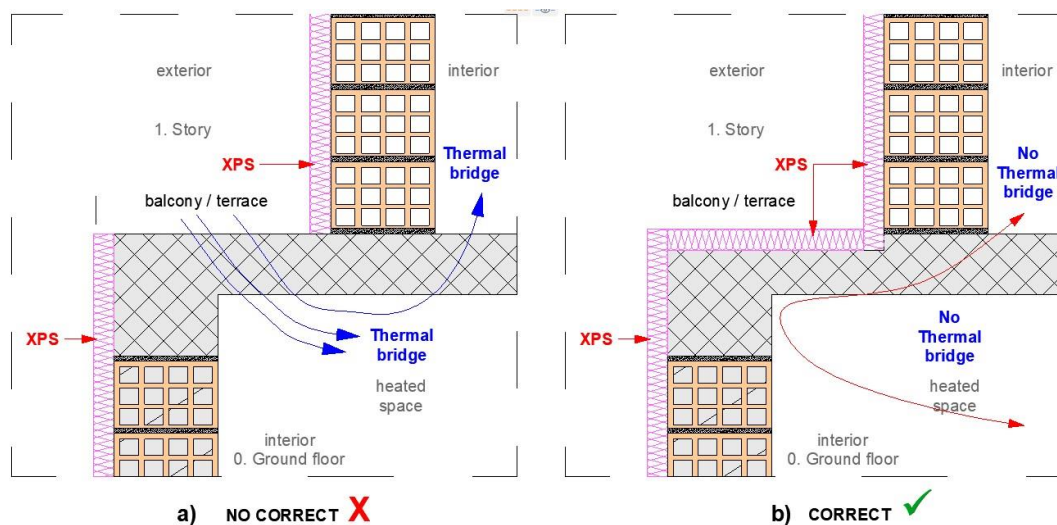


Figure 4: Thermal bridges over heated rooms, balconies and terraces

One of the most common mistaken realizations is the non-insulation of balconies and terraces on heated spaces Figure (4), is one of the largest thermal bridges in individual residential buildings,

which allows a large flow of energy. The correct solution is to cover each above or below the heated room with thermal insulation (b).

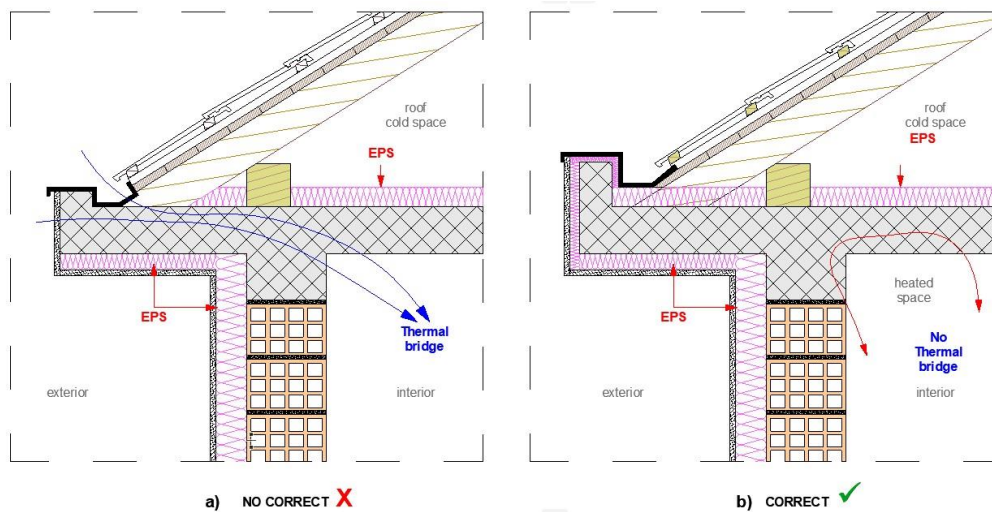


Figure 5: Thermal bridges that occur during the realization of pitched roofs on the reinforced concrete slab

The roof is one of the main elements of the building, where the thermal bridges are more pronounced. This is because the heat always tends to reach its maximum height and the largest amount of it is accumulated in the roof. The completion of the roof at its edges always causes problems due to lack of insulation (Figure 5), the right choice is that the envelope of it should be insulated like the example above (Figure 5, b)).

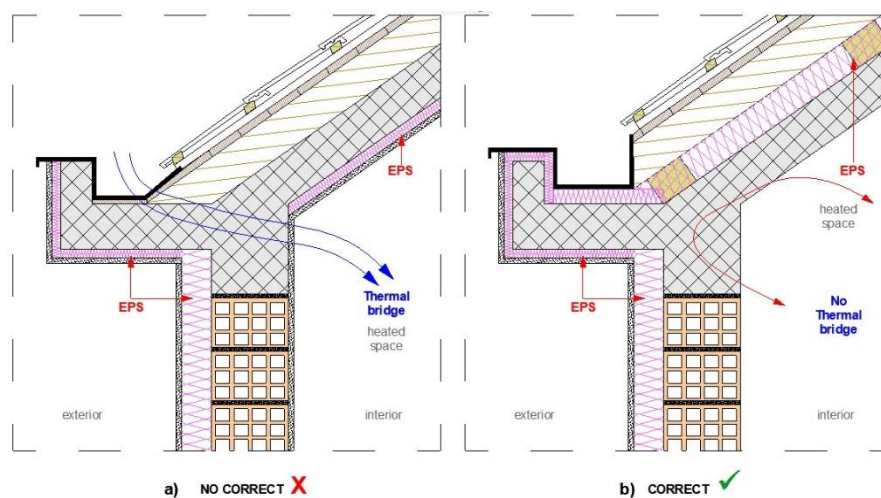


Figure 6: Thermal bridges on roofs with sloping reinforced concrete slabs

One of the roof solutions most often used in recent years for individual residential buildings (Figure 6), in these roofs we have large appearances of thermal bridges, most of it in with mold presence, which makes the internal environment uncomfortable. A significant shortcoming is the placement of thermal insulation XPS (a), under the reinforced concrete slab, which is not preferred as a material for indoor environment, at the same time it is unnecessary during construction.

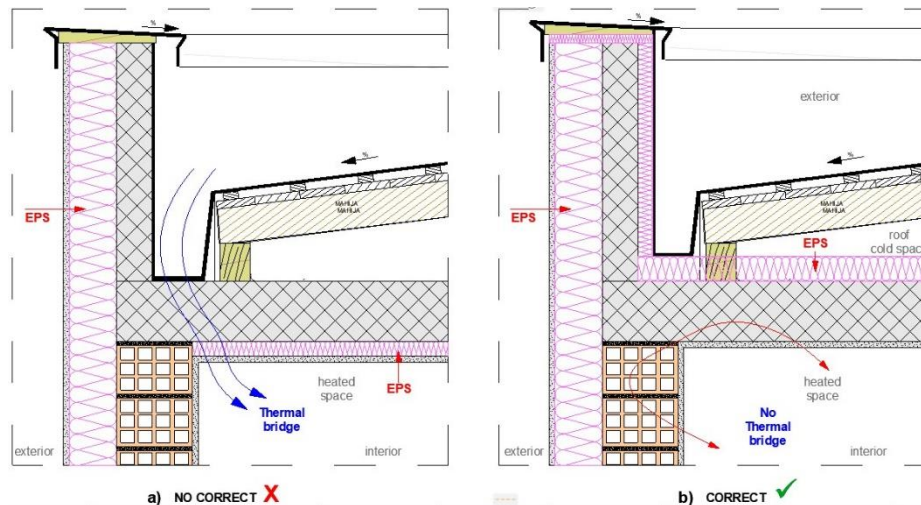


Figure 7: Thermal bridges in the attics of flat roofs

Attics (Figure 7) on the so-called flat roofs (because they have a slight slope with wooden structure covered with sheet metal), the same as on the sloping roofs above, we have a large concentration of heat in the interior, due thermal bridges we have a high degree of energy loss, which is due to improper placement of thermal insulation (a), the correct way of placement should be as presented in solution (b), which allows complete insulation of the roof and part of the attic. Do not be confused, all the above examples used in the realization of individual residential buildings in RMV are taken from the field and in all of them is placed the right solution how to install thermal insulation based on what is built in the buildings.

3.2 Thermal bridges, thermal insulation in comparison with the above mentioned norms and standards of other countries.

Above (3.1) we showed the examples, where errors with thermal bridges were made during the realization in individual residential buildings in the NRM and how these buildings should be built. All above details in which the thermal bridges are shown are of the type of non-repetitive thermal bridges, they are not shown in the whole building envelope, but only in some important

parts of the construction of the building. It has been estimated from various studies that non-repetitive thermal bridges account for about 30% of the heat loss in a typical house.

In almost all new individual residential buildings from the analyzed cases the thickness of the facade, whether EPS or XPS with a thermal conductivity $\lambda=0.040$ W/mK value and composite from classic masonry blocks with plastering on both sides, varies by 10 cm, in rare cases it exceeds 12 cm. From these data, we will continue to calculate the NRM standards for the external envelope of the façade using the comparative method in with Swiss SIA [4] standards and Austrian OIB standards [3], as well as the equivalent thermal insulation thickness required to maintain the thermal transmission coefficient ($U=W/m^2K$).

Table 1. Comparison of the thermal insulation used on the basis of compliance with the energy efficiency regulations of the respective countries.

Standards	Exterior wall against outside air, $U=W/m^2K$ value required	Thermal conductivity of EPS $\lambda=0.040$ W/mK	Thermal insulation required approximately $d= \lambda/U$	Mainly used thermal insulation thicknesses (d), varies from (λ) of material
SIA (Swiss)	0.20	$\lambda=0.040$	20 cm	> 20 cm
OIB (Austria)	0.35	$\lambda=0.040$	12 cm	> 14 cm
REF (NRM)	0.35	$\lambda=0.040$	12 cm	10-12 cm

So if we take a look at the table (Table 1) we can see that, according to the energy efficiency regulations, thermal bridges give us the minimum thickness that we must use for a given building element, in this case the external walls of the façade.

In countries such as Switzerland and Austria, the thickness of thermal insulation even if used to a minimum to meet the condition U (Thermal Transmission Coefficient) according to the relevant standards, it will not be a problem because in most cases we have continuity of thermal insulation in all building envelope and considerable attention to avoid non-repetitive thermal bridges. Although we always have a large amount of thickness placement of the thermal insulation layer on the building envelope, which not only meets the condition U, but can be considered as NZEB (nearly zero energy building).

In NRM or in the examples shown above for individual residential buildings, as well as according to the table (Table 1), we can see that the energy losses are very high, and this is due to:

- 1.) Non-repetitive thermal bridges and
- 2). The low thickness of the thermal insulation used in building envelope.

So, if in our case for an building envelope is required to achieve a minimum thickness of thermal insulation in a classic block composite with plastering, even if it is 12 cm according (Table 1) is still insufficient, because here if we add non-repetitive thermal bridges in buildings that are involved with about 30%, then the thermal insulation of buildings will actually be around 8 cm, which does not meet the condition U (Thermal Transmittance Coefficient) according to the regulation for buildings with energy efficiency of NRM.

4. Findings and results

Even if we consider in this paper that we respect the NRM's energy efficiency regulations in terms of design and implementation of each residential building, by providing the building envelope with thermal insulation thickness that meets the defined condition U, we conclude that it is not sufficient to achieve that because the building has low energy efficiency without eliminating non-repetitive thermal bridges during the construction of a building.

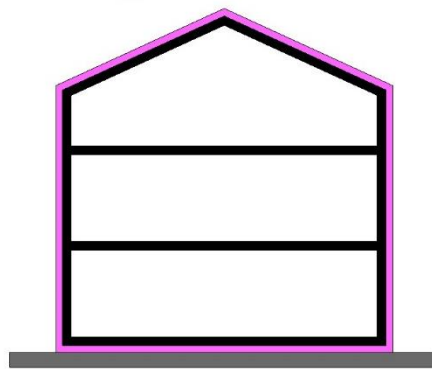


Figure 8: Continuous, uninterrupted thermal insulation in the entire building envelope

The examples analyzed above, where we have errors in the installation of thermal insulation, lead us to the solution that in individual residential buildings in most cases the correct building envelope is not provided, which eliminates all non-repetitive thermal bridges in the construction.

Regardless of what type of building and construction we have, whether it is a flat roof, a pitched roof, whether it is made of wood, concrete, brick, with terraces, cantilevers, etc, in each case must be found the right way of continuous, un-interrupted thermal insulation (Figure 8) in the entire envelope of the building to minimize all undesirable side effects.

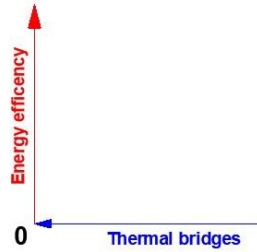


Figure 9: The relationship between the energy efficiency of the building and non-repetitive thermal bridges

In order to achieve the required parameters according to the standards and regulations, the energy efficiency of buildings must be in inverse proportion to the thermal bridges in general and to the non-repetitive thermal bridges that we treat above, which means that the thermal bridges between the different constructions must be minimized, which means that the more the energy efficiency and the comfort, of the building increase.

5. Conclusions and recommendations

The individual residential buildings in the NRM must be properly composed, regardless of the different materials and structures of which they are made, especially when the envelope is in contact with the external environment. Defects that occur in the building envelope, especially the facade and its inadequate insulation which create opportunities for the appearance of thermal bridges have a very negative impact on the construction of the building and mainly during the winter season, when we have a large presence of mold inside the building, especially in places where we have the penetration of cold air from the outside to the inside.

The comfort of the object is significantly reduced by the presence of mold and moisture, both from the health aspect and from the visual point of view, where the objects show themselves from the beginning of their use. The use of inappropriate materials inside the building with polymer composition such as XPS is another negative factor as it affects the health of the users and is only recommended for use outside the building.

In view of all these shortcomings, we are moving away from the guidelines for energy efficiency and sustainable architecture of buildings, while at the same time contributing to environmental pollution, since most buildings are heated with wood, where non-compact insulation requires more heating energy and in this case more emission of smoke from the chimneys of each residential building into the atmosphere.

If we follow the principles of compact insulation of the building and thermal bridges, we will make a great contribution to the living environment, where we will not only achieve better energy efficiency, but also have very durable constructive structures and better living comfort.

References

- [1] European Commission (16 May 2019), Energy Performance of buildings directive, Facts and figures, retrieved in 11.2020 from https://ec.europa.eu/energy/topics/energy-efficiency/energy-efficient-buildings/energy-performance-buildings-directive_en
- [2] („Службен весник на Република Македонија” бр. 16/2011, 136/2011 и 79/2013), Правилник За енергетски карактеристики На зградите , Skopje 4 July 2013
- [3] Österreichisches Institut für Bautechnik, OIB-Richtlinie 6, Energieeinsparung und Wärmeschutz, Edition: October 2011. Retrived in 11.2020 from https://www.oib.or.at/sites/default/files/rl6_061011_2.pdf
- [4] SIA 380/1, Thermische Energie im Hochbau, 2009. Retrived in 11.2020 from: https://www.energie-zentralschweiz.ch/fileadmin/user_upload/Downloads/Energienachweise/10_KursunterlagenEinfuehrung380_1.pdf

Le principe de subsidiarité dans la sécurité sociale - aspects normatifs, sociaux et politiques

Abdulah Ahmedi, PhD (Suisse)

E-mail : Abdulah.Ahmedi64@gmail.com

Abstrait

Conçu comme une contribution du principe de subsidiarité à la sécurité sociale, ce thème analyse l'état actuel des législations aux niveaux international, européen et national. En proposant plusieurs pistes de réflexion sur l'avenir de l'Etat social et sur une cohésion sociale, et le rôle du principe de subsidiarité à ce jour. Dans sa généralité, la subsidiarité consiste «à laisser agir, autant que possible, les particuliers ou les petits groupes et à n'admettre l'intervention de collectivités plus grandes - celle de l'Etat ou d'une communauté des Etats - que si les particuliers ou les petits groupes ne peuvent pas donner de réponse satisfaisante aux problèmes qui leur sont posés»?. L'intervention de collectivités plus grandes, de l'Etat ou d'une communauté des Etats ne vient qu'après les particuliers ou petits groupes; C'est dans ce sens qu'elle est «subsidaire».

Mots clés : *Subsidiarité- Etat-Social-Sécurité -Sociale -Droit - International- Européen - Suisse-Macédoine du Nord*

1. Introduction

Ce travail concerne le principe de subsidiarité à la sécurité sociale, et son rôle aux niveaux international, européen et national, en mettant au centre l'activité de l'individu. Il est judicieux de souligner que le maxime « aide toi-même ''sinon'' personne ne t'aidera » met le principe de subsidiarité au centre d'attention dans les Etats-providence encore plus forts comme ceux de l'Union européenne et de la Suisse. Nous allons faire quelques réflexions sur l'Etat-providence et la crise qu'il traverse à l'époque du Covid-19. De même, nous allons mettre l'accent sur la nécessité d'ouverture de l'État-providence envers la société civile, les associations caritatives, les associations religieuses et l'aide de la famille face à l'épidémie mondiale du Covid-19. Ainsi, nous allons réaliser un développement et une cohésion sociale durable.

2. Un système complexe, subsidiarité et coordination

La sécurité sociale est une construction humaine élaborée sur la base d'une définition conventionnelle des risques sociaux. De même c'est un héritage de l'histoire d'un système complexe. La convention n°102 OIT 1952 constitue une référence et adopte une « norme minimum » de sécurité sociale et de manière explicite définit neuf éventualités ; soins médicaux, maladie, maternité, vieillesse, invalidité, survivants, accidents de travail, chômage, charges familiales. Concernant l'assistance sociale elle fait partie de la sécurité sociale. Dans le contexte de la sécurité sociale, le principe de subsidiarité joue un rôle de coordination entre la sécurité sociale et de l'assistance sociale. L'assistance sociale reste toujours subsidiaire face à une ressource financière.

3. Droit international et subsidiarité

Le droit international oblige les Etats d'agir sous le principe de subsidiarité en respectant les engagements pris face du droit international. Ainsi, l'art. 2 du Pacte social 1967 de l'ONU impose le devoir aux Etats membres de l'ONU de prendre «en épuisant toutes ses possibilités, des mesures permettant d'assurer progressivement le plein exercice des droits économiques, sociaux et culturels». Tandis que l'art. 11 du Pacte social de l'ONU garantie le droit de toute personne à un niveau de vie suffisant ainsi qu'à une amélioration constante de ses conditions d'existence.

4. Droit européen et principe de subsidiarité

L'art. 1 TUE vise « Une union (...) plus étroite entre les peuples de l'Europe, dans laquelle les décisions sont prises dans le plus grand respect possible du principe d'ouverture et le plus près possible des citoyens ». Tandis que l'art. 5 TUE envisage l'application du principe de subsidiarité. Le principe de subsidiarité n'est pas applicable dans les domaines qui relèvent les Compétences exclusives de l'UE (art. 3 TFUE) ; Union douanière ; Règles de concurrence nécessaires au fonctionnement du marché intérieur ; Politique monétaire pour les Etats membres dont la monnaie est l'euro ; Conservation des ressources biologiques de la mer dans le cadre de la politique commune de la pêche ; Politique commerciale commune. Par contre, le principe de subsidiarité s'applique dans les domaines qui relèvent les Compétences

partagées (art. 4 TFUE) ; Marché intérieur ; Politique sociale pour les aspects définis dans le présent traité, cohésion économique, sociale et territoriale; Agriculture et la pêche, à l'exclusion de la conservation des ressources biologiques de la mer ; Environnement ; Protection des consommateurs ; Transports ; Réseaux transeuropéens ; Energie ; Espace de liberté, de sécurité et de justice ; Enjeux communs de sécurité en matière de santé publique, pour aspects définis dans le présent traité.

a). La subsidiarité à l'européenne – Une Union de plus en plus étroite ? Non, merci !

L'art. 5, al. 2 Traité sur l'Union européenne stipule que «Dans les domaines qui ne relèvent pas de sa compétence exclusive, la Communauté n'agit selon le principe de la subsidiarité que lorsque et dans la mesure où les objectifs des mesures envisagées ne peuvent pas être atteints suffisamment à l'échelon des Etats membres et qui dès lors, en raison de leur ampleur ou de leurs effets, peuvent être mieux atteints à l'échelon de la Communauté». L'Union Européenne agit, selon le principe de subsidiarité que dans les domaines qui relèvent des compétences partagées, et si les mesures envisagées peuvent atteindre mieux les objectifs au niveau de l'UE.

b). La subsidiarité à l'européenne – Une Union de plus en plus étroite ? Non, merci!

L'art. 5, al. 3 Traité sur l'Union européenne précise qu' «En vertu du principe de subsidiarité, dans les domaines qui ne relèvent pas de sa compétence exclusive, l'Union intervient seulement si, et dans la mesure où, les objectifs de l'action envisagée ne peuvent pas être atteints de manière suffisante par les États membres, tant au niveau central qu'au niveau régional et local, mais peuvent l'être mieux, en raison des dimensions ou des effets de l'action envisagée, au niveau de l'Union». Aux termes de l'article 5, al. 3, du traité UE, l'intervention des institutions de l'Union au nom du principe de subsidiarité présuppose que soient réunies trois conditions :

- a) il ne doit pas s'agir d'un domaine relevant de la compétence exclusive de l'Union (compétence non exclusive);
- b) les objectifs de l'action envisagée ne peuvent pas être atteints d'une manière suffisante par les États membres (nécessité);
- c) l'action peut être mieux réalisée, en raison de ses dimensions ou de ses effets, par une intervention de l'Union (valeur ajoutée).

c). La subsidiarité à l'européenne – Une Union de plus en plus étroite ? Non, merci !

Nous dressons un Procès-verbal sur le principe de subsidiarité qui permet de comprendre le rôle qui joue le principe de subsidiarité lorsqu'il s'agit du processus de la prise de décision, ci-après: Décisions prises proches des citoyens; Justification de chaque projet sous l'angle du respect de la subsidiarité; Consultations et auditions des parlements nationaux avant les projets législatifs européens; Prise en considération des prises de position des parlements européens ; Possibilité de porter plainte devant la Cour de Justice de l'Union européenne (CJUE); La Cour de justice de l'UE est compétente pour se prononcer sur les allégations formulées par un Etat membre ou transmises par celui-ci, conformément à son ordre juridique, au nom de son parlement national.

5. Les compétences de l'UE et Covid-19

Voici les dix choses que fait l'UE pour lutter contre la Covid-19, et ceci dans les domaines de compétences partagées (fig. 1) ; Soutenir la relance économique de l'UE; Coordonner les mesures relatives aux déplacements; Ralentir la propagation du virus; Promouvoir un vaccin contre la Covid-19; Soutenir les systèmes de santé de l'UE; Protéger l'emploi (instrument pour chômage); Aider les pays de l'UE à financer leur réaction face à la Covid-19; Stimuler la solidarité européenne; Soutenir les secteurs économiques les plus touchés (mesures pour agriculture et pêches); Soutenir ses partenaires dans le monde entier.



Figure 1 : Dix choses que fait l'UE pour lutter contre la Covid-19

6. La subsidiarité en droit national

Nous pouvons confirmer que le principe de subsidiarité est un droit normatif. Nous allons évoquer deux Etats comme exemples : Dans le cas de la Suisse, l'article 12 de la Constitution suisse garantit le droit de minimum vital. Tandis que l'art. 5a Constitution suisse précise que l'attribution et l'accomplissement des tâches étatiques se fondent sur le principe de la subsidiarité. Dans le cas de Macédoine du Nord l'art. 15 de la loi modifiée 2019 de la sécurité sociale préconise le principe de subsidiarité.

7. La subsidiarité en droit Suisse

Tout d'abord le principe «Aide-moi toi-même, sinon, personne ne t'aidera!». En conséquence, la Confédération et les Cantons s'engagent, en complément de la responsabilité individuelle et de l'initiative privée, à ce que toute personne bénéficie de la sécurité sociale (art. 41 Constitution). Et, l'art. 5a Constitution que l'accomplissement des tâches étatiques se fondent sur le principe de la subsidiarité. L'art. 12 Constitution suisse stipule que « Quiconque est dans une situation de détresse et n'est pas en mesure de subvenir à son entretien a le droit d'être aidé et assisté et de recevoir les moyens indispensables pour mener une existence conforme à la dignité humaine ». Donc, l'aide sociale est subsidiaire et le droit à l'aide sociale n'est pas ex-officio. De même, l'assistance ne dépend pas des causes de l'indigence.

8. La subsidiarité en droit Macédoine du Nord

Article 15 de la Loi modifiée 2019 de sécurité sociale stipule que «la personne qui n'arrive pas à subvenir à ses besoins par son propre travail, par les droits découlant du travail ou de

l'assurance, de biens, d'autres ressources, de personnes obligées par la loi à la soutenir ou autrement, a droit à la sécurité sociale ». Sous conditions suivantes, la personne pour avoir le droit à l'assistance sociale, doit prouver qu'elle n'est pas bénéficiaire ou propriétaire: d'une compensation d'une assurance sociale; d'une fortune ou des biens; d'un revenu de son activité; d'une autre ressource quelconque! Nous pouvons souligner que l'aide sociale est subsidiaire vis-à-vis d'une ressource financière quelconque.

9. Subsidiarité et Etat-providence actif

Entre les années 1940 et 2000, avec l'industrialisation, pour permettre le libéralisme économique et le besoin de protection sociale des travailleurs, un Etat-providence, protecteur, a été mis en place, d'abord avec les assurances sociales (fig. 2). Si on remplissait les conditions des assurances, en cas de problème on recevait de l'argent sans rien devoir en échange, une standardisation des prestations (c'était rentable, croissance économique). Aujourd'hui, on est passé de l'Etat-providence à l'Etat social actif, nous avons une responsabilité individuelle. Solidarité contre Responsabilité, je bénéficie de la solidarité de l'Etat social, je suis responsable d'utiliser les outils proposés pour créer mon projet d'insertion professionnelle, ex : retraités, chômeurs.



Figure 2 : Etat providence rentable et la croissance économique

10. Subsidiarité au sein de la sécurité sociale face à la mondialisation

A la fin du XIXème siècle, avec la mondialisation, ce n'est plus rentable pour l'Etat et il doit encourager la réinsertion des personnes bénéficiaires de la sécurité sociale dans le marché du travail, la sécurité sociale devient un moyen ! Le but des politiques sociales devient donc d'investir dans la capacité des personnes à être responsable et autonome. Investissement pour leur activation, l'individu acteur au sein de l'Etat social actif (chômeurs). Ainsi, aujourd'hui en Europe, il n'y a pas que les personnes qui ont besoin d'une fin de vie paisible qui reçoivent uniquement de l'argent, les retraités. (Fig. 3)



Figure 3 : Un Etat social actif, fini la belle vie

11. Etat social, l'Epidémie Covid-19 et Subsidiarité

Un État-providence que nous avons espéré et sur lequel nous comptons dans les années 80 a été mis à l'épreuve devant le Covid-19 (Fig. 4) et a joué un rôle très latent. Nous constatons qu'un État-providence morose à l'époque du Covid-19 a été remplacé par la société civile et la famille. Un État-providence avec un rôle subsidiaire et un rôle très actif joué par la société civile et la famille, une solidarité avec leurs plus proches les parents et les personnes âgées en premier lieu. Aujourd'hui, nous avons besoin d'une société solidaire et ouverte vis-à-vis des associations, la société civile, les œuvres caritatives et religieuses et d'une cohésion sociale avec la participation active de tous les acteurs sociaux.



Figure 4 : Etat social et lieu du départ de virus du Covid-19

12. Conclusions

Le principe de subsidiarité permet une activité plus proche de la société et une cohésion sociale, il joue un rôle de coordination entre la sécurité sociale et l'assistance sociale. Au niveau international la convention n°102 de l'OIT reconnaît neuf éventualités et le reconnaît à la sécurité sociale une complexité en soi. Le pacte 1967 de l'ONU préconise aux Etats de garantir les droits sociaux-économiques-culturelles et un niveau de vie suffisant et amélioration les conditions d'existence (subsidiarité). Au niveau de l'UE plus proche de citoyen- non. Préfère consulter les plus petites entités en respectant le principe de subsidiarité. Au niveau national le principe de subsidiarité est une norme juridique ; cas Suisse et Macédoine du Nord. Aujourd'hui, nous sommes à la recherche d'un Etat social actif ! La

sécurité sociale devient un moyen en recommandant la solidarité de l'Etat social et la responsabilité de l'individu. Avec la pandémie de la Covid-19 on constate un Etat social, à l'horizon, remplacé par la société civile et la famille.

Références

- [1] Guy Isaac: Droit communautaire général 6 édition, Dalloz, Paris, 1998.
- [2] Jean-François Aubert : Le principe de subsidiarité dans la Constitution fédérale suisse de 1999, in Mélanges en l'honneur de Henri-Robert Schüpbach, Bâle ; Genève, (etc), Helbing& Lichtenhahn, 2000.
- [3] Jean-Michel Bonvin & Erci Moachon: L'activité et son potentiel de subversion de l'Etat social. In P. Vielle, P. Pochet & I. Cassiers (dirs), L'Etat social actif. Vers un changement de paradigme? Bruxelles, 2005.
- [4] Abdulah Ahmedi: La retraite, un défi pour la sécurité sociale : analyse en droit international, européen et macédonien, <https://archive-ouverte.unige.ch/unige:113905>, 2018.
- [5] Sandro Cattacin : Journal 24 heures «Le Covid-19 vu comme un accélérateur de changement», 20 juillet 2020.
- [6] Abdulah Ahmedi : Zhurnal «Disa leksione dhe impakti i Covid-19 mbi shoqërinë tonë», 24 gushtë 2020.
- [7] Convention concernant la sécurité sociale n° 102,norme minimum, (OIT), 1952.
- [8] Pacte des droits économiques, politiques et culturelles (ONU), 1967.
- [9] Traité de l'Union européen (TUE), 1992.
- [10] Traité sur fonctionnement de l'UE (TFUE), 2007.
- [11] Protocole (n°2) sur l'application de principe de subsidiarité et de proportionnalité, Journal officiel de l'Union européenne, 09 mai 2008.
- [12] Loi de la sécurité sociale de la République de Macédoine du Nord (RMN), 2019.
- [13] <https://www.consilium.europa.eu/fr/policies/coronavirus/10-things-against-covid-19/#>

The effect of pandemic on service-learning courses

Mejreme Ymeri, Arta Sejdiu

Universum College, Prishtina, Kosovo, mejreme.ymeri@universum-ks.org

Abstract

Service-learning is an educational approach that integrates learning objectives with community service in order to give a pragmatic, progressive learning experience while meeting community needs. The pedagogy of learning through community service is said to be a microevolution in higher education, as it helps students to experience life outside the campus (Cushman, 2002; Farnsworth, 2009). Similarly, professors at Universum College saw drastic changes in their students after taking the course “Community-Based Writing in the Department of English Language. However, because of the pandemic, last year students of Universum College in Kosovo were not able to conduct their research in the said course due to COVID-19. This study examines how third-year students tried to attend online social justice campaigns, workshops, or training, in order to fulfill their credits for this class. Moreover, it will examine whether students found it difficult to help the community virtually. 50 students participated in this study from three different campuses: Prishtina, Ferizaj, and Gjakova, by filling out a questionnaire. The results suggested that students had many difficulties when it came to the swift between learning service-courses to digital learning. This was mainly because of technical difficulties, less activities in contribution of society because of isolation, and the change of learning outcomes. Learning outcomes will be examined in a special chapter, because most of them had to be re-written because of the COVID-19.

Finally, the study suggests methods on how students overcome the pandemic hit, and finished their projects, which were innately human-centric.

Keywords: *Keywords: service-learning, students, virtually, pandemic, challenges*

1 Introduction:

Service-learning is an educational approach that integrates learning objectives with community service to give a pragmatic, progressive learning experience while meeting community needs. According to Himley's article in 2004, the pedagogy of learning through community service is said to be microevolution in higher education, as it helps students to experience life outside the campus, and in this way of thinking, teachers see radical transformation in them as they become authentic, and autonomous learners in real-life situations (Cushman, 2002; Farnsworth, 2009). Service-learning also may be seen as having "activist potential" (Cushman, 2002; Bickford, 2002).

However, with the COVID-19 pandemic hit a lot of things changed within higher education. Organizations have had to adopt new information technology (IT) systems during the pandemic, while others have had to completely rethink their business model, moving to online services and products and engaging in new business channels to those eroded or removed by the pandemic (Carroll and Conboy, 2020). The same happened in the organizations that students were contributing into. In addition, social distancing placed more importance on the role of online applications which became critical to ensure continuity of personal and business services (Papagiannidis et al., 2020).

This study is going to examine how students of Universum College in Kosovo finished their projects, despite the fact that a lengthier time to finish their assignment was given to them, to finish their community work. It will include how students felt while doing community service in the pandemic, how they fit into the new learning outcomes -- as we shifted online in the midst of the semester, and also it suggests other instructors for future references.

2 Literature Review:

Over the years, a lot of new courses have been implemented in higher education to help students contribute to their communities. One of them is service-learning courses as Universum College has "Community-Service Writing" where students are asked to do volunteer work and write reflection papers on their experiences.

Bickford (2002) argues that it matters whether students see what they are doing as service or as an activist project contributing to social justice, in terms of both how we can explode the self-other binary and how we can achieve substantive structural change in society. According to him, students should be aware of before starting the course that they are the leaders who will situate their programs in the context of historical activism and consciousness-raising. This was one of the most problematic topics that we, instructors, dealt with while this course started in January, 2020 and in the midst of the pandemic students were doing community service. The students knew that they were helping the community so they did not want to stop their work; however, they were really cautious, but also the process of writing, drafting, and interviewing became difficult for them.

Furthermore, many scholars agree that service-learning is different from any other learning approach because it focuses on civic engagement, underpinned by reciprocity among students, educators, and community; hence, it challenges students to engage with diversity and social justice. (Cushman, 2002; Bheekie and Huyssteen, 2015.)

For some teachers, service-learning inevitably includes a feeling of chaos (Stenberg and Whealy, 2009), and that was even more reliable in a pandemic time. By chaos, they mean that service-learning is not always a place for order, efficiency, and best outcomes; hence, frustrations and chaos are part of it.

As a result, some students get frustrated with the work. For authors Bheekie and Huyssteen (2015), the feeling of frustration is not a mistake. This community work, this contextualized learning, brings up different emotions for students. These authors argue that the service-learning' objective is to develop leadership attributes whereby students can engage with the binary, dialogue about the status quo, and negotiate toward the common ground by focusing on similarities -- to make them ready as "agents of change" (p.6).

So far, the defining terms of service-learning include a progressive learning experience that can feel like chaos and can help students to understand civic engagement. But it also pulls students out of their comfort zones, which can feel frustrating.

In defining service-learning, it quickly becomes apparent that a teacher organizing such a course has a lot of work and many difficulties when it comes to engaging their students in these kinds of opportunities. According to Cushman (2002) teachers explore and challenge their students with different problems that communities may have, even though it is risk-taking, but the teachers take such risks and step outside their discourse comfort to commit to a project which will have life-changing experiences for students. However, the increased labor (for both students and teachers) is an important problem. In 2008, Lettner- Rust published a paper on service learning and social change and how such change can be achieved. He describes the process by which students discover the arguments that already exist in the communities they wish to serve; analyze the effectiveness of those arguments; collaboratively produce viable alternatives with community partners; and assess the impact of the interventions" (Lettner-Rust, 2008).

The range of service-learning approaches, as we know, is varied. Sometimes, working with a community organization, students decide on projects, whether reports or conferences with community members. Sometimes the projects are larger in scope: teachers and students work together on projects that promote "social imagination" for others -- in order to move beyond an individualistic, symptomatic reading of the world and toward a systemic, historicized understanding of the world as a common project (Boler, 1999; Himley, 2004). These kinds of projects also encourage accepting and tolerant approaches towards social inequalities (Bheekie and Hysteen, 2015).

3 Methodology and Materials:

50 students of Universum College from three campuses: Prishtina, Ferizaj, and Gjakova partook in this study voluntarily. For this study we devised a thirteen-item questionnaire which takes 10 minutes to complete. We chose a quantitative questionnaire as an instrument because with questionnaires it is easier to collect the data.

4 Analysis and Discussion:

50 students from Universum College did community work in-person and online. The course “Community-Service Writing” has shaped their knowledge on what they can do for their communities and more. However, they faced many challenges while doing their projects. First of all, the classes began mid-February in 2020 when there was no pandemic hit in Kosovo yet. Students easily moved to virtual classes; however, challenges were huge to these students. Because of the isolation and quarantine, students also moved their work to online, by teaching or writing for other organizations.

When they were asked whether they thought that COVID-19 made it more difficult for them to finish their projects on time, 88.9% of them said yes, while the other said that they do not have any thoughts regarding that.

Meanwhile, the majority of them (54%) thought that the final project, which would be an academic paper or research project, was not the same as it would have been without the pandemic. 23% said that the final project would be the same, whereas 23.8% did not have opinion regarding that. However, we as instructors, believe that the pandemic hit really influenced their work.

First of all, some of them did not have the right technologic supplies to keep their work up, and even if they did, most of them had other brothers and sisters who were taking online classes as well; hence, it became a problem to do the perfect job. Of course, we totally understood their situation and tried to motivate them in their journey. Because of that, we changed the learning outcomes, which were also shown to students. Many "do's" in the learning outcomes became "expected", and so on.

Secondly, the lack of motivation was present to most of the students. The fact that Kosovo was in total isolation and quarantine influenced students' mental health as well. Instructors reduced the working hours and fitted in students' schedules. Even with that in mind, when we asked them whether they would suggest this course to other students, their answers showed that, even during a pandemic time, this course helped them know more about the community, and in that situation, they felt as if they were contributing something to the community. Kaharuddin's study in 2020, showed that by integrating technology and culture in classroom learning could affect directly and indirectly through the attitude of the students' motivation in learning English. Attitude is proved to strengthen the effect of technology and culture on motivation.

When students were asked whether this course made them more eager to learn about the community and their problems, the majority of students (96.8%) agreed that this course and

project helped them and made them more eager to learn about the community and their problems; whereas the others did not have any opinion regarding the question.

Despite the pandemic hit, students' comments were rewarding at the end of the course. All of them showed that they would repeat this course and would suggest it to other peers. Pandemic hit was not a reason to stop contributing to the community.

Conclusion:

The aim of this study was to show how students of Universum College finished successfully the course of "Community-Service Writing" during a pandemic time. The study interviewed 50 students from all regions of Kosovo and it showed that students faced many difficulties. It started in February when there was no pandemic outbreak, and continued virtually.

Their difficulties were: lack of technologic supplies, poor internet connection, and also the lack of motivation. Despite their difficulties, the eagerness to help the community did not stop these students from doing their community service.

Because of the switching from in-person to online, the learning outcomes had to change as well. However, students did not have any troubles with that. Finally, this study suggests that even other students can do their community service virtually.

References:

- [1] Cushman, E. (2002). Sustainable Service Learning Programs. *College Composition and Communication*, 54(1), 40. doi:10.2307/1512101
- [2] Farnsworth, V. (2010). Conceptualizing identity, learning and social justice in community-based learning. *Teaching and Teacher Education*, 26(7), 1481–1489. doi:10.1016/j.tate.2010.06.006
- [3] Bickford, D. M. (2002). Activism and Service-Learning: Reframing Volunteerism As Acts of Dissent. *Pedagogy: Critical Approaches to Teaching Literature, Language, Composition, and Culture*, 2(2), 229–252. doi:10.1215/15314200-2-2-229
- [4] Himley, M. (2004). Facing (Up to) 'the Stranger' in Community Service Learning. *College Composition and Communication*, 55(3), 416-438. doi:10.2307/4140694
- [5] Bheekie, A. & Huyssteen, M. (2015). Be Mindful of your Discomfort: An Approach to Contextualized Learning. *The International Journal of Research on Service-Learning and Community Engagement*, 3(1).
- [6] Boler, M. (1999). *Feeling Power: Emotions and Education*.
- [7] Lettner-Rust, H. (2008). Response to "Service Learning and Social Change: The Case for Materialist Rhetoric" by David Coogan. *College Composition and Communication*, 59(4), 807-813. Retrieved from <http://www.jstor.org/stable/20457034>
- [8] Stenberg, S., & Whealy, D. (2009). Chaos Is the Poetry: From Outcomes to Inquiry in Service-Learning Pedagogy. *College Composition and Communication*, 60(4), 683-706. Retrieved from <http://www.jstor.org/stable/40593425>
- [9] Carroll, N., & Conboy, K. (2020). Normalising the “new normal”: Changing tech-driven work practices under pandemic time pressure. *International Journal of Information Management*, 102186.doi:10.1016/j.ijinfomgt.2020.102186
- [10] Papagiannidis, S., Harris, J., & Morton, D. (2020). WHO led the digital transformation of your company? A reflection of IT related challenges during the pandemic. *International Journal of Information Management*. <https://doi.org/10.1016/j.ijinfomgt.2020.102166>.
- [11] Kaharuddin, A. (2020). CONTRIBUTIONS OF TECHNOLOGY, CULTURE, AND ATTITUDE TO ENGLISH LEARNING MOTIVATION DURING COVID -19 OUTBREAKS. *Systematic Reviews in Pharmacy*, 11 (11), 76-84. doi:10.31838/srp.2020

Confined body versus body as mobile border: banned people, barriers and impossible boundaries in times of global Covid-19 pandemic

Natasha Sardzoska, PhD

Center for Advanced Studies South East Europe – Rijeka, Croatia

Abstract

The permeability of the border areas, the instability of shifting space, the constantly dubious belongings, the need or search for homelessness, the impossible passage at border crossing in this although borderless, liquid, porous world, now, in times of pandemic, engraved with ontological uncertainty, become paradigm of impossible mobility and forbidden freedom of movement. In such violent circumstances, the human body, despite its borderline or rather bordering nature, now becomes physically restricted, removed, dislodged, dislocated, separated, potentially contagious and eventually banned.

Keywords: *borders, barriers, confined body, impossible passage, forbidden threshold, banned citizens, global pandemic*

In my paper I examine ontological uncertainty and spatial mutilation, anthropological and cultural reconfigurations and disturbed proxemics in times of pandemic due to Covid-19 virus. Thus, I plan to draw on some unprecedented patterns of passage, forbidden mobility, dystopia, confinement and isolation, as well as banned citizenships and prohibited border crossings which have overwhelmed the humanity and the world economy, demonstrating to what extent globalization has gathered the world in networks of shared meanings, shared communities and shared values for most inhabitants, but at the same time has reduced it and transformed it into shrinking and accessible reality of many others. Hence, the pandemic has showed that if the world was until 2020 a comfortable place to live, now it has become a hostile and disconnected world, where solidarity and philanthropy have failed to succeed human evolution and exchanges. The method I rely on is social qualitative conveyed through semi-structured and unstructured interviews with different confined citizens. In this manuscript I will try to argue barriers as a more adapted concept in the borderless world liberal where border has somewhat ambiguous notion.

Surely, when Marc Auge was referring to this overall and comprehensive globalization when he elaborated his theory of “non-places/non-lieux” applied to places such as airports, train stations, hotels, waiting lounges, etc., in a nutshell, all places deprived from meaning and cultural description and nexus, drifted by the neoliberal common global economic benchmarks, he never thought that precisely those “non-places” would become today in 2020 what I would call anti-places, anti-spaces, aspatial demarcation of void, of emptied humanity deprived from meaning. Today fear and anguish are the main generator of these places. The human body has become at the same time vector of contamination and contagion and vehicle of confinement and isolation; hence, it turned into a confined body. The places where this human body dwells could be, here, I would take Homi Bhabha quote: “space without places”¹.

Earlier, Agamben in his study has described even airports as forms of “concentration camps” and the “state of exception” as emerging risk in our panoptical and overcontrolling societies where the everlasting production of “spectacles”, to name it referring to Guy Debord’s political theory of capitalistic societies of spectacle, has never ceased to exist. Much even earlier, Walter Benjamin suggested that the state of emergency in which we live is not the exception but the rule. This is perhaps the state of exception foreseen by Agamben which is now impossible to convey, to deploy, to translate and to transfer into reality, for it results to be something inviable, impossible to live.

Namely, according to Bhabha’s reference to Heidegger: “boundary is not that at which something stops but, as the Greeks recognized, the boundary is that from which *something begins its presencing*”, as developed by Martin Heidegger ‘Building, dwelling, thinking’ in *Border lives: the art of the present*). Today we cannot argue anymore any form of *presencing*, neither beginning nor we can consider borders and fertile, or not even *overheated*² places of interaction, exchange and production of people, goods, commodities, access, etc., but we could rather consider borders are deadlocks, as lockdown zones, as no man’s lands, as excluded places of non-belonging and non-identification. As mere border-crossing check points where without Covid-19 negative test one should not be able to cross border. Empty rooms, empty corridors, cancelled flights, postponed travels, blocked or repatriated passengers are just few of the contexts in which the world is thrown during

coronavirus crisis. These spatial mutilations have created completely the new anthropology of space, where the human factor is accessory, where humans are “(...) cast out, or made out-cast, manifestly ‘not one of us’”. Such a discursive ambivalence at the very heart of honor and duty in the colonial service represent the liminality”³ in the new world order – and here I decline any allusion to conspiracy theory, as I underline the new structure of capital meanings and human exchange and mobility, or even the vocabulary reference to “colonial service” which cannot be considered as a measuring instrument for it implies totally radical practices of biological colonization and segregation due to Covid-19.

Thus, in this segmented, fragmented and segregated world where it is as much as impossible to move and roam as it is during war times, “(...) the very space of identification, caught in the tension of demand and desire, is a space of splitting”⁴. If in the past migrations, mobilities, vagrancy and wandering have created larger impact on human cultures, nowadays since Covid-19 crisis, the larger impact is drifted by the blocked, confined, excusive, sedentary life. Humans have regressed to their biological function and human body is still considered a vector of contamination, a vehicle of diseases, an imposter, an intruder, a biology of prohibition. Certain portions of citizens are even considered to be forbidden or banned and do not have the right to access certain countries. Borders, fences, boundaries, controls, tests arise everywhere and human body is allegedly considered as a confined body, as suppressed walking boundary. The dystopic experience of understanding the contextualization of fear and the culture of anxiety becomes an impossible action, like decoding an idiom, like “catching an illusion” (as remotely Clifford Geertz would underline as regards understanding culture) and it is definitely not an “achieving a communion” (Bhabha) as it is supposed to be.

In my next paragraphs I shall draw on George Simmel seminal work and elaborate what is crucial in my understanding as cultural anthropologist in the new border-order as a consequence from the global pandemic of uncontrollable dimensions. Simmel has made a spatial turn in his philosophy of space. Her argued space – somewhat neglected by history of thought which was mainly focused on time and its abstract and hermetical phenomena – as palpable to us, as something tangible, close to us, related to our inner existence. Nowadays, what was brought to us by the pandemic is something different than the palpable space that we all experienced in our daily, local and international lives. The pandemic restrictions have brought to out existence sterile space, hybrid spaces, confined spaces, quarantines, isolated zones, forbidden zones, prohibited entries, lockdown, void zones deprived, emptied, without people, or even worst: banned people, contagious people, dangerous space, impossible motions.

Space is no longer common. Space is no longer allowed. Space no longer represents a possibility of getting together, of communion, of sociation, of association. Space has become a zone of splitting, of separation, of cultural segregation: namely, who has the right to a larger space has the right to less risk of contagion and who lives in smaller places or households is more exposed to contagion. Space has become a measure of health. Space has become a measure of permission. Space is no longer a common value. According to Simmel “the concept of a boundary is extremely important in all relationship of human beings to another”⁵ and the “(...) indefinable multiplicity of delimitations, and

especially what a continual flux and shifting dominates them.”⁶ Space was measured and demarked “(...) through sensory proximity or distance between people who stand in some relationship or other to one another.”⁷ This relation has been radically troubled and contorted notwithstanding “(...) the most subtle sociological tasks of the art of living is that of preserving the values and affections that develop between people at a certain distance for a close relationship.”⁸ The new world bordering order under Covid-19 pandemic has increased tendencies of living under unstable, fearful, uncertain circumstances.

The stability now arises from immobility, whereas before the pandemic the stability – either economic, political, psychological, ontological – would arise from the mobility: here we can contextualize the spatial determinacy. “Space always remains the actually ineffectual form, in whose modifications real energies are manifested (...) central point which holds the inhabitants of such region together politically. It is not the form of spatial proximity or distance that creates the special phenomena of *neighbourliness* or *foreignness* no matter how irrefutable this might seem. Rather, these too are facts caused purely by psychological contents, the course of which has no different relationship to its spatial form (...) space in general is only an activity of the mind.”⁹

Having as somewhat certain and approved that space is an activity of the mind, we could discuss further on the new tendency of border examination. This implies a new definition of borders, or rather boundaries: nowadays the human body is what can easily demarcate the border, in the cueing line, in supermarket, in school, at theater, in airports, now the walking human body represents the bordering practices. Social distancing and physical distance do not only refer to alienation and exclusion but they open a new consciousness of *borderiness* (concept I have coined in my in-depth examination of borders) or “boundedness” which according to Simmel it not precisely the place applied to natural boundaries or now not even political boundaries but “(...) only place a geometrical line between two neighbors. And this is so, in the latter case, since shifts, expansions, contractions or fusions are much easier, because at its end the structure borders on living, psychologically active boundaries, which produce not only passive resistance, but also very active repulsions.”¹⁰

Simmel puts it very clearly that setting a boundary “(...) which is in any case psychological, would find an alleviation and emphasis (...). Indeed, through the structuring of its surface, space often receives divisions which color the relationships of the inhabitants to each other and to third parties in a unique fashion.”¹¹ Space today in times of pandemic is no more the component that fixes the contents of social formations, as Simmel underlines it. “(...) Whether a group or certain of its individual elements or essential objects of its interests are completely fixed or remain spatially indeterminate must obviously affect their structure; and how much the differences in the states of mind of nomadic and settled groups are determined by this fact has been explained so frequently that it need only be alluded to here.”¹² To a larger extent, I would add that in the confinement and reclusion imposed measures there are no “(...) impulses of spatial expansion and contraction confront each other very abruptly; nutritional conditions lead the individuals as far apart as possible (and the spatial separation must lead to a psychological – qualitative one.).”¹³

Nowadays migrations have no impact on the whole, but it is rather the other way around: the sedentary communities have impact on the whole, health-wise mainly, but also politically –

forbidden entries -, psychologically and economically. “It is absolutely essential for humanity that it set itself a boundary, but with freedom, that is, in such a way that it can also remove this boundary again, that it can place itself outside it. The finitude into which we have entered somehow always borders somewhere on the infinitude of physical or metaphysical being.”¹⁴ Simmel argues that “the human being is likewise the bordering creature who has no border”¹⁵, but today the bordering creature has become border itself. Contemporary societal implosions and fear generators impose confined bodies, confined spaces, fences, barriers. “The deepest problems of modern life derive from the claim of the individual to preserve the autonomy and individuality of his existence in the face of overwhelming social forces, of historical heritage, of external culture, and of the technique of life.”¹⁶ This artificial, hybrid, contaminated, fully unnatural human condition strives forcefully to reduce human existence to a borderline biological existence. In this social crisis, individuals blame each other and fear each other.

Perhaps we could argue that the *liquid times* (Bauman) are nearly over and that space, or rather territory, as political denotation and not as a geographical demarcation, is not anymore open to free circulation of people, commodities, goods, events, cultures, itinerancy, travels, pilgrim, migration. Before the Covid-19 pandemic “no *terra nulla*, no blank spots on the mental map, no unknown, let alone unknowable lands and peoples”¹⁷ was excluded from the global globalizing mapping. Now it seems that the world is closed, fixed, blocked, not existing, a no man’s land. Airports are no longer non-places but rather impossible places deprived of life and motion. But “nothing can be credibly assumed to stay in a material ‘outside’. Nothing is truly, or can remain for long, indifferent to anything else – untouched or untouching. No well-being of one place is innocent of the misery of another.”¹⁸ In other words, “the displacement of fear – from the cracks and fissures in the human condition where ‘fate’ is hatched and incubated, to areas of life largely unconnected to the genuine source of anxiety¹⁹”. Bauman has surely predicted that we shall inhabit “the no man’s land of the global wilderness”²⁰ that loses control now even on the possibility of free exchange of goods and itineraries, on the state preservation and citizens protection.

At this point the migrant, the intruder, the violator is not anymore someone external, but they are rather among us, obtrusive stalker, poisoner, killer, invisible enemy, terroristic cell invisible to human eye, capable to penetrate air cells and infiltrate in our nose, mouth, eye. What is becoming now imminent and dangerous is the human body itself, not anymore liaised or linked to political backgrounds or economic affiliations, but the unknown, the wild, the undomed inner microorganism who has turned to be a “serial killer”; infected bodies, dangerous breaths, social and physical distancing are invading human existence and daily habits. Entire societal webs of meaning are turned over the original meanings; entire societal structures losing control and protection by the state; humanity seems to be “(...) exposed to the rapacity of forces it does not control and no longer hopes or intends to recapture and subdue.”²¹ Closed borders, black lists of countries, banned entries, mandatory tests, quarantine, police controls, panoptical supervision, contacts screening, mass samples of tests, prohibited travels, are just few of the local or national measures to contrast the spreading of the coronavirus but we should not forget that “(...) there are not, and cannot be, local solutions to globally originated and globally invigorated problems.”²² We are not “floating into a suspension of cultures” anymore, as Simmel would describe, because today cultures are cognitively

difficult, impossible to be translated or understood. Human understanding has become an impossible enterprise. We do not have only now refugees but confined bodies found in “a cross fire”, “in a double bind”. They are expelled by force or frightened into fleeing their native countries, but refused entry to any other. They do not *change* place; they *lose* their place on earth and are captured into a nowhere, into Auge’s ‘non-lieux’ or Garreau’s ‘nowherevilles’, or loaded into Michel Foucault’s ‘Narrenschaften’, a drifting ‘place without a place, that exists by itself, that is closed in on itself and at the same time is given over to the infinity of the sea’ (in Michel Foucault “On other spaces”) – or (as Michel Agier suggests) into a desert, by definition an *uninhabited* land, a land resentful of humans and seldom visited by them.”²³

We no longer inhabit a world in which cultures prevail offers, richness, abundancy, exuberance, offers, occasions, growth and wealth but rather poverty, hunger, fear, disease, norms, prohibitions, fines, interdictions, or as Stuart Hall puts it, in the brave new world of erased or punctured boundaries, information deluge, rampant globalization, consumer feasting in the affluent North and a ‘deepening sense of desperation and exclusion in a large part of the rest of the world’ arising from ‘the spectacle of wealth on the one hand and destitution on the other’. We now inhabit a world of solid walls, made of borders, prohibitions and interdictions, world of fences, masks, gloves, disinfecting solutions, security guards and controls. People considered in my interviews perceive the sense of abandon, loss, fear, uncertainty, instability. The world before coronavirus was not so much different: accessible for few, shrinking for many, and so even today the world elites have different access to isolation and confinement because they can afford it. Confinement turns to be an affordable category, not destined for big families, not destined for poor students, for migrants, for homeless people, for vagrants. Confinement is reserved to resourceful residents and citizens who can afford the separation, the segregation, the isolation, the reclusion. The distance became a category of privilege. Like never before, Covid-19 social distancing brings into relief distances we have been all trying to breach forever. The logic of barrier is now applied without excuse: surveillance, monitoring, testing, checking, curfew; rich residents can buy the confinement, they can purchase the isolation, create some form of a ghetto and prevent others from settling in their proximity. Now it is forbidden to touch humans. Now it is desirable to function online, to purchase online, not to move, not to shift, in the world we inhabit, it is not allowed to be free anymore. Actually, it is even beneficial to disconnect our households and living context from the rest of the inhabitants. It became so normal to inhabit cities of invisible walls, barriers, obstacles, fences, masks.

We are no longer in the epoch of non-engagement when the Foucauldian “ (...) panoptic model of domination, with its main strategy is supervising, minutely monitoring and correcting the self-government of its sub-ordinates, is fast being dismantled in Europe (...)”²⁴, but we are shifting again in a no man’s land, in uncertain zones of assimilation, alienation and acculturation. We are living in the age of multicomunitarianism, as Alain Touraine has pointed out when making allusion to the difference between that concept and the multiculturalism. The culture which is imposed is no more the elegant and eloquent culture of knowing, of sharing, of travelling, of artistic creation and knowledge dissemination, but it is rather the culture of ignorance, of world conspiracies, of the revenge of the masses, of the hedonism of the masses. The culture is anymore – in the liquid world – a “tranquillizer” – as Bauman puts it, culture is not anymore “the name for

functions ascribed to stabilizers, homeostats or gyroscopes”²⁵, but it became a generator of fear and anxiety: disinfect, wash, clean, protect, detach, run away, stay home, do not move, erase.

Bauman affirms that the “liquid modern culture no longer feels itself to be a culture of learning and accumulating like those cultures recorded in historians’ and ethnographers’ reports. It seems instead a *culture of disengagement, discontinuity and forgetting*.”²⁶ I would add that the culture which is imposed as a hybrid is a culture of intimidation, agoraphobia, uncertainty of an open space, urge to run, to escape, to simulate omnipotent knowledge, to break the wall, a culture of death and depression. Bauman therefore writes:

“Unable to slow down the mind-boggling pace of change, let alone to predict and control its direction, we focus on things we can, or believe we can, or are assured that we can, influence... In other words, we seek substitute targets on which to unload the surplus fear that has been barred from its natural outlets, and find such makeshifts in taking elaborate precautions against cigarette smoke, obesity, fast food, unprotected sex or exposure to sun.”²⁷ I would not go beyond the frame of the factual medicinal phenomenon, but I would surely like to point out the “(...) off-putting disguise of loneliness, abandonment and alienation. The self-same loss of comfortable, harmonious and unproblematic inclusion in the surrounding space and the impossibility of feeling at home in that space that is so close and yet so distant, so different from the memorized topography of the lands left behind which torment the exile or the refugee, allow them to penetrate deeper into the universal logic and meaning of life in a kind of world (we would say our liquid modern world).”²⁸

Human bodies now become not only vehicles of contagion, but they become walking borders. Banned citizens and forbidden entries is what we deal with in the pandemic year 2020. Bodies become confined and this experience is traumatic, impossible to be conveyed and transposed in the reality, dramatic shift that impacts not only our surrounding space but mostly our inner space. The process of self-discipline and external-punishment (fines, imprisonment, judgment, alienation) turns out to be autistic and alienating. Human bodies became confined not only because humans are now the new vectors of diseases, but because human body is open and therefore vulnerable, accessible and exposed. What we are thought and what we are suppose to teach our future generations is that distance is healthy, distance is safe, distrust and lack of confidence are the utter element of self-regulation. What we learn is a new form of border: legally- physical border. That is to say that confines and frontiers we impose to our body are regulated by laws and each and every contact should be regulated for the mutilations of this invisible enemy are imminent. This is why digital and virtual relocations and displacements are the safest way to keep our bodies intact untouchable inviolable. We learned to see without touching because our bodies contain unstable and unreliable barriers, made of skin, of pores, of nostrils, and therefore we have to consider any gest towards others or us as a vehicle of plausible infection, aggression, removal. The onthological fear now implies the fear of the body which becomes body deployed in the space: everything, every object, space, surface, glass, pen that was touched by our body becomes a zone of contagion and infection. We are compelled to a continuous surveillance, censorship, intimidation, and to some extent even humiliation, reservation, blockage, discomfort, apathy, fear and feeling of loss, alienation and abandon cannot find anymore a realization and understanding in human empathetic culture. Any form or expression of fear become humiliating.

I have been arguing since my doctoral research that we inhabit borders, we learn how to live on the border – borderline, borderscape, borderzones – and to build a quality that I have called “borderness”. We have learned to become as Bhabha puts it “unhomed” instead of “homeless”. When we learned that borders and confines could become liminal spaces, creative zones, fertile places to be crossed, or even conflict points to be nourished, experienced, but not argued as somewhat coercive or burdening which lead us to solitude and alienation. Our bodies become knowledge, confined commuting knowledge. We become used to wear prothesis in most futile and unreliable way. Our existence is digitalized. We assist those spectacles depicted by Guy Debord. We urge to become obedient because we want to survive on a planet which seems to already pretty infected and sick.

It is useless to pretend that the world is not going through harsh dematerialization and digitalization of human existence, in different contexts and situations, from personal, psychological and ontological, going through cognitive dissonance and cognitive pandemic, to economical, political and military intrusions and deprivations of our personal space, right to work, travel, dwell, exchange. What is at stake here is that even our approach to the body, our way to exist within the body, inside our time and space, is being gradually twisted, contorted, troubled. We are compelled to apply prothesis on our body as a form of a demarcation of our space, physical space, personal space and our daily life undergoes the culture of fear, mistrust and anxiety based precisely on the confinement of our bodies. Today we are obliged to assign new functions to our bodies, specific hygienic organization, compulsive management of our household, our work, our relations. Hence, we become hostages of fear, solitude, hosts of disease, viruses, contagion, swollen and digested by the neoliberal capitalistic vortex, where, as Marx has underlined, human body turns to be mercified and considered as piece of flesh, of meat, as pure biological function that should be put inside a frame, a limit, a barrier, a frontier. These new borders seem to be uncrossable, even though we have always examined borders in border studies as something fertile, overheated, productive, liminal, shifting, blurred and therefore apt to be crossed, therefore as spaces of initiation. The newborn experience of border-spaces, of border-e/scapes, of border-lines turns to be something impossible to be transferred in our empirical cultural and cognitive experience, as somewhat intolerable practice of control, invasion, intrusion, testing, checking, investigating. Humanity seems to be still unable to reconfigure and reformulate these phenomena which undergo radical mutation of our description of reality and existence. These are the new dark times of Humanity. This pandemic is a new form of war, biological, invisible, unbearable. The cultural world map of the pandemic intertwines not only notions of fear but a rather military vocabulary and network of meanings: curfew, war, quarantine, social distancing, criminal code, criminal responsibility of contagion, identification of the contagion and transgressor, interdiction and prohibition of movement, state of emergency, state of exception.

When Agamben has recalled his theory of state of exception as a perfect application to these newborn states of emergency in which the law seems to cease to be a law but rather an arbitrary illusion and formulation of panoptical control and surveillance, he surely has not anticipated the emerging states of emergency as pure states of exception. As abovementioned, Agamben was arguing even contemporary forms of concentration camps, such as waiting zones in airports, and so now we could apply his reading to our new confined situations where human bodies lose the immanent freedom to be, to exist, to move, to exchange, to know, to love. This pandemical mapping of the world is

terrifying because what is at stake is the capitalist machine that should not be stopped or prevented from digesting capitals and societal “spectacles”. The world catastrophe is unprecedented and not even imagined by the sharp depictions of societies of spectacles by Guy Debord.

For instance, we could argue what Appadurai has described here: “The world we live in now seems rhizomic²⁹, even schizophrenic, calling for theories of rootlessness, alienation, and psychological distance between individuals and groups on the one hand, and fantasies (or nightmares) of electronic propinquity on the other. Here, we are close to the central problematic of cultural processes in today’s world.”³⁰ Appadurai announced that the “problem of today’s global interactions is the tension between cultural homogenization and cultural heterogenization.”³¹ This problem during the pandemic times seems to degrade even more humanity because we understood during the confinement that human beings gathered not only in imagined communities, or imagined worlds, but that even despite the globalization and the accessibility, human beings seems to accept naturally the condition of being disconnected, detached, deprived, deluded. This imagined community brings to what Edgar Morin was arguing about “community sharing same destiny” and we have witnessed this during the confinement because despite the economic background the virus Covid-19 seems to have surrendered with fear and risk any human being on earth and that there are no borders or confines that prevent him or could prevent him from spreading. The almost a social experiment brings us to understand that “(...) cultural politics of deterritorialization and the larger sociology of displacement (...)”³² in “(...) traditional anthropological terms” could be phrased as “the problem of enculturation in a period of rapid culture change.”³³

But this rapid cultural change does not refer anymore to forced migration, migratory flux, exile, ethnic cleansing, xenophobia, trafficking in human beings, smuggling of migrants, constant paranoia and ontological uncertainty because “ (...) in many such cases, people and whole communities are turned into ghettos, refugee camps, concentration camps, or reservations, sometimes without anyone moving at all”³⁴, but it refers rather to forced alienation, involuntary isolation and confinement, violent quarantine, waiting in line and cueing for simple and basic needs, mass online consumption, mass pharmaceutical products consumption, blocked population at borders, airports, cognitive pandemic, conspiracy theories, mass information spreading, chronicle of death. “The many displaced, deterritorialized, and transient populations that constitute today’s ethnoscape are engaged in the construction of locality, as a structure of feeling, often in the face of erosion, dispersal, and implosion of neighborhoods as coherent social formations.”³⁵

To conclude, I would again refer to Bauman to state that the world is not human only because it is inhabited by humans and it does not become more human only because it is populated by human voices, but it is and it becomes human only when it becomes object of discussion. Bauman argues that we make this world more human when we transform it into a discourse and when we talk about what is happening to ourselves - instead of fearing and distancing, confining and fining - is when we become actually humans.³⁶ The open question is almost of an existential nature: for how long Humanity will remain deaf, inert and - hence – motionless, adapting humans on impossible circumstances, reducing human existence to a mere biological function deprived from rebellion and perpetual questionings of existence and knowledge.

References

- [1] ¹ Bhabha, Homi K., *The location of culture*, Routledge, New York, 1994; p. 353.
- [2] ² Erikssen, Thomas Hayland, *Relocating Borders Conference*, Humbolt University, Berlin, 2012.
- [3] ³ Bhabha, Homi K., *The location of culture*, Routledge, New York, 1994; p. 250
- [4] ⁴ Idem, p. 63.
- [5] ⁵ Frisby, David/Featherstone, Mike, edited by, *Simmel on culture*, Sage Publications, 1997; p. 142.
- [6] ⁶ Idem, p. 144.
- [7] ⁷ Idem, p. 151.
- [8] ⁸ Idem, p. 157.
- [9] ⁹ Idem, p. 137-138.
- [10] ¹⁰ Idem, p. 141-142.
- [11] ¹¹ Idem, p. 142.
- [12] ¹² Idem, p. 146.
- [13] ¹³ Idem, p. 162.
- [14] ¹⁴ Idem, p. 172.
- [15] ¹⁵ Idem, p. 174.
- [16] ¹⁶ Idem, p. 174-175.
- [17] ¹⁷ Bauman, Zygmunt, *Liquid times. Living in an age of Uncertainty*, Polity Press, 2007; p. 5.
- [18] ¹⁸ Idem, p. 6.
- [19] ¹⁹ Idem, p. 13.
- [20] ²⁰ Idem, p. 15.
- [21] ²¹ Idem, p. 25.
- [22] ²² Idem, p. 26.
- [23] ²³ Idem, p. 45.
- [24] ²⁴ Bauman, Zygmunt, *Culture in a Liquid Modern World*, Polity Press, Cambridge, 2011, p. 55.
- [25] ²⁵ Idem, p. 10-11.
- [26] ²⁶ Bauman, Zygmunt, *Liquid life*, Polity Press, 2005, p. 62.
- [27] ²⁷ Idem, p. 69.
- [28] ²⁸ Idem, p. 137.
- [29] ²⁹ In Deleuze, Gilles/ Guattari, Félix, *Capitalisme et schizophrénie. Mille plateaux*, Minuit, Paris, 1980.
- [30] ³⁰ Appadurai, Arjun, *Modernity at Large. Cultural dimensions of Globalization*. University of Minnesota Press, 2000; p. 29.
- [31] ³¹ Idem, p. 32.
- [32] ³² Idem, p. 39.
- [33] ³³ Idem, p. 43.
- [34] ³⁴ Idem, p. 192.
- [35] ³⁵ Idem, p. 199.
- [36] ³⁶ Bauman, Zygmunt, *Culture in a Liquid Modern World*, Polity Press, Cambridge, 2011; p. 145.
- [37] Augé, Marc, *Les non-lieux*, Seuil, Paris, 1992.
- [38] Agamben, Giorgio, *Homo sacer: il potere sovrano e la nuda vita*, Einaudi, Torino, 2005.
- [39] Appadurai, Arjun, *Modernity at Large. Cultural dimensions of Globalization*. University of Minnesota Press, 2000.
- [40] Bauman, Zygmunt, *Liquid life*, Polity Press, 2005.
- [41] Bauman, Zygmunt, *Liquid times. Living in an age of Uncertainty*, Polity Press, 2007.
- [42] Bauman, Zygmunt, *Culture in a Liquid Modern World*, Polity Press, Cambridge, 2011.
- [43] Debord, Guy, *La Société du spectacle*, Gallimard, Paris, 1996.
- [44] Deleuze, Gilles/ Guattari, Félix, *Capitalisme et schizophrénie. Mille plateaux*, Minuit, Paris, 1980.
- [45] Bhabha, Homi K., *The location of culture*, Routledge, New York, 1994.
- [46] Featherstone, Mike, *Undoing Culture*, Sage, London 1995.
- [47] Foucault, Michel, *Dits et écrits*. Gallimard, 2001.
- [48] Foucault, Michel, *The Archaeology of Knowledge*, Vintage Reprint Edition, 1982.
- [49] Frisby, David/Featherstone, Mike, edited by, *Simmel on culture*, Sage Publications, 1997.
- [50] Hall, Stuart, *Identité et cultures. Politiques des cultural studies*, Editions Amsterdam, Paris, 2008.
- [51] Geertz, Clifford, *The interpretation of cultures*, Basic Books, New York, 1989, (ed. 2000).
- [52] Morin, Edgar, *Lo spirito del tempo*, Meltemi, Roma, 2005

ISSN (print) 2545-4463
ISSN (online) 2545-4471