PROCEEDINGS

12th INTERNATIONAL SCIENTIFIC FORUM, ISF 2018

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Table Of Contents:

Waste Collection, Sorting and Storage and Food Waste Management on Disney Cruise Line Ships

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Abstract

This paper presents the waste collection, sorting and storage on Disney Cruise Line (DCL) company ships, as well as in-house food waste management procedures. In a previous paper, we singled out the DCL company's environmental policies, as well as the cruise itinerary waste management plans for the enterprise's ships.

The paper analyses the in-house environmental personnel's activity, the company's internal regulations, and relevant data and field observations collected by the environmental protection staff, and presents data on the collection, sorting and storage of the waste generated by DCL cruise ships, and details food waste processing and discharge methods.

The paper confirms the DCL company's intention to minimize its fleet's environmental impact by implementing the appropriate waste collection, sorting and storage methods, as well as by reducing food waste amounts and ensuring an efficient food waste management. In 2013, DCL was declared the most environmentally-responsible cruise line, according to the Cruise Industry Environmental Report Card. All crew members are charged with complying with environmental requirements and DCL's environmental policy. Both crew members and customers must pay attention to practices that can accidentally result in food waste pollution. Food waste collection and the prevention of improper overboard spillage of waste are carefully supervised by everyone on board. The DCL company makes constant efforts to reduce food waste amounts and associated risks to a minimum across its commercial fleet. This entails using proper waste storage and disposal procedures, as well as planning the supply of raw materials and food ingredients.

Keywords: Disney Cruise Line, environmental policy, food waste management, on board

Introduction

Over recent years, environmental challenges have been getting more and more attention from governments, companies and the general public, which resulted in a concerted worldwide effort to change the status quo. Developing a prevention strategy for ecological degradation entails implementing the right mechanisms and policies that favour a sustainable approach to economic growth, i.e.increasing both environmental responsibility and economic efficiency.

The present paper presents in a clear-cut manner the waste collection, sorting and storage on board Disney Cruise Line (DCL) ships, as well as their food waste management plan. In a previous paper, we singled out the environmental policies of the DCL company, as well as the cruise itinerary waste management plans for the enterprise's ships.

The purpose of this paper is to look into DCL's environmental impact prevention strategy to ensure a proper food waste management on board, by analyzing (a.) the collection, sorting and transportation of the waste generated by its fleet to the dedicated treatment area, (b.) the waste storage in the treatment area, and (c.) food waste processing and disposal methods.

Disney Cruise Line is an enterprise affiliated with the Walt Disney Company (Manoiu and Antonescu, 2017). It was founded in 1996, initially under the name Magical Cruise Company Limited, based in London, UK, with its operational headquarters in Celebration, Florida (Manoiu and Antonescu, 2017). The DCL's fleet consists of four cruise ships: Disney Magic, Disney Wonder, Disney Dream, Disney Fantasy.

Environmental responsibilities on board DCL ships are held by the captain, environmental officer, chief engineer, B mechanic, and finally by all crew members (Manoiu and Antonescu, 2017).

The article, through its originality, will add to the findings of previous studies on this still insufficiently explored topic (Letson, Suman and Shivlani, 1998; Johnson, 2002; Burgin, Hardiman, 2011; Ulnikovic et al., 2012; Kizielewicz, Lukovic, 2015; Lasserre, Tetu, 2015, Wilewska-Bien, Granhag and Andersson, 2016).

The paper aims to analyze the in-house environmental personnel's activity, the company's internal regulations, and relevant data and on-site observations recorded by environmental protection team members.

Collection, sorting and transportation of waste to the treatment area on board DCL cruise ships

This chapter analyses the collection, sorting and transportation of waste from various ship sections to the designated treatment area.

Collection and sorting of waste

Each department has a designated area where waste is collected before it is transferred to the treatment area (Disney Cruise Line, 2016). These locations are fitted with multiple metal containers, one for each type of waste (Table 1):

Table 1. Types of waste (Source: Disney Cruise Line, 2016)

Category	Examples	Color of container
Burnable materials	Paper, plastic, rags	Blue/Aluminum
Glass	Bottles, glasses, mugs, plates	Gray
Cans and metal	Aluminum and metal cans	Green
Food	Cooked or raw food	Yellow
Medical	Blood-contaminated bandages	Red
Cooking oils	Used cooking oil	Black

When a waste item does not fit any of the categories, or there is no appropriate container in a given location, it must be transferred directly to the waste treatment area and handed over to the officer on duty.

All crew members are responsible for sorting the waste at source (Disney Cruise Line, 2016). This includes waste generated at their work area, in the cabins, eating area/restaurants and pubs, and recreational facilities (crew members must sort their personal waste in the treatment area, not at the source), waste generated by guests in the crew's work area. All crew members are responsible for transferring personal waste to the special collection point or to the waste treatment area.

Transportation to the waste treatment space

For sanitary and safety reasons, any collected waste must be transferred to the waste treatment area as directly and often as possible. All heads of departments train their teams on the procedures and routes to use for waste transportation (Disney Cruise Line, 2016). Upon entry into the waste treatment area, crew members are instructed on how and where to discharge/store the waste. When the waste management officer is handed over a load, the crew members who brought it in must wash the containers and return them to their areas. They must also carefully wash their hands after having handled waste. All departments are responsible for emptying, cleaning and returning their allocated waste containers.

Departmental responsibilities

On board waste management is an explicit requirement for all crew members and departments. Failure to comply with the regulation and to meet responsibilities may result in disciplinary reprimands and even termination of employment (Disney Cruise Line, 2016).

3

Department heads must ensure that all departmental collection points are fitted with the appropriate containers based on the type of activity; the right procedures are applied for sorting and transferring waste to the treatment area; all crew members are trained on the correct waste management methods, and waste sorting and handling operations are carefully monitored. Department heads are also responsible for ensuring full compliance with waste management regulations in their respective areas.

Waste storage on board the ships
Waste treatment area
The waste treatment area features a) an incinerator sector; b) a waste sorting and storage area, and c) waste cold storage room.
The waste treatment area must be kept clean, supervised closely, and used only for waste treatment operation materials.

Types of processed waste
Burnable waste
Once the waste reaches the treatment area, the personnel must identify the nature of the materials and the most appropriate processing methods. Burnable waste is shredded before being incinerated. The incineration of the following substances is not allowed on board the ships (United Nations-International Maritime Organization, 2011): polychlorinated biphenyls (PCBs); waste containing traces of heavy metals; refined petroleum-based products containing halogen compounds.

Non-burnable waste
Non-dangerous waste that cannot be burned is stored temporarily on board until it can be recycled or discharged in accordance with the relevant regulations.

Recyclable waste
It must be sorted before reaching the waste treatment area, where it is collected and processed before being discharged on land. Recyclable materials must not be mixed before disposal, as this can disrupt the recycling process.

Food waste
It is processed on board using grinders, in accordance with regulation. Items that cannot be grinded must be brought to the waste treatment area for storage and subsequent disposal.

Special waste

This type of waste cannot be processed on board the ships. It must be brought to the waste treatment area or to a location designated by the environmental officer for packing and storage until it is discharged.

Waste storage on board DCL ships

The main waste storage areas are the cold storage room and the waste sorting and storage area (Fig. 1).

The environmental officer is responsible for all waste sorting and labeling operations in the treatment area (Disney Cruise Line, 2016). The waste processing personnel must follow the environmental officer's instructions on waste handling and storage.

Waste cold storage room

This is the main location used for storing waste that, if stored at room temperature, can undergo biodegradation (food waste), as well as for other types of waste (e.g. dangerous non-flammable waste). Waste that is not affected by temperature can be stored in the cold room only if there is enough space available.

Fig. 1 Waste sorting unit

Unless stated otherwise by the environmental officer, the cold storage room is the designated area for storing dangerous non-flammable waste before it is discharged on land. Dangerous waste must not be kept longer than ninety days in this facility. Before the dangerous waste reaches the storage area, the environmental officer must make sure all labelling was done correctly, the appropriate containers are used and that they are in good condition, material safety data sheets (MSDS) are available and that incompatible materials are sorted out, in order to reduce associated risks (Disney Cruise Line, 2016). Before stored in the cold room, the waste must be labelled with the date of

storage, in order to help with the final disposal timing. The cold storage room is a safe location and must be kept closed at all times.

It is necessary to take the appropriate safety measures for risks associated to all cold storage waste types. The equipment that must be made available consists of: a fire extinguisher, personal protective equipment (PPE), and MSDS to indicate any hazardous elements (Disney Cruise Line, 2016). The environmental officer must inspect the cold storage room regularly and ensure compliance with the aforementioned rules.

Food waste processing and disposal procedures
Food waste processing

Waiters and personnel charged with dishwashing must carefully separate food waste from other types of waste in order to reduce the risk of plastic materials contaminating the organic waste mixture that is discharged in marine waters. In special marine areas, food waste must be grinded to less than 1inch (25 mm) before it is discharged. The company's ecological objective is to follow the same standards for all marine areas. The primary processing method for food waste is via pulpers/grinders (Fig. 2). When waste cannot be grinded, it is discharged on land as regulated waste (Disney Cruise Line, 2016).

Outside special marine areas, food items that cannot be grinded (bones, fish, crustaceans, etc) can be discharged overboard using chutes/slides when the ship is over 12 marine miles from shore and advancing at a speed of at least 6 knots. This needs to be approved by the Environmental Safety, Security and Policy Authority (Disney Cruise Line, 2016). If the procedure is not available, the food waste that cannot be grinded must be discharged on land as regulated waste.

All personnel involved in the food waste discharge procedure must carefully monitor the waste flow and make sure no plastic or other types of prohibited materials are discharged. The food waste that is processed using grinders is checked by the grinder operator, who has to examine the waste feeding line. The waste that is discharged using chutes/slides is checked by the environmental officer.

Wet food waste (resulting from grinders) is collected in the wet waste silo. The discharge of wet waste is performed directly from the silo. On the Disney Magic and Disney Wonder ships, the personnel can use the discharge slide located in the waste treatment area. Before the discharge operation begins, the environmental officer checks the ship's location and time, and files the necessary reports in the Garbage Record Book (Disney Cruise Line, 2016).

Fig. 2 Bone, crustacean and large food item grinder

Food waste disposal

The environmental officer is responsible for discharging food waste overboard and recording the discharged amount, time and ship location in the Garbage Record Book. Before discharging the waste, the environmental officer ensures compliance with company policies and MARPOL codes (United Nations-International Maritime Organization, 2011). The Disney Magic and Disney Wonder ships feature a discharge chute that is kept closed when not in use.

On-land discharge of food waste and food-contaminated waste

Food waste and food-contaminated waste must be discharged on US territory, in the harbour, when no processing equipment is available on board.

Waste that cannot be discharged in the water must be transferred to the appropriate waste processing and treatment unit. The specific discharge process is chosen based on the type of waste. All waste must be packed and labeled before reaching the land (Disney Cruise Line, 2016).

It is forbidden by law for any food waste and any food-contaminated material to be discharged in the US, with the exception of direct transfers to specialized sanitation units that are authorized by the United States Department of Agriculture (USDA). Waste can only be discharged in hermetically sealed containers, approved by the USDA, under the supervision of the environmental officer and of a representative of the sanitation company (U.S. Departament of Agriculture, 2006).

The environmental officer is responsible for planning the contaminated waste collection process via the Disney Cruise logistics and procurement department (Disney Cruise Line, 2016). The environmental officer will contact the sanitation company the day before the end of a cruise and will indicate the number of required containers. The officer is responsible for planning and supervising the waste discharge process, preparing the necessary

7

documentation in accordance with local and national regulations. The transfer of unregulated waste to contractors must be undergone as fast as possible.

Regulated waste consists of material leftovers derived from fruit, vegetables, meat or any meat- and plant-derived material (including poultry).

In US harbors, regulated waste must be packed in 3 mm-thick bags and discharged in hermetically sealed containers approved by the USDA (U.S. Departament of Agriculture, 2006). Disney uses 4 mm-thick bags.

Any food waste discharge action must be documented in the Garbage Record Book and the reports must be kept on board for 3 years (Disney Cruise Line, 2016). The environmental officer is responsible for keeping a record of all discharged waste.

Customs Service and Customs Protection

The US Customs and Border Protection organization (US CBP) controls the entry of food products on US territory (U.S. Customs and Border Protection site, 2016). Without CBP's permission, it is forbidden to discharge food products or food waste-contaminated materials on land. When it is necessary to discharge such materials in a given harbor, a sanitation company approved by CBP must be contracted, which will process the waste delivered in CBP-approved containers (U.S. Customs and Border Protection site, 2016).

Conclusion

The Disney Cruise Line Company aims to minimize the environmental impact of its cruise ships by implementing the appropriate waste collection, sorting and storage methods, as well as by reducing the amount of generated food waste and by ensuring a proper management of this waste category. To this end, Disney Cruise Line uses the best available technologies and provides dedicated employee training programs. In 2013, Disney Cruise Line was declared the world's most environmentally responsible cruise line, according to the Cruise Industry Environmental Report Card (Elks, 2013). The company fully complies with all relevant national and international conventions, laws and regulations.

All crew members are responsible for complying with the DCL company's environmental requirements and policy. Both crew members and customers must pay attention to practices that can result in accidental food waste pollution. Food waste collection and the prevention of improper overboard spillage of waste are carefully supervised by everyone on board. The DCL company makes constant efforts to reduce food waste amounts and associated risks to a minimum across its commercial fleet. This entails using proper waste storage and disposal procedures, as well as planning the supply of raw materials and food ingredients.

The keywords that define DLC's environmentally conscious approach to its ongoing operations are keeping thorough records, monitoring, oversight, awareness and constant communication.

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Improving the Productivity and Energy Efficiency by a Heat Treatment Method Applied to Aluminum Forged Parts

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Abstract

In industrial applications, hot forging of AA6082 alloy is carried at 480°C. After the hot forging operation parts are cooled down to room temperature and heated again up to 540°C for solution heat treatment and artificially aged. Heating-cooling-heating cycles leads to energy and time loss in production, and have long-term environmental and economic impacts. Mass production of aluminum parts for applications in various industries (automotive, aerospace etc.) requires a process with higher productivity.

The aim of this study was to provide time and energy efficiency by combining hot forging and solution treatment processes into a single operation. AA6082 billets were forged at 540°C for 7.5, 15 and 30 minutes in order to achieve simultaneous solution treatment. Billets were then water quenched and artificially aged. Mechanical properties (hardness, tensile strength) as well as microstructure of samples were investigated. Required mechanical properties were achieved on the samples forged and treated at 540°C for 15 and 30 minutes.

Introduction

Owing to desirable properties such as high corrosion resistance, formability (forging, extrusion etc.), machinability and high strength, AA 6082 aluminum alloy have various applications in machine, aerospace and automotive industries [1]. Most common heat treatment applied to AA 6082 is T6 (solution heat treatment and artificial aging).

Hot forging entails the heating of a work piece to about 75% of its melting temperature. This allows for the flow stress and energy required to form the metal to lower, effectively increasing the rate of production (or strain rate). Hot forging aids in making the metal easier to shape as well as less likely to fracture. While other materials need to be strengthened through the forging process itself, materials such as most of the titanium and aluminum alloys, can be hot forged and then then hardened. Forging temperature for AA 6082 alloy is between 450-500 °C [2]. Induction heaters are commonly used to heat parts up to hot forging temperatures. The forged parts are then cooled down to room temperature, heated up again to apply conventional solution treatment followed by quenching and artificial aging processes. Repetitive heating/cooling steps are a significant cause of energy loss.

Several studies examined the effects of different aging and heat treatment processes on the microstructure and mechanical properties of AA6082 parts. Other studies have examined the possibility to replace rolled or extruded parts with cast ones. These studies were focused on the employability of AA6082 parts as-cast or after homogenization heat treatment [2-7]. There are few details about the microstructure and mechanical properties of the AA 6082 aluminum alloy with or without deformation after short-term heating by induction. Literature review also revealed that there is very little information available about the T5 heat treatment of aluminum alloy AA 6082. Existing studies examined the properties of these alloys with small number of variables and consist of limited information. In this context, an experimental work at a predefined heating time of 15 minutes was carried out by Zvinys et al. Primary importance of this study is the investigation of optimum forging temperatures to obtain the right solution temperature [3]. There was not any detailed information about the conditions of forging and heat treatment presented in TALAT aluminum heat treatment programs [2].

In this study, AA 6082 alloy were water quenched immediately after forging at 540 °C and then aged for 8 hours at 180 °C to combine hot forging and solution treatment processes in a single high-temperature process. This heat treatment pattern is quite similar to T5 applied to aluminum alloys.

Experimental

AA6082 alloy bars (36 mm diameter, 85 mm length) supplied by ASAS Aluminum were used in this experimental work. Bars had nominal

chemical composition (Table 1) and 47-52 HB hardness. AA 6082 alloy contains Si, Mg, Mn and Fe and a mid-high strength alloy that is commonly used as extruded and forged aluminum products. Strengthening mechanism is the precipitation of   Mg-Si-Mn intermetallic compounds (especially Mg2Si). A common acceptance criterion for this alloy in the industry is a hardness value of 90 HB.

Table 1. Nominal chemical composition of alloy AA 6082 and chemical composition of AA 6082 bars used in present study.

Element	Nominal (wt. %)	Present (wt. %)
Si	0,70-1,30	1,00
Mg	0,60-1,20	0,66
Mn	0,40-1,00	0,42
Fe	Max. 0,50	0,23
Cr	Max. 0,25	0,10
Zn	Max. 0,20	0,01
Cu	Max. 0,10	0,01
Ti	Max. 0,10	0,02
Other	0,05-0,15	0,06
Al	Remaining	Remaining

Conventional T6 heat treatment pattern of AA 6082 alloy is illustrated in Figure 1a. In this pattern, parts are cooled down to room temperature after hot forging, heated up again to a suitable solution heat treatment temperature, quenched to room temperature and artificially aged to obtain required hardness values depending on the application. In this study, second step (2) of this pattern was eliminated from the process to obtain the improved heat treatment illustrated in Figure 1b.

This new pattern was expected to provide a higher time and energy efficiency. Solution treatment and hot forging were carried out simultaneously at 540 °C, which is the conventional solution heat treatment temperature. Various process durations (7.5, 15 and 30 minutes) were applied in order to find an optimum temperature-time combination. Following this combined pattern, aluminum bars were artificially aged for 8 hours at 180°C. Total process time was at least 2 hours shorter. Two distinct groups of samples, without deformation and with 10% deformation were investigated in this study.

(a)
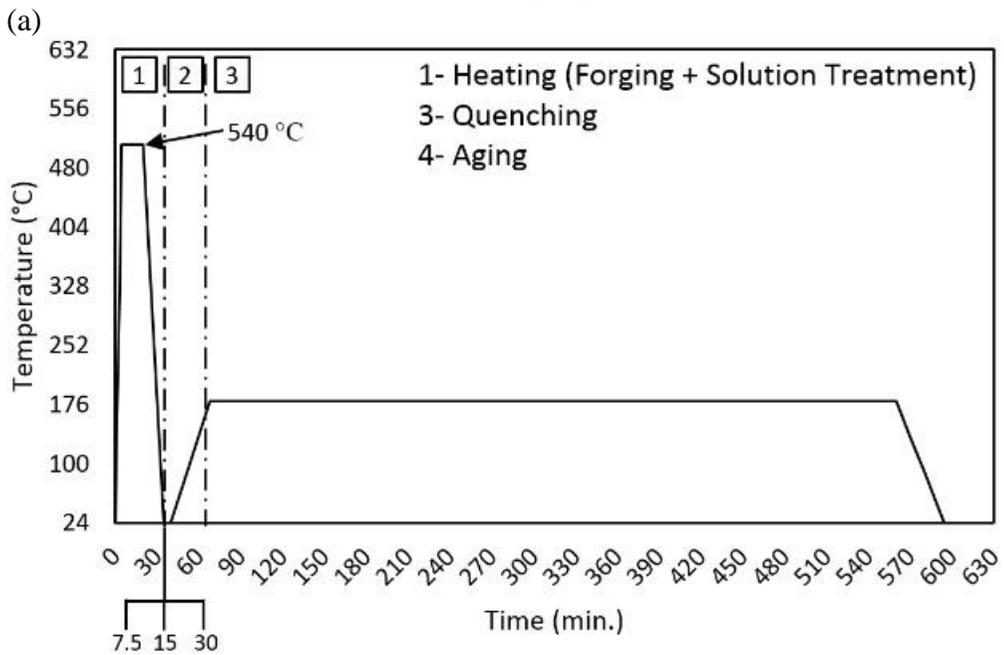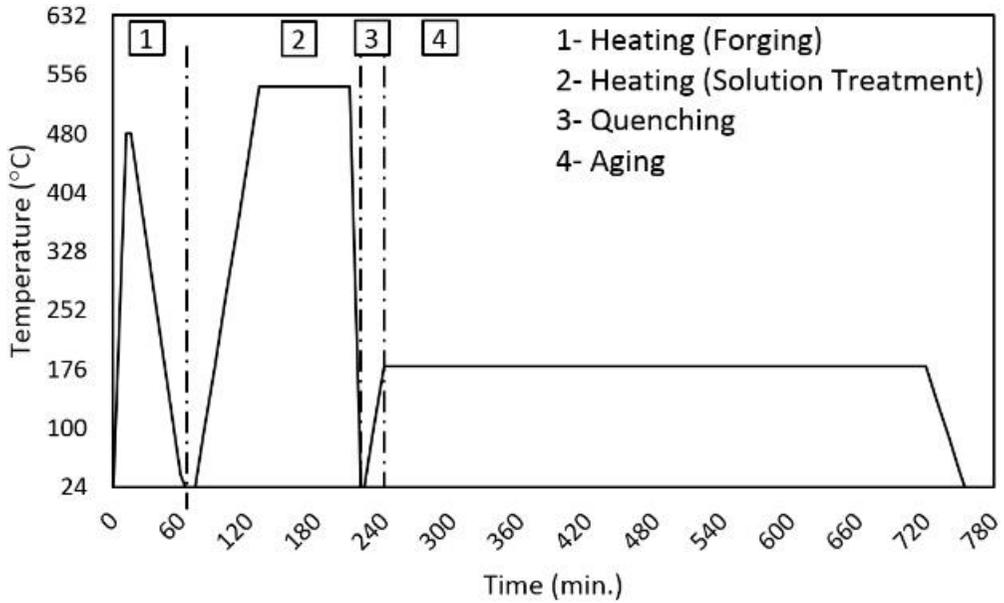
(b)

Figure 1. Heat treatment patterns (a) conventional T6 process and (b) experimental process.

The detailed work flowchart followed is given in Figure 2. Sample denomination is shown in Table 2.
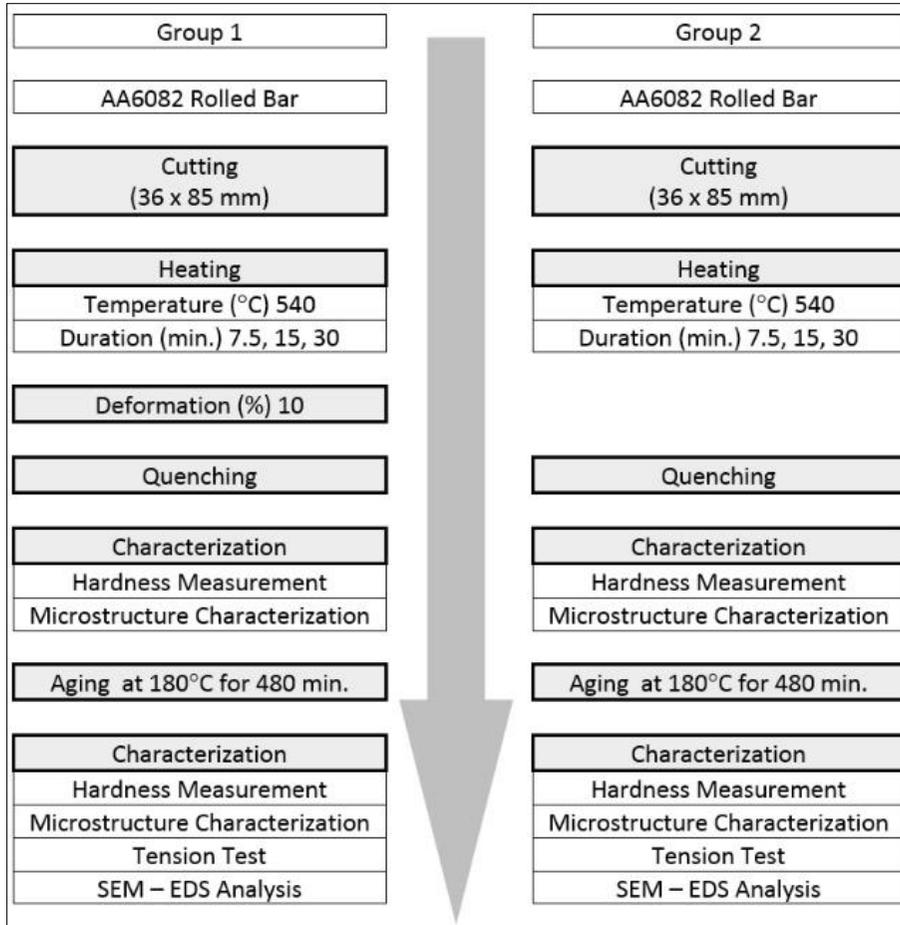
Figure 2. Experimental process flow chart for two sample groups.

Table 2. Sample denomination.

Group No.	Sample No.	Process Temp. (°C)	Process Time (min.)	Deformation (%)
	A1	540	7.5	10
1	A2	540	15	10
	A3	540	30	10
	A4	540	7.5	0
2	A5	540	15	0
	A6	540	30	0

Group 1 samples (samples A1, A2 and A3) were prepared by cutting a cylindrical bar, heat treating 540 °C for 7.5, 15 and 30 minutes and then introducing 10 % plastic deformation prior to quenching into water bath (Figure 3). An automatic 5-ton vertical hot forging ram was used. Group 2 samples (samples A4, A5 and A6) were also heat treated at 540 °C for 7.5, 15

and 30 minutes and directly quenched to water bath without introducing any deformation. All the samples were artificially aged at 180 °C for 8 hours.
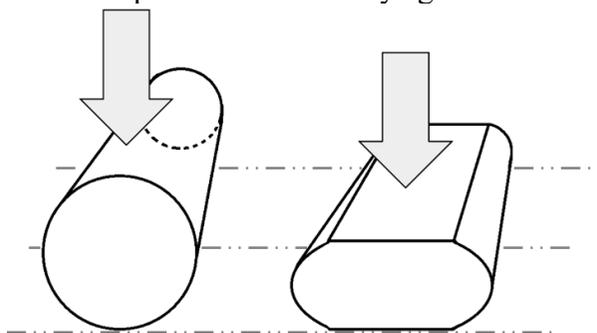
Figure 3. Illustration of plastic deformation introduced to Group 1 samples by hot forging.

All samples were characterized before and after the aging process. Figure 4 illustrates the regions from where specimens were taken.
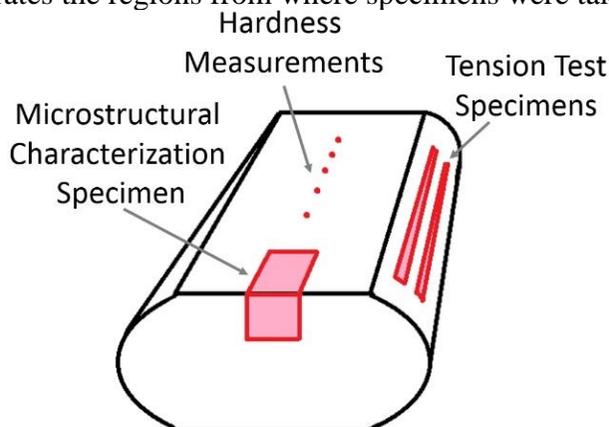
Figure 4. Illustration of the regions on Group 1 samples used to obtain experimental data.

Brinell hardness measurements (750 kg load, 5mm ball indenter, polished surface) and standard tension tests were carried out using Emcotest M5C030G3 Hardness Tester and Zwick Tensile Testing Instrument. Tension test specimens were prepared according to the DIN 50125 standard. Tensile strength and % elongation values of Group 1 and 2 samples were calculated before and after the aging process.

Microstructure characterization samples were chosen from the region exposed to the most severe deformation in a way to reveal the structural change from the surface. Samples were ground using SiC abrasive papers, diamond polished and chemically etched using NaOH solution. Nikon Eclipse Optical Microscope (OM), Philips XL 30 FEG Scanning Electron Microscope (SEM) and integrated EDAX Energy Dispersive X-ray Spectral Analysis (EDS) system were used for microstructural characterization and elemental

analysis. Elemental analysis was carried out from the aluminum matrix and precipitates in the microstructure.

Results and Discussion

Mechanical properties and microstructures of specimens - heat treated and hot forged for various durations (7.5, 15 and 30 minutes) - were compared before and after artificial aging. Hardness test results, calculated as the average of 5 measurements on each sample, are given in Table 3.

Table 3. Hardness test results.

Sample No.	Hardness before aging (HB)	Hardness after aging (HB)
A1	81	84
A2	88	106
A3	90	112
A4	77	82
A5	84	102
A6	88	108

Hardness values of Group 1 and 2 specimens were between 81-88 HB before and 84-108 HB after artificial aging process (at 180 °C for 480 min). Figure 5 and 6 gives the variation of hardness values depending on process duration and deformation before and after the aging process.
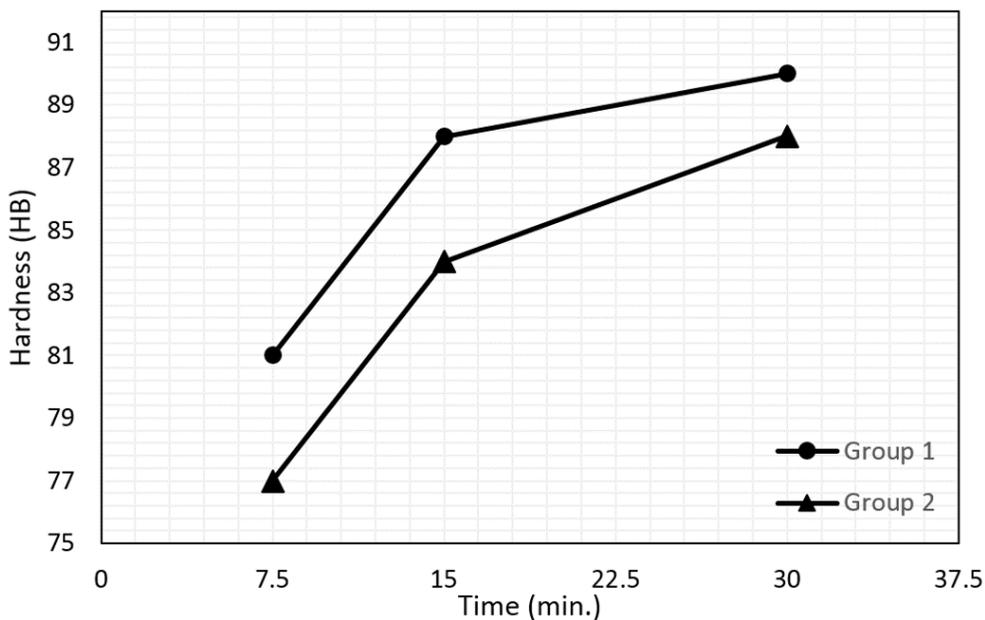
Figure 5. Variation of hardness values depending on heat treatment time - before artificial aging
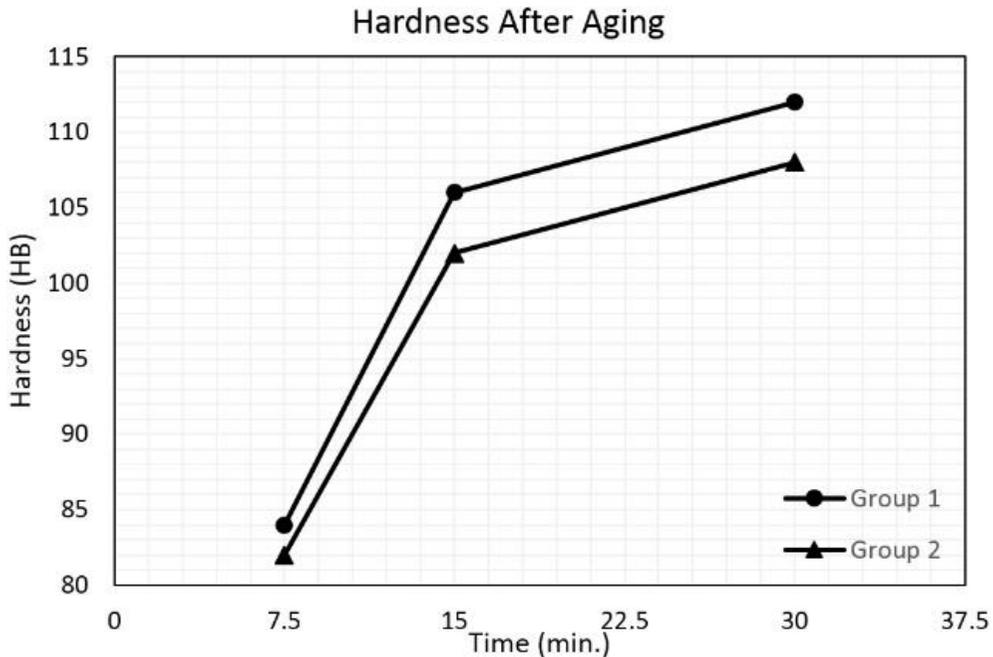
Figure 6. Variation of hardness values depending on heat treatment time - after artificial aging

It is evident that the quenched hardness of the samples significantly increased depending on increasing solution treatment temperature. It was also observed that plastic deformation did not have any notable effect on the Brinell hardness values of the two sample groups. Thus, microstructural characterization was only carried out for Group 1 samples.

Table 4 gives the yield strength, tensile strength, and elongation values of aged samples.

Table 4. Tension test results.

Sample #	Yield strength (N/mm^2) Min 260 N/mm^2	Tensile strength (N/mm^2) Min 310 N/mm^2	Elongation (%) Min. %6
A1	-	228.16	21.1
A2	290.33	344.72	18.47
A3	315.38	372.63	15.95
A4	-	208.13	21.05
A5	288.34	338.21	18.12
A6	305.83	362.02	16.85

Tensile strength and % elongation values of the specimens were within the range of 228-362 N/mm^2 and 21-17 % respectively.

Tensile strength of the samples increased depending on increasing process duration, showing a similar tendency to the hardness (Figure 7). Deformation did not have any influence on the tensile strength of the samples.

The wide range in elongation and strength values can be attributed to the non-homogeneous distribution of precipitation phases. When process time is short, due to limited diffusion, insufficient amount of quantity of coherent and semi coherent precipitation can occur within the alloy [8].

Tensile strength values of the samples treated for 7.5 minutes below whereas the tensile strength of the samples treated for 15 and 30 minutes were above the desired value. Elongation values tend to decrease with increasing tensile strength. Both hardness and tensile strength of the samples increased after aging.
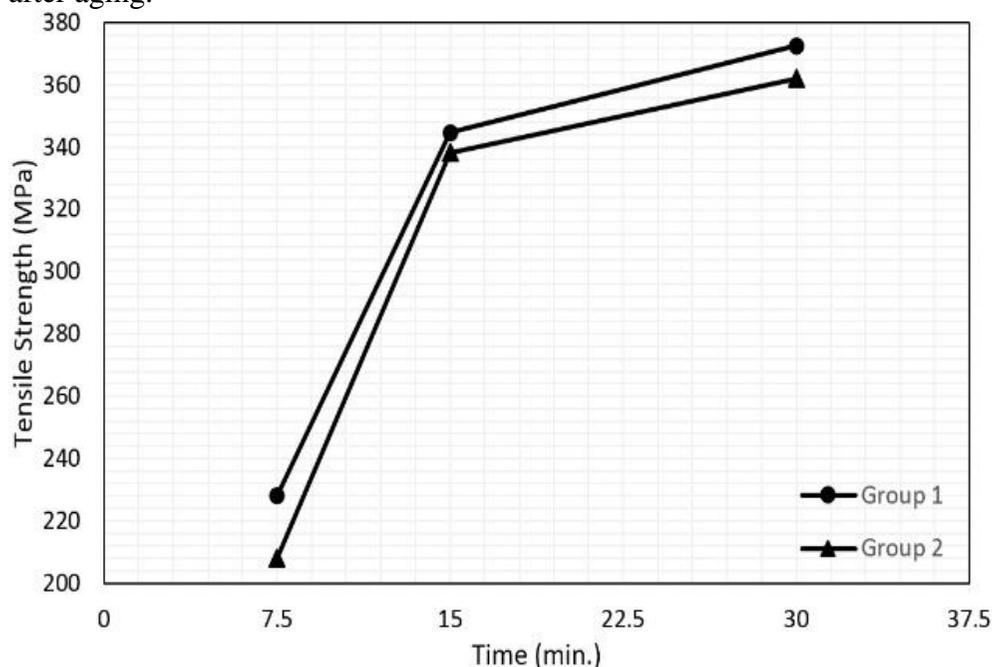
Figure 7. Tensile strength of Group 1 and 2 samples - heat treated 7.5, 15 and 30 minutes and artificially aged.

For industrial applications (machine components etc.) acceptance criteria for AA 6082 alloy is that the hardness of the part must be over 90 HB. Experimental results showed that for short process durations hardness values were below the desired value, most probably due to the insufficient amount of dissolved second phase. After artificial aging, hardness of the samples treated for 15 and 30 minutes were over 90 HB (Table 3).

Optical microscope images of the samples Group 2 samples before and after artificial aging are given in Figure 8.

19
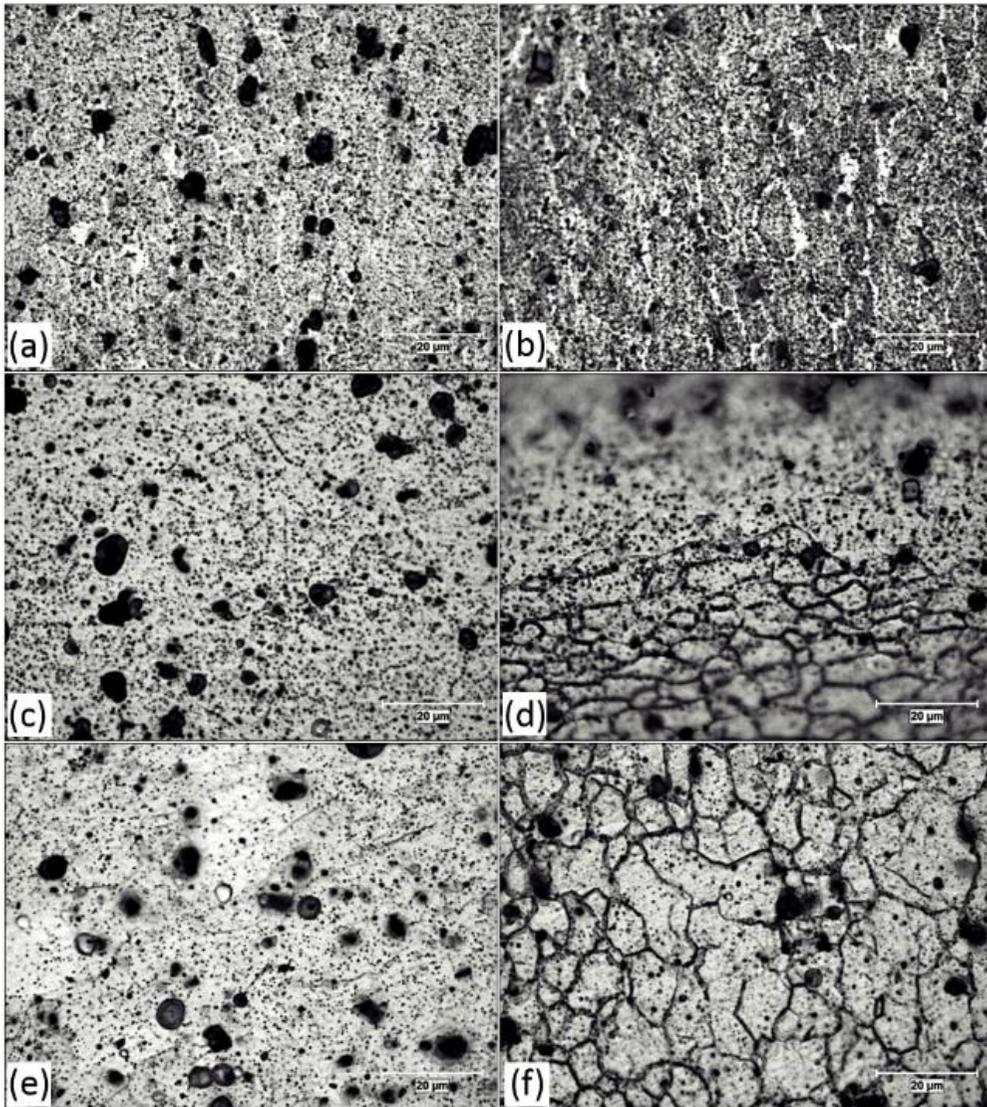
Figure 8. Optical microscope images (a) sample A4 (b) sample A4-aged (c) sample A5 (d) sample A5-aged (e) sample A6 and (f) sample A6-aged.

Comparison of microstructures given in Figure 8 reveals that the artificial aging process alters the alloy microstructure. Grain growth occurred from surface towards the center during artificial aging. Figure 8b shows the transition between the coarse surface and fine inner region. Considering the deformation is concentrated on the surface during forging, it is clear that the aging process acted as a partial recrystallization anneal. It can be observed that second phase precipitates are finer and distributed more homogeneously within the structure after artificial aging process, depending on process duration. Coarse precipitates at low solution treatment temperatures are

dissolved and spread over the matrix with finer precipitation as the process temperature increase.

SEM micrograph of the AA6082 alloy is given in Figure 9. EDS analysis results of various regions marked on Figure 10 are given in Table 5.
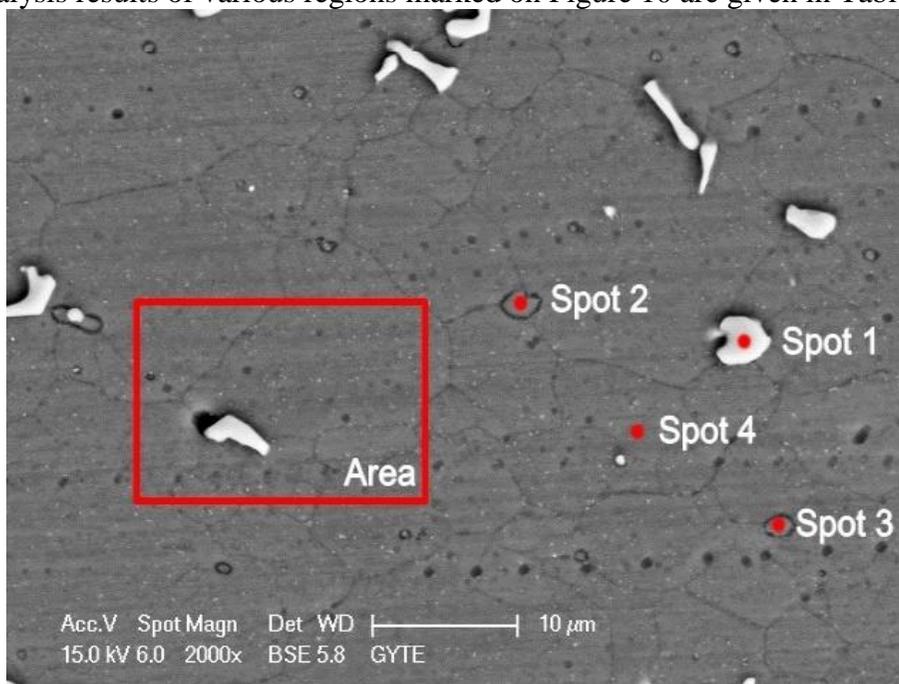
Figure 9. SEM micrograph of AA6082 alloy. EDS analysis regions are marked.

Figure 9 shows that coarse precipitates in the alloy has no regular geometry. Very thin and light gray colored spherical precipitates are also present. Grain boundaries and fine precipitates which are the result of the aging process are also visible.

Table 5. EDS analysis results.

Region	Element (wt. %)				
	O	Mg	Si	Mn	Al
Spot 1	1.51	0.52	11.93	14.35	71.68
Spot 2	3.4	9.47	7.32	-	79.8
Spot 3	6.6	21.05	16.1	-	56.25
Spot 4	1.23	1.99	1.33	-	95.46
Area	-	1.56	1.52	-	96.52

EDS results show that irregular bright precipitates (Spot 1) consist of Al, Mn, Si and Mg whereas light grey precipitates (Spot 2 and 3) consist of Al as well as high amount of Si and Mg. Spot 4 is the matrix alloy. Considering these results and earlier studies on alloy AA 6082, it can be concluded that these precipitates are complex binary and/or ternary intermetallic compounds such as Mg_2Si, $Al_{10}SiMn_3$ and $Al_{15}Si_2Mn_3$ [8]. Precipitation of second phase

particles during heat treatment is the main strengthening mechanism of AA6082 alloy. Above the solvus line, solubility of Mg and Si in Al increases depending on the treatment temperature. Quenching creates a super saturated matrix and after artificial aging, precipitates formed through the super saturated Al matrix retard the dislocation motion and increase the mechanical strength and the hardness values. This increment tends to be higher for higher concentration of Mg and Si in solid solution.

Conclusion

Experimental results are summarized below:

1. Deformation had a slight effect on hardness, elongation and strength values.
2. Hardness and tensile strength values of the samples increased with increasing heat treatment duration.
3. Samples did not reach the sufficient hardness before aging. All samples, except the ones treated for 7.5 minutes, had sufficient hardness (over 90 HB) after artificial aging.
4. A fine grain structure was observed through the inner regions of aged samples. Recrystallization and grain growth occurred after ageing depending on increasing process duration.
5. Al, Si, Mg and Mn elements were observed within the precipitates in the matrix phase. Complex intermetallic compounds were formed through the matrix.
6. Induction heating is employed for pre-heating of forging parts for a very short term in the industry. Results of this study revealed that short heating durations at elevated forging temperatures of AA6082 alloys are sufficient to obtain the required hardness values.
7. Simultaneous hot forging – solution treatment process provided time and energy efficiency for AA 6082 aluminum forged parts.

Acknowledgment

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Neighborhood Dynamics of Race and Ethnicity in the 21st Century: Residential Segregation and Poverty Concentration within Chicago, Illinois; 2000-2010

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Abstract

Residential landscapes throughout the urban United States have long been associated with high levels of racial and ethnic segregation. The increased ethnic diversification occuring across many larger urban areas has somewhat altered this dynamic. Chicago, Illionois is one major city possessing a long history of being highly segregated residentially. The city is especially noted for the exceptionally high levels of separation that have always existed between African-Americans and whites. Like many major cities the last few years, it has increasingly became home to larger numbers of Hispanics and Asians, a trend that has altared its residential geography. This research investigates the impacts that increased diversity had on levels of residential segregation among racial and/or ethnic groups within Chicago from 2000 to 2010. Empirical analysis entailed the measurement of two dimensions of segregation evident among Non-Hispanic whites, African-Americans, Hispanics and Asians. We focus particular attention to the role that segregation has in terms of influencing degrees to which these different groups are exsposed to poverty residentially. During the decade, African-American Chicagoans as a group became slightly less residentially isolated. Conversely, results confirm that both Asians, and Hispanics appear to be exhibiting forms of "ethnic (or racial) self-selectivity" that functioned to spatially concentrate them within their own neighborhoods. The demographic composition of the city's extremly poor neighborhoods changed during the decade, yet they remained predominantly black. Findings lead us to conclude that in 2010 Chicago was still a highly segregated, albeit increasingly diverse, city.

Keywords: Urban geography, racial segregation, urban poverty, neighborhood change

Introduction

In recent years the concept of inequality has reemerged as a major point of discussion across the U.S. As has always been the case, these discussions strongly incorporate issues of race and ethnicity. The geographic dimensions of these inequalities are one subject area given considerable attention within the scholarly community, particularly in regards to the disadvantages experienced by African-Americans residing within extremely poor urban neighborhoods (Massey and Denton 1993; Quillian 2012; Sharkey 2013). By just about any measure, socioeconomic inequalities between whites and African-Americans have worsened throughout the U.S. in recent decades. History has shown that the disparate neighborhood conditions these two racial groups experience are both the most vivid manifestation of these inequalities, and the most persistent in their severity (Massey and Denton 1993; Duneier 2016).

The disadvantages African-Americans face within urban environments stem directly from the interrelated conditions of residential segregation and poverty concentration. In short, relative to other racial and ethnic groups, African-Americans have traditionally resided within neighborhoods that are more spatially isolated and disproportionately poorer (Jargowsky 1997, 2015). For instance, it is the experiential context of racial segregation that explains how and why even many non-poor African-Americans are actually more residentially exposed to the by-products of poverty concentration than are poor whites (Massey and Denton 1993; Iceland and Hernandez 2017). It has been widely acknowledged that neighborhood experiences can actually shape everything from higher crime rates, health disparities, educational disadvantages, to limited socioeconomic mobility (Collins and Collins 2001; Strait 2006; Sampson 2012; Sharkey 2013). Thus, rather than simply being a geographic symptom of a larger system of inequality, residence within highly segregated and extremely poor neighborhoods can actually function as a root cause of a broad array of socioeconomic disadvantages that are arguably more problematic than a lack of income.

Over the last few decades urban areas in the United States have been transformed in a variety of ways, and many of these transformations that have undoubtedly altered their residential dynamics (Hardwick 2008; Ehrenhalt 2013; Frey 2010, 2012). Not all urban areas have been impacted by these transformations in the exact same manner, yet four notable nation-wide trends have impacted most large cities to some degree; (1) rapid growth in diversity and the residential dispersal of minority populations, especially Hispanics, (2) an identifiable "black flight" from cities traditionally possessing large African-American populations, (3) an influx of younger "gentrifying" whites into central cities of larger metros, and (4) the suburbanization of poverty concentration. The interaction of the changes obviously have profound

25

impacts across urban landscapes, thus modifying the geographies of segregation and poverty concentration in significant ways.

The primary aim of this paper is to shed light on the evolving nature of residential segregation and poverty concentration evident among racial and ethnic groups during the first full decade of the 21st century. We focus attention on how the aforementioned changes have manifested across the residential landscape within the core of Chicago, Illinois, a diversifying urban region that has witnessed transformations that exemplify those exhibited across the urban United States. We argue that it remains paramount to understand how city-wide diversity translates to the actual residential experiences of different racial and ethnic groups within places like Chicago, particularly in light of research suggesting that neighborhood geographies of US metropolitan areas can simultaneously be both diverse and segregated (Holloway et al. 2012; Strait and Gong 2015). In meeting its purpose this project builds upon a growing literature that has analyzed changes in residential segregation at the neighborhood level, and has considered its relationship to degrees of poverty concentration exhibited among different racial and ethnic groups (Firebaugh and Acciai 2016; Holloway et al. 2012; Iceland and Hernandez 2017; Intrator et al. 2016; Quillian 2012; Strait 2001, 2002, 2006a, 2006b; Strait and Gong 2008, 2010, 2012, 2015; Strait et al. 2007).

The following specific questions are addressed here: (1) What are the relative levels of segregation experienced among four main racial and ethnic groups in Chicago and how have they changed between 2000 and 2010? [1] (2) How do the levels of segregation existing among these groups relate to neighborhood-level poverty exposure experienced by both the poor and the non-poor alike? (3) How has the demographic and geographic nature of extremely poor neighborhoods in Chicago changed over time? By addressing the last two questions, this paper investigates the possibilities that certain racial and/or ethnic groups may be experiencing the residential effects of urban processes in different ways, with these differences causing them to become more or less residentially exposed to poverty overtime.

The Context of Chicago

Chicago represents an important and interesting case study for an investigation such as this for a number of reasons. First, since the early part of the 20th century Chicago has been noted for possessing a significant African-American population, yet in recent years the city has experienced a considerable shift in its racial and ethnic make-up, largely driven by an influx of Hispanics and Asians. Second, despite a strong history as a multi-cultural city, Chicago is infamous for being among the highly segregated city in the U.S. (Sampson 2012). Moreover, the city's high levels of racial segregation

have always intersected with very high levels of poverty concentration – poor minorities in Chicago, especially the African-American poor, have always been highly isolated from the non-poor. Third, the city has recently exhibited a degree of gentrification, whereby many neighborhoods traditionally inhabited by lower-income or modest-income minority residents have recently witnessed an influx of higher-income whites (Betancur 2010; Papachristos et al. 2011). Finally, Chicago's residential dynamics have been significantly altered by an ongoing process that totally redeveloped, and in some cases totally removed, much of its public housing stock. This process has significantly transformed many of the residential communities that traditionally served as the home for much of the African-American poor. In sum, a focus on Chicago should provide considerable insight into the impacts that urban transformations of the 21st century are having on geographies of race, ethnicity and poverty.

Data, Methodology and Conceptual Framework

Data used in this paper were derived and tabulated from the 2000 and 2010 census tract files for the city of Chicago, Illinois. The city of Chicago serves as the demographic, cultural, and economic core of the larger Chicago-Naperville-Elgin (IL-IN-WI) metropolitan area, and in 2010 was the 3rd largest city in the United States in terms of population. The city has always contained the majority of all racial and ethnic minorities residing within the larger Chicago metro area, as well as the majority of the poor.

This study considers two different manifestations of residential segregation and required the use of two separate statistical measurements; residential evenness and residential exposure. Residential evenness, perhaps the most frequently referenced form of segregation, generally refers to the degree to which members of different groups are over-represented and/or under-represented in different sub areas relative to their overall proportions across a larger area (Massey and Denton, 1988; Massey et al., 1996). Measures of residential evenness between pairs of racial and ethnic groups were calculated via the commonly used Index of Dissimilarity (ID).[2] By comparison, residential exposure is not based on some ideal or "even" distribution, but refers to the potential for different groups to experience contact through the sharing of residential space. In this paper a measure of neighborhood-level exposure was used to determine the extent to which various groups – defined by race, ethnicity, and poverty status - reside in the same neighborhoods. Unlike the index of dissimilarity, the measurement of exposure used here strongly depends on the relative sizes of the groups being considered, thus more accurately expressing the degree to which group members actually *experience* segregation within their neighborhood environments (Massey 1985; Massey and Denton 1988; Massey et al., 1996).

In this study residential exposure is measured via two distinct, yet similar indices.[3] One index is referred to as the isolation index and indicates the probability that an average member of a specific population would have residential contact with other members of the same population. Thus, for the purpose of this paper, increased isolation refers to the process whereby members of a particular ethnic or racial group, or just the poor members of a particular ethnic or racial group, come to increasingly reside in neighborhoods inhabited by relatively larger numbers of the same group. For example, this index could be used to calculate the proportion of the total population residing with the average Hispanics' neighborhood that is also Hispanic. Likewise, this index could be used to calculate the proportion of the total population within the average poor African-American's neighborhood that is also both poor and African-American. The related interaction index is used to measure the probability that an average member of a specific population will have residential interaction with, or exposure to, members of a different group. The interaction index can then demonstrate the proportion of the population residing within the average non-poor Hispanic's neighborhood that is either African-American, Asian and poor, or non-poor and white. Collectively these two indices essentially provide the demographic breakdown of the neighborhood inhabited by average members of the particular racial or ethnic groups being considered, as well as the poverty status of this demographic breakdown.

As a means to further investigate the evolving demographic and geographic nature of extremely poor neighborhoods, we utilized the most commonly referenced measure of extreme urban poverty; census tracts possessing overall poverty rates of 40% or more (Jargowsky 1997). The census tracts within Chicago that fit this criterion were identified for both 2000 and 2010, and demographic changes evident within them were noted.

Results of Analysis

Data in Table 1a and 1b demonstrate the overall population change, and the change in the poverty population, that occurred throughout Chicago during the decade. The total population of the city declined by 7.6%, and group-specific totals declined for every racial and ethnic group considered, with the exception of Asians. Chicago's poor population mirrored its overall population by becoming slightly more diverse by 2010. Poverty increased throughout the city in both relative and absolute terms (Table 1b), as the white, Hispanic, and Asian populations all became at least slightly poorer over the decade. The increase in poverty among these groups were partially offset by relative and absolute declines in African-American poverty. Members of this racial minority still comprised over half the of the city's poverty population in

28

2010, yet the total number of poor African-Americans in Chicago declined by over 7% during the decade.

Table 1a. Population Change Among Racial and Ethnic Groups in the City of Chicago; 2000 - 2010				
	2000	**2010**	**Change**	**% Change**
Total MSA population	2.873.570	2.656.413	-217.157	-7,6
White population	951,180 (33.1 %)	842,280 (31.7 %)	-108.900	-11,4
African-American population	1,034,325 (36.0%)	899,281 (33.9 %)	-135.044	-13,1
Hispanic population	755,165 (26.3%)	746,330 (28.1 %)	-8.835	-1,2
Asian population	127,383 (4.4 %)	143,323 (5.4 %)	15.940	12,5
	Source: U.S. Census Bureau (2000 and 2010)			

Table 1b. Change in Poor Population By Race and Ethnicity in the City of Chicago; 2000 - 2010				
	2000	**2010**	**Change**	**% Change**
Total poor population	553.883	556.416	2.533	0,5
% of total city population	19,3	21,0		
White poor	75.035	84.994	9.959	13,3
% of total poverty	13,6	15,3		
African-American poor	303.864	282.278	-21.586	-7,1
% of total poverty	54,9	50,7		
Hispanic poor	150.571	162.057	11.486	7,6
% of total poverty	27,2	29,1		
Asian poor	22.296	22.944	648	2,9
% of total poverty	4,0	4,1		
	Source: U.S. Census Bureau (2000 and 2010)			

Figures 1 through 4 cartographically demonstrate the relative distributions of the groups considered here, defined by race, ethnicity, and poverty status. Figures 1a and 1b clearly show that the northern portions of the Chicago are predominantly inhabited by the city's white population, both poor and non-poor. Comparitively, Figures 2a and 2b demonstrate the widely acknowledged high concentrations of African Americans within the city's South and West sides. Views of Figures 1b and 2b cartographically reinforces the data presented in Table 1b; the concentrations of poor whites has increased across northern Chicago (Figure 1b), while the concentrations of the African-American poor appear less prominent in 2010 (Figure 2b). Figures 3 and 4, respectively, show the increased presence of Hispanics and Asians over time. They also demonstrate that each of these groups increasingly carved out their own residential concentrations during the decade. The distribution of Asians more closely overlaps with the distribution of the white population (Figure 4a and 4b), while some Hispanic concentrations that evolved by 2010 were located near, or within, neighborhoods formerly predominated by African Americans (Figures 3a and 3b).

Changes in Residential Evenness

Table 2 includes a segregation matrix showing measures of evenness evident among the four groups as measured by the index of dissimilarity for 2000 and 2010. The data indicate that the segregation continuum evident between whites and the various minority groups in Chicago generally mirrors the trend typically evident across the rest of the metropolitan U.S. (Logan and Stults 2010; Glaesar and Vigdor 2012; Strait and Gong 2015). African-Americans were more segregated from whites than other minority groups and were also the most the residentially segregated group overall. The degree of separation between African-Americans and all other groups, while still exceptionally high, did decline slightly over time. Still, the pair-wise indices are interpreted to suggest that over 83% of African-Americans would have to be relocated across Chicago in order for perfect spatial integration with any other group to be realized. As is typical elsewhere, Asians in Chicago were more integrated with whites than other groups, while Hispanics exhibited intermediate, yet fairly high, levels of segregation with the white majority. In fact, the Hispanic population exhibited fairly high levels with all groups, and demonstrated no sign of integrating with Whites or Asians during the time frame.

Table 2. Measures of Residential Evenness Among Racial and Ethnic Groups in Chicago, Illinois; 2000 and 2010 (2000 figures in parenthesis; based on the Index of Dissimilarity)

	Whites	African-Americans	Hispanics	Asians
Whites	X	83.0 (86.0)	60.1 (60.1)	45.0 (48.8)
African-Americans	83.0 (86.0)	X	83.1 (86.0)	85.2 (86.0)
Hispanics	60.1 (60.1)	83.1 (84.7)	X	67.1 (67.0)
Asians	45.0 (48.8)	85.2 (86.0)	67.1 (67.0)	X

Source: U.S. Census Bureau (2000 and 2010)

Changes in Residential Exposure

Tablea 3a and 3b list measures of residential exposure exhibited by the four groups as measured by both isolation and exposure indices, defined by race, ethnicity, and poverty status. These indices are influenced by changes in the relative group compositions, so they would be expected to change over time. To some degree, these changes reflect the increased diversity evident across the city, along with a slight increase in exposure among the different groups. African-Americans and whites became more exposed to Hispanics and Asians over the decade, and slightly more exposed to one another (Table 3a). Findings demonstrate that on average, Asians and Hispanics resided in neighborhoods that were far more diverse than those inhabited by African-Americans or whites. For example, in 2010 the average Asian resident in Chicago resided in a neighborhood that was 45.8% white, 10.8% African-American, 21.6% Hispanic and 21.4% Asian (Table 3b). It is worth noting, however, that the proportion of non-Asians residing in the average Asian's neighborhood did decline for all groups overtime. In short, Asians are similar to other groups in Chicago in that they generally reside in neighborhoods inhabited by a disproportionately high number of people sharing the same racial identity. These results confirm that African-Americans in Chicago still reside in neighborhoods that are predominantly black (82% black), although on average these neighborhoods had become *slightly less* black by 2010 (Table 3a). By comparison, Hispanics were not as spatially concentrated as African-

Americans, but in 2010 did reside in neigborhoods where over 60% of the residents were co-ethnics (Table 3b).

Table 3a. Neighborhood Exposure Indices by Race, Ethnicity, and Poverty Status in Chicago; 2000 – 2010

	2000	2010	Change	% Change
Whites to:				
Whites	0.649	0.613	-0.036	-5.5
Poor Whites	0.043	0.055	0.012	27.9
Non-Poor Whtes	0.606	0.558	-0.048	-7.9
African-Americans	0.076	0.086	0.010	13.2
Poor African-Americans	0.017	0.024	0.007	41.2
Non-Poor African-Americans	0.059	0.062	0.003	5.1
Hispanics	0.211	0.241	0.030	14.2
Poor Hispanics	0.033	0.041	0.008	24.2
Non-Poor Hispanics	0.178	0.180	0.002	1.1
Asians	0.062	0.078	0.016	25.8
Poor Asians	0.009	0.011	0.002	22.2
Non-Poor Asians	0.053	0.067	0.014	26.4
Total Poverty	0.102	0.131	0.029	28.4
African Americans to:				
Whites	0.070	0.081	0.011	15.7
Poor Whites	0.009	0.011	0.002	22.2
Non-Poor Whtes	0.061	0.070	0.009	14.8
African-Americans	0.846	0.820	-0.026	-3.1
Poor African-Americans	0.253	0.258	0.005	2.0
Non-Poor African-Americans	0.593	0.562	-0.031	-5.2
Hispanics	0.068	0.080	0.012	17.6
Poor Hispanics	0.017	0.019	0.002	11.8
Non-Poor Hispanics	0.051	0.061	0.010	19.6
Asians	0.014	0.017	0.003	21.4
Poor Asians	0.003	0.003	0.000	0.0
Non-Poor Asians	0.011	0.014	0.003	27.3
Total Poverty	0.282	0.291	0.009	3.2

Source: U.S. Census Bureau (2000 and 2010)

Table 3b. Neighborhood Exposure Indices by Race,

Ethnicity, and Poverty Status in Chicago; 2000 – 2010

	2000	2010	Change	% Change
Hispanics to:				
Whites	0.266	0.220	-0.046	-17.3
Poor Whites	0.026	0.029	0.003	11.5
Non-Poor Whtes	0.240	0.191	-0.049	-20.4
African-Americans	0.093	0.130	0.037	39.8
Poor African-Americans	0.029	0.097	0.068	234.5
Non-Poor African-Americans	0.064	0.033	-0.031	-48.4
Hispanics	0.598	0.609	0.011	1.8
Poor Hispanics	0.128	0.138	0.010	7.8
Non-Poor Hispanics	0.470	0.471	0.001	0.2
Asians	0.038	0.042	0.004	10.5
Poor Asians	0.006	0.006	0.000	0.0
Non-Poor Asians	0.032	0.036	0.004	12.5
Total Poverty	0.189	0.270	0.081	42.9
Asians to:				
Whites	0.465	0.458	-0.007	-1.5
Poor Whites	0.046	0.051	0.005	10.9
Non-Poor Whtes	0.419	0.407	-0.012	-2.9
African-Americans	0.114	0.108	-0.006	-5.3
Poor African-Americans	0.029	0.032	0.003	10.3
Non-Poor African-Americans	0.085	0.076	-0.009	-10.6
Hispanics	0.224	0.216	-0.008	-3.6
Poor Hispanics	0.038	0.045	0.007	18.4
Non-Poor Hispanics	0.186	0.171	-0.015	-8.1
Asians	0.192	0.214	0.022	11.5
Poor Asians	0.042	0.043	0.001	2.4
Non-Poor Asians	0.152	0.171	0.019	12.5
Total Poverty	0.155	0.171	0.016	10.3

Source: U.S. Census Bureau (2000 and 2010)

As would be expected given the compositional changes that occurred, all groups became slightly more residentially exposed to poverty over the decade. African-Americans were still more exposed to poverty in 2010 than all other groups, and on average resided in neighborhoods that were more than twice as poor as those inhabited by whites (29.1% poor for African-Americans versus 13.1% poor for whites; Table 3a). The most signficant change evident in terms of poverty exposure pertained to the residential experiences of Hispanics. The poverty rate of the average neighborhood inhabited by Hispanics increased signficantly over time, from 18.9% to 27.0% (Table 3b). These data demonstrate that the increased poverty exposure experienced by Chicagoans was at least partially due to an increased exposure to poor members of their same respective racial and/or ethnic group. However, it is notable that all groups were increasingly exposed to poor African-Americans over time, despite the fact that the relative and absolute size of this poor cohort had declined signficantly.

Nature of Extremely Poor Neighborhoods
Table 4a provides a view of changes in the composition of extremely poor neighborhoods for both 2000 and 2010, defined by race, ethnicity and poverty status. Table 4b demonstrates changes in the relative presence of the various groups within these neighborhoods. There were fewer actual neighborhoods within Chicago classified as extremely poor in 2010 than was the case at the beginning of the decade (103 versus 119, respectfully). However, these data reveal that the overall population residing within such neighborhoods increased over time. Most of this change was almost totally due to the increased presence of the non-poor, who comprised over 52% of the population within extremely poor neighborhoods by 2010 (Table 4a). For all four racial and ethnic groups considered here, the increased presence within extremely poor neighborhoods was more significantly driven by the non-poor, rather than the poor.

Table 4a. Composition of Extremely Poor Neighborhoods by Race and Ethnicity the City of Chicago; 2000 - 2010

	__2000__	__2010__	__Change__	__% Change__
Total population	225,766	241,950	16,184	7.2
Total Poor	114,829 (50.9)	115,928 (47.9%)	1,099	1.0
Total Non-Poor	110,937 (49.1%)	126,022 (52.1%)	15,085	13.6
White population	7,438 (3.3 %)	11,833 (4.9 %)	4,395	59.1
White Poor	2,267 (1.0%)	3,675 (1.5%)	1,408	62.1
White Non-Poor	5,171 (2.3%)	8,158 (3.4%)	2,987	57.8
African-American population	183,816 (81.2%)	189,603 (78.2 %)	5,787	3.1
Afr.-Am. Poor	98,776 (43.7%)	96,321 (39.7%)	-2,455	-2.5
Afr.-Am. Non-Poor	85,040 (37.6%)	93,282 (38.5%)	8,242	9.7
Hispanic population	30,190 (13.3%)	36,492 (15.1 %)	6,302	20.9
Hispanic Poor	11,646 (5.2%)	14,529 (6.0%)	2,883	24.8
Hispanic Non-Poor	18,544 (8.2%)	21,963 (9.1%)	3,419	18.4
Asian population	4,322 (1.9 %)	4,022 (1.7%)	-300	-6.9
Asian Poor	2,140 (0.9%)	1,403 (0.6%)	-737	-34.4
Asian Non-Poor	2,182 (1.0%)	2,619 (1.1%)	437	20.0

Table 4b. Percent Population within Extremely Poor Neighborhoods by Race and Ethnicity in the City of Chicago; 2000 - 2010

	2000	**2010**	
Total population	7.86	9.10	
Total Poor	20.73	20.83	
Total Non-Poor	4.78	6.00	
White population	0.78	1.40	
White Poor	3.02	4.32	
White Non-Poor	0.59	1.08	
African-American population	17.77	21.10	
Afr.-Am. Poor	32.51	34.10	
Afr.-Am. Non-Poor	11.64	15.12	
Hispanic population	4.00	4.89	
Hispanic Poor	7.73	8.97	
Hispanic Non-Poor	3.07	3.76	
Asian population	3.39	2.81	
Asian Poor	9.60	6.11	
Asian Non-Poor	2.08	2.18	

Throughout the 20th century African-Americans have also comprised the majority of residents within Chicago's extremely poor neighboods. Such neighborhoods did become slightly less African-American through the first decade of the 21st century, yet this racial group still comprised over 78% of the population within them in 2010 (Table 4a). The second largest share of residents were Hispanics, who share of the population had increased to 15% by the end of the decade. The most striking component of change evident pertains to the changing poverty-status of the African-American presence. In 2010 the largest cohort residing within extremely poor neighborhoods was still the African-American poor, yet their numbers decreased in both relative and absolute terms (Table 4a). By comparison, the presence of non-poor African-American within these neighborhoods increased signficantly. In fact, over half of the population increase evident within these neighborhoods during the

decade was accounted for by non-poor members of this racial minority. By 2010 the average African-American resident of an extremely poor neighborhood in Chicago was almost as likely to be living above the poverty level, rather than being poor themselves.

Discussions and Conclusion

This research confirms that city-wide demographic changes did effect the residential landscape of Chicago during the first full decade of the 20th century, albeit in certain respects these effects were quite modest. It is impossible to use the data analyzed here to distinguish population change driven by migration from that due to natural increase. Nor can these data be utilized to differentiate between in-migration from international and domestic source regions. Finally, these data cannot be used to track the relocation behavior of specific populations over time. They simply provide geographic snapshots of the relative distributions of different groups at the begining and ending of a decade. That said, results presented here clearly demonstrate the residential outcomes of, and linkages between, geographic processes operating at two scales; the impacts of city-wide diversity on levels of residential segregation, and the effects that both increased diversity and residential segregation had on neighborhood-level poverty exposure..

The implications of these results can be summarized by three main points. First, the increased diversity exhibited across the city of Chicago yielded only a very slight degree of residential integration at the neighborhood level. The integration evident at the neighborhood-scale exhibited was primarily due to the combined effects of two forces operating at the city-wide scale; the signficant outmigration of African-Americans and whites that occurred during the decade, and the relative growth exhibited among Hispanics and Asians. In this regard, increased diversity did indeed lead to minor increases in integration across the city. Yet pair-wise indices of eveness indicate that African-Americans were the minorities that became increasingly integrated with all groups considered, changes that were very modest at best. Moreover, by the end of the decade Chicago's African-American population still remainted one of the more geographically isolated urban cohorts in the entire United States. Comparitively, both Hispanics and Asians appear to be exhibiting certain degrees of ethnic (or racial) "self-selectivity" by increasingly residing in neighborhoods inhabited by co-ethnics (Gordon, 1964; Strait 2002).

Second, the evolving levels of residential segregation in Chicago had complex and sometimes contradictory links with the levels of poverty exposure exhibited by different racial and/or ethnic groups. For instance, there is no doubt that the tendency for African-American Chicagoans to reside in highly segregated neighborhoods results in members of this racial group being

disproportionately exposed to poverty residentially. Evidence provided here clearly demonstrates that both the absolute and relative numbers of non-poor African-Americans residing within extremely poor Chicago neighborhoods increased during the decade, even as poor members of this racial minority became slightly less present within them. Yet, this same evidence also suggests that the modest levels of integration that did occur across the city was at least partially generated by other racial and ethnic groups becoming *increasingly* exposed to poor African-Americans. Integration was essentially occuring across lines of poverty status. This was particularly true for the Hispanic population, whose increased exposure to African-Americans over time was almost totally driven by an increased exposure to a poor cohort. In sum, untangling the complex impacts of racial and/or ethnic segregation on poverty exposure requires one to fully consider the race-and-class contexts of neighborhood dynamics.

Third, empirical results provide ample evidence that the evolving residential geography within Chicago was associated with alterations in the nature of the city's extremely poor neighborhoods. Given that the city's poor population had increased in relative terms during the decade, it might seem natural that a larger percentage of its population would reside in such neighorhoods. However, extremely poor neighborhoods in Chicago, at least as collectively measured here, became noticably *less* poor during the decade. It is counter-intuitive, but the increased population residing within extremely poor neighorhoods was driven almost exclusively by a growth in non-poor populations. Fewer poor African-Americans resided in these neighborhoods by 2010, yet this change that was more than offset by the increased presence of a non-poor racial cohort. In Chicago, extremely poor neighborhoods had became slightly less poor, and slightly more Hispanic, but in 2010 they were still predominantly black

So what do these findings tell us about the general impacts of increased diversity on levels of segregation evident across urban residential space? Or what do they tell us about residential segregation and its particular relationships to poverty concentration within Chicago? In Chicago, Illinois, as is the case across the larger urban world, the old realities of race, ethnicity and place are changing. Chicago has been in the process of exhibiting a total reconfiguration of residential space the last few decades, changes that obviously impact how different populalations share residential space. The residential changes identified here are at least partially a response to the wide-spread transformation of Chicago's public housing sector, a housing sector that has contributed to what has been referred to as the city's „architecture of segregation." (Jargowsky 2015). For example, the overall decrease in Chicago's poor black population, as well as the increased exposure to this population on the part of all other groups considered, stem in part from the

removal of the city's larger public housing projects (Austen 2018). As the housing options formerly available in certain neighborhoods changed, many poor African-Americans responded by relocating. These relocations that in some cases entailed leaving Chicago, or even leaving the state of Illinois (Diamond 2017; Moore 2017). Addressing the precise nature of these processes lie outside the primary purpose of this paper. Likewise, this research did not address a determination of what would lead members of an ethnic or racial group to choose to live in certain neighborhoods. These findings would generally support the idea that ethnic enclaves represent a natural response within an urban area experiencing rapid immigration (Gordon 1964; Iceland 2004). It is likely that the immigrant populations newly arriving to Chicago, for a variety of reasons, actively search out residential environments from which they can more easily assimilate into the broader urban fabric

The most vivd conclusion derived from this research is that, despite the effects of a number of geographic and demographic processes, in 2010 Chicago remained a highly segregated city. In the context of continued diversity, Chicago continues to live up to its reputation as a city of neighborhoods, with this geographical distinctiveness stemming at at least partially from the spatial manifestations of race and ethnicity. Results reported here reinforce Vertovec's (2007) notion that "diversity is not what it used to be." (Vertovec 2007). Chicago, being simultanously both diverse and highly segregated, could be offered as evidence that diversity and segregation are not binary opposites of one another in terms of how they manifest across urban space (Holloway et al. 2012; Strait and Gong 2015). Findings reported here provide compelling geographical evidence that race and ethnicity still matter in Chicago, even if they continue to matter in slightly different ways.

FIGURE 1a.

Percent White Poor
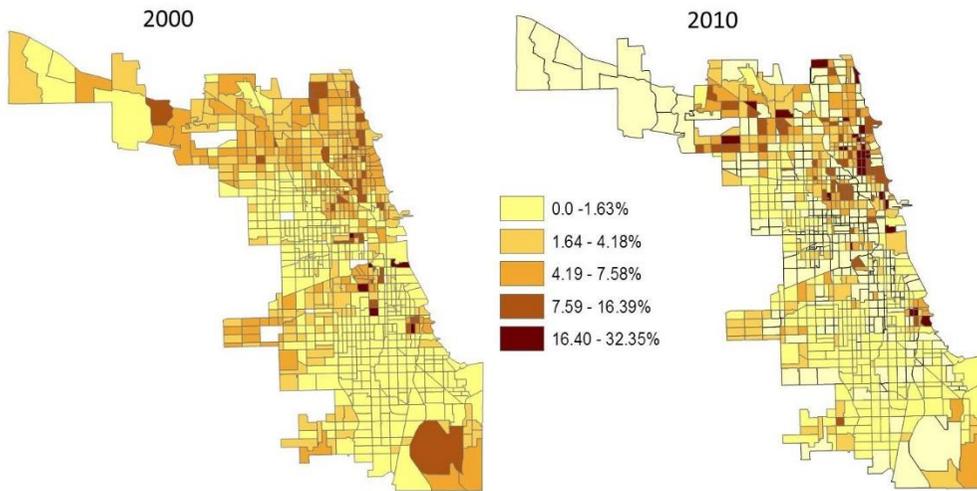
FIGURE 1b.

Percent White Non-Poor

FIGURE 2a.

Percent Black Poor

FIGURE 2b.

Percent Black Non-Poor
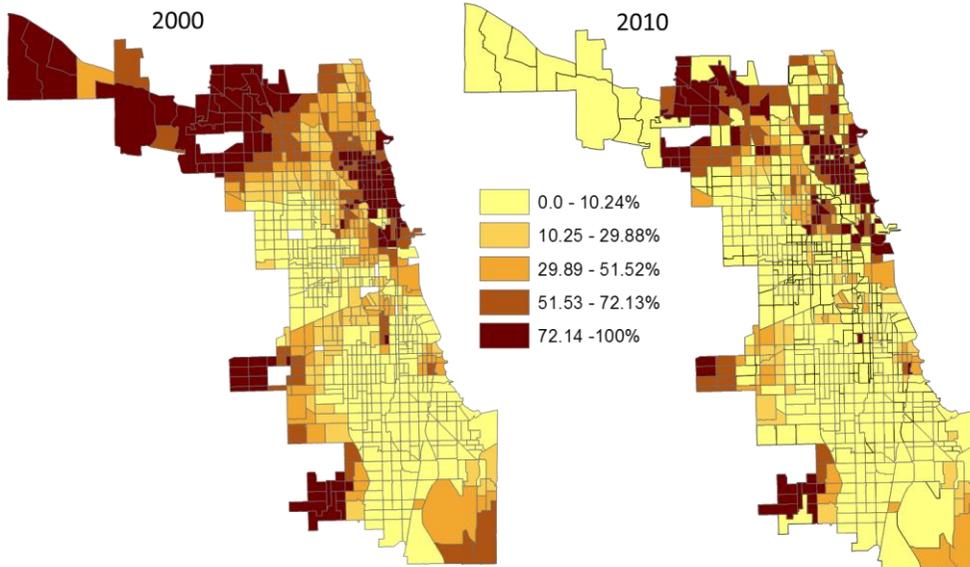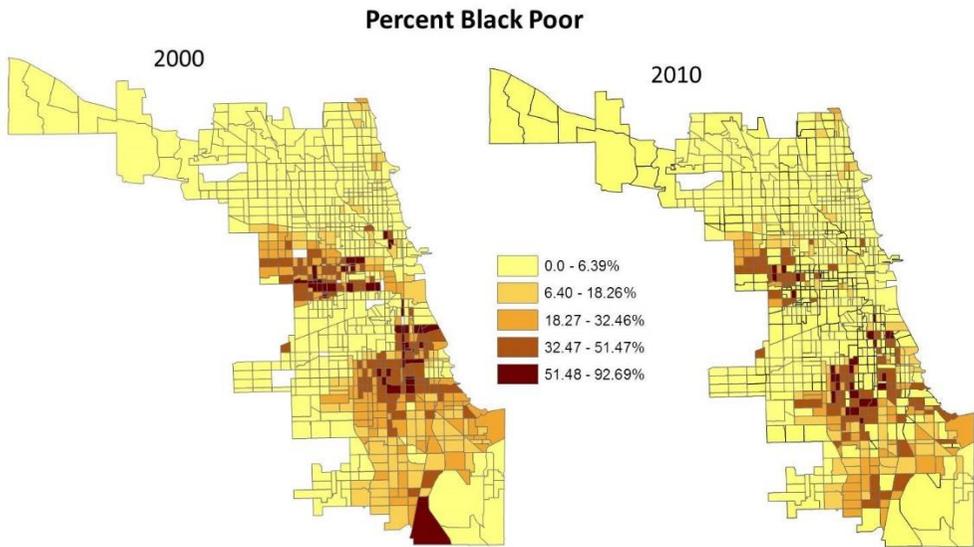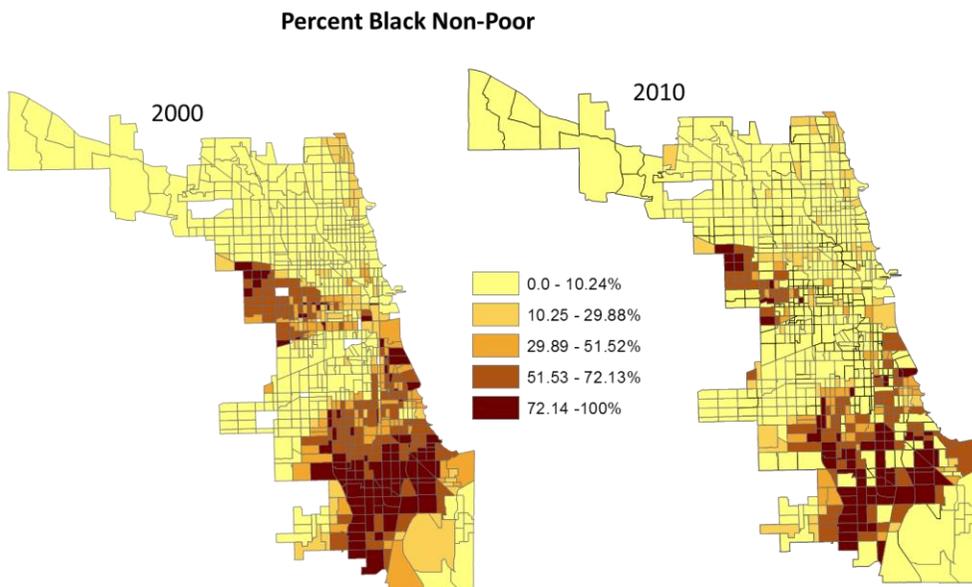
FIGURE 3a.

Percent Latino Poor
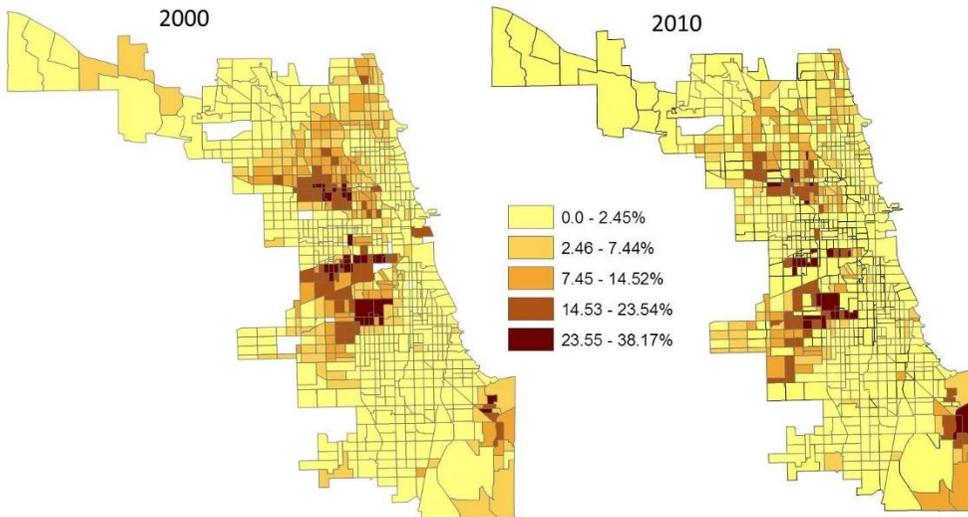
FIGURE 3b.

Percent Latino Non-Poor
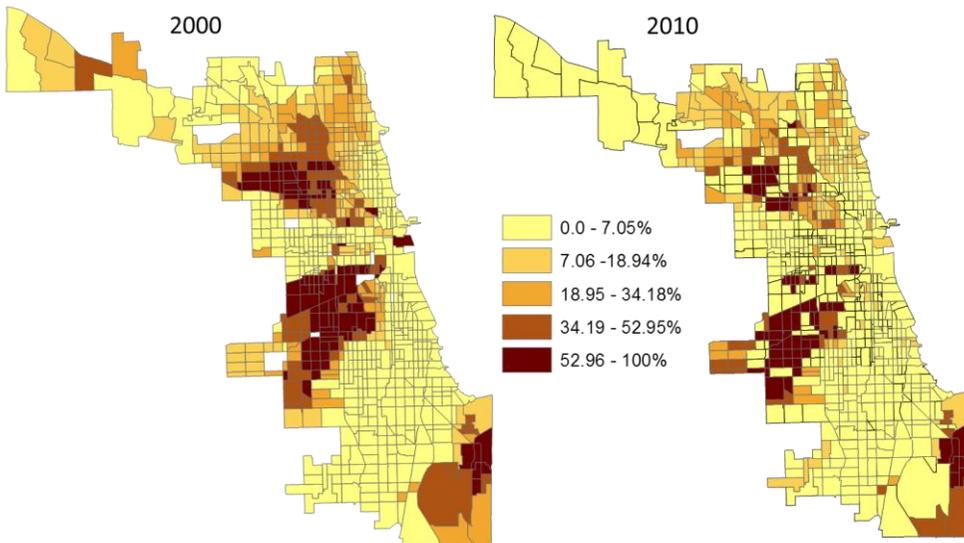
FIGURE 4a.

Percent Asian Poor
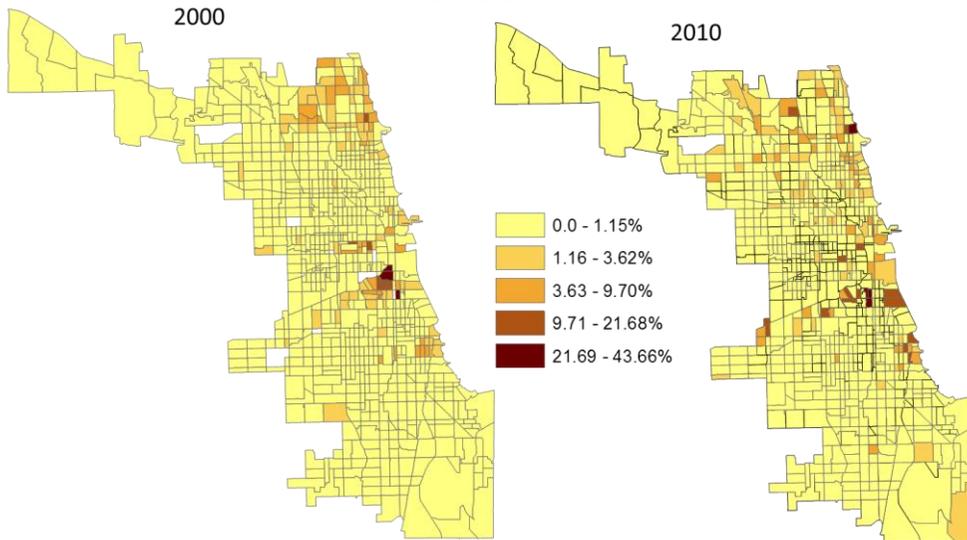
FIGURE 4b.

Percent Asian Non-Poor
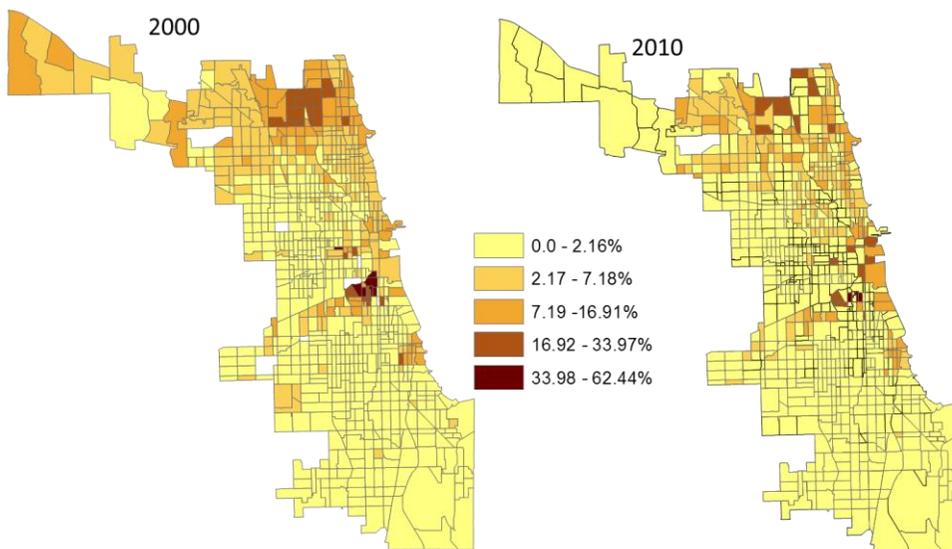
Notes

1.   The terminology used in this paper to refer to different racial/ethnic groups follows the U.S. Census Bureau; Whites (a term used here to refer to Non-Hispanic whites), African-Americans, Hispanics, and Asians. In order to compare population counts among racial and ethnic groups over different

43

census years, the multiracial population identified in 2000 and 2010 was excluded for the purpose of empirical analysis. The authors acknowledge that the particular categories coded by the U.S. Census may not be the most accurate way to gauge racial/ethnic identity, given that such categories represent *social constructs* that cannot be measured biologically (Omni and Winant 2014). For obvious reasons, however, the methodology utilized here requires the use of such census-defined categories. Moreover, geographical research, including findings reported in this paper, demonstrate that such categories do indeed have a geographical dimension. At times throughout this paper the terms *black* and *African-American* are used interchangeably.

2. The basic formula for the index of dissimilarity is:

$$\frac{1}{2}\sum_{i=1}^{N}\left|\frac{b_i}{B}-\frac{w_i}{W}\right|$$

where (comparing a black and white population, for example):

b_i = the black population of the ith area, e.g. census tract

B = the total black population of the large geographic entity for which the index is being calculated.

w_i = the white population of the ith area

W = the total white population of the large geographic entity for which the index is being calculated.

This index ranges from 0 to 100 and is conceptually interpreted as reflecting the percentage of either group's population that would have to change neighborhood residence in order for one group to become evenly distributed across the study area relative to another.

3. The most common formula for the *isolation* index is the following:

$$xPx* = \sum_{i=1}^{I}\left(\frac{xi}{X}\right)*\left(\frac{xi}{ti}\right)$$

where t_i is the total population of tract i, x_i is the number of group-X members in tract i, and X is the total number of group-X members in the largest metropolitan region in question. The measure is interpreted as representing group-X's proportion of the population in the residential tract of an average group-X member. The related *exposure* index is

$$xPy* = \sum_{i=1}^{I}\left(\frac{xi}{X}\right)*\left(\frac{yi}{ti}\right)$$

where t_i, x_i, and X are the same terms as before, and y_i represents the number of group-Y members in tract i. This index then measures the potential that an average member of group-X will have residential contact with, or *exposure* to, members of group-Y within their neighborhood environment.

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Evaluation of Use of Social Media in Marketing Communication Activities of Institutions

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Abstract

Rapidly evolving technology has led to the differentiation of communication tools used by institutions and brands in marketing communication activities. Social media with low-cost, fast feedback providing a possibility to access large masses in a shorter time with Web 2.0 technology has become a preferred tool for brands.

In this study the concepts of social networks and social media is explained within the scope of communication studies, in relation with public relations, advertisement, and sales promotion. In the scope of the research; it has been benefited from the statistical information inferred from the data based on Facebook, Twitter, and Instagram during 1-31 January 2018 period by SocialBrands, which measures more than 25 thousand brands' social media performances. Social media marketing communications studies of two of the successful brands in home decoration sector in Turkey, Madam Coco and English Home, have been analyzed by the data of SocialBrands. It has been tried to explain that brands become more successful in brand communications with social media through which they find the measurable and fast opportunity to determine their target audience.

Key Words: Social Media, Marketing Communication, Brand

Introduction

Today, social media, which has appeared with the development of Internet and Web 2.0 technology, has become an important tool that brands use in their communications with their customers. Thanks to social media and Internet, consumers have information about institutions, products, and brands. Marketers want to achieve success by putting existing and potential customers into interaction with the brand (Clow and Baack, 2016: 8).

Social media, which has entered our lives in recent days with the decreasing effect of advertisement, inadequacy of public relations on certain

points, inability of communication methods such as promotion and social responsibility to always create the desired effect, and the rising value of marketing communication, confronts us as a unique tool in communication with consumers (Akar, 2010: 40). Institutions tend to attain measurable gains in brand awareness, brand loyalty, and market share in sales.

One of the biggest benefits that social media provides to institutions is the possibility to observe consumers. Institutions which gain a chance of observing all the actions performed by their consumers such as; which sites they enter, which products or advertisements they click on, which shares they like, through the use of specific programs also carry out their marketing studies as interactive and customized (Denetçi, 2015: 3).

Social Media

Social media, also referred to as the Web 2.0, is online technologies and applications in which people share their views and experiences. Social media can be also stated as the medium in which different contents, such as texts, audios and videos, are broadcast (Wikipedia, 2011). The best way of expressing the social media is that social media is, in fact, only about being human. Sharing the ideas, exchanging opinions, cooperating, thinking, trading, performing hard debates and speeches, finding the people who might become good friends, mates and beloveds, are already the acts over which humankind has constructed civilizations. In that sense, social media has rapidly spread over not because it is an excellent information technology but because it leads humankind to be like itself. (Mayfield, 2008: 14).

The number of its users is increasing day by day with its possibility of being constantly updated, openness to multi-use, and possibility of virtual sharing. In social media, users are not only able to perform consumption, but also production. Many organizations build their business strategies through social media. Social media environments can basically be grouped into 7 groups (Onat and Alikılıç, 2008: 1111-1143): E-mail groups, blogs, forums, corporate intranets, extranets, instant messaging services, social network sites.

Groups of people connected to each other over a single common resource constitute social networks. Social networks play a big role on the direct transference of individuals' ideas (Güçdemir, 2017:25).

Social networks supply many marketing objectives of the brands, such as creating asset by forming brand identity, constituting contents offering social value, meeting with community members, communicating, and offering a reason to share (Tuten, 2008:53).

Social network sites, which witness a very important participation and an intensive usage among social media tools, are web based services enabling individuals to create a public or semi-open profile within a confined system, to speak to the people on the lists of the other users they share the connection

with, to view their contact lists, to make transitions from there, and enabling other individuals in the system to also perform these actions. The most important feature that makes social network sites unique is in addition to giving individuals the opportunity to meet strangers, it also gives them the opportunity to communicate with the people they are connected with in the real world, and to make their social networks visible. Thus, it is made possible to establish links between individuals that they can not otherwise form. This kind of friendship ties happen among people who know each other in real life, but who have weak ties between each other. In the vast majority of social networking sites participants are primarily communicating with people in their current social network, rather than seeking to meet new people (Boyd and Ellison, 2008: 211).

The use of social networks is increasing day by day. "Digital in 2017 Global Overview" report which was published by "We are Social and Hootsuite" provides important information on the Internet and social media user statistics (www.digitalajanslar.com/internet-ve-sosyal-medya-kullanıcı-istatistikleri-2017/). The 106 page report, prepared from the data collected from 238 countries, contains up-to-date information about the development of the Internet and digital.

According to the research,

60 % of Turkey's population, 48 million people, are social media users. This number is only for single use. The number of people connected to social media from mobile is 42 million. Considering the growth, it has been observed that the number of Internet users increased 2 million with 4%, and the number of active social media users increased 6 million with 14% in Turkey since January 2016. Users spend an average of 7 hours on the computer, 3 hours on connecting to the Internet via phone, and 3 hours on the social media platforms during the day. The average time spent on TV is 2 hours. It has been also noted in the report that the use of Internet and social media in developed countries is high, while in undeveloped regions such as the African continent, individuals use the Internet and social media at a very low level.

According to the report, Turkey's social media and Internet usage rate with 60% is at an average value between Asia with 46% and Europe with 76%.
According to We are Social 2017 data, (https://pazarlamailetişimi.com/turkiyenin -digital-kullanim-aliskanliklari-2017/) in Turkey, the most widely used media is YouTube, and Facebook follows it with a small difference. Other popular social media channels are; Instagram and Twitter.

With the development of the youtuber concept, many people began to share their contents and generate incomes through the videos. Although there

are many brands and people who produce content for Youtube, there are also content agencies focused on this area. According to 2016 demographic data, it has approximately 52 million active users. 48% of those are adult parents. The majority of the answers to the question of what Youtube is used for is as follows; 58% for fun, 47% for learning, 25% for original content, 23% for product research. Brands are producing contents on YouTube which emphasize on the limited scope of products and services related to the interests of their target groups.

The benefits content sharing sites provide to businesses and brands can be addressed under two main headings. These are (Ryan and Jones, 2009: 160):

-Learning what are the interests of the target market: The ability to understand the likes and dislikes of the target market can be obtained through the analysis of the popularity of the messages in the content sharing sites and reading the user comments, and these can be combined in content creation.

-Being a ready tool for content distribution: Content sharing sites are an ideal tool for rapid distribution of digital media content. Actually, all digital marketing is evolving around the micro discipline of YouTube and viral video content. On the other hand, services which allow people to upload, share, and discuss their slides in a variety of different settings such as Slideshare, are another example of content sharing sites. All these and similar content sharing sites make it possible to share and discuss with other people if desired, in an integrated way with other social media tools by making the content publicly available (Akar, 2011: 96). When the social networks widely used today are classified:

Facebook

It is a social networking site which was founded in 2004 by a student at Harvard University, and spread all over the world. According to a statement made by Facebook in the fourth quarter of 2016, the number of monthly users around the world approached to 2 billion (www.cnnturk.com/teknoloji). 72% of its users are adult users (Pew Research Center, 2015).

According to statistics created by HubSpot (2017) showing how marketers have expanded their reach with social media (http://www.pazarlamasyon.com/pazarlama/pazarlamacilar-icin-sosyal-medya-kullanim-istatistikleri/); only 45% of the marketers think that their communication work on Facebook is effective and fruitful (Social Media Examiner, 2015).

Facebook posts with photographs get two times more interaction than the ones without photographs (http://buzzsumo.com/knowledge/analyze-facebook-posts-and-pages/). 70 % of the Facebook users sign in daily while 43 % sign in a few times a day (Pew Research Center, 2015). Facebook sends

82 % of its social media traffic to longer posts, and 84% of it to shorter news articles (Pew Research Center, 2016). 63 % of the Facebook and Twitter users say that each platform acts as an additional resource for news on matters apart from events, friends, and family (Pew Research Center, 2015). 74 % of the people say they use Facebook for professional purposes (HubSpot, 2017). Content consumption on Facebook has shown an increase at the rate of 57 % (HubSpot, 2016). 76 % of the people use Facebook pages to find an interesting content (HubSpot, 2016).

Instagram

Instagram, which is especially used by young people, shatters records with its share of 55 million photos a day. Brands are using it extensively in campaign management and promotions. 28% of adults use Instagram (Pew Research Center, 2015). 59% of Instagram users are on the platform on a daily basis, while 35% of them are visiting several times a day (Pew Research Center, 2015).

Instagram, which was first introduced in October 2010 on the iPhone platform, reached the first 1 million users in December 2010. In September 2011, however, it reached over 10 million users. The number of the users of the application, which was also published for Android platform in April 2012, was 30 million on iPhone at the same date. It reached to; 100 million in February 2013, 200 million in March 2014, 400 million in September 2015 and 500 million user numbers in June 2016 (www.mobilhobi.com). More than 95 million photos and videos are shared daily in Instagram (Instagram, 2016). In April 2017, it reached 600 million users.

Linkedin

It is a social network chosen by users to create networks, establish new business connections and be aware of the innovations. 25% of the adults use Linkedin (Pew Research Center, 2015). Linkedin is the only significant social media platform where the utilization rates in the 30-49 age group are higher than in the 18-29 age group (Pew Research Center, 2015). 46% of the adults graduated from universities use Linkedin (Pew Research Center, 2015). 32% of the working adults are Linkedin users, and besides that another %14 is consisted of unemployed (Pew Research Center, 2015).

Twitter

It is one of the strongest representatives of the communication network. It is also used as a good advertising tool. On Twitter, where more than 6 tweets are posted per second, more than 500 million tweets are entered per day (www.seokursu.com.tr/sosyal-medya-siteleri). In Twitter, messages about the agenda and life are constantly updated. 23% of the adults use

Twitter. (Pew Research Center, 2015). 30% of the Twitter users are under the age of 50, and 11% of them are over 50 years old (Pew Research Center, 2015). Twitter accounts for 16% of the posts made by long articles on social websites, and 14% of the shorter news articles (Pew Research Center, 2016).

Use of Social Networks in Marketing Communications

At the heart of marketing communication are the efforts to inform consumers about goods and services produced by institutions, to convince them, to direct them to a certain behavior and to remind them. Marketing communication; is defined as an institution's communication process consisting of consciously programmed and coordinated activities aimed at persuading the customer and carried out under the supervision of the producer / marketer with the purpose of facilitating the sales of the products or services.

Considering the historical development of marketing communications, it is possible to respectively talk about personal sales, advertisement and public relations, Following the sales promotion procedures that have been added to these methods, direct marketing has been added as the fifth element to the traditional quadruple division (Mucuk, 1997).

It is seen that marketers use social networks for many reasons in their marketing communication applications (www.socialmediaexaminer.com, 2013):

- Interacting with fans
- Increasing the brand visibility
- Finding a point of interaction with the customer
- Increasing site traffic
- Emphasizing the leading aspects.
-Strengthening the brand image
- Rising in the search rankings
-Attracting the customer intelligence
-Creating loyal fans
-Increasing the sales

Brands organize gifts, draws, and competitions in order to increase brand visibility by having more likes and shares on social networks. Although there isn't always a need for gifts and promotions to interact with fans and provide more people to follow, this method increases the interest in the brand. With customer interactions, users enable the brand to be announced through word of mouth communication by sharing their experiences about the brands.

Social networks can also provide traffic at the brand's website. By giving the website of the brand in the messages on social networks, users can be led to visit the website and get detailed information about the brand and the campaigns. In addition to the purpose of providing only information about

brands, social networks can support brand image enhancement by also doing social responsibility studies.

Social networks can help to ensure that the brand rises in search rankings with the support of search engines. These rises occur for two reasons: Firstly, since most of the search engine algorithms analyze the numbers of being tagged and written, the brand name rises to the top as people start to use the brand's name more often in the social media networks. Secondly, if the published content or the comments made about the brand overlap with keywords, the quality of interaction increases, and thus, search engines provide a significant amount of credibility to the brand (Clow and Baack, 2016: 259).

Since the consumers are both producers and consumers in social media networks, it is important to listen the consumers in order to specify trends and identify problems. Being able to respond quickly to negative feedbacks, and replying the questions also affect the brand image.

Listening to what is spoken on social networks also supports identifying the brand advocates. When examining social interactions, three characteristic features of brand advocates are pointed out: Behavioral commitment, emotional ties, quality communication skills. Advocates often make behavioral commitments to the brand. They buy the brand regularly and frequently. They establish an emotional connection with the brand. Suggestions of this profile, complimenting the brand by praising, is very important. They must have good communication skills also while expressing their feelings and thoughts (Pruden and Vavra: 2014).

It is seen that brands have increased their sales by benefiting from social networks to reach a loyal customer profile and to provide brand dependency. Users make suggestions and share ideas on social networking sites. It is seen that customers have repeatedly investigated the ideas of others when they thought of buying goods and services. In fact, 78% of the global consumers believe and trust other people's suggestions for goods and services compared to another setting. The opinions of others are seen as more objective than the institutions' own marketing messages. Consumers use online resources, including social networks, to find the ideas of others. Members of social networks perform two tasks. These are providing content and consuming content. Creators of the content are typically and extremely tied to consumers as a result of effectiveness. If the right influencers are reached by a message (which might be viral), it is perceived as valuable. This is extremely powerful for marketers since it feels that the information is not transmitted to the user and the user is sent by a trusted friend on a secure network(http://www.redbridgemarketing.com/social_networking_the_basics.pdf).

Company executives use social networking sites in marketing communication strategies since they affect buying behavior. Customers also follow brands for reasons such as getting information about products and services, recalling activities, draws, promotions, getting feedbacks, joining fan communities, making purchases, and complaining (Garibian, 2013: 10336).

It is seen that brands are following marketing communication strategies in social networks where they can effectively communicate with their customers. The most effective of these strategies is creating content. Methods to provide content shares about a brand should be used. For instance, organizing competitions, money refund, giving coupons, giving gifts etc. Marketers who care about value added feelings can create a content sharing environment that offers something that will enable customers to feel special.

Usage of Advertisement in Social Media

Advertisement, which is an important element of the marketing combination, is the presentation of the goods, services, or ideas to large masses for a fee, in a non-personal way with the aim of announcement and adoption. Apart from traditional media, advertisement is also effectively used in social networks, which we call as new media.

Advertisements broadcast on traditional media are uploaded on social media, on Youtube, and they can be published as links or videos on Twitter and Facebook. The Coca Cola brand delivers messages on Facebook to approximately 36 million 180 thousand people worldwide, which intensify their needs and desires, create awareness, and appeal to their emotions (Özdemir, 2013: 323).

RTB House announced the results of advertisements given on social media and classic websites by sharing the analysis of data collected from 40 countries. It was revealed that the rate of users who clicked on the ads per view is higher in social media. Turkey comes at the top of the countries where the most striking difference can be seen in high click-through rate on social media. In Turkey, advertisements on social media is clicked 110% more compared to classic websites (www.pazarlamasyon.com).

There are four basic reasons why social networks play a significant role in advertising strategy (Todi, 2008: 52):

-Broad access: More than half of the world's population is an Internet user. Internet users are increasingly devoting time to activities done with social connections. By integrating social networks in advertising strategies, companies can easily reach a large user base. Social media advertisement, also referred to as social network advertisement, provides opportunities for brands to reach both mass and niche markets (Tuten, 2008:42).

- Lower costs: Advertising over social media is very cheap compared to traditional media. Very cheap promotions with a wide range of access can

be made. In recent years, successful advertising campaigns have been made on YouTube and Facebook.

-Advertisement with a target: In a way not seen in other advertising mediums, advertisers are able to advertise target-specific ads, and to access vast amount of information about users' interests.

-Time spent in the virtual environment: Users spend more and more time on social media instead of the traditional media. Advertisers are looking for ways to reach consumers who spend more time in the virtual environment (Todi, 2008: 52).

Social media advertising offers important opportunities at the points of ensuring the interaction of consumers with the brand, the determination of what the brand means for consumers, detecting the inconvenience of online customers, and the determination of what character the brand will have (Tuten, 2008: 14).

Usage of Public Relations in Social Media

Increasing competition among institutions in today's modern world requires the most effective introduction of the products or services that institutions produce. For this reason, instead of just advertising for sales purposes, public relations activities with the aim of improving the image of the organization, brand, product or service by developing positive relationships with the target audience are more prominent. Public relations studies which is defined as a distinctive management function that helps establishing and maintaining mutual communication, interaction, acceptance and cooperation between an institution and its target audience, has begun to differ, especially as the Internet begun to progress (Yeniçıktı 2016: 97).

Digital public relations, which is strategic, fast and result oriented, has become a preferred medium for communication. It is preferred by the institutions in order to strengthen the corporate reputation in social networks and to promote its products and services.

According to a research conducted by PRCA; 55% of the institutions allocate 16% of their budgets for digital public relations activities. These activities include; online advertising, web design and structuring, content creation, social networking strategies, and increasing the impact of blog writers (Digital PR Report 2015).

Institutions seeking to perform public relations aims, such as establishing links with customers through social media, establishing and developing brand awareness, strengthening positive image, started to use social media platforms such as blogs, micro-bloggings, wikis, social networking sites, media sharing sites, social marking and tagging sites, podcasting and virtual worlds intensively (Taşdemir 2011: 653).

The positive effects that social media provides to institutions' public relations activities are as follows (Alikılıç 2011: 17-19):

- New stakeholders as new target audience: Social media creates new online communities, each of which can be the new social stakeholders of the organization.

- Direct communication and interaction with social stakeholders: Institutions and brands get into direct communication and interaction with social stakeholders without intermediaries and filters through virtual environments where contents are created by users, such as social networks, websites, videos, photo and video sharing sites, blogs, and so on.

- The spread of posts: Social media tools are important mass media tools for the purpose of spreading positive messages.

- User-driven content sites as mixed media: Firms can use user-driven content sites, namely, social media environments (blogs, forums, newsgroups, virtual worlds, social networks, etc.) as well as traditional mixed media, such as television, radio, newspapers.

- Business collaboration with the target group: In social media environments, people produce messages by presenting ideas about brands, institutions, products and services. Public Relations specialists can cooperate with the new stakeholder groups defined in the social media environment by listening to the messages created by them and giving feedbacks to these messages.

- Performing feedback and corrective / preventive actions: Listening to what is said about them can earn institutions and brands a lot. Feedback coming from online stakeholders can be identified and corrected before it is too late. Just as quick feedbacks can be obtained, fast corrective / preventive actions can also be planned.

- Participation and adaptation: By observing social media, and providing participation, brands can ensure participation to any kind of environment related to themselves. Participation in these groups is a great opportunity for companies to endorse their new breakthroughs, new products, new strategies and policies to them.

- Creating a network: Creating a network in online environments is a new public relations tool. This means that while firms form strategies and tactics for communication and public relations, they find and join to the networks that are most suitable for them to build relationships.

- Confidence: The most important element among institutions and stakeholders is confidence. With the creation and dissemination of content by users themselves, they have actually taken possession of a considerable force. With the confidence this power gives, they have begun to communicate with each other with higher loudness and have gained the trust of each other in particular.

- Corporate reputation: In order to build and protect corporate reputation, it is primarily necessary to identify how it is perceived by all stakeholder groups. Institutions can catch the opportunity of protecting and increasing their reputation by maintaining effective communication with millions of people who are effective in the online environment.

The Usage of Sales Promotions in Social Media
Sales promotions; are impermanently carried out marketing activities excluded from advertisement, personal sales and public relations activities, seizing the purchasing behavior of the consumer and increasing the effectiveness of the business. Brands make various sales promotions in order to promote product sales in social media. Although there is focal point pricing in sales promotions, activities towards creating brand awareness and improving the brand image are also carried out.

In order for the brand to reach its marketing communication goals, marketing teams design promotional programs. In the early stages of the product life cycle, there are matchings done with promotions, tentative purchases, and other activities focusing on brand awareness. Further objectives are mentioned as strengthening brands, increasing consumption, facilitating competition, and changing into new markets (Clow and Baack 2016: 37).

Social media is particularly a popular area for competitions and draws. It is being preferred for its features of being both fast and cheap as well as being easily controlled and obtained knowledge from. Consumers strengthen their ties with the brand by participating in contests, games, draws organized in social media tools.

The latest trends in contests and draws contain social media. Microsoft, Sephora, NASCAR, Comcast, McDonalds have organized twitter competitions or used twitter or other social media tools with the purpose of joining in a draw and competition. Marketers use competitions and draws in order to trigger a viral rumor about a brand (Morrissey 2009).

The Method of the Research
SocialBrands algorithm, which uses the advanced technology of BoomSonarSuite, a smart business platform offering specific social media tracking management and analysis results, and detailed data of BoomSocial, analyzes all social media activities of more than 25 brands with abiding to the big data principle. More than 30 criteria in total such as; the total number of interactions of the pages, the number of fans, the fan increase, the growth stability, the distribution of the interactions according to the messages, the likes, the comments, the sharing, the retweet rates, the number of messages the page has distributed throughout the month, the usage rates of different

message types, constitutes the basis of the algorithm which analyzes brands statistically and objectively (www.socialbrandsturkey.org). SocialBrands, which identifies the most powerful brands on Facebook, Twitter and Instagram entirely based on data, examines the performance of more than 25 brands displayed on social media each month.

In the study, the marketing communication activities of MadameCoco, which is ranked 1st in the household and decoration sectors among the brands which made the most successful rankings, and English Home, which is ranked 18th on the top 100 list of the same sector in social media, is analyzed according to SocialBrands data between January 1-31, 2018.

Findings and the Evaluation
Accounts reviewed: 25094
Messages reviewed: 1,443,240
Interactions investigated: 799.808.475
The time period examined: January 1-31, 2018

Madame Coco

Facebook	2nd	1.455.912 follower	1.455.672 interaction
Twitter	3rd	54.909 follower	42.806 interaction
Instagram	1st	1.705.361 follower	1.568.489 interaction

Madame Coco, which is ranked 1st in the top 100 rankings, is also ranked 1th among 102 brand accounts in all social networks on "home and decoration" sector, which is a sub-sector within the durable consumption main sector.

Top 100	January 2018	December 2017
Social Score(%)	88.37	87.49
Facebook	90.07	90.51
Twitter	79.39	77.06
Instagram	95.65	94.92

English Home

Facebook	22nd	1.597.414 follower	238.045 interaction
Twitter	294th	39.315 follower	1865 interaction
Instagram	5th	1.840.005 follower	757.239 interaction

English Home, which is ranked 18th in the top 100 rankings, is ranked 2nd on Facebook and Instagram, and 4th in Twitter among 102 brand accounts in "home and decoration" sector, which is a sub-sector within the durable consumption main sector.

Top 100	January 2018	December 2017
Social Score(%)	88.37	87.49
Facebook	90.07	90.51

| Twitter | 79.39 | 77.06 |
| Instagram | 95.65 | 94.92 |

As it is also seen in the analysis results, it is observed that the brands in the home and decoration sector have given intensive use of Instagram especially in marketing communication. Instagram, which is a photo and video sharing site, is also used extensively in mobile applications.

In Instagram, the length of the video content is sent as 15 seconds, and when the content is scrolled the image starts to play automatically. Videos become also beneficial for organizations by adding extra voice and image to communication, especially in telling their brand stories (Hellberg 2015: 21). It also provides a function known as "hashtag", which provides ease of displaying photos and videos about the institution's products and services. Users are able to see all the photos and videos related to these hashtags by clicking on these hashtags.

It has been observed that consumers' expectation and complaints are learned from the comments left under the photographs, and there have been efforts to strengthen brand loyalty by increasing follower numbers through sales promotions like "tag your friends and win a gift".

Statements which have a triggering effect on customers, like "do not miss it for just 3 days, just wait for our surprise at 14:00, discounts are only specific to this day", are the advertisement studies both companies use in their advertisement strategies to direct their customers to sales. Product promotions, gifts, promotions, campaigns, draws and competitions are intensely used by both brands on social networks.

It has been observed that messages such as, "like the visual, tag your friend and get the chance of winning a gift for your friend and yourself" get more likes and shares than product promotion messages, discount campaigns and the other messages.

The method to interact with customers through promotions and gifts on social media is observed in both brands. Customer interactions also provide the opportunity for word of mouth communication. It is seen that both MadameCoco and English Home use "tag your friend" application intensively. Recommendation of the product by a customer to a friend or conveyance of the experience about it is more valuable than the hundreds of promotions the brand will make.

MadameCoco, which makes the intensive use of the feature of customers' being both content producers and content consumers on social media, receives information by asking questions to be completed by customers in order to learn what customers think about the brand. "MadameCoco is a love, because ...". At the same time, it tries to improve its brand image by sharing its achievements and its awards with consumers. It has been observed that both brands share their work on Facebook, Twitter and Instagram

concurrently. When the interaction networks are examined, it has been concluded that Instagram is in the 1st place, Facebook is in 2nd, and Twitter's likes and shares are less than the others.

When the Madame Coco and English Home social media brand accounts are examined in general, it has been observed that message integrity is provided, applications supporting each other are concurrently broadcast in social media, and messages with the aim of strengthening the brand loyalty and brand perception are used.

Brands which use the social media effectually have good communication with consumers, and they carry out successful marketing communication activities in many fields from consumer complaints to product promotions, campaign announcements to special applications. It can be said that social networks used in social media are preferred communication mediums by brands because of the reasons such as; freedom of their message content, measurability, being fast and economical, and the ease of detecting the target group.

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Comparative Analysis of Croatian and Czech Lagging Regions

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Abstract
Regional development is a central subject of different scientific areas of study, and especially economy since a region in a modern context represents a universal unit of monitoring (regional) development. Independent of the level of their development, national economies mostly bear the burden of regional inequalities and, *grosso modo*, of the existence of regions that fall behind in development. These regions are most vulnerable in post communist and highly centralized countries such as Croatia and the Czech Republic. Croatia and Czech Republic share many similarities, for example transitional post-communist background with centralized national economies dominated by capital city regions. Considering this, the aim of this paper is to analyse regions in Croatia with respect to their economic and social development with a detailed review of the least developed region. With that in mind, a comparative display of Czech Republic and issues concerning Czech lagging regions in economic aand social development will be used to find the common denominator with similar problems in Croatian regions followed by suggestions for solutions on a regional level. This paper uses methods of description and comparative anaysis, wih an analytical review of data made available by relevant institutions.

Keywords: Regional development, lagging regions, decentralization, transition

Introduction

The common denominator of Croatia and Czech Republic is certainly their road through economic transition. Although beginnings of this process started more than two decades ago, its consequences are evident in specific economic indicators and problems. Some research, like Hartwell (2015) state that institutional frame connected to processes that precede transition is mostly

treated either as an exogenous or a slow and gradual process. Kippenberg (2008) points out that different developments paths of specific countries in Central and Eastern Europe (CEES's) is mostly conditioned by different political decisions after 1989. In accordance with this, Harris (1996) states that period after 1989 is the time of substantial changes in Central and Eastern Europe, but also in other areas, for example ex-USSR countries. Assumption that transitional processes are followed and respected leads to the need to undergo decentralization and, as stated by Diaz-Serrano & Rodriguez-Pose (2015), there is a lot of empiric research which connect decentralization to economic growth as well as establish a relation between decentralization and regional imbalances. The common feature of two selected economies is also connected to the process of accession to the European Union, although in different time period (Czech Republic: 2004; Croatia: 2013). Almost a decade after the Czech Republic Croatia became a full EU member as well, and a partial reason for this delay might be found in war and its consequences which required more than a few years to overcome. Due to strong initiatives for decentralization and economic integration national economies, in accordance with EU policies, mostly transition to smaller territorial units – regions. However, contrary to expectations as stated by Krieger-Boden, Morgenroth & Petrakos (2008), integration of Eastern European countries in the EU resulted in an increase rather than decrease of regional differences. Since this paper focuses on examples of regional differences between Croatia and Czech Republic it is important to point out that, according to Balchin, Sykora & Bull (1999), Czechoslovakia was the strongest proponent of equality policy in Central and Eastern European regions. The same authors, as stated by Blažek (1996), confirm that the introduction of free-market economy contributed to the increase in regional imbalances. On the other hand, Havrylyshyn, Meng & Tupy (2016) claim that transition to free-market economy can create those differences with respect to different implementation policies. The argument between those that proposed quick or "big bang" reforms and those that advocated gradual approach and changes was settled in favor of fast reforms, which was evident in economic indicators (GDP) as well as social development indicators (Human Development Index). The existence of regional imbalances in Croatia is also a subject of a lot of research in specific contemporary published works (f.e. Đokić, Fröhlich & Rašić Bakarić, 2015; Lončar & Marinković, 2015, Tulumović, 2015). In the introductory part of this paper basic similarities between two national economies based on transition are clarified. Next chapter is reserved for a review of regional development in Croatia and Czech Republic, while the third chapter deals with analysis and comparison of chosen indicators which are important for measuring economic performance to show similarities and differences between two countries. The

last part of this paper summarizes basic conclusions and puts forward some suggestions to promote a more balanced regional development in Croatia.

Characteristics of regional development in Croatia and Czech Republic

Similar historic circumstances on a transitional journey to change the economic system and introduce free-market economy, evident by reviewing chosen indicators, points to a lot of similarities in these processes in both countries. Furthermore, it is worth mentioning that regional imbalance which appeared is a common denominator in both cases. In this chapter individual aspects of development both in Croatia and Czech Republic will be shown. Kippenberg (2008) states that regional imbalances, and even regional economic divergence existed in Czech Republic from 1993 to 2003, and already in 1998 Czech government forms certain principles of regional policies to avoid regional divergence. However, the same author, according to Ich & Larischova (1999) states that some of these measures have to be implemented due to integration in the EU, and not with the goal of reaching sustainable economic growth in Czech Republic. In a very similar situation in Croatia, Srića (2010) points out the effort to join the EU, and states that accession cannot solve national economic problems by itself. According to Kippenberg (2008) the presence of strong agglomeration of economic activities in the capital city of Czech Republic is evident as well as the increase in suburbanization in Stredocesky region. A part of population that left Prague found new homes in Stredocesky region based on supply of living space and housing close to the capital city but without the negative effects that are associated with it. The same applies to economic activities. Balchin, Sykora & Bull (1999) point out that regional imbalances in Czech Republic also appeared due to growing unemployment in industrial regions and areas that are characterized by lagging behind, a more active development in western part of the country and selective concentration of foreign investments in Prague area, a few other selected major cities and western border zone. Dušek (2018) states that contemporary process of regional policy is directed to reduce imbalances in regional development and making sure that growth is balanced and sustainable and stresses the importance of cooperation between cities and municipalities in development of a specific area. Furthermore, the same author says that local initiatives become more and more important, and in certain circumstances become the most important factor in regional development. These, compared to regions smaller entities can influence the activation of local and regional resources and create a synergic effect. A similar opinion based on cooperation of regional institutions in public and private sector is shared by Stejskal, Kuvikova & Meričkova (2018), who point out the importance of such cooperation with respect to promoting innovation-friendly environment which is the primary goal of regional innovation system.

Croatia's regional policy reflects two approaches to regional (but also to general) development of Croatia. The first approach covers the period 1945-1991 and the main principles of regionalization, primarily gravitational principle, were respected. The main legacy of that period is the creation of four macro-regions with four major cities that should had the role of urban growth poles: Zagreb, Rijeka, Split and Osijek. The established macro-regions have been the basis, with slight changes, for all later regional divisions of Croatia until 1990. Respecting historical processes, principles of regionalization (homogeneity, gravity and functionality) and long-term economic interests, Croatia today is closest to division in four regions (Bogunović, 2011). The second approach covers the period 1991-present. During this period, the number of local units has skyrocketed by five times creating a bulky state apparatus with a very low degree of decentralization (in 2014, only 11% of the revenues and 10.5% of the expenditures were allocated at the local level) (Čavrak, Andabaka and Sekur, 2016). Furthermore, several legal acts and strategies have been adopted for fostering regional development. However, such a situation has created too many laws, directives and strategies with overlapping functions, which, in addition to the lack of political will to implement the reform of the regional and local structure, hampers equal regional development.

Comparative review – Czech Republic vs. Croatia

In the case of Croatia, for statistical purposes Eurostat – Regions in the European Union (2015) divided Croatian territory in three hierarchy NUTS levels: NUTS-1 level refers to Croatia itself, NUTS-2 level refers to Continental and Adriatic Croatia, and NUTS-3 level refers to 21 Croatian county, while the division of Czech Republic according to same source, for statistical purposes is made as following: NUTS-1 level refers to Czech Republic, NUTS-2 level refers to Praha, Střední Čechy, Jihozápad, Severozápad, Severovýchod, Jihovýchod, Střední Morava, Moravskoslezsko, and NUTS-3 level refers to 14 Czech counties. Furthermore, ratio of NUTS-2 and NUTS-3 regions in Croatia and Czech Republic reveals that NUTS-3 regions in Croatia are much smaller, but more numerous than in Czech Republic and most of Europe.

In this paper, we analyze and compare lagging regions of Czech Republic and Croatia on NUTS-3 level. One of the striking feature of Croatian regional state of affairs is pronounced economic and demographic strength of City of Zagreb relative to other parts of Croatia. For start, population of City of Zagreb accounts for 19.3% of Croatian population (Eurostat, 2018). If we add to this number a population of County of Zagreb, which highly gravitate to the City of Zagreb, this share climbs to 26.9% of Croatian total population living on a territory which compromises around 6.5% of total Croatian area

(For comparison, 24.8% of the Czech population live in Central Bohemian region which accounts for 14.6% of total Czech area). As far as the economic potential is concerned, the City of Zagreb (and its surroundings) account for 33.4% (39.3%) of total Croatian GDP. City of Zagreb is also the richest region (measured with GDP p.c.) in Croatia - in 2015 its GDP p.c. was 19.100 EUR which is 3.4 times larger than the poorest region Virovitica-Podravina County (5.700 EUR) (Figure 1). For comparison, Prague (Hlavní mesto Praha) with 33.600 EUR p.c. in 2015 is 3.1 times richer then Czech's poorest NUTS 3 region - Karlovarský kraj 11.100 EUR p.c. Other Croatian counties that have GDP p.c. below 6.000 EUR are Brod-Posavina (5.800 EUR p.c.), Požega-Slavonia (5.900 EUR p.c.) and Vukovar-Sirmium (6.000 EUR p.c.). We can conclude by observing this parameter that Croatian lagging regions (as measured by GDP p.c.) are mainly situated in the eastern parts of the country.

Figure 1 Gross domestic product p.c. at current market prices by NUTS 3 regions in EUR for Croatia and Czech Republic in 2015
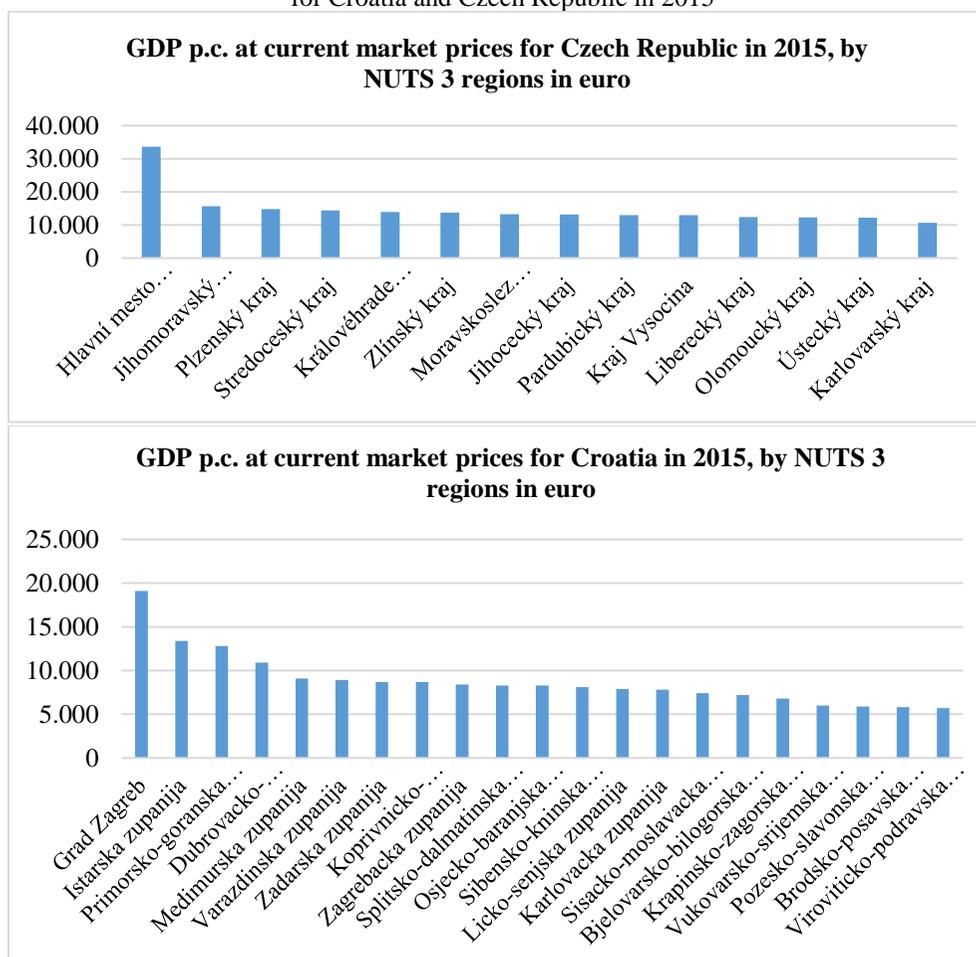
Source: Source: Own graphics: in accordance to Eurostat official page and Eurostat, 2018

One of the major problems of Croatian economy and especially of the least developed regions is high rate of unemployment. According to Croatian Bureau of Statistics (2017), registered rate of unemployment of Croatia was 16.9% in 2016. Virovitica-Podravina County as Croatian poorest NUTS-3 region also had the highest rate of unemployment which was 32.7%. Other NUTS-3 regions with the lowest GDP p.c. also had very high rates of unemployment, all above 20%. Actually, there is high degree of correlation between GDP p.c. and the rate of unemployment (Figure 2).

Figure 2 Correlation between GDP p.c. and rate of unemployment for Croatian Counties in 2015

$$y = -0,0019x + 39,213$$
$$R^2 = 0,5157$$
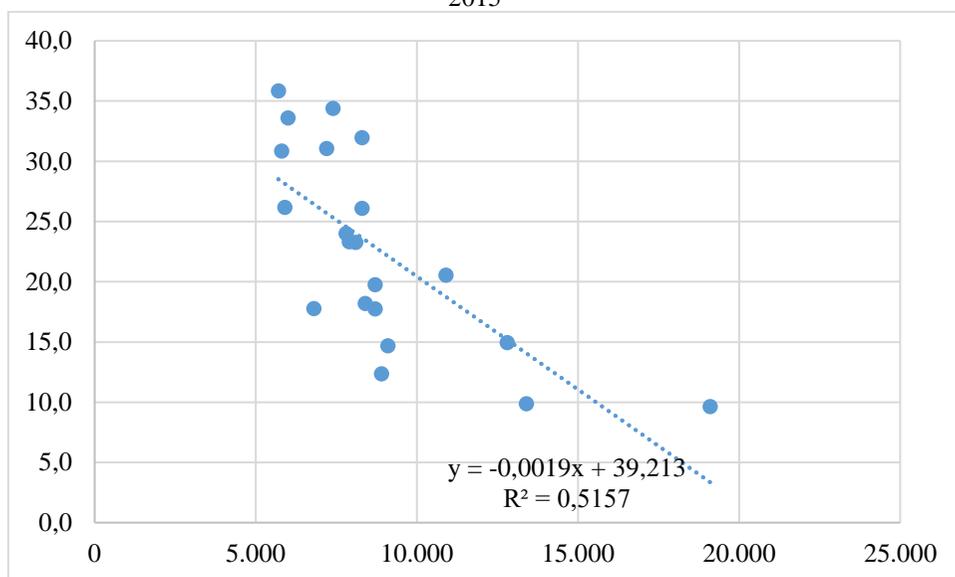
Source: Eurostat (2018), Croatian Bureau of Statistics (2017)

The same degree of correlation between GDP p.c. and the rate of unemployment is not evident in the case of Czech NUTS-3 regions. If we compare Croatian and Czech NUTS-3 regions, it is evident that Croatian regions are in worse position than Czech's in terms of either GDP p.c. or unemployment rate (Figure 3). City of Zagreb with the unemployment rate of 9.6% in 2015 had the lowest rate in Croatia and yet that is higher than the Czech NUTS-3 region with the highest rate of unemployment in 2015 - Ústecký kraj with the unemployment rate of 8.9% (Croatian Bureau of Statistics, 2017; Czech Statistical Office, 2018).

Figure 3 Comparison of Croatian and Czech NUTS-3 regions by "GDP p.c. (thousands of EUR) – unemployment rate (%)" correlation in 2015
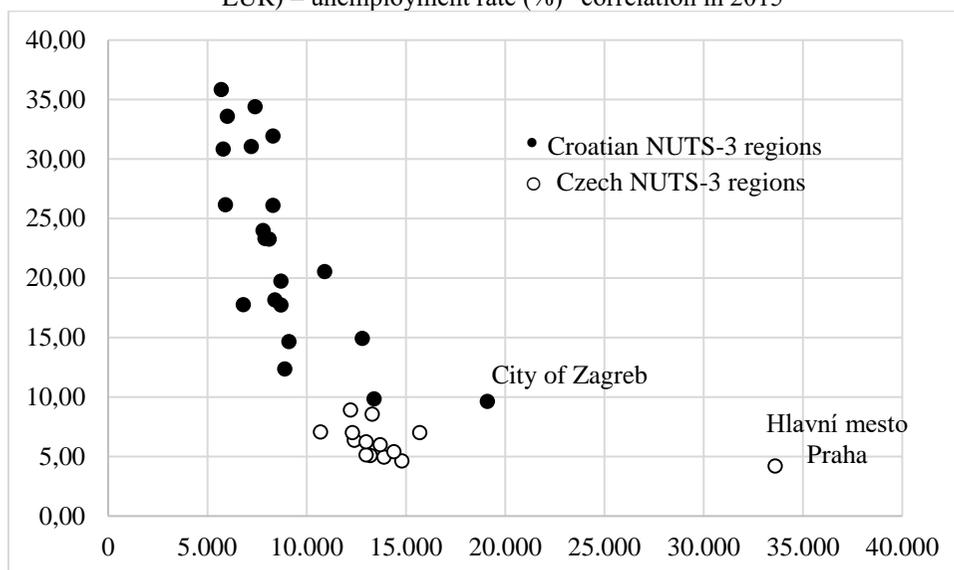

Source: Eurostat (2018), Croatian Bureau of Statistics (2017) and Czech Statistical Office (2018)

As shown on Figure 3, Czech NUTS-3 regions are more graphically concentrated (with the exception of Prague) suggesting lesser regional variations as measured by "GDP p.c.-unemployment rate" correlation On the other hand, Croatian NUTS-3 regions are more scattered and they occupy upper left part of the graph which implies lower GDP p.c., higher rates of unemployment and therefore greater regional inequalities than the Czech regions. It is indicative, as shown on Figure 3, that the problem of lagging regions is more pronounced in Croatia with the main difficulty being the enormously high unemployment rate in most of NUTS-3 regions. This may be the key reason for future Croatian demographic shrinkage and that will only worsen further development opportunities for lagging regions and Croatia in general.

The employment graph for certain parts of Czech Republic in 2015 is presented by the number of persons (thousands) and shows that Hlavní mesto Praha had the highest employment rate of all NUTS-3 regions, while at the same time Karlovarský kraj had the lowest employment rate. Regarding employment, situation in Croatia is almost identical if we observe asymmetry towards predominance of NUTS-3 region which also includes the city of Zagreb as the capital, while the lowest rate of employment was recorded in the NUTS-3 region of Lika-Senj county (Figure 4).

Figure 4 Employment (thousand persons) in Czech Republic and Croatia by NUTS-3 regions in 2015
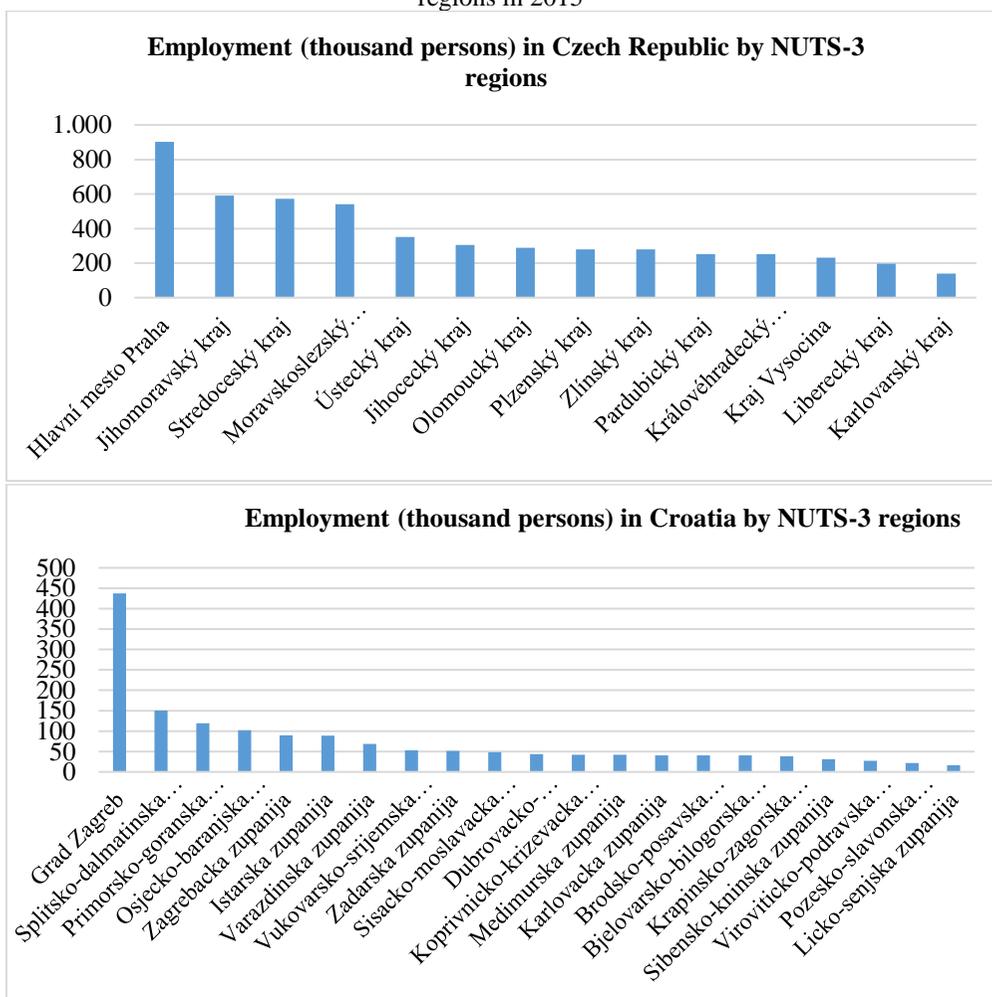

Source: Eurostat (2018)

Industry (more specifically manufacturing) is often regarded as a key factor in economic development especially for developing countries. One of the most important features of industry are its strong spillover effect to other sectors of the economy (e.g. mechanization of agriculture), generator of employment and its high share in exports (which is crucial macroeconomic variable for small open economies like Croatia and the Czech Republic). If we compare the share of manufacturing in GDP in 2015 (measured as the share of manufacturing in total Gross value added) of Croatia and the Czech Republic, we see great disproportion at national and regional level. Its share in Croatian GDP amounted 14.9% whereas in the Czech's GDP it stood at 26.8% (Eurostat, 2018). At the regional level, it is noticeable that Czech's

70

regions have higher and more balanced shares of manufacturing in total Gross value added in their economies (Figure 5).

Figure 5 Share of manufacturing in total Gross value added in 2015 for Czech's and Croatian NUTS-3 regions
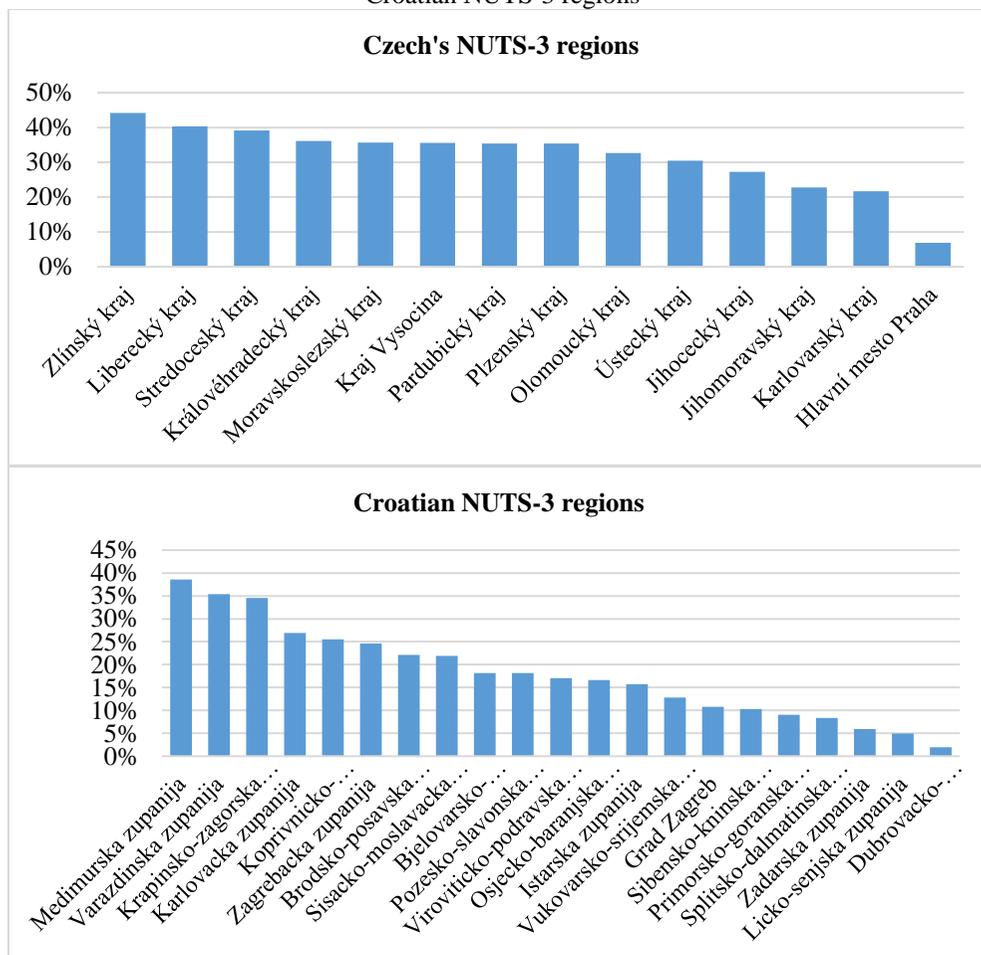
Source: Eurostat (2018)

Chosen indicators confirm theoretical foundations of this paper regarding intensive centralization that is present both in Czech Republic and in Croatia. There are numerous other indicators which would, sadly, also show the situation of extreme gaps between certain parts of national economies.

Conclusive remarks and suggestions

The confirmation of theoretical interpretation regarding predominance of one urban center in the selected national economies, those of Zagreb and Prague, is evident. The difference between the most and the least successful NUTS-3 regions is measured by the GDP p.c. is quite similar and sums up to

a little over three times. The fact that the least developed Czech region (Karlovarsky kraj) had the similar level of GDP p.c. as some of the most developed Croatian NUTS-3 regions (Dubrovnik-Neretva County), is especially striking. The analysis also showed that the Czech regions (except for Prague) are much closer to each other in the sense of development level, while on the other hand the Croatian regions presented higher level of unequal development. From all of the above mentioned, we can conclude that regardless of choosing the different path while switching from one economy system to other, which is evident in the transitional process, Croatia and Czech Republic both had a quite similar choice of using the parts of economic policy which affect regional development. Putting more emphasis on the procedural character to getting close to the membership in the European Union, is one of the similarities. The future must necessarily change the existing economic differences. Some of the possibilities for improving this condition could be based on the cooperation of cities and counties regarding when developing a certain area and localization as the important tool which everyone with the adequate knowledge can use through activation of local and regional resources.

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Hedonic and Utilitarian Aspect of Traditional Retail Shopping[1]

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Abstract

Consumption consists of quite different concepts compared to the recent past consumption patterns. Traditional retailing has been evolving into online shopping which is getting out of timing/placing limits in this process. This transformation force traditional retailers to present something more than a mere shopping. This research aims to investigate face-to-face shopping from traditional retailers in contexts of hedonism and utilitarianism. A total of 263 respondents participated in the survey. As a result, there were no significant difference between male and female consumers in traditional retail shopping on the utilitarian aspect, but the difference for hedonism were significant. Female customers tend to shop more hedonic. Marital status does not affect the hedonic or utilitarian aspect; but there was significant difference found between employed and unemployed consumers. Unemployed consumers were found to be more hedonic in traditional retail shopping behavior.

Keywords: Hedonism, utilitarianism and hedonic consumer

1. Introduction

In our contemporary world, consumers' shopping pattern has evolved as number of small-sized retailers decreased and of shopping malls increased recently. This evolution fed by socio-economic changes emerged different consumption styles such as hedonism and utilitarianism. On the contrary to the economists who appreciate the value of a product based on the utility obtained by consumption of a good, symbolic consumption concept which puts affection and psychological utility obtained by consumption of a good has altered the view toward the consumption.

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Consumers' consumption styles are taken into consideration in two different consumption contexts: utilitarian and hedonic. This approach is under influence of various factors from consumers' demographic characteristics to their personalities; and they are rather difficult be kept under control. It is not realistic to asses a consumer behavior as either fully hedonic or utilitarian. Each individual displays unique hedonic or utilitarian tendency. Shopping action takes place under numbers of stimulants difficult to estimate. The essential part is to support purchasing motivation by influencing this stimulus. According to Allard et al. (2009: 41), while shopping malls motivate consumers to develop hedonic values by means of restaurants, movie theatres, interiors, animations and stimulating their affection, they contribute in enrichment of utilitarian value to convince customers to make shopping. The general dual views of the value description: the first, utilitarian output obtained by following conscious chase of an envisaged result, the second, and the outputs relevant more with the hedonic responses which occur spontaneously. These two types of value are useful in explaining value shopping reward together with other behaviors (Babin et al., 1994: 645).

As the number of shopping malls taking advantage of hedonic and utilitarian factors increases, and their scope expands, consumers spend longer period of time at shopping malls. The general expectation from consumers spending more time at a shopping mall is making more purchase.

Each shopping mall need to offer something unique to ensure their visitors to feel the best shopping experience (Allard et al., 2009: 40). In our contemporary world, offering low prices in a usual fashion, expanding business hours, providing greater selection of products or capturing the best spot in the market are not enough to guarantee the success for a retailer. Entertainment dimension of retailing, in other word, "entertailing" has been further acknowledged as a primary competition tool (Arnold and Reynolds, 2003; Allard et al., 2009). This situation requires applying hedonic motivations more than ever.

Hedonism and Utilitarianism

Pleasure expectation from consumption is usually associated with hedonism in the consumption culture. Hedonism deeply influenced the contemporary consumption society. Hedonic goods are demanded owing to their capacity to provide hedonic and symbolic utility to consumers. Hedonic experience is encountered during travel, shopping, entertainment and internet usage (Teo and Sidin, 2014: 390). The hedonism concept that we could encounter in every aspect of daily life could be result of tens of different cause and effect that could not be envisaged.

It is commonly known that ordinary people is willing to the best interest of themselves. This situation is referred as self-love. Hedonists

consider that the concept of "the best" could be described over pleasure and pain. Nevertheless, it is not enough to explain hedonism over self-love (Chandler, 1975: 223, 232). Hedonism and intrinsic satisfaction seem competing with each other typically in accurate description of "the thing in the best interest of a person". As hedonism describes "good life" as the one giving pleasure, the intrinsic satisfaction describes it more rigidly as "there is no need to have pleasure to be good, you just need to acquire what you need". Although they seem quite different, these two approaches are close each other at reasonable level in description of "good life" (Heathwood, 2006: 539). In the context of marketing, although intrinsic satisfaction seems as a prioritized target, the pleasure gained throughout the shopping process could result in repeating the shopping experience in the future once more, which place emphasis on hedonism.

Hedonic value adds dimension of affection on to the shopping experience (Jones et al., 2006: 979). Hirschman and Holbrook assert that hedonic consumption reflects multi-sensual, fantasy and affection dimensions experienced by a consumer with the good. In the hedonic consumption perspective, goods are viewed as subjective symbols rather than objective (Hirschman and Holbrook, 1982: 92,93).

Taking pleasure of something is temperamental motivation factor of humankind. Nevertheless, taking pleasure could also result in situations of feeling guilty or justification of consumption (Okada, 2005: 43). In such cases, consumers are found to exert utilitarian behavior which suppresses their hedonic motives.

Utilitarian view considers purchasers as rational problem solvers (Sarkar, 2011: 58). Consumers' choices are steered by means of utilitarian and hedonic assessments. Whereas hedonic goods offer pleasant, exciting, fun-type consumption experiences in general, utilitarian goods offer more functional and mediatory consumption experience (Dhar and Wertenbroch, 2000: 60). In the utilitarian consumption, a female with high responsibility feeling towards her family prioritizes interests of her family when making decision with consumption (Liao et al., 2005: 174). These shopping decision are more realistic and irrelevant with pleasure aspect. Babin et al. (1994) implied that highly utilitarian value could explain the repeating shopping behavior although they are not pleasant; and they associated repeat of these behaviors with satisfaction of needs or with the view of them as fulfillment of a certain task.

Whereas utilitarian motivation is related with functionality of shopping, hedonic motivation is relevant with the enjoying shopping experience (Anderson et al., 2014: 774). Majority of customers, especially low-income tier, are satisfied with the efforts of stores to develop experimental satisfaction. However, efforts to facilitate purchasing process are viewed as a

reward only for high-income tier (Allard et al., 2009: 47). Utilitarian shopping value could rather be necessary. However, this is not enough for developing loyalty (Jones et al., 2006: 979).

Customers' enjoyable experiences and hedonic shopping motivations could vary from one culture to another. For hedonic experience, all shopping motivations are relevant; and the primary difference is viewed with pleasure and collective cultures against individual shopping. In an individualistic culture, if cause of pleasure or adventure shopping motivations is customer experience, shopping is highly enjoyable indeed. On the other hand, in a collectivist culture, individual pleasure from shopping is less acceptable from the social point of view (Evanschitzky et al., 2014).

The model suggested by Yim et al. (2004) asserts that stronger hedonic motivations depend on significantly increasing consumer purchase; and video-graphic analysis results of shoppers indicate that more than half of consumers hang around the departments of hedonic goods just before or after the greengrocer shopping. This situation is assessed as that satisfaction of hedonic shopping motive would contribute in retail sales (Yim et al., 2014). The present study evidences that hedonism and utilitarian shopping are indispensable concepts and rather they are complementary to each other.

Haas and Kenning (2014) conclude with the retailers that consumers' consulting to sales represents provides hedonic motivations such as enjoying shopping besides utilitarian motivation obtained in circumstances of indecisiveness. According to Jones et al. (2006), feeling satisfied with a retailer place is relevant with hedonic aspect irrelevant with the good rather than conventional utilitarian motivations such as word-of-mouth communication and expectation of revisit for shopping. On the other hand, utilitarian shopping value has stronger relationship owing to the intention of consumers' revisit for shopping from the retailer (Jones et al., 2006: 979). However, a consumer is required to enjoy the whole process for revisiting the retailer.

One of the hedonic motivation tools used for consumers to enjoy the shopping process with the retailers is fashion factor. Especially following fashion trend, imitating others, or not to fall back behind fashion feelings are intensively sensed by consumers and these feelings motivate consumers to explore the new-coming goods to the stores. Kang and Park-Poaps (2010) report that innovative fashion is highly correlated with various hedonic shopping motivations. This correlation has positive impact as adventure and shopping ideas. Pursuit of adventure and new idea result in high level of innovation in fashion and desire to try new fashion (Kang and Park-Poaps, 2010). Cinjarevic et al. (2011) find that adventure, pleasure, value and shopping idea have direct impact on impulsive purchasing.

Hedonic behavior style could differ with respect to variety of products. Teo and Sidin (2014: 390) report evident hedonic consumption behavior with regard to cosmetics goods, apparels and cell phones. On the other hand, Apaolaza-Ibáñez et al. (2011: 798) emphasized both utilitarian and hedonic positive impacts of the brand for the cosmetic goods. Whereas the hedonic impact caused by a cosmetic product is comprised of affection experience of feeling being more adorable or young, the utilitarian impact refers successful physical changes promised such as body shape, wrinkle-free appearance, tight and shining skin (Apaolaza-Ibáñez et al., 2011: 794).

In addition, there are studies reporting impact of geographical factors on consumers' display either hedonic or utilitarian behaviors. Kim (2006) implies that urban consumers display higher hedonic shopping motivation with respect to country. According to Kim (2006), for urban consumers, shopping is entertainment-based motivation and perceived as a leisure activity. The primary reason for similar findings of these two studies is the greater number of retailers and shopping malls in the city center with respect to the rural areas. Consumers are exposed to more stimulators in urban areas.

Another factor explaining the difference among consumers' behaviors is gender. Women's addiction to shopping has always put them in the center of studies on hedonic shopping; and attracted attention of researchers on women's shopping behaviors. Teo and Sidin (2014) report stereotype Malay women living in urban areas exhibit higher hedonistic behavior. According to Teo and Sidin (2014), extrovert behaviors such as "going out", "being entrepreneurial", "expansiveness", "ecstasy" "and "pursuit of adventure" are hedonic and they are found among the fundamental values of contemporary women evidently. For instance, women's going out to indulge in various atmospheres or to make shopping in order to relieve from the weight of the roles expected from contemporary women, such as an employee at the workplace or a mother at home, totally represent hedonic behavior.

Raajpoot et al. (2008) noticed in their study that male consumers mostly take behaviors of sales persons into consideration when they assess their shopping experience. On the other hand, female consumers find shopping experience more exciting when there is high product variety. Aydın (2010) reports that female consumer exhibits greater tendency towards hedonic consumption in comparison with male.

Additionally, the relevant literature includes studies implying the impact of income level on consumption style beside the gender factor. Aydın (2010) addresses significant positive correlation between the consumers' income level and hedonic shopping attitude. Female consumers who feel greater economic independence and who has greater self-esteem would think that they deserve more quality and fashionable goods with the influence of the social status and success that they acquire (Liao et al., 2005: 174). The

significant hedonic and utilitarian difference between employed and unemployed female consumers in their shopping motivation emphasize that female consumer who make their own money and who has high self-esteem would eventually tend towards hedonism.

Raajpoot (2008) compares behaviors of employed and housewife female consumers at shopping malls; and reports that employed female consumers place more emphasis on sales persons when they assess their shopping experience. The author associates this preference with the higher expectations of employed female consumers. For housewife consumers, accessibility is more important and affection responses are more influent in general shopping assessment with respect to employed female consumers (Raajpoot, 2008).

Based on overall literature review, it could be asserted that consumers' hedonic or utilitarian behaviors are subject to variety of goods, influence of fashion, consumers' location, gender and income.

Method

The objective of the study is to investigate hedonic and utilitarian consumption behaviors of consumers from Denizli City in detail. The survey method, the most widely preferred method by the social scientists, was employed in the data collection process. The convenience sampling method was preferred in the study. Totally 263 face-to-face interview was conducted with consumers in the city center. Hedonic and utilitarian shopping scale developed by Babin et al. (1994) was employed as data collection tool. Fifteen items from the aforesaid scale were translated into Turkish and adapted before using in the interview. The scale items were structured with the five-point Likert Scale.

Following hypotheses were tested in the study;

H1a: There is significant difference between consumers' hedonic and utilitarian shopping attitudes with respect to their gender.

H1b: There is significant difference between consumers' hedonic and utilitarian shopping attitudes with respect to their marital status.

H1c: There is significant difference between consumers' hedonic and utilitarian shopping attitudes with respect to their employment status.

Research Findings
Reliability and Factor Analyses

As a result of the reliability analysis conducted for evaluation for items of the scale used in the study, alpha reliability coefficient is estimated at 0.82, which suggest that the employed scale is highly reliable.

The KMO value is estimated at 0.889, which suggests that sampling is appropriate for the factor analysis. Fifteen items cluster around two factors in

the scope of the original scale (Hedonic and Utilitarian); and it is seen that total variance of these two factors explains about 50% of the change. This rate could be assessed as sufficient for further analysis.

Hypothesis Tests

Sampling group is normally distributed and homogeneity of variance is assured. Accordingly, one of the parametric tests, T-test was employed in testing of the relevant hypothesis.

According to the finding of the T-test conducted to investigate the difference between genders in terms of hedonic and utilitarian shopping attitudes, a significant difference was determined with the hedonic aspect. Where Hedonic$_{(261)}$= -5,33, p<0.05, Utilitarian$_{(261)}$= 1,167, p>0.05, *H1a* hypothesis is found to be partially acceptable. When fundamental statistics are taken into consideration in order to assess the difference, it could be seen that female consumers' hedonic average score is greater than the males (3.06 vs. 2.95). In terms of the utilitarian aspect, both groups display the same average score (Table 1).

Table 1. Consumers' hedonic and utilitarian attitudes with respect to their gender

Gender		N	$\overline{X}$	S.S	df	t	p
Hedonic approach	Male	114	2.9580	.81771	261	-5.33	.000
	Female	149	3.0629	.81565			
Utilitarian approach	Male	114	3.6138	.62850	261	1.167	.244
	Female	149	3.5421	.66762			

As a result of the T-test result conducted to investigate the difference between hedonic and utilitarian shopping attitudes with respect to respondents' marital status, no difference was determined in both dimensions. Where Hedonic$_{(261)}$= -,973, p>0.05, Utilitarian$_{(261)}$= -,877, p>0.05 p>0.05, the H1b hypothesis is rejected. Married consumers' hedonic average score (2.95) is found to be lower than the single consumers (3.06). The utilitarian average score of married and single consumers are estimated at 3.6 and 3.54, respectively (Table 2).

Table 2. Consumers' hedonic and utilitarian attitudes with respect to their marital status.

Marital status		N	$\overline{X}$	S.S	df	t	p
Hedonic approach	Married	156	2,9580	,83456	261	-,973	,331
	Single	107	3,0629	,89190			
Utilitarian approach	Married	156	3,6138	,61588	261	-,877	,381
	Single	107	3,5421	,70081			

As a result of the T-test conducted to investigate the difference between the hedonic and utilitarian shopping attitudes with respect to respondents' employment status, a significant difference is determined with the hedonic aspect. Where $Hedonic_{(261)}= -2,72$, $p<0.05$, $Utilitarian_{(261)}= -,526$, $p>0.05$, the H1c hypothesis is partially accepted. When average scores are taken into consideration in order to assess the difference, employed and unemployed consumers' hedonic average are found to be 2.88 and 3.18, respectively. Within the scope of the study, unemployed consumers are found to be more hedonic. In the utilitarian aspect, both groups have similar average score (Table 3).

Table 3. Consumers' hedonic and utilitarian attitudes with respect to their employment status

Employment Status		N	$\overline{X}$	S.S	df	t	p
Hedonic approach	Employed	162	2.8883	.85852	261	-2.72	.007
	Unemployed	101	3.1809	.83056			
Utilitarian approach	Employed	162	3.5679	.65998	261	-.526	.599
	Unemployed	101	3.6114	.63980			

Result and Discussions

According to research findings, it could be concluded that female consumers display more hedonic behavior during shopping with respect to male consumers. This finding corresponds with the current studies in the relevant literature. Female consumers view shopping experience as exciting and fun activity. When the utilitarian dimension is taken into consideration, no significant difference was found between two genders.

It could be concluded that marital status is not influent on hedonic and utilitarian attitudes of participants during shopping. In terms of employment status of participants, unemployed participants were found to be more hedonic. The difficulty experienced by employed participants with making money could be interpreted as adverse impact on their hedonic attitude. These results are general assessment of consumers' shopping behavior. In case consumers' hedonic or utilitarian attitude is taken into consideration for different product groups, the findings could be differentiated and more detailed findings could be obtained. In order to develop effective marketing constituents, marketing managers need to explore the products upon which consumer exhibit hedonic or utilitarian attitudes by taking demographic variables into consideration.

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War Narratives Through The Eyes/I´S of Women in Iman Humaydan Younes'
B As In Beirut

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Abstract
      Lebanese author and journalist Iman Humaydan Younes published her debut novel *B as in Beirut* in Arabic in 1997 while the English translation didn't appear until 2007. The novel is divided into four narratives told by Lillian, Warda, Camilia, and Maha who live in the same apartment building in Beirut during the Lebanese civil war that extended from 1975 till 1990. Younes chooses to present personal narratives that reflect the emotional states of these women rather than describe the violent occurrences of the actual war. In this sense she tells of the repercussions of the war on her female narrators, and the coping mechanisms that each adopts away from the violence, destruction and absurdity that have been the main foci of most Lebanese war novels. My paper affects a close reading of these interlocked narratives and investigates the female voices behind them: who they are, what they are going through, and what they do in order to survive the state of inertia and loss during the civil war. My contention is that Younes's novel is one of the very few that succeeds in conveying the female experience during the civil war and paves the way for a Feminist attitude towards gender roles in a war- torn nation, and towards an understanding of the place of the woman in an overly male-oriented   and   maneuvered   dominion.

> *"This is an important book, the critic assumes, because it deals with war. This is an insignificant book because it deals with the feelings of women in a drawing room. A scene in a battlefield is more important than a scene in a shop." (Virginia Woolf, A Room of one's Own)*

Iman Humaydan Younes´s *B as in Beirut* was originally written in Arabic and published in 1997, but it wasn´t until 2007 that the English translation appeared. Her consequent novels were also translated from Arabic into English and several other languages: *Wild Mulberries* was published in 2008, *Other Lives* followed in 2014, and most recently *The Weight of Paradise* in 2016. Younes's writing revolves around the Lebanese civil war and the place of female protagonists in the context of war. Younes studied Sociology at the Lebanese University of Beirut and works as a journalist and writer. Her Master's thesis entitled "Neither Here, Nor There" documented the stories of those who disappeared during the war. She conducted interviews with and was interested in the individual stories and narratives of their families and loved ones. She focused on their experiences and their approach to memory and loss. In that sense her interest in the narrative of war counters the mainstream narrative that has been imposed on the Lebanese people. She draws from her rich socio-historical knowledge to write the war, and her approach stems from her preoccupation with the individual and social aspects of war.

Younes writes both in Arabic and French. *B as in Beirut*, her debut novel is entitled *Bā'mithla bayt... mithla Bayrūt* in Arabic, which translates literally as: B as in House... as Beirut. By equating Beirut to house or home, Younes targets the connotative dimension of the word. Beirut is home. It constitutes the private sphere of war that I aim to discuss in the current study. The book is divided into four interlocked narratives told by four very different women, namely Lilian, Warda, Maha and Camilia who live in the same apartment building in Beirut during the Lebanese civil war that extended from 1975 till 1990. The last two stories intertwine and Maha tells her own story as well as that of Camilia in the last section of the book. Younes chooses to present personal narratives that reflect the emotional states of these women rather than describe the violent occurrences of the actual war. Her focus is the private, personal sphere rather than the public and collective. Yet she uses this intimate experience as catalyst for the development of female consciousness with regards to male experience and social experience in general.

The Beirut Decentrists

The Lebanese civil war has been the setting and subject matter of many female authors including Ghada al- Samman, Hanan al Shaikh, and Emily Nasrallah among many others. The mid 1970s witnessed the emergence of a significant number of women writers who started to write their own literature in and about the war, a field that primarily constituted of male authors. These women who experienced the war reported their own take on it in their literature. Critic Miriam Cooke (1987) baptized them as the "Beirut Decentrists", as they are de-centered or excluded from the literary canon. These female authors have relayed the experience of consciousness of survival

and described the war and their society through their own lenses. In "Women Write War: the Centring of the Decentrists" Cooke writes:

> The Beirut Decentrists... wrote of the dailiness of war... from the inside margin, compelled to participate because the war was everywhere. The men wrote from the epicenter. The men's writings catalogued savagery, anger and despair. These women's writings reflected the mood of the war and the emergence of a feminist consciousness. (Cooke, 1987, p.3)

While men describe battles and depict violence in their novels, the Beirut Decentrists create their own sphere of experience away from savagery, blood and politics. Cooke adds that they are decentered on two different levels: the physical and the intellectual. These female writers were scattered all over Beirut during the war, and "they moved in separate spheres" intellectually (Cooke 1988, p.4). For her, these female authors were able to affect an act of resistance against men and against society during the civil war, and became in control of their own bodies and fates. Their writings underwent an evolution from passivity to action, and strong female voices developed during the war.

Younes might not categorically fit in Cook's definition of the Beirut Decentrists mainly because she wrote in the period after the war, not during the war. However, it is clear that Younes's writing continues in the tradition of Lebanese women writers who succeeded in establishing a new position of self-assertion vis- à-vis patriarchy in a war-torn country. Her protagonists Lilian, Warda, Camilia, and Maha tell diverse stories of survival during a war that is not named and never actually shown. These four women recount the war through their positions and dis-positions while never describing violence, battles, bombing or bloodshed. In her 1997 novel *Beirut Nightmares* Ghada al- Samman adopts a similar choice when she chronicles seven days in two-hundred and six nightmares spent in a villa in Beirut in 1975. She uses the journal format in order to give the illusion of fact recording while the reader never sees or hears the war except through the mind and psyche of the narrator. By distancing their narrators from the battlefield and centering them in the private sphere, these female authors deliberately adopt an angle that veers away from historical reality and establishes a new focal perspective.

The current paper will focus on three of Younes´s narratives: the first, the third and the last, those of Lilian and Camilia mainly for due to the abundance of material that can be discussed and to the fact that each narrative deserves special attention and in-depth study. Thus, limiting this discussion to Lilian and Camilia's narratives will give me the opportunity to closely study them in light of the claim at hand. In addition, Warda and Maha´s roles in the narratives are rather passive in the sense that both women suffer from patriarchy and male control that are imposed on them. Warda´s husband works in the Gulf area and leaves her behind. At one point he takes away her child

from her and she finds herself alone. She is deprived of her strength, hope, family and her sanity. The narrative style in her story is highly emotional and psychologically heavy, especially when compared to Lilian´s straight-forward narrative style. Warda is left deserted until she decides to end her life while Maha´s lover dies in the war and she finds herself sharing an apartment with Camilia who enables her to find purpose and meaning in her life. While Warda and Maha represent a good number of women who were overpowered by patriarchy and social restrictions, Lillian and Camilia propose an alternative reality where women were actually able to manoeuver their respective roles and positions in a war-torn country. They find for themselves a voice and a role that might start from the nucleus of the private sphere but that transcends the limitations of prescribed female demarcations. The novel clearly presents these female voices that tell of a different experience, a female experience in its own right.

The Assertion of a Voice

In the first narrative Lilian has lost her connection with her husband and is hoping to flee the country. She is pragmatic and practical, waiting for her visa to leave the country, "suitcases closed and waiting" by the door (Younes, 2007, p.2). She often compares herself to those suitcases: "I mused how they were just like me in that way: closed and waiting" (Younes, p.2). Lilian feels disconnected from her husband, a writer who lost his right hand as a result of an "accident". The reader guesses that the accident that is kept vague is actually a war-related injury but Younes never mentions it. Details of the war: shootings, battles, dead people, injuries and politics are practically missing in the novel. These sorts of details are kept ambiguous. The novel distances itself from details of violence, motives and reasons of the war. This vagueness is deliberate in an effort to highlight the private sphere of the female characters during the war. The author is not interested in those details but rather in the repercussions of such a war on these protagonists. At one point Lilian states: "One thought and one thought alone cycled through my mind: we are all alone. We lose those who we love, alone, and there is no shelter outside of the womb" (Younes, p.14). Her hope of deliverance is symbolized by the image of the flying woman: "I imagined a woman standing on the windowsill, flapping her arms in the wind like a bird trying to fly for the first time. She rose into the air, chased the sky without knowing where she might end up" (Younes, p.10). This image is interesting in the sense that it creates a certain space for Lillian to find her freedom from the status quo, which she eventually does at the end of her narrative.

Although Younes sets this story mostly inside the realm of the household that Lilian is running, she never underestimates the role that her protagonist plays in providing security and protection for her family. This is

seen in the novel when Lilian is crossing checkpoints with her children in order to visit her parents in East Beirut: "I heard my heavy breathing before I could hear my own footsteps. I was exhausted. I remembered that I had two children with me. I looked back. I sat down on the sidewalk among people who were terrified of slowing down even for a moment" (Younes, p. 36). During the Lebanese war crossing checkpoints was a dangerous ordeal and was not habitually done by women unaccompanied by their spouses or male figures. Lilian is a strong independent woman who chooses to take charge instead of waiting. She also does it without her husband's help. This character as well as others we meet in the novel were not the case in earlier literature. Critic Miriam Cooke wrote about women writers. In *War's Other Voices: Women Writers on the Lebanese Civil War* she writes: "Women were not yet sufficiently part of society to be able to use their own voice. Women could be characters in men's fiction, but they could not create such characters" (Cooke, p. 79). Younes creates characters like Lilian who not only voice out their experience from their own point of view but who most importantly refuse to look at the war from a purely political point of view. They are not mere passive readers of events but rather active participants and oftentimes writers of their own fates. Along these lines Lilian admires Josefa´s character and states: "But Josefa actually resembled the heroines, who transformed their misfortunes into fertile wheat fields… She wasn't afraid, though. She wasn't afraid a day in her life" (Younes, p. 24). In *Women and War in Lebanon* (1999), edited by Rustum Shehadeh, Mona Amyuni in "Panorama of Lebanese Women Writers, 1975-1995" writes about the role of women during the war and argues that war was an oppressor of women but that this didn't stop them from playing an important role during the war. This is quite evident in some of Younes´s protagonists who perform an act of resistance against the war, against oppression and mostly against ineptness.

The disparity between men and women's outlook at the war, the past and martyrdom is also evident in this first narrative. Lillian´s husband is caught in the past and is unable to proceed towards the future. Her approach is different from his since she is constantly looking for a way out of the war-torn city. Her husband Talal is preparing for the commemoration of his grandfather´s martyrdom. A new tomb has been built for him and Talal is consumed with this event while Lillian is trying to make him accompany her to her appointment with the Australian consul. Talal is adamant about the commemoration and the preparations for it that he chooses to miss the appointment that is essential for his family´s future. Lillian, the pragmatic, exclaims: "To hell with Talal and Abbas, to hell with martyrdom and commemoration" (Younes, p. 48). She reads in his refusal a sense of surrender to the past that she simply would not accept. Younes further illustrates this important theme in the following excerpt: "While Talal was writing his

commemoration address, I asked him why we search for our identity among the dead, why this search always takes us back into the past. I knew that to search somewhere else, in that moment in particular, would require extraordinary courage, courage Talal no longer possessed" (Younes, p. 49). Politics to Younes seems to be pointless at this stage. Looking back at the past, dwelling on what's passed does no good. The practical outlook of this female character challenges the passive acceptance of events and focuses on the survival of family and the small nucleus. Younes capitalizes on this standpoint at the end of this narrative when she has Lillian confront Talal before she takes the children and leaves to Australia:

> I looked at him and thought, My God, how we'd changed. How we used to fight back at the outbreak of the war. I got so angry whenever he talked to me about politics just to provoke me. We were enemies but neither emerged victorious. Rather, we were both losers until the bitter end. Now, after all that bloodshed and all the years we had lost, the conflict had become bound up with our very lives. As though the violence, which had dragged on for years and lasted far too long, held our personal conflict together, refining it, making it more tolerable than it was before. That's war, my friend: the most despicable way of disagreeing. "Did we really need all that violence?" I asked him… (Younes, p. 52)

A great number of Lebanese war novels written by male authors focus on the events of war, on conflict, political and sectarian religious dichotomies while women writers speak of experience and transport the war from the private sphere to the public sphere. In this respect Younes succeeds in maintaining distance from historical reality. Male writings about the civil war focus on the violence, killing, and horrid details of the war while Younes takes a different direction by moving the battlefield to the inside, to the private sphere. Lilian chooses to leave her husband behind and emigrate because he's unable to take this decision himself. In this final act of departure, one can read the ultimate expression of her feminist attitude. During the Lebanese war it was customary for men to leave the country to work while women were left behind. Lillian is the one who takes the active role to walk towards the future, while Talal decides to stay back, buried in the past, in useless politics and in a war he himself cannot fathom. In this excerpt one can also read the author´s rejection of the war as a pointless endeavor that costs people a lot for no obvious purpose. Lillian´s rejection of war and her final decision to leave her husband behind clearly delineate a feminist attitude towards patriarchy and war that tallies with Cooke´s reading of women writers during the second half of the twentieth century.

Retribution against War and Patriarchy

We move on to Camilia who is a single woman who lives in the mountains and does not have a father figure. She has the complete freedom to behave the way she wants and to have her independent thought and vision of the world around her. Telling about her upbringing in the mountains Camilia explains: "We began to own the place. We used to be only visitors. It was easy for me to adapt to this new life, easier than adapting to the orderly life most girls in town were used to. Maybe that was because I grew up in a house with no men. No one exercised absolute control over my decisions" (Younes, p. 95). Talking about her father´s absence she says: "His absence didn't bother me; I felt an extreme, boundless freedom, a freedom that was apparent in my eyes and behavior" (Younes, p. 116). She is at first detached from war mainly raging in Beirut and is free from male authority. This establishes the bases for her character and clearly prepares for the major events that will occur further along in the novel. Camilia is the epitome of the self-sufficient woman who never knew limitations and was never bound up by patriarchy. Her education is liberal and her thoughts progressive for her age and status. She later on immigrates to the England and comes back to Beirut to work on a documentary film about militia men in the Lebanese war.

Maha's story starts upon Camilia's return to Lebanon. Maha takes over the narration at this point and her story becomes intertwined with that of Camilia who comes to live with her in Beirut. Maha lost her lover during the war. Here again, there is an ambiguous reference to the war with no specific details or explanations given. Maha maintains her distance from everyone and never leaves the house. She is detached from reality around her. It is only when Camilia comes to live with her that her life starts to change. Maha´s standpoint from men and the war can be clearly deciphered in the following line: "Men's finger stay on the trigger while women look for safe places for their children" (Younes, p. 148). This position of course resonates with that of Lilian and reinforces the binary opposition that is evident in novels written by female authors during the war, namely that of: self vs. other, private vs. public, peace vs. war, activity vs. passivity. According to Cooke, the war provided the context for such a dichotomy (Cooke 1988, p. 87). Younes agrees and asserts that the war has destroyed the Lebanese social norms and allowed new voices to emerge. In an interview with Qantara.de in 2010 she affirms: "Writers and artists speak up, and they are listened to. There's a wide variety of voices which claim attention. The war has opened up these strong, official, mainstream voices and pushed them to one side" (Sectarianism as a Dead End for Lebanon). She believes that the rise of the Modern Lebanese novel is a product to the civil war. It is exactly the afore-mentioned dichotomy that is represented in *B as in Beirut* and that Younes capitalizes on, in an attempt to re-position the narrative of war and give it a feminist layer.

Furthermore, Camilia´s dichotomous character is exhibited in the way she falls in love with Muhammad, a doctor her father's age and is at the same time in a relationship with Ranger (his nickname comes from the type of car he drives), the militia man who dictates her life and controls her. Camilia is back in Lebanon to shoot a documentary about militia men like Ranger and war is the reason why she left the country in the first place. The reader might question at this point her motives behind having a relationship with a man like Ranger. She is on one hand spending her time with an educated, mature man who sees her as an equal but might represent a father figure that she never had, while on the other hand she willingly lets herself be overpowered by a violent man who represents all that war connotes. It all begins to take shape at the end of Maha's narrative in the final scene when violent battles are occurring outside the apartment building while Maha and Camilia are sitting in the shelter waiting for the shooting to cease. Ranger comes into the shelter and very calmly tells Camilia that he shot Muhammad (mainly because of sectarian conflicts that fueled the war). He also declares the end of the war in a very matter-of fact manner, without any introductions or fuss. The news comes as a simple, unimportant piece of information, very collateral in magnitude. Camilia and Maha take in the news about the end of the war in an underrated way, the same way the readers never get to see the war or even its end. Younes gives us information about the proceedings and end of the war only indirectly, very similar to the way Virginia Woolf did it in *To the Lighthouse* or *Mrs. Dalloway*. Younes in this sense continues to maintain distance from historical reality and shows little interest in the war in the level that pertains to violence, politics and the actual battlefield.

In the final scene of the novel the two women tie Ranger up and Camilia starts bombarding him with a string of long questions, mostly about the war, violence and bloodshed. She also questions him about kidnapping and killing Muhammad. In the meantime Maha is listening but she feels numb: "All things come to an end, I thought. Even violence reaches a point from which it cannot advance further. It will go on piling up on the violence that came before it, stacking up time and emptiness. It becomes like a bare, unembellished lust" (Younes, p.223). In these lines one can easily read the author's take on violence and the reason behind her choice to veil bloodshed, killing and violence in her novel. In the meantime Ranger laughs and takes the whole scene lightly, thinking it was a game, until the game becomes real and the events take a serious turn after his confession about the doctor's kidnapping, torture and eventual death. Camilia shoots him twice, taking her revenge for Muhammad´s death but mostly on war, on violence, as well as on patriarchal figures, all the things that Ranger represents and stands for as a militia man. The reader can interpret this final act as retaliation on the destructive forces or powers that were facing Camilia during the war. More

importantly, the violence that the reader never has a glimpse of throughout the novel is condensed in this one scene, and the lines between combat zones and safe zones, between the public and private have now been blurred. Ranger's description of his acts of violence and murder as well as Camilia's final act represent the only denotations of violence and war. The Lebanese war the way Younes conceives it had no clear causes, no obvious shape, and no stable enemy. It only took shape in the final act in the novel.

The ultimate twist in this scene is when Camilia announces that she is pregnant. And since both possible fathers are now dead, Camilia declares that: "It'll be a beautiful child. It will have no father" (226). In this statement can be read the ultimate expression of independence and a new position for Camilia, one that is feminist *par excellence.* According to Cooke, decision making is a form of self-assertion on the part of women in Lebanon (Cooke 1988, p.134) and by giving Camilia the power to cancel out Ranger and design her own fate alone, in her own way, the author traces the development of a woman from a passive, silent subject to an empowered actor of her own fate. The absence of the father in her child´s life can also be seen as the epitome of female empowerment. Camilia decides to go back to England since her "child will become my homeland" (226) and leaves Maha behind, alone with an unfinished story. The last line of the novel reads as follows: "They may say the war has ended but I haven't finished my story yet" (227).

Iman Humaydan Younes gave dimensions to her characters and presented an alternative insight into the war. Her novel reshapes the experience and meaning of war, and moves female characters from characters that serve as symbols, or characters that are reduced to flat figures, to protagonists who introduce their own voices and "contest the acceptance of a structured world and break down the simplistic oppositions between home vs. front, civilian vs. combatant and war vs peace that have long served and promoted war" (Cooke 1988, p. 79). Her novel is concerned with the lives of women: their struggles, losses and victories. It empowers these two women and gives them not only a voice to speak out their suffering, their insecurities and conflicts, but most importantly an opportunity to decide for themselves and act out their own desired roles in a time when only bloodshed and violence reigned.

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Writing Through the 4Cs in the Content Areas – Integrating Creativity, Critical Thinking, Collaboration and Communication

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Abstract

Writing is a complex process that involves a number of competences and a degree of imagination. It can be evolved by using the 4Cs in the content areas: integrating creativity, critical thinking, collaboration, and communication, all of which teachers have struggled to include as part of their curricula. These struggles are often caused by logistic and financial constraints. With the professional demand pressingly navigating towards technology, teachers can aid their students by applying solution amenable to immediate use, low cost and tolerates interdisciplinary implementation. The first step would be to abandon the conventional curricula that were taught before as most of the current students are at a whole new technological level. They can be replaced by more pertinent skills that cater to the artistic and professional outlooks of students. This will ultimately equip them to be able to meet the market standards and improve their vocational prospects.

Keywords: Education, 4Cs, creativity, critical thinking, collaboration, communication, technology, implementation

Introduction

Writing is one of the hardest skills to foster because it involves the concentration and distillation of various linguistic aptitudes such as grammar and vocabulary as well as having a decent imagination that allows an unconstructive flow of ideas. It is now considered an important skill in almost all domains (Klimova, 2015) as the world is becoming more technologically inclined and people often need to communicate with others who belong to different cultures. Students struggle with utilizing their acquired knowledge and using it in writing (Hyland, 2013). At lower levels, teachers seem to focus on receptive language skills such as reading and listening instead of productive language skills such as speaking and writing (Sebestova, Najvar & Janik,

2011). Among the higher levels of education, students struggle with weak arguments, elaboration, integration of prior knowledge, and lack of critical thinking (Cavdar & Doe, 2012). This makes it difficult to generate content as well as evaluate what they have written.

One of the approaches that aid students in developing their writing skills is integrating the 4Cs in writing content areas. They are creativity, critical thinking, collaboration, and communication. This paper explores the benefits of these skills as well as the most cost-effective and efficient methods of integrating them into the curricula. This paper is a practical approach for each teacher that can easily be adopted without any drastic changes that can prove to be impractical for budget reasons or opposition from administrative authorities. It contains tips that any teacher can reasonably include within any curricula.

Creativity

Although creativity can be simplified as "making something original", it is in of itself a very complicated process (Yates & Twig, 2017). Adults often grow up being afraid of creativity as a whole concept because they are not given the proper tools to develop that skill at an early age. Some of the theories that explain this gap explain that the activities given to children are often controlled by adults. For example, during Arts & Crafts in school, children are asked to paint a picture or build some kind of model. Though they might aid some skills, creativity is not necessarily improved by them because they tend to a pre-determined outcome instead of allowing children the freedom to exercise their vision (Myhill & Wilson, 2013).

Creativity necessitates breaking loose of all the restrictions and expectations in order to forge something new and unique. Wright (2015) also pointed out that shaping children's creativity is often limited by the educator's ability to stimulate said instructor's own creative capabilities that are often lacking due to the accumulation of practices and policies that failed to nurture this skill. It seems that the educators themselves need to be rehabilitated in the art of teaching their charges at the various stages of education. Due to this lack, teachers fail out of the fear of the unexpected (Cheung, 2013). They would lean towards the expected and discourage the unique, and they even go further by relating a lively imagination to psychological problems.

There is much to be learned from children when it comes to creativity. A closer look at children reveals individuals who are carefree and independent thinkers (Glaveanu, 2011). They draw, dance and even create imaginary friends with little heed to the laws of the world around them. That flexibility should be encouraged rather than stifled by teachers. They need to ask children questions that provoke further explanations, and the more bizarre the better. This technique might not work so well with older students, but that dormant

part can be triggered as well. Music is an attractive option because it is something that can be interpreted differently. The Internet offers a wealth of options; teachers should not feel restricted to the classical pieces and they could dive into a wealth of ethnic music. Eliminating words or the understanding of words is further incentive for creativity. Furthermore, narration is a great option for inducing creativity. Teachers can start off small by telling a story and asking children to provide the ending. For older students, teachers can present an unusual premise; for example: What would happen if Earth lost its gravity and we were all floating all the time? Is there really a cat conspiracy to take over the world? If these prompts seem outlandish then that's the point.

Creativity tiptoes the line between sanity (our comfort zone) and insanity (uncharted waters), so the more boundaries are pushed, the more creative our students can become.

Critical Thinking

Critical thinking is another elusive quality that we wish to cultivate in our students yet we often fall short on that goal. It is also incredibly difficult to define a concept as fluid as critical thinking because it is as changeable as the situation presented. Critical thinking is centered on updating existing knowledge by analyzing new situations through performing comparisons, establishing relationships, extracting new ideas and evaluating truth, utility and consequences of findings (Florea & Hurjui, 2015). If this sounds too complex, think of critical thinking as a method or tool that allows students to fix problems in a logical, albeit not always conventional, way.

As mentioned before, students might have plenty of knowledge about a topic, but they are incapable of translating that knowledge into viable information. According to Bailey et al. (2015), some of the most common problems of writing are weak or no evaluation of theoretical assumptions, disorganized structural formation, weak support for ideas and lack in the ability to critique. This is because children are always taught the answers but never the questions. Some of the drawbacks of the educational system in-place are that it encourages memorization of facts and figures instead of exploring knowledge.

Critical thinking is a topic that some teachers willfully chide away from because they are afraid it will make compromise their position as the source of all the answers. Critical thinking has to be about finding links between unlikely sources. This will all start off by encouraging children to start off conversations with one another. Let them argue among themselves about what makes sense and what doesn't. With their active imagination and creativity, they will find unlikely connections that an adult would never have thought about. To further assist in establishing these links, present them into

something tangible such as a flowchart. For older students, a simple and effective method is to build their ability to ask questions instead of providing answers. The father of critical thinking Socrates himself was always more concerned with the question instead of the answer. Write a sentence on the board and students think back on the path that would have led to this outcome. Trying to reconstruct the pathway to the answer is more challenging and it forces students to find correlations and a logical sequence for the outcome. Teachers can instigate the conversation and keep its flow by laying the devil's advocate and asking all sorts of questions. Such discussions might be hindered by a tight curriculum, so they can be done during brainstorming sessions of writing. Once students are versed, they can be given as homework. Teachers should keep in mind that some students may be too shy to voice their opinions especially when they could be contested by their peers, so a good tip to encourage them would be by roleplaying. By putting them in the position of someone else, they are more likely to voice their own ideas because they now have a suitable mouthpiece.

For critical thinking to flourish, there needs to be little restriction on what students want to ask or think which could be challenging in a contested environment we live in. To minimize the friction, deal with any controversy calmly and make sure you present a neutral global topic that will never trigger the sensibilities of different characters and backgrounds.

Collaboration

The aspect of collaboration is taking on more importance in today's world with the bloom of the Internet and online teaching. Collaborative writing can be an asset for students because they are involved with others during all the stages of writing. It can be defined as "An activity where there is a shared and negotiated decision-making process and a shared responsibility for the production of a single text" (Storch, 2013). While writing is stressful for all age groups, it can be particularly taxing for those in grade 11 and 12 who face many assessment tests that can influence their college careers. They are also taught writing techniques specific to university and therefore have to quickly adapt their personal styles.

In a study conducted by Vorobel & Kim (2017), they discovered that collaborative writing developed the communication skills through discussions, negotiation and developing arguments on one hand and produced a text of a higher quality in terms of organization, grammar, and vocabulary on the other hand. For students who deal with English as a second language, it is beneficial that students perform their own discussion in English to consolidate their benefit from the activity as well as enhancing the produced text (Wigglesworth & Storch, 2012).

Collaboration can be a bit difficult for some students who do not have the best communication skills, so teachers need to make sure they create an inclusive environment. Collaboration's first step involves splitting students into groups made up of students with different skills and personalities because collaboration is all about merging the strengths of every member to cover up their deficiencies. In fact, putting together students with similar skills will only create some problems as each will try to up do the other and taking the lead. With different strengths, each of the students will have their own spotlight which will boost their morale and allow them to become more engaged. These groups will revolve around having the right dynamic to evolve so make sure you keep tabs and make sure balance and open communication exists between every member of the group.

The instructor should also provide students with the tools to properly critique their own work and that of others. Students do not have the proper vocabulary and technique to address the issues of what was written and often use terms such as "stupid" and "wrong". This is never helpful because it either creates anger from the person critiqued or makes them drawn within themselves and put halt to further contribution they might have had. The instructor can perform critiquing exercises by telling students to read aloud passages from other sources and encouraging them to express their feelings and opinions. Their expressions at first will be unsophisticated, but the instructor can modulate these expressions in a way that allows them to pinpoint whatever deficiencies they perceive and thus work out methods of improving them. This will, in turn, enhance their critical thinking skills and communication tools. It supplies them with a way to properly articulate their opinions and thus allow all members of the group to collaborate more efficiently and effectively.

Communication

The age of computers has further pushed the boundaries of communication where the written letter takes precedence over body language and tone; however, communication has always been an integral part of the classroom (Sirbu & Tonea, 2015). The role of the teacher is vital because they have to manage the entire environment by planning, organizing and motivating students to communicate with one another. Furthermore, the new curricula have pushed students to become a more active component in the learning process, so they now need to have the communication tools to occupy the center stage position that was traditionally restricted to teachers (Yusof & Halim, 2014).

Teachers' fostering communication in the classroom will serve three main purposes: stimulate the relevant knowledge from the students that have previously acquired the information but are unable to correlate it to the

question, allow them to interact with what is being discussed by others and be able to properly describe what experiences with others to add their own input and impact on the discussion (Farrell, 2009). The onslaught of digital communication has robbed this generation from much of the opportunities that have allowed previous generations to cultivate the hone their own style as they are too immersed in the online world. They find it difficult to write in a way that expresses their opinion.

The problem is twofold: communicating with others verbally and communicating in the written word. The verbal communication can be enhanced by referring to collaboration in chapter 3. Having students work in groups with their peers is the first step because it removes any position leverage and forces them into a situation where they could be on equal footing and capable of voicing their opinions. As mentioned before, the teacher needs to step in and supply them with the proper tools and words that allow them to critique what has been said instead of focusing on criticizing it.

When it comes to written communication, there are several tips that can aid students. The number one step is to carefully pinpoint the focal idea as students often get confused about what to write. They have all the knowledge of the world at their fingertips, so they are loaded with too much material to choose from. Focusing on the idea would mean less confusion for them and remove some of the panics at the prospect of not being able to properly cover the entire topic.

The younger generation can benefit a lot from including games in the writing process. It is not always about putting a video game or power point presentation on the board for them to see as this is not available in all schools. Games can be written on the board or created on paper or cardboard and are passed to students. Games are engaging for children and even those most averse to writing or participating might communicate. Games also have the added advantage of being extremely interactive, so they create open communication channels between all involved.

Students should also learn to write clearer. Help them to write in small and clear sentences as they seem to think that only by writing compound and complex sentences they can get a better grade. This often backfires on students because it weakens their structure. Instead, encourage them to use simple sentences with power adjective, adverbs, and images that will get their point across clearly and concisely. Teachers should stress that writing at the level of the university is all about getting a message across clearly rather than flowery and redundant expressions. They should be extremely careful of using ambiguous language that can be interpreted in a different way. Again and again reading out loud and having other comment and address what was written goes a long way towards improving the overall text.

Conclusion

The 4 Cs, creativity, critical thinking, collaboration and communication can play an integral part of writing in today's curricula. By implementing these techniques, you can stimulate the students' creativity and imbue them with the tools needed to facilitate the writing process.

Today's curricula are challenged by the need to incorporate new technology to cater for the thinking process of the generation who has abandoned even the notion of letters and words for pictures and emojis making the concept of writing alien to most of them. Even within the space of their working careers, they will be required to present detailed and well-constructed reports of their work. Hence, writing is an important skill that is now an essential requirement in all the wakes of life. They can benefit from the 4Cs being integrated within the curricula to spark their interest and facilitate their journey into writing. They have been scientifically proven to benefit individuals in acquiring a number of skills in many domains including writing. The creativity can be stocked by stripping away the constraints of words and replacing them with thoughts. Critical thinking is enhanced by having students work on their logical thinking and analysis. They can benefit from collaboration by joining together those with different skills and having them learn from their peers. Their communication skills can be enhanced by focusing on clear and concise ideas and sentences rather than frills. Even though many have claimed that everything under the sun has been written already, others believe that there are many untold stories waiting the perfect conduit to burst through.

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The Legal Constitution of the European Union[2]

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Abstract

World War II (1939 – 1945) was a catastrophe for the whole world and for Europe in particular. It is one of the great miracles of the 20th century that the West European war parties did draw a line and founded an economic alliance for coal and steel production. This economical alliance is based on common values and on the rule of law. A main problem of the European Union is to give a democratic legitimation to the European institutions. It is good that e.g. the European Parliament is elected directly, it is bad that e.g. the President of the European Commission is not elected directly. In some Member States of the European Union common values and common interests are only partim shared. The people of Great Britain did decide in 2016 to leave the European Union; according to the legal constitution of the European Union a leave is allowed. The main achievement of the European Union is the abolition of inter-European taxes and thus the promotion of economical relationships between the Member States of the European Union. The Euro that is the currency of (only) some Member States has become a global player.

Keywords: European Union, Member States of the European Union, Treaties of the European Union, common values, common market, separation of powers, European Commission, European Parliament, President of the European Council, High Representative of the Union for Foreign Affairs and Security Policy, European Central Bank

Introduction

One should be aware of the fact what kind of brutal military violence the greatest war criminal of human history – Adolf Hitler (1883 – 1945) and his crazy followers – had brought to the former Czechoslovakia (CSSR)[3]. It is

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[2] This was the subject of the author's keynote speech at the 12th International Scientific Forum (ISF 2018) that took place at Prague on the 26th and 27th of April 2018.
[3] The Molotov–Ribbentrop Pact – named after the Soviet foreign minister Vyacheslav Molotov (1890 – 1986) the German foreign minister Joachim von Ribbentrop (1893 – 1946) – was at the beginning and was a secret plot for dividing Poland; cfr. Gerhard Bisovsky/Hans

one of the great miracles of the 20th century that the relationships between Czech Republic and Germany were normalized. For the author of this paper the journey to Prague is always something very particular. The Czech Republic was at the beginning of the author's career[4]: In the almost very first month of his professional career as a lawyer in the Federal Ministry of Transport, he did come intensively in touch with the Czech Republic; it was in December 1991[5]: The comeback of the Czech Republic in the infrastructure sector was in full swing, the comeback of Eastern Germany was in full swing as well. The Ministries of Transport of the Czech Republic and of the Federal Republic of Germany were concerned with the preparation of state treaties for the planning and construction of border bridges that should serve the connection of long-distance roads. The bridges were built long ago, the connections of the long-distance roads were established long ago, these long-distance roads do now fulfil a very important function for the coping of traffic in the European Union; the Czech Republic and the Federal Republic of Germany are strong partners in the European Union. Important Czech-German road projects[6] are referring to the following European regions[7]:

– Schönberg – Vojtanov[8].
– Waidhaus – Rozvadov[9].

Schafranek/Robert Streibel (Hrsg.): *Der Hitler-Stalin-Pakt. Voraussetzungen, Hintergründe, Auswirkungen.* Wien, 1990.

[4] To the ideologically motivated expropriations by socialist nationalization Grazyna Ewa Herber: Reconstruction of Warsaw's old town after the 2nd World War. The conflict between historic preservation principles, political enslavement and social expectations. Bamberg, 2014, p. 224 ff.

[5] Franz-Rudolf Herber: On the importance of expropriation in the Roman Empire and in modern Europe, in: European Scientific Journal, January 2015 edition vol. 11, No. 1, ISSN: 1857 - 7881 (Print)/ISSN: 1857 (1858) (Online).

[6] For a moment we shall imagine the following: The competent authorities of the Czech Republic and of the Federal Republic of Germany planed this bridges and road connections "lege artis". But what should happen, if owners of private land, that was necessary for the realisation of the road projects, were not inclined to sell their land to the Czech state respective to the German state? The legal solution would have been expropriation for compensation. Any other solution would have been an unacceptable result (with the exception of an easement on the private land for the state). This leads to the questions of property, restrictions for property and expropriation.

[7] Franz-Rudolf Herber: Bridges from east to west - Poland's transport policy and opening process to the reunified Germany, in: uni.vers, The Magazine of the University of Bamberg, Issue 4, June 2003, p. 16–17.

[8] The legal basis in international law is the Agreement of the 13th of the July 1995 between the Federal Republic of Germany and the Czech Republic on border crossing facilities for the new highway bridge in the Vojtanov – Schönberg area.

[9] The legal basis in international law is the Agreement of the 13th of July 1995 between the Federal Republic of Germany and the Czech Republic on border crossing facilities for the new highway bridge in the Waidhaus – Rozvadov area.

– Breitenau – Krásný Les[10].

Important treaties for the European Union

The European Union is based on the rule of law, i.e. that every action taken by the European Union is founded on treaties that have been approved voluntarily and democratically by all Member States of the European Union. These treaties are negotiated and agreed by all Member States of the European Union and then ratified by their parliaments or by referendum – this is a very long and complicated procedure for each treaty. The history of the European Union is the history of important treaties; only a few out of the given range can be mentioned here:

(1) At the very beginning there was the Treaty of Paris: The Treaty of Paris was signed in Paris on the 18th of April 1951 and entered into force in 1952. This treaty established the so-called European Coal and Steel Community[11]; the six founding countries were the following:

– Belgium[12].
– France[13].
– Germany[14].
– Italy[15].
– Luxembourg[16].
– The Netherlands[17].

(2) The Treaties of Rome were signed in Rome on the 25th of March 1957 and came into force in 1958[18]; these treaties established the European Economic Community and the European Atomic Energy Community.

These two treaties paved the way into a prosperous future: The European Coal and Steel Community as well as the common market begun to unite European countries economically. These treaties were a very important political instrument in the so-called cold war: The 1950s were dominated by

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[10] The legal basis in international law is the Agreement of the 13th of July 1995 between the Federal Republic of Germany and the Czech Republic on border crossing facilities for the new highway bridge in the Breitenau – Krásný Les area.

[11] It expired in 2002.

[12] To the history of Belgium: Bernard A. Cook: Belgium. A History. 3rd edition, New York et al., 2004

[13] To the history of France: Jean Favier (Hrsg.): Geschichte Frankreichs. 6 Vol., Stuttgart, 1989 sqq.

[14] To the history of Germany: Hans-Ulrich Wehler (Hrsg.): Moderne Deutsche Geschichte. 12 Vol. + Reg.-Bd., Frankfurt am Main, 1996.

[15] To the history of Italy: Ruggiero Romano: La storiografia italiana oggi., Mailand, 1978.

[16] To the history of Luxembourg: Michel Pauly: Geschichte Luxemburgs. München, 2011.

[17] To the history of The Netherlands: Christoph Driessen: Geschichte der Niederlande. Von der Seemacht zum Trendland. Regensburg, 2009.

[18] The Single European Act (SEA) was signed in February 1986 and came into force in 1987. It amended the EEC Treaty and paved the way for completing the single market.

political tensions between east and west. Protests in the former DDR[19] and Hungary[20] against the Communist regimes were put down by Soviet tanks in 1953 and 1956. Furthermore, the afore-mentioned treaties made the European Union attractive for other countries: Denmark, Ireland and the United Kingdom joined the European Union on the 1st of January 1973, thus raising the number of Member States to nine[21].

(3) The Treaty on the European Union — the so-called Maastricht Treaty — was signed in Maastricht on the 7th of February 1992 and came into force in 1993; it gave the Parliament more say in decision-making and added new policy areas of cooperation. Very important is that the Parliament is elected directly and thus democracy in the European Union is embettered.

(4) The Treaty of Amsterdam[22] was signed on the 2nd of October 1997 and came into force in 1999; the main p**urpose of this treaty was** reforming the institutions of the European Union in preparation for the arrival of future member countries. The transparent decision-making should become more transparent by increasing usage of the ordinary legislative procedure.

(5) The Treaty of Nice was signed on the 26th of February 2001 and entered into force in 2003; it streamlined the institutional system of the (soon enlarged) European Union. The following states that had been communistic states joined the European Union as new Member States[23]:

– Czech Republic[24].

– Hungary[25].

– Latvia[26].

– Lithuania[27].

– Poland[28].

– Slovakia[29].

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[19] lko-Sascha Kowalczuk: 17. Juni 1953 – Geschichte eines Aufstands. München 2013.

[20] Agnes Heller/Ferenc Fehér: Hungary 1956 Revisited: The Message of a Revolution – a Quarter of a Century After. Allen and Unwin, London, 1983.

[21] The EU regional policy started to transfer huge sums to create jobs and infrastructure in poorer areas.

[22] For the full text of the Treaty of Amsterdam cfr. https://europa.eu/european-union/law/treaties_en.

[23] Furthermore, Cyprus and Malta joined the European Union.

[24] To the history of the Czech Republic: Vodička, Karel/Cabada, Ladislav: Politický systém České republiky, Praha, 2003.

[25] To the history of Hungary: Gyorgy Dalos: Ungarn in der Nußschale. Geschichte meines Landes. München, 2004.

[26] To the history of Latvia: Ilgvars Butulis/Antonijs Zunda: Latvijas Vēsture. Riga, 2010.

[27] To the history of Lithuania: Marianne Butenschön: Litauen. Beck'sche Reihe Länder, München, 2002.

[28] To the history of Poland: Jürgen Heyde: Geschichte Polens. München, 2006.

[29] To the history of Slovakia: Elena Mannová (Hrsg.): A Concise History of Slovakia. Bratislava, 2000.

– Slovenia[30].

This was a caesura not only for Europe, but for the whole world.

(6) The Treaty of Lisbon was signed on the 13th of December 2007 and came into force in 2009. It shall strictly simplify working methods and voting rules; two points are outstanding:

– The new institution "President of the European Council" was established. The former Polish Prime Minister Donald Tusk[31] is the current President of the European Council; in this position he was re-elected in 2016 against the protest of the Polish Government.

– The new institution "High Representative of the Union for Foreign Affairs and Security Policy" was established, because the European Union wanted to be a stronger actor on the global stage. The High Representative is the coordinator of the European Union's foreign and security policy. The Italian politician Frederica Mogherini[32] is the current High Representative of the Union for Foreign Affairs and Security Policy.

Important Persons for the forthcoming of the European Union

The foundation of a union out of several different states is a great achievement, wherever it takes place on the globe. In post-war Europe, however, this was a very difficult job because, there had to be conquered nationalism that was the cause for the two world-wars being clear that Germany started at least World War II (1939 – 1954) by a politics of aggression. The split through Europe after World War II was so deep that it required strong characters to ban nationalism and to show the nations a prosperous future in a united Europe; particularly these characters are outstanding:

– Konrad Adenauer[33] (1876 – 1967).
– Joseph Bech[34] (1887 – 1975).
– Johan Beyen[35] (1897 – 1976).
– Winston Churchill[36] (1874 – 1965).

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[30] To the history of Slovenia: Joachim Hösler: Slowenien. Von den Anfängen bis zur Gegenwart. Regensburg, 2006.

[31] Sławomir Grabias: Donald Tusk. Pierwsza niezależna biografia, Łodź, 2011.

[32] To Frederica Mogherini: https://ec.europa.eu/commission/commissioners/2014-2019/mogherini_en.

[33] To Konrad Adenauer: Ulrich Frank-Planitz: Konrad Adenauer. Bergisch Gladbach (2. edition), 1975.

[34] To Joseph Bech: Cfr. http://governmentsinexile.com/yapouluxembourg.html.

[35] To Johan Beyen: https://www.parlement.com/id/vg09llhs5qyi/j_w_johan_beyen.

[36] To Winston Churchill: Thomas Kielinger: Winston Churchill. Der späte Held. Eine Biographie. München, 2014.

– <u>Alcide De Gasperi</u>[37] (1881 – 1954).
– <u>Walter Hallstein</u>[38] (1901 – 1982).
– <u>Sicco Mansholt</u>[39] (1908 – 1995).
– <u>Jean Monnet</u>[40] (1888 – 1979).
– <u>Robert Schuman</u>[41] (1896 – 1963).
– <u>Paul-Henri Spaak</u>[42] (1899 – 1972).
– <u>Altiero Spinelli</u>[43] (1907 – 1986).

In this paper it is not possible to give even an overview of the historical achievements of every of the afore-said persons, therefore there is given a concentration on four politicians:

– Winston Churchill[44] (1874 – 1965) is a very important European politician: He had been the worldwide warner against Adolf Hitler and his aggressive nationalistic power. After the collapse of the so-called III. Reich – USA, England and France had a strong contribution to it's defeat – Winston Churchill had given a very clear description of the architecture of the new Europe. From his famous Zurich-speech[45], that was held in 1946; here is quoted this paragraph[46]:

"I wish to speak to you to-day about the tragedy of Europe. This noble continent […] is the home of all the great parent races of the western world. It is the fountain of Christian faith and Christian ethics. It is the origin of most of the culture, arts, philosophy and science both of ancient and modern times. If Europe were once united in the sharing of its common inheritance, there would be no limit to the happiness, to the prosperity and glory which its three or four hundred million people would enjoy. Yet it is from Europe that have sprung that series of frightful nationalistic quarrels, originated by the Teutonic nations, which we have seen even in this twentieth century and in our own lifetime, wreck the peace and mar the prospects of all mankind. […]".

Churchill's credo is that nationalistic quarrels should be ended – but we all do know that in the 21st century nationalism seems to be back in Europe

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[37] To <u>Alcide De Gasperi</u>: Pietro Scoppola: La proposta politica di De Gasperi. Il Mulino, Bologna, 1977.
[38] To <u>Walter Hallstein</u>: <u>Wilfried Loth</u>: Walter Hallstein – der vergessene Europäer? Bonn, 1995.
[39] To <u>Sicco Mansholt</u>: Johan van Merriënboer: Mansholt: A biography. Brussels, 2011.
[40] To <u>Jean Monnet</u>: Eric Roussel: Jean Monnet: 1888–1979. Paris, 1996.
[41] To <u>Robert Schuman:</u> Hermann-J. Benning: Robert Schuman. Leben und Vermächtnis. München, 2013.
[42] Cfr. <u>Paul-Henri Spaak</u>: Memoiren eines Europäer, Hamburg, 1969.
[43] To <u>Altiero Spinelli</u> http://www.altierospinelli.org.
[44] To Winston Churchill: <u>David Cannadine</u>: Winston Churchill. Abenteurer, Monarchist, Staatsmann. Berlin, 2005.
[45] Cfr. http://www.churchill-in-zurich.ch/de/churchill/churchills-zurcher-rede/.
[46] Cfr. https://www.europa.clio-online.de/quelle/id/artikel-3393.

as well as in North America. Churchill's point is clear: It is outlined that Europe is the fountain of the Christian faith and Christian ethics. It is clear that European democratic values are based on Christian values.

– The German chancellor Konrad Adenauer is a further very important European politician: He had been pursued by the Nazis and had been hidden by Catholic monks in the cloister Maria Laach[47]. The German chancellor Adenauer made clear that true friendship towards France and true friendship towards other European countries is absolutely necessary. Chancellor Adenauer and the Charles de Gaulle[48] (1890 – 1970) were the charismatic leaders that favoured and symbolized true friendship between Germany and France.

– The French politician Jean Monnet (1888 – 1979) is a further very important European politician: In 1945 Monnet proposed the so-called Monnet Plan, also known as the "Theory of l'Engrenage"; it included taking control of the remaining German coal-producing areas and German steel-producing areas. Nevertheless, Monnet worked for the French-German friendship. In 1952 Jean Monnet became the first president of the High Authority of the European Union.

– The French politician Robert Schuman (1886 – 1963) is a further very important European politician; in his Strassbourg-speech year in 1949[49] Schuman described a clear post-war vision for Europe:

"We are carrying out a great experiment, the fulfillment of the same recurrent dream that for ten centuries has revisited the peoples of Europe: creating between them an organization putting an end to war and guaranteeing an eternal peace. The Roman church of the Middle Ages failed finally in its attempts that were inspired by humane and human preoccupations. Another idea, that of a world empire constituted under the auspices of German emperors was less disinterested; it already relied on the unacceptable pretensions of a 'Führertum' (domination by dictatorship) whose 'charms' we have all experienced. Audacious minds, such as Dante[50],

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[47] To the Maria Laach cloister: http://www.maria-laach.de/.

[48] To Charles de Gaulle: Vincent Jouvert: L'Amérique contre De Gaulle. Paris, 2000.

[49] Cfr. http://www.schuman.info/Strasbourg549.htm.

[50] To Dante: Karlheinz Stierle: Dante Alighieri. Dichter im Exil, Dichter der Welt. München, 2014.

Erasmus[51], Abbé de St-Pierre[52], Rousseau[53], Kant[54] and Proudhon[55], had created in the abstract the framework for systems that were both ingenious and generous. The title of one of these systems became the synonym of all that is impractical: Utopia, itself a work of genius, written by Thomas More[56], the Chancellor of Henry VIII[57], King of England. The European spirit signifies being conscious of belonging to a cultural family and to have a willingness to serve that community in the spirit of total mutuality, without any hidden motives of hegemony or the selfish exploitation of others. The 19th century saw feudal ideas being opposed and, with the rise of a national spirit, nationalities asserting themselves. Our century, that has witnessed the catastrophes resulting in the unending clash of nationalities and nationalisms, must attempt and succeed in reconciling nations in a supranational association. This would safeguard the diversities and aspirations of each nation while coordinating them in the same manner as the regions are coordinated within the unity of the nation".

What is so important in this historical speech of Robert Schuman? The very important point is that Schuman streamlined main thinkers and philosophers of the old Europe that had dreamt – so to speak – modern scenarios for a better and a united Europe. A problem that Schuman touched, but is not solved even until now, is this question: What about the democratic control of supranational institutions, one has to see that the President of the European Commission is still not elected by the people in the European Union, but by the leaders of the Member States.

And last, but not least, what about women? That women are not in this list, does not depend on the personal view of the author of this paper, but is due to the fact that still after World War II (1929 – 1945) politics were a metier of men. An outstanding woman that did become later on the President of the European Parliament[58] was Simone Veil[59] (1927 – 2017).

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[51] To Erasmus: Wilhelm Ribhegge: Erasmus von Rotterdam. Darmstadt, 2009.
[52] To Abbé de St-Pierre: Castel de Saint-Pierre. Der Traktat vom ewigen Frieden (1713). Übers. v. Friedrich v. Oppeln-Bronikowski. Reihe: "Klassiker der Politik", Vol. 4. Berlin, 1922.
[53] To Rousseau: Michael Soëtard: Jean-Jacques Rousseau. Leben und Werk. München, 2012.
[54] To Kant: Otfried Höffe: Immanuel Kant. München (7. Edition), 2007.
[55] To Proudhon: Thibault Isabel: Pierre-Joseph Proudhon. L'anarchie sans le désordre. Paris, 2017.
[56] To Thomas More: Richard Marius: Thomas Morus. Eine Biographie. Zürich, 1987.
[57] To Henry VIII: Lucy Wooding: Henry VIII. London et al.,2008.
[58] She was President from 1979 up to 1982.
[59] To her cfr. http://www.memorialdelashoah.org/hommage-a-simone-veil-decedee-30-juin-2017-a-89-ans.

Common values of the Member States in the European Union

A problem is still that in the Member States the European Union is regarded as a union for a common market, the juridical values, that shall be guaranteed, are sometimes forgotten; in Article 2 of the Constitution of the European Union there are laid down the following values which can only prosper if there is given a strict separation of powers:

"The Union is founded on the values of respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities. These values are common to the Member States in a society in which pluralism, non-discrimination, tolerance, justice, solidarity and equality between women and men prevail".

Values and aims are strongly connected to each other, Article 3 of the Constitution of the European Union gives an impressing list of aims and values:

"1. The Union's aim is to promote peace, its values and the well-being of its peoples.

2. The Union shall offer its citizens an area of freedom, security and justice without internal frontiers, in which the free movement of persons is ensured in conjunction with appropriate measures with respect to external border controls, asylum, immigration and the prevention and combating of crime.

3. The Union shall establish an internal market. It shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment. It shall promote scientific and technological advance.

It shall combat social exclusion and discrimination, and shall promote social justice and protection, equality between women and men, solidarity between generations and protection of the rights of the child.

It shall promote economic, social and territorial cohesion, and solidarity among Member States.

It shall respect its rich cultural and linguistic diversity, and shall ensure that Europe's cultural heritage is safeguarded and enhanced.

4. The Union shall establish an economic and monetary union whose currency is the euro.

5. In its relations with the wider world, the Union shall uphold and promote its values and interests and contribute to the protection of its citizens. It shall contribute to peace, security, the sustainable development of the Earth, solidarity and mutual respect among peoples, free and fair trade, eradication of poverty and the protection of human rights, in particular the rights of the

child, as well as to the strict observance and the development of international law, including respect for the principles of the United Nations Charter.

6. The Union shall pursue its objectives by appropriate means commensurate with the competences which are conferred upon it in the Treaties".

Where is the historical source for these aims? A very important source is the   Déclaration des Droits de l'Homme et du Citoyen[60] (1789) that is the result of the French Revolution; for the purpose of this paper it is enough to quote Article 1, 2, 3 and 4 of the   Déclaration des Droits de l'Homme et du Citoyen:

Article 1

« Les hommes naissent et demeurent libres et égaux en droits. Les distinctions sociales ne peuvent être fondées que sur l'utilité commune. »

Article 2

« Le but de toute association politique est la conservation des droits naturels et imprescriptibles de l'homme. Ces droits sont la liberté, la propriété, la sûreté et la résistance à l'oppression. »

Article 3

« Le principe de toute souveraineté réside essentiellement dans la nation. Nul corps, nul individu ne peut exercer d'autorité qui n'en émane expressément. »

Article 4

« La liberté consiste à pouvoir faire tout ce qui ne nuit pas à autrui : ainsi l'exercice des droits naturels de chaque homme n'a de bornes que celles qui assurent aux autres membres de la société la jouissance de ces mêmes droits. Ces bornes ne peuvent être déterminées que par la loi. »

Back to the future: In regard of the aforesaid aims and values of the Member States of the European Union there are still questions that are unsolved:

– What about equal payment for women and men? Equal payment for women and men is only given in the public service of Member States of the European Union and in the public service of the European Union herself.

– What about the protection of the external borders of the European Union? Henry Kissinger[61] – the former secretary of state of the United States

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[60] Gérard Conac/Marc Debene/Gérard Teboul (Hrsg.): La Déclaration des droits de l'homme et du citoyen de 1789; histoire, analyse et commentaires. Paris 1993.
[61] To Henry Kissinger: Jermi Suri: Henry Kissinger and the American Century. Cambridge (MA), 2009.

– postulates that the European Union has to protect the external borders of the union, if there shall be legal ways e.g. from Africa to the European Union.

– What about the European Union as a strong military power? This question is the more important the more the American President Donald Trump says again and again "America first" and wants to minimize US-contributions to NATO.

V) Separation of powers or a system of check and balances

If there is no separation of powers, it is very difficult to ensure democratic rights. Under the model of separation of powers a state's government is divided into branches, so that the power of one branch is not in conflict with the power associated with any other branch. The typical division is into three branches: a legislative, an executive, and a judiciary power. It can be contrasted with the fusion of powers in some parliamentary systems where the executive and legislature are unified – this is the anti-democratic horror-scenario described by Charles-Louis de Secondat, Baron de La Brède de Montesquieu[62] (1689 – 1755). But Montesquieu, however, was a thinker for whom the king should play the most important role in a state's system. Nearer to our modern position is John Locke[63] (1632 – 1704), who postulated in his "Two Treatises of government, Book II, Chapter VII, Sect. 87"[64] that the inborn rights cannot flourish without strict separation of powers:

"Man being born, as has been proved, with a title to perfect freedom, and an uncontrouled enjoyment of all the rights and privileges of the law of nature, equally with any other man, or number of men in the world, hath by nature a power, not only to preserve his property, that is, his life, liberty and estate, against the injuries and attempts of other men; but to judge of, and punish the breaches of that law in others, as he is persuaded the offence deserves, even with death itself, in crimes where the heinousness of the fact, in his opinion, requires it. But because no political society can be, nor subsist, without having in itself the power to preserve the property, and in order thereunto, punish the offences of all those of that society; there, and there only is political society, where every one of the members hath quitted this natural power, resigned it up into the hands of the community in all cases that exclude him not from appealing for protection to the law established by it. And thus all private judgment of every particular member being excluded, the community comes to be umpire, by settled standing rules, indifferent, and the same to all parties; and by men having authority from the community, for the execution of those

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[62] To him: Louis Desgraves: Montesquieu. Frankfurt am Main, 1992.
[63] To him: Michael P. Zuckert: Launching liberalism. On Lockean political philosophy. Kansas, 2002.
[64] Cfr. http://www.johnlocke.net/two-treatises-of-government-book-ii/#CHAPTER_VII.

rules, decides all the differences that may happen between any members of that society concerning any matter of right; and punishes those offences which any member hath committed against the society, with such penalties as the law has established: whereby it is easy to discern, who are, and who are not, in political society together. Those who are united into one body, and have a common established law and judicature to appeal to, with authority to decide controversies between them, and punish offenders, are in civil society one with another: but those who have no such common appeal, I mean on earth, are still in the state of nature, each being, where there is no other, judge for himself, and executioner; which is, as I have before shewed it, the perfect state of nature".

It is clear that a King does not dispose of a super-power, because this power God might have handed to him. Nevertheless, the regal system is still practiced in following Member States of the European Union, the power of the monarch is reduced by each national constitution:

–Luxembourg[65].

– Great Britain[66].

– Denmark[67].

– The Netherlands[68].

– Sweden[69].

– Spain[70].

For every woman and every man that is living in the 21th century it should be clear that there is no constitutional reasoning for monarchy, because there is no democratic legitimation. Therefore the German Constitution fixes the republican model for eternal time, a re-turn to monarchy is against the German Constitution and not allowed.

The ordinary legislative procedure[71] gives the same weight to the European Parliament and the Council of the European Union on a wide range of areas, e.g. economic governance, immigration, energy, transport, the environment and consumer protection. The vast majority of European laws is

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[65] To the royal family in the Grand Duchy of Luxembourg: http://www.luxembourg.public.lu/de/le-grand-duche-se-presente/monarchie/famille-grandducale/index.html.

[66] To the royal family in Great Britain: Alison Weir: *Britain's Royal Families. The Complete Genealogy*. London, 1996.

[67] To the royal family in Great Britain: http://kongehuset.dk/monarkiet-i-danmark/kongerakken.

[68] To the royal family in The Netherlands: https://www.koenigshaus.nl/.

[69] To the royal family in Sweden: http://schweden.rocks/land-leute/schwedisches-koenigshaus/.

[70] Cfr. http://www.sueddeutsche.de/thema/Spanisches_Königshaus.

[71] Cfr. http://www.europarl.europa.eu/aboutparliament/en/20150201PVL00004/Legislative-powers.

adopted by the European Parliament and the Council. The Treaty of Lisbon sets out the role of national parliaments within the European Union. National parliaments have the opportunity to question, whether draft EU-laws do respect the principle of subsidiarity that is laid down in Article 5 (3) of the Treaty of the European Union:

"Under the principle of subsidiarity, in areas which do not fall within its exclusive competence, the Union shall act only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States, either at central level or at regional and local level, but can rather, by reason of the scale or effects of the proposed action, be better achieved at Union level.

The institutions of the Union shall apply the principle of subsidiarity as laid down in the Protocol on the application of the principles of subsidiarity and proportionality. National Parliaments ensure compliance with the principle of subsidiarity in accordance with the procedure set out in that Protocol".

To the European Symbols

The European Union does have different symbols:

(1) To the European Flag: The European Flag symbolizes the European Union; it features a circle of 12 gold stars on a blue background. The stars do stand for the ideals of unity, solidarity and harmony among the peoples in the European Union. The number of stars has nothing to do with the number of Member States of the European Union.

(2) To the European Anthem: For the European Anthem there is chosen a melody that **comes from the Ninth Symphony composed in 1823 by Ludwig van Beethoven**[72] **(1770 – 1827). Beethoven had set music to the "Ode to Joy",** that is a lyrical verse of Friedrich von Schiller[73] (1759 – 1805) from the year 1785. The European Anthem is not intended to replace the national anthems of the Member States of the European Union. Here there are quoted the first two verses that may be enough for the purpose of this paper:

"(1) Joy, beautiful spark of the gods[74],
Daughter from Elysium,
We enter, drunk with fire,
Heavenly One, thy sanctuary!
(5) Your magic binds again
What convention strictly divides;
All people become brothers,
Where your gentle wing abides.

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[72] To him: Maynard Solomon: Beethoven. Biographie. Frankfurt am Main, 1990.

[73] Sigrid Damm: Das Leben des Friedrich Schiller. Frankfurt am Main, 2004.

[74] Cfr. http://www.schillerinstitute.org/transl/schiller_poem/ode_to_joy.pdf.

Who has succeeded in the great attempt,
(10) To be a friend's friend,
Whoever has won a lovely woman,
Add his to the jubilation!
Indeed, who calls even one soul
Theirs upon this world!
(15) And whoever never managed, shall steal himself
Weeping away from this union!"

(...)".

(3) To the Europe Day: The Europe Day is also regarded as a European symbol: On this day the institutions of the European Union open their doors to the public in early May in Brussels and Luxembourg, later on in early June in Strasbourg. Local offices of the European Union in Europe and all over the world organise a variety of activities and events. For 2018 there is fixed the following time-table for the celebration of the Europe Day:
– Brussels: 5th of May 2018
– Luxembourg: 5th of and 9th of May 2018
– Strasbourg: 10th of June 2018.
　　(4) To the motto of European Union: The motto of the European Union is regarded as a further European symbol; the motto refers to the concept >beinig United in diversity<; here there is the motto in all official EU languages:
– Bulgarian: Обединен в многообразието.
– Croatian: Ujedinjeni u različitosti.
– Czech: Jednotná v rozmanitosti.
– Danish: Forenet i mangfoldighed.
– Dutch: In verscheidenheid verenigd.
– English: United in diversity.
– Estonian: Ühinenud mitmekesisuses.
– Finnish: Moninaisuudessaan yhtenäinen.
– French: Unie dans la diversité.
– German: In Vielfalt geeint.
– Greek: Ενωμένοι στην πολυμορφία.
– Hungarian: Egység a sokféleségben.
– Irish: Aontaithe san éagsúlacht.
– Italian: Unita nella diversità.
– Latvian: Vienota dažādībā.
– Lithuanian: Suvienijusi įvairovę.
– Maltese: Magħquda fid-diversità.

– Polish: Zjednoczona w różnorodności.
– Portuguese: Unida na diversidade.
– Romanian: Uniţi în diversitate.
– Slovak: Zjednotení v rozmanitosti.
– Slovene: Združena v raznolikosti.
– Spanish: Unida en la diversidad.
– Swedish: Förenade i mångfalden.

Although the European Union does have an impressing motto, there is the unsolved and almost unsolvable problem that the European Union has no common language (so-called lingua franca). The following process has to be seen: Through the power of the <u>Roman Republic</u> Latin had become the dominant language, initially in Italy and subsequently throughout the <u>Roman Empire</u>. The Latin language is the source for several European languages, the so-called Romance languages such as <u>Italian</u>, <u>Portuguese</u>, <u>Spanish</u>, <u>French</u>, and <u>Romanian</u>. Today Article 55 of the Constitution of the European Union does make the given dilemma obvious:

"1. This Treaty, drawn up in a single original in the Bulgarian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Irish, Italian, Latvian, Lithuanian, Maltese, Polish, Portuguese, Romanian, Slovak, Slovenian, Spanish and Swedish languages, the texts in each of these languages being equally authentic, shall be deposited in the archives of the Government of the Italian Republic, which will transmit a certified copy to each of the governments of the other signatory States.

2. This Treaty may also be translated into any other languages as determined by Member States among those which, in accordance with their constitutional order, enjoy official status in all or part of their territory. A certified copy of such translations shall be provided by the Member States concerned to be deposited in the archives of the Council".

To the future of the Euro

The first plan of the European Union for a <u>single European currency</u> dates back into the year 1970. To maintain monetary stability the Member States of the European Union took the wise decision to allow their national currencies to fluctuate against each other only within narrow limits. This exchange rate mechanism that dates back to the year 1972 was a first step towards the introduction of a common currency. In the year 1998 eleven Member States of the European Union did meet the <u>euro convergence criteria</u>, consequently the Euro-zone came into existence with the official launch of the euro on the 1st of January 1999, whereas the "former" national currencies were used as a parallel currency up to the 1st of January 2002: In this date the euro-currency replaced the national currencies of those Member States that adopted the euro-currency as the only obligatory money-system; between the year

2007 and 2015 seven further states acceded. Today the following Member States of the European Union do have the euro-currency[75]:

– Austria (1999)[76].
– Belgium (1999)[77].
– Cyprus (2008)[78].
– Estonia (2011)[79].
– Finnland (1999)[80].
– France (1999)[81].
– Germany (1999)[82].
– Greece (2001)[83].
– Ireland (1999)[84].
– Italy (1999)[85].
– Latvia (2014)[86].

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[75] Five of the following dependent territories of Member States of the European Union, that are not part of the EU, do have the Euro-Curreny:

– Akrotiri and Dhekelia is British territory on the island of Cyprus.
– The Collectivity of Saint Martin is French territory in the Caribbean.
– The Territorial collectivity of Saint Barthélemy is French territory in the West Indies.
– The Overseas Collectivity of Saint-Pierre and Miquelon in the northwestern Atlantic Ocean near the Newfoundland and Labrador province of Canada.
– The French Southern and Antarctic Lands are French territory that is situated overseas.

[76] COUNCIL DECISION of 3 May 1998 in accordance with Article 109j (4) of the Treaty. Official Journal of the European Union. L (139/30), the 11st of May 1998. Retrieved 27 October 2014.

[77] Cfr. footnote 75.

[78] COUNCIL DECISION of the 10th of July 2007 in accordance with Article 122 (2) of the Treaty on the adoption by Cyprus of the single currency on the 1st of January 2008". Official Journal of the European Union. L (186/29), the 18th of July 2007. Retrieved on 27th of October 2014.

[79] COUNCIL DECISION of the 13th of July 2010 in accordance with Article 140 (2) of the Treaty on the adoption by Estonia of the euro on the 1st of January 2011. Official Journal of the European Union. L (196/24), the 28th of July 2010. Retrieved on the 27th of October 2014.

[80] Cfr. footnote 75.

[81] Cfr. footnote 75.

[82] Cfr. footnote 75.

[83] COUNCIL DECISION of the 19th of June 2000 in accordance with Article 122 (2) of the Treaty on the adoption by Greece of the single currency on 1 January 2001. Official Journal of the European Union. L (167/19), the 7th of July 2000. Retrieved on 27th October 2000.

[84] Cfr. footnote 75.

[85] Cfr. footnote 75.

[86] COUNCIL DECISION of the 9th July 2013 on the adoption by Latvia of the euro on the 1st of January 2014. Official Journal of the European Union. L (195/24), the 18th of July 2013. Retrieved on 27th of October 2014.

– Lithuania (2015)[87].
– Luxembourg (1999)[88].
– Malta (2008)[89].
– Netherlands (1999)[90].
– Portugal (1999)[91].
– Slovakia (2009)[92].
– Slovenia (2007)[93].
– Spain (1999)[94].

The following Member States of the European Union do not have the euro-currency:
– Czech Republic[95].
– Croatia.
– Denmark.
– Hungaria.
– Poland.
– Sweden[96].
– United Kingdom.

The <u>financial crisis of 2007 and 2008</u> prompted a number of reforms in the Eurozone: The <u>European Financial Stability Facility</u> (EFSF) and the <u>European Financial Stability Mechanism</u> (EFSM) were created in the year 2010. In the year 2011 there was an agreement made according to that the establishment of a <u>European Stability Mechanism</u> (ESM) should be built up and be much larger than the aforesaid funds; as a result of this process a third

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[87] <u>COUNCIL DECISION of the 23rd of July 2014 on the adoption by Lithuania of the euro on the 1st of January 2015</u>. <u>Official Journal of the European Union</u>. L (228/29), the 31st of July 2014. Retrieved on 31st of December 2014.

[88] Cfr. footnote 75.

[89] <u>COUNCIL DECISION of the 10th of July 2007 in accordance with Article 122 (2) of the Treaty on the adoption by Malta of the single currency on 1 January 2008</u>. <u>Official Journal of the European Union</u>. *L (186/32), the 18th of July 2007.* Retrieved on 27th October 2014.

[90] Cfr. footnote 75.

[91] Cfr. footnote 75.

[92] <u>COUNCIL DECISION of the 8th of July 2008 in accordance with Article 122 (2) of the Treaty on the adoption by Slovakia of the single currency on the1st of January 2009</u>. <u>Official Journal of the European Union</u>. L (195/24), the 24th of July 2008. Retrieved 27th of October 2014.

[93] <u>COUNCIL DECISION of the 11st of July 2006 in accordance with Article 122 (2) of the Treaty on the adoption by Slovenia of the single currency on the 1st January 2007</u>. <u>Official Journal of the European Union</u>. *L (195/25), the 15th of July 2006.* Retrieved on 27th of October 2014.

[94] Cfr. footnote 75.

[95] Cfr. https://europa.eu/european-union/about-eu/countries/member-countries/czechrepublic_de

[96] Cfr. https://europa.eu/european-union/about-eu/countries/member-countries/sweden_de

paragraph is added to Article 136 of the Treaty on the Functioning of the European Union:

1. In order to ensure the proper functioning of economic and monetary union, and in accordance with the relevant provisions of the Treaties, the Council shall, in accordance with the relevant procedure from among those referred to in Articles 121 and 126, with the exception of the procedure set out in Article 126(14), adopt measures specific to those Member States whose currency is the euro:
(a) to strengthen the coordination and surveillance of their budgetary discipline;
(b) to set out economic policy guidelines for them, while ensuring that they are compatible with those adopted for the whole of the Union and are kept under surveillance.
2. For those measures set out in paragraph 1, only members of the Council representing Member States whose currency is the euro shall take part in the vote.
A qualified majority of the said members shall be defined in accordance with Article 238(3)(a).
3. The Member States, whose currency is the euro, may set up a stability mechanism, that will be activated when it is indispensable to preserve the stability of the euro area as a whole. The providing of all necessary grants under the mechanism will be subject to strict conditions".

If the Euro is mentioned, the European Central Bank has to be mentioned: The European Central Bank is a very European and a very global player: But there are questions:
– Our first question is the following: Why is there a portrait of two bulls in the forecourt of the European Central Bank in Frankfurt? The answer is to be traced back to a very romantic love-story that is at the beginning of Europe. But romantic is this story only at first glance: In this love-story between Iupiter and the beautiful girl Europa there is a rather problematic character: This is Godfather Iupiter who is not faithful to his wife Hera and is always in love with some other beautiful women. Iupiter uses tricks to get near to the new beloved woman and in this case he disguises himself as a bull when meeting the young lady Europe at the strand near the sea. The young lady who is the princess of a European kingdom[97] is timid, but the seducer is so carefully clever that the lady takes confidence to him and takes place on the animal's back. And then the riding over the sea is beginning. Of course, this story is a

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[97] She is the daughter of the Phoenician King Agenor.

mythological story and the Roman author Publius Naso Ovidius[98] does narrate it in his "Metamorphoses"[99]:

(1) *The dignity of empire laid aside,*
(For love but ill agrees with kingly pride)
The ruler of the skies, the thund'ring God,
Who shakes the world's foundations with a nod,
Among a herd of lowing heifers ran,
Frisk'd in a bull, and bellow'd o'er the plain.
Large rowles of fat about his shoulders clung,
And from his neck the double dewlap hung.
His skin was whiter than the snow that lies
(10) *Unsully'd by the breath of southern skies;*
Small shining horns on his curl'd forehead stand,
As turn'd and polish'd by the work-man's hand;
His eye-balls rowl'd, not formidably bright,
But gaz'd and languish'd with a gentle light.
(15) *His ev'ry look was peaceful, and exprest*
The softness of the lover in the beast.
Agenor's royal daughter, as she plaid
Among the fields, the milk-white bull survey'd,
And view'd his spotless body with delight,
(20) *And at a distance kept him in her sight.*
At length she pluck'd the rising flow'rs, and fed
The gentle beast, and fondly stroak'd his head.
He stood well-pleas'd to touch the charming fair,
But hardly could confine his pleasure there.
(25) *And now he wantons o'er the neighb'ring strand,*
Now rowls his body on the yellow sand;
And, now perceiving all her fears decay'd,
Comes tossing forward to the royal maid;
Gives her his breast to stroke, and downward turns
(30) *His grizly brow, and gently stoops his horns.*
In flow'ry wreaths the royal virgin drest
His bending horns, and kindly clapt his breast.
'Till now grown wanton and devoid of fear,
Not knowing that she prest the Thunderer,
(35) *She plac'd her self upon his back, and rode*
O'er fields and meadows, seated on the God".

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[98] Franz-Rudolf Herber: Ovid's elegische Erzählkunst in den >Fasten<, Diss. phil., Saarbrücken, 1993.
[99]   Here   quoted   according   an   English   translation: http://classics.mit.edu/Ovid/metam.2.second.html.

121

– But there is another question, but this one does refer to our time: The European Central Bank has a face and this comes from Italy; it is Mario Draghi[100]: He has the main responsibility for the fact that the life insurance of millions of citizens in Europe and several other investments are rather worthless[101]. The reason is the low interest rate policy that is the philosophy of the European Central Bank. Furthermore, there is the fatal notion that worthless bonds of countries that are in turmoil – in particular Greece – may be purchased with money from the European Central Bank[102]. This might have the ultimate effect that ailing states should be favoured at the expense of taxpayers.

– The most important question is this one: Is it realistic that other Member States of the European Union will join the Euro-zone, e.g. Poland? To be sincere there is today no scenario visible, that wants an enlargement of the Euro-zone.

Is the Brexit the beginning of the upcoming of the decay of the European Union?

Article 50 of the Treaty on European Union allows the exit of any member state:

"1. Any Member State may decide to withdraw from the Union in accordance with its own constitutional requirements.

2. A Member State which decides to withdraw shall notify the European Council of its intention. In the light of the guidelines provided by the European Council, the Union shall negotiate and conclude an agreement with that State, setting out the arrangements for its withdrawal, taking account of the framework for its future relationship with the Union. That agreement shall be negotiated in accordance with Article 218(3) of the Treaty on the Functioning of the European Union. It shall be concluded on behalf of the Union by the Council, acting by a qualified majority, after obtaining the consent of the European Parliament.

3. The Treaties shall cease to apply to the State in question from the date of entry into force of the withdrawal agreement or, failing that, two years after the notification referred to in paragraph 2, unless the European Council, in agreement with the Member State concerned, unanimously decides to extend this period.

4. For the purposes of paragraphs 2 and 3, the member of the European Council or of the Council representing the withdrawing Member State shall

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[100] Cfr. http://www.zeit.de/wirtschaft/2011-06/gipfeltreffen-ezb-praesident.

[101] Cfr. Jürgen Roth: Der Helfershelfer, den sie riefen: Der Italiener Mario Draghi, in: Der stille Putsch. München, 2014.

[102] Cfr. ttp://www.handelsblatt.com/politik/konjunktur/nachrichten/urteil-des-europaeischen-gerichtshofs-freibrief-fuer-draghi/11921904.html .

not participate in the discussions of the European Council or Council or in decisions concerning it.
A qualified majority shall be defined in accordance with Article 238(3)(b) of the Treaty on the Functioning of the European Union.
5. If a State which has withdrawn from the Union asks to rejoin, its request shall be subject to the procedure referred to in Article 49".

In a referendum on the 23rd of June 2016 51,9% of the participating electorate in Great Britain voted to leave the EU out of a turnout of 72,2%. On the 29th of March 2017 the Government of Great Britain invoked Article 50 of the Treaty on the European Union and the letter of divorce[103] was handed over to the President of the European Union (Donald Tusk): The letter of divorce is starting thus and praises European values:

"On 23 June last year, the people of the United Kingdom voted to leave the European Union. As I have said before, that decision was no rejection of the values we share as fellow Europeans. Nor was it an attempt to do harm to the European Union or any of the remaining member states. On the contrary, the United Kingdom wants the European Union to succeed and prosper. Instead, the referendum was a vote to restore, as we see it, our national self-determination. We are leaving the European Union, but we are not leaving Europe - and we want to remain committed partners and allies to our friends across the continent. Earlier this month, the United Kingdom Parliament confirmed the result of the referendum by voting with clear and convincing majorities in both of its Houses for the European Union (Notification of Withdrawal) Bill. The Bill was passed by Parliament on 13 March and it received Royal Assent from Her Majesty The Queen and became an Act of Parliament on 16 March. Today, therefore, I am writing to give effect to the democratic decision of the people of the United Kingdom. I hereby notify the European Council in accordance with Article 50(2) of the Treaty on European Union of the United Kingdom's intention to withdraw from the European Union. In addition, in accordance with the same Article 50(2) as applied by Article 106a of the Treaty Establishing the European Atomic Energy Community, I hereby notify the European Council of the United Kingdom's intention to withdraw from the European Atomic Energy Community. References in this letter to the European Union should therefore be taken to include a reference to the European Atomic Energy Community".

It cannot be ruled out that other Member States of the European Union may follow the British way.

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[103] Cfr.
https://upload.wikimedia.org/wikipedia/commons/0/0f/Prime_Ministers_letter_to_European_Council_President_Donald_Tusk.pdf

Summary and conclusion

The Declaration of the leaders of 27 Member States and of the European Council, the European Parliament and the European Commission of 25th of March 2017[104] does emphasize not only the common conception of the European Union, but the problems to be solved[105]; here there is quoted the text that does refer to the problem:

1. *A safe and secure Europe: a Union where all citizens feel safe and can move freely, where our external borders are secured, with an efficient, responsible and sustainable migration policy, respecting international norms; a Europe determined to fight terrorism and organised crime.*

2. *A prosperous and sustainable Europe: a Union which creates growth and jobs; a Union where a strong, connected and developing Single Market, embracing technological transformation, and a stable and further strengthened single currency open avenues for growth, cohesion, competitiveness, innovation and exchange, especially for small and medium-sized enterprises; a Union promoting sustained and sustainable growth, through investment, structural reforms and working towards completing the Economic and Monetary Union; a Union where economies converge; a Union where energy is secure and affordable and the environment clean and safe.*

3. *A social Europe: a Union which, based on sustainable growth, promotes economic and social progress as well as cohesion and convergence, while upholding the integrity of the internal market; a Union taking into account the diversity of national systems and the key role of social partners; a Union which promotes equality between women and men as well as rights and equal opportunities for all; a Union which fights unemployment, discrimination, social exclusion and poverty; a Union where young people receive the best education and training and can study and find jobs across the continent; a Union which preserves our cultural heritage and promotes cultural diversity.*

4. *A stronger Europe on the global scene: a Union further developing existing partnerships, building new ones and promoting stability and prosperity in its immediate neighbourhood to the east and south, but also in the Middle East and across Africa and globally; a Union ready to take more responsibilities and to assist in creating a more competitive and integrated defence industry; a Union committed to strengthening its common security and defence, also in cooperation and complementarity with the North Atlantic Treaty Organisation, taking into account national circumstances and legal commitments; a Union engaged in the United*

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[104] In short it is known as the Rome Declaration.
[105] Cfr. https://europa.eu/european-union/eu60_en.

Nations and standing for a rules-based multilateral system, proud of its values and protective of its people, promoting free and fair trade and a positive global climate policy.

We will pursue these objectives, firm in the belief that Europe's future lies in our own hands and that the European Union is the best instrument to achieve our objectives. We pledge to listen and respond to the concerns expressed by our citizens and will engage with our national parliaments. We will work together at the level that makes a real difference, be it the European Union, national, regional, or local, and in a spirit of trust and loyal cooperation, both among Members States and between them and the EU institutions, in line with the principle of subsidiarity. We will allow for the necessary room for manoeuvre at the various levels to strengthen Europe's innovation and growth potential. We want the Union to be big on big issues and small on small ones. We will promote a democratic, effective and transparent decision-making process and better delivery. (…)".

This declaration seem to suggest that the Member States of the European Union do have the same aims, but the reality demonstrates that there are strong differences between the Member States and the danger is given that the European Union will break apart:

– If the French President Macron[106] would be defeated in the next election, Marine Le Pen[107] will be the next President, then the France will go to the extreme right; then the "Frexit" will be a question of a few months.

– In Hungary Victor Urban[108] was elected again Prime Minister of the Hungarian Republic a few weeks ago. His politics are quite obvious: Take as much money from the European Union as possible and do not care about common values of the European Union.

– In Poland there is started a so-called reform of the juridical power that does disregard European philosophical principles[109] and does disregard the model of separation of power.

– In Spain many people in the region of Catalonia want to separate Catalonia from Spain. If Catalonia would separate from Spain, other separations may follow, in Italy the region Tyrol may separate itself.

One problem the European Union has to solved very soon: It is the unemployment of the young people; if the problem of unemployment would not be solved, many young people may follow ultra-right ideas or ultra-left

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[106] To President Macron cfr. Caroline Derrien, Candice Nedelec: Les Macron. Fayard, 2017.
[107] To Marine Le Pe cfr. http://www.zeit.de/2004/13/Marine_Le_Pen.
[108] Igor Janke: Viktor Orbán. Ein Stürmer in der Politik. Übersetzung aus dem Polnischen. Passau, 2014.
[109] Cfr. http://www.zeit.de/politik/ausland/2017-12/polen-parlament-gesetz-oberster-gerichtshof.

ideas. It is still time, but the beginning of the necessary reform should not be postposted, otherwise it will be too late.

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Economic Impact of Thermal Insulation of the Building's Envelope

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Abstract
Climate change was the beginning of the depletion of fossil fuels, and increasing expansion in investment projects in various sectors of our life, all play a key role in the increasing demand for energy. So energy is considered one of the biggest priorities and challenges facing the world economy due to the lack of conventional energy sources of crude oil and natural gas used in energy generation. The use of thermal insulation materials in building's envelope is one of the ways to reduce energy consumption. Therefore, this study will address the importance of the use of thermal insulation materials in building' envelope to reduce energy loss as a result of heating and cooling conditions. The case sudy was the implementation of thermal insulation on Engineering Faculty building's envelope/ Muta'h University. The thermal loads were calculated for the building, with and without thermal insulation, by using four common different insulation materials which are; Rockwool, foam concert, double-glazing and extended Polystyrene. The selection of these materials depends on availability in the market, cost of implementation and the coefficient of thermal conductivity. The results showed that the polystyrene extended of thickness 10 cm is the best material for the thermal insulation in comparison of the others. The reduction ratio in thermal transmittance reached up to 76%; while in volume ratio of central heating fuel consumption reached up to 26.7%.

Keywords: Thermal Insulation Materials, Thermal Conductivity Coefficient, Building's envelope, and Fuel Consumption

Background
Energy is considered one of the biggest challenges faced by the most of the world countries. It is a very big challenge due to the fact that the lacks of energy sources and thus relies on imported sources. Energy is necessary for

the economic and social growth. Large quantities of energy are needed per year due to the nature of the prevailing climate. Oil and its derivatives constitute 95% of consumed commercial energy in some countries. One of the derivatives of oil is natural gas, which is the best fuel in power generation in terms of lack of damages to the environment. The development and increase in the population in recent years has led to an increase in energy demands. Most of these energy demands are attributed mostly to the heating and cooling processes, at levels that exceed the capacity of the country's economy, rather than being exploited in development projects. This prompts an interest in following the ways and means intended to ration energy consumption (Akacir, etal 2010). These methods use thermal insulation in buildings, including residential buildings, to ration consumption and reduce spent energy on air conditioning in homes, and public buildings. It is necessary to use a material suitable for year-round use and for all weather conditions. In addition, it must be within the composition and design of the ideal buildings insulators, i.e. it is important to not only consider economic restrictions, but also consider factors affecting health, both by reducing acoustic pollution (due to noisy air conditioning devices) or gaseous pollution and other waste products. All these can be accomplished through the rationing of energy consumption, which in turn will reduce the fuel consumption and the production of pollutants. The use of thermal insulation in buildings is very important in the rationalization of the growing consumption of energy. This is reflected economically for individuals in particular, and society in general. Insulation can result in benefit from energy in the various projects development, such as agricultural, industrial, commercial, scientific and cultural fields, as well as the environment and health by reducing noise pollution and the deposition of toxic elements in nature (Duijve 2012).

The Problem of the Study

Energy has become one of the priorities of the national economy, due to the lack of conventional energy sources of crude oil and natural gas which are used to generate electricity (Jin Kim 2009). The increase in the total consumption of primary energy such as crude oil and natural gas due to population growth is up to 6% increasing rate per year of electricity consumption. In light of the limited power output depending on local energy sources in Jordan, which constitute about 4% of the total needs of annual capacity and the rest depends on the import of crude oil and oil derivatives and natural gas, to meet the growing fuel needs which arrived in the growth rate (35%) annually (Al Shebakat 2006). This study aims to contribute of reducing the loss of energy, as a result of leakage of heat in buildings and facilities across the walls, windows, doors and ceilings from the outside to the inside in summer and vice versa in the winter; this occurs due to the un-insulation of

the building's envelope. The subject of energy conservation has great importance with the increasing energy consumption in various fields, as well as the human need to use the means of heating and cooling for the terms of comfort throughout the year. Thus, it is important to use thermal insulation materials in buildings to conserve energy and achieve the highest degree of physical health and psychological.

Research Objectives

The main objectives of the present work are:

(1) Analyzing the economic impact of using thermal insulators of the building's envelope

(2) Calculating the required energy consumption for purposes of heating and cooling, where insulators are used on building's envelope and comparing this with non insulated case for the same building to find out the amount of energy saving.

(3) Studying the maintenance cost of the building's evelope due to the heating.

Research hypothesis

The following hypotheses will be tested during the analysis of the results:

(1)   The first hypothesis: What is the economic impact of the use of thermal insulators on building's

envelope?

(2)   The second hypothesis: Is the use of thermal insulators on building's envelope can be considered one of

the most effective construction methods to reduce energy consumption?

The Means of Heat Transfer

Thermal insulation is used in buildings to reduce heat transfer from inside to outside in winter, and from the outside to the inside in the summer. There are three principles of heat transfer, which are conduction, convection and radiation as shown in figure-1 (Wilson 2013).
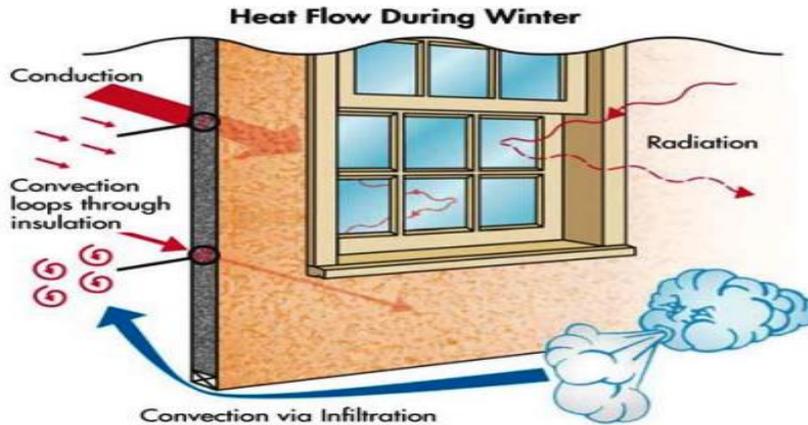
Figure-1 heat transfer from building's envelope (Wilson 2013)

Factors Affecting Thermal Insulation Design

Thermal evaluation of the buildings objectives are to reduce the heat transfer of the originator, whether the transition from inside to outside in the winter, or vice versa in the summer, and thus secures a comfortable and healthy environment for the occupants of the building and the provision of energy consumed and lower periodic maintenance cost resulting from heat stress of the building (Singh2015).The most important factors that affect the thermal insulation buildings design (Al aaysh 2009) are:

(1) Weather conditions: Weather conditions play an important role in determining the appropriate type of buildings isolation according to the nature climatic conditions.

(2) Types and categories of buildings**:** Buildings are divided by area and provide them with thermal devices, as well as thermal limitations and exposure to weather factors.

(3) Geographical direction and shape of the structure: The sun is the source of heat which can be used in winter. In addition, the wind speed and the direction, building site and the degree of impact by the sunshine will affect the evaluation and selection of thermal insulation. Also, the construction site of the neighboring buildings, the height, the level of the building if it is several floors play an important role in selection of materials

(4) Conductivity heat: Always preferred that the external elements of the buildings are low heat conductivity as possible (high thermal resistance)

The Environmental Impact of Thermal Insulation Materials

Thermal insulation impact on the environment is one of the materials manufacture for thermal insulation and the stages used in residential and industrial projects in terms of sustainability and energy saving, heat-resistant, fire resistant, industry, or the formation of some thermal insulation materials

leads to the emission of environmentally harmful gases. As a result, must focus on the impact of harmful substances to be less to the environment. But the positives of the use of thermal insulation materials will be energy saving of 30% to 70% of reducing toxic gases that are released in thermal power plants to produce electricity and rationalize the use of fuel for heating, as well as to create a comfortable atmosphere inside the building in summer and winter. The costs which will provide a result of the rationalization of energy consumption, also the cost of building maintenance (Abu Dayyeh2005)

Thermal Bridges in Structural Elements and Methods of Treatment
They are considered thermal bridges, or what are called in some references as cold bridges. They are weak because they are neglected in the process of implementation of the thermal insulation in buildings. Thermal bridges leak heat significantly. The wastage of energy, moisture condensation, and mold formation are observed on these parts of the building from the inside. Thus, it is required to avoid thermal bridges in buildings which occur in the following cases (ALaaysh 1990):
(a) The **concourse** of external walls with floor: When implementing the thermal insulation of walls without floors, the thermal insulation layer must extend a distance of no less than 25 cm from the level of the floor tiles. In the case that the thermal insulation is extended to the flooring, a distance of up to one meter is needed from where the walls meet with the concrete floor as shown in Figures-2 and 3.
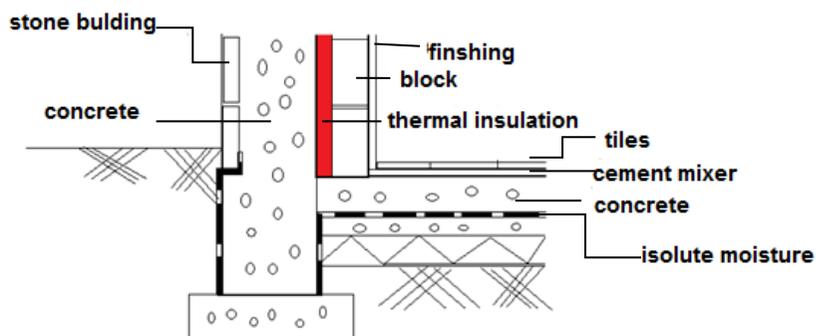
Figure-2 Heat transfer through concourse external walls with floor (Alaaysh1990)
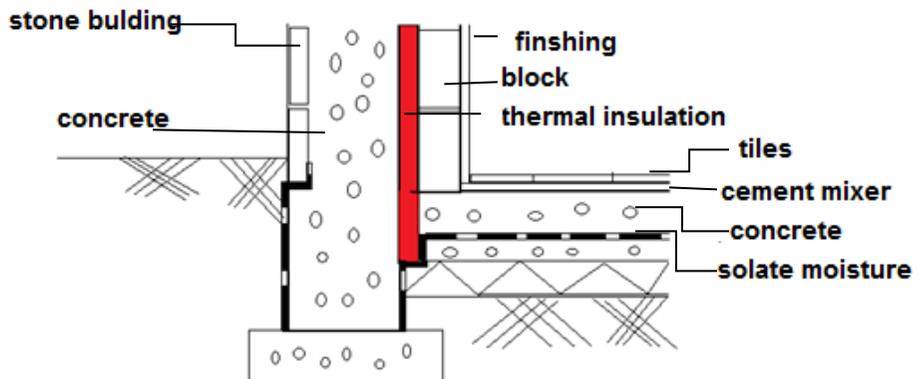
Figure -3 Implementation of the thermal insulation at the concourse of the external walls with floor   (Alaaysh, 1990)

(b) The **concourse** of external walls with ceiling: If thermal insulation is not implemented in a correct manner, these positions constitute a high leakage of heat where it was noted the humidity on the ceiling, corners, or along its edge with the wall. The thermal isolation of these positions requires that the layer of thermal insulator in the walls extends to the lower edge of the roof, until the first row of brick components. This is shown in the figures-4 and 5.
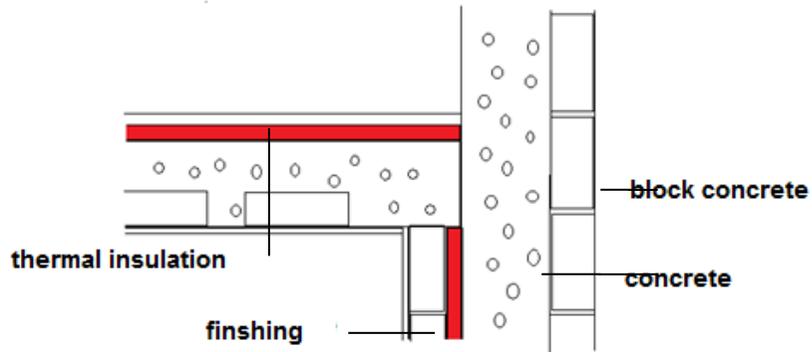
Figure-4 Heat transfer through the concourse the walls with external ceiling (Alaaysh, 1990)
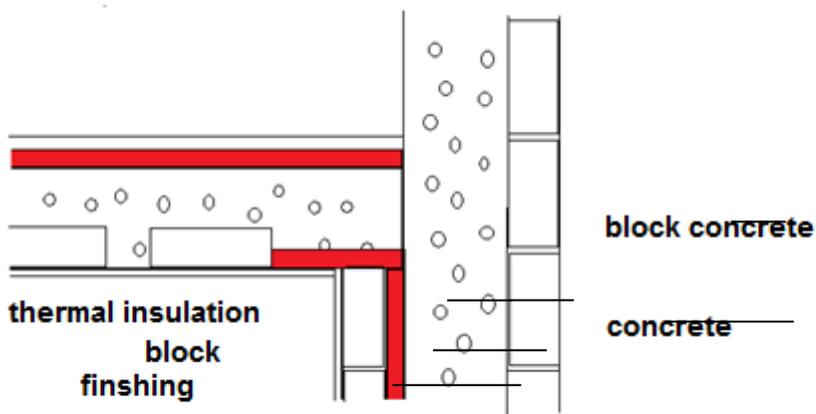
Figure (5) Installation of thermal insulation at the concourse of the walls with external ceiling
(Alaaysh, 1990)

(c) The corners of columns and armed columns in the external walls: These areas are of high leakage of heat if thermal insulation is not implemented properly. The proposed solution to avoid this is by the

continuation of the thermal insulator at the mentioned points, as shown in Figures-6 and 7.
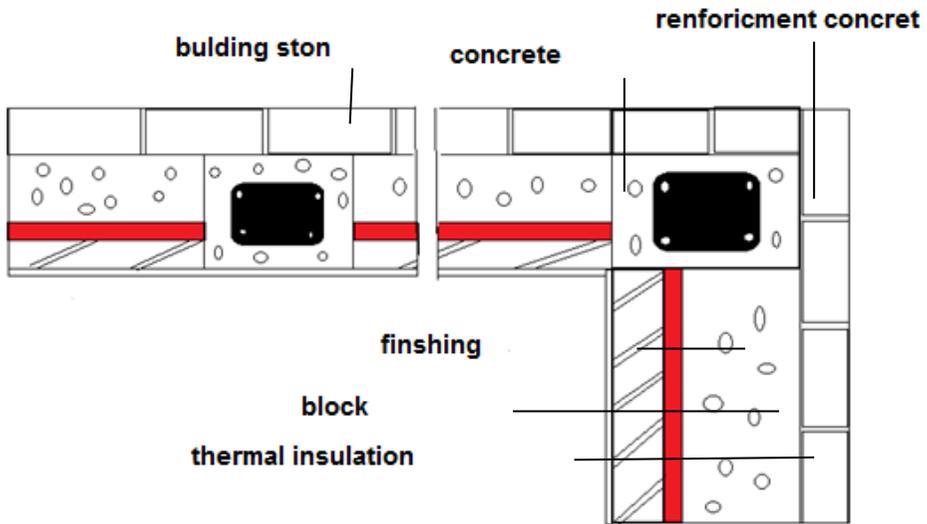
Figure (6) Heat transfer through the columns of corners and armed columns (Alaaysh, 1990)
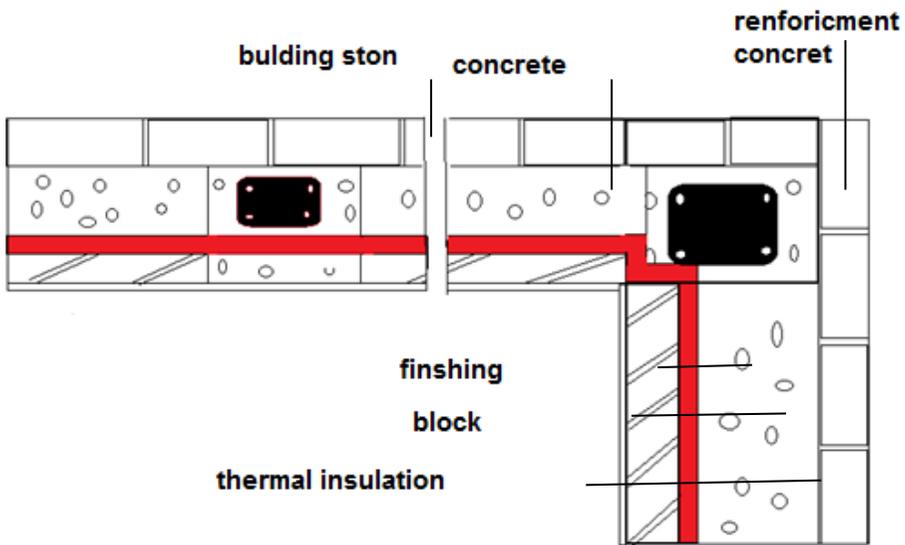
Figure-7 Implementation insulating at columns corners and armed columns (Alaaysh, 1990)

Case- Study Calculations

The calculations will outline the importance of materials for thermal insulation in building to reduce the amount of energy consumed and comparing that before and after the building insulated thermally. The case study building is the Engineering Faculty as shown in figure-8 and the calculations will be for the following cases:

Case- 1: The Building without any thermal insulation materials.

Case- 2: The Building with thermal construction insulation materials.

Case-3: The Building with industrial thermal insulation materials.

Case -4: Using Expended Polystyrene material of thickness (10 cm) for walls, and (5cm) for the floors and the ceilings, and using double-glazing for windows and external doors.

For each of the above cases the thermal insulation design will be according to code 2009 (Alaaysh 2009), and calculating the capacity of heating appliances in each case. The case study building consists of three floors; the ground floor includes the area which consists of a courtyard extended to the roof of the building, and coated glass indoor with stairs and 16 class-rooms.

Figure-8 Building of Engineering Faculty

Thermal Loads Calculations

Thermal loads are calculated by adopting the following data:

- Estimated heated area of the building = 14155.714 m^2
- Estimated the external walls area without opining (A_e) = 5636.56 m^2
- Estimated the roof area = 3446.6 m^2
- Estimated the opining area = 1514.05 m^2
- Estimated the gap area in the calling = 55.950 m^2
- The design value of the external temperature of the building in the winter = 0.0 c^o
- The design value of the external temperature of the building in the summer = 40 c^o
- The design value of the internal temperature of the building in the winter =18 - 20 c^o

• The design value of the internal temperature of the building in the summer = 25 c^o

• The design value for the external moisture of the building in the winter: Minimum = 60%, Maximum = 70%, while in summer minimum = 36% and max. = 42%

• The market prices of thermal insulation materials are: 7.9 JD/m^2 for the 10 cm polystyrene boards , 3.59 JD/m^2 for the 5 cm polystyrene boards, 5 JD/m^2 for the 10 cm Rockwool coil , 2.5 JD/m^2 for the 5cm Rockwool coil , 5.5 JD/m^2 for the 10 cm foam concert and the double glazing is 17 JD/m^2

• The price of diesel fuel = 0.35 JD /L according to year 2015 market price

• The amount of fuel consumed for five years (2016-2017), which was obtained from the maintenance department as in table-1

Table-1; the fuel consumption of the Faculty of Engineering for 2016- 2017

Year	Amount of fuel consumed(L/year)	Cost of fuel consumed (JD)
2013	27028	9459.8
2014	30159	10555.65
2015	20276	7096.6
2016	16969	5939.15
2017	15977	5591.95
Total fuel consumption at 5 years	22081.8	7728.63

To calculate the heat transfer coefficient by using the following equation:-

U = 1/ R$_T$ ………. (1)

U: Thermal Transmittance

R$_T$: Total Thermal Resistance

R$_T$ = R$_i$ + R$_c$ +R$_{Si}$+R$_{SO}$ …………….. (2)

R$_i$: Thermal Resistance of the structural element

R$_c$: Cavity Thermal Resistance .

R$_{Si}$: Thermal Resistance of the internal surface .

R$_{SO}$: Thermal Resistance of the outer surface.

R = d / k …………. (3)

R : Thermal Resistance

d : Layer thickness of structural element.

k : Thermal Conductivity .

To calculate the total heat loads is by using the following equation:

Q$_T$ = Q$_C$ + Q$_V$ - Q$_i$ ………..(4)

Q$_T$: Total Heating Loads

Q_C : Total heating energy which are lost from all external elements of the building and from the heated parts to the non- heating parts in the building Q_c = 987552.1062 w.

Q_V : Total energy lost as a result of ventilation or air leakage through the building joints, which will be calculated as follows:

$Q_V = 0.33*N*V*(T_o − T_i)$ ……………(5)

V : The size of the space heaters.

N : The number of times air change per hour (ach/h), according to Aaaysh, 2009 will be changed in public building from 2 to 3 times

Q_i: Total gained energy rate which is resulting from thermal sources inside the building such as People, lamps….. act (**Q_i** is assumed to be 150 w/person) .

T_i = The interior temperature of the building 20° c exception the ground floor is 10° c .

T_o = The outer temperature (assumed 40° c)

Samples of Calculations

Case -1: Without thermal insulation materials:

(1) The calculation of heat loads without any thermal insulation for external walls which consist of hollow concrete block of thickness 25 cm from interior to exterior face as in figure-9 and table-2
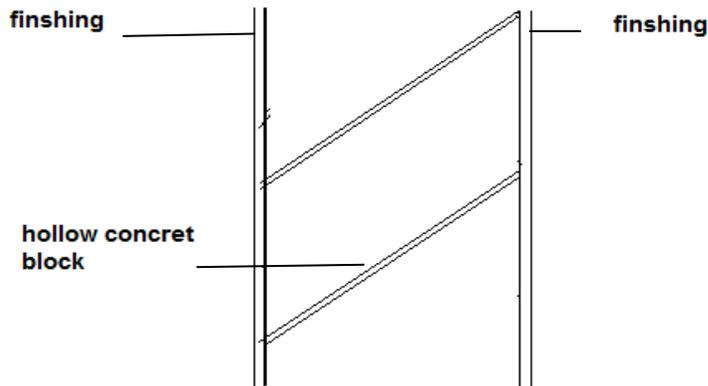
Figure-9; The layers of the walls design without the air vacuum

Table-2; The values of thermal resistance elements of the external walls

Elements of construction external walls	k w/m².k	d (m)	R = d/k m² .k/w
External finishing	0.72	0.02	0.028
Hollow concrete block	0.49	0.25	0.51
Internal finishing	0.72	0.02	0.028

The calculation of the related elements:

- $R_{so}= 0.04$ m^2.k/w
- $R_{si} = 0.13$ m^2.k/w
- $R_T = 0.739$ m^2.k/w
- $U = 1/ 0.739$ m^2.k/w
- $U = 1.353$ W/m^2 k

(2) The roof consists of a hollow concrete block of thickness 18 cm, concrete layer light-concrete reinforced sloping of thickness 14 cm, finishes with asphalt and filancot as shown in figure-10 and table -3
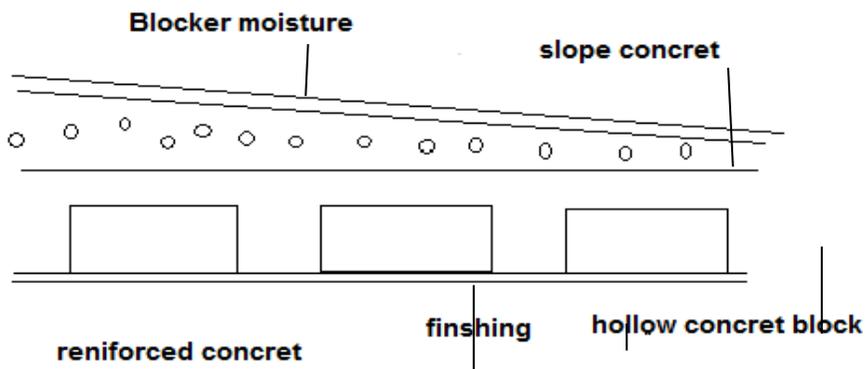
Figure-10; The elements of Roof construction

Table-3; The values of thermal resistance elements of the Roof

Elements of Roof	K W/m^2.k	d)m(	R = d/k m^2.k/W
External finishing	0.70	0.02	0.028
Reinforced concrete	1.75	0.14	0.08
Hollow concrete block	0.95	0.18	0.189
Internal finishing	0.72	0.02	0.028

The calculation of the related elements:

$R_{si} = 0.1$ m^2. k/w

$R_{so} = 0.04$ m^2. k/w

$R_T = 0.465$ m^2. k/w

$U = 1/ 0.465 = 2.151$ w/m^2. k

(3) The floors consisting of a mixture of grit thickness of 10 cm - layer Concrete normal sloping thickness of 10 cm – tiles. As in figure-11 and table -4
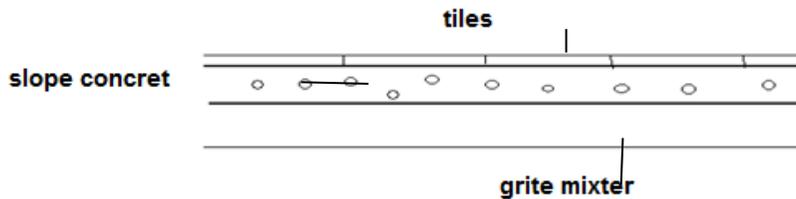
Figure -11; The elements of Ground

Table-4; The values of thermal resistance element it's of the Ground floor

Elements of Ground floor	K W/m^2.k	D m)(	R = d/k m^2.k/W
Tilles	0.99	0.25	0.253
Cément mixé	0.72	0.02	0.208
Concrète	0.56	0.1	0.178
Grit mixture	1.5	0.1	0.067

The calculation of the related elements:

$R_{si} = 0.17$ m^2. k/w

$R_{so} = 0.04$ m^2. k/w

$R_T = 0.736$ m^2. k/w

$U = 1/$ o.736 $= 1.359$ w/m^2. k

(4) The windows were openings normal single-layer glaze and the external doors are glazed iron, so the calculated elements are :-

$U_{glasses} = 5.7$ w/m^2. k

$U_{ceiling\ glasses} = 6.1$ w/m^2. k

$U_{average} = $ Sum $(A_e*U) /A_T$ …………………(6)

$U_{wall} = 5636.56 *1.359 = 7660.08$ w/m^2 . k

$U_{roof} = 3446.6 *2.151 = 7413.64$ w/m^2 . k

$U_{ground} = 3502.554 * 1.359 = 4759.97$ w/m^2. k

$U_{glasses} = 1514.05 * 5.7 = 8630.08$ w/m^2. k

$U_{ceiling\ glasses} = 55.950 * 6.1 = 341.30$ w/m^2. k

$U_{average} = 28805.07 / 14155.714 = 2.03$ w/m^2. k

Q_{wall} = 1.359 *5636.56 *20 = 153201.7008 w

Q_{roof} = 2.151 * 3446.60 *20 = 148272.732 w

Q_{ground} = 1.359 * 3502.55 *10 = 47599.6545 w

Q_{glass} = 5.7 * 1514.05 * 20 = 172601.7 w

$Q_{ceiling\ glass}$ = 6.1 * 55.95 * 20 = 6825.9 w

Q_T = 1515903.794 w

(5) Boiler Energy :

The boiler energy will be calculated as follows: 1515903.794 * 0.85 (Conversion Energy (Watts) to the heat emitted (kcal) = 1288518.224 kcal/h

The amount of heat emitted per each thermal radiator = 130 kcal/h

The number of thermal radiators needed for building = 1288518.224/130 = 9912 units

(6) Calculation of the amount of emitted CO_2:

Total fuel consumption for the five years (2011-2015) = 22081.8 L/year, for the non-thermal insulated case.

So, the amount of CO_2 emitted = 22081.8 L* 0.84 kg/L (Diesel density in the winter = 0.84 kg\L) = 18548.712 kg

Where, (175 g/ 1 kg is the standard ratios of CO_2 emitted from the exhaust of diesel = 18548.712* 0.175 = 3246.025 kg

(7) The economic feasibility:

The calculations of consumption cost as follows:

The cost of (Boiler + radiators) = 75000 +(9912*20) = 273240 JD

The cost of fuel consumption =22081.8 *0.35 = 7728.63 JD

So, the total cost = 273240+7728.63 = 280968.63 JD

Case2: Using Industrial Thermal Construction Insulation Materials

(1) External walls consist of hollow concrete block of thickness 15 cm from the outside and a vacuum air of thickness 5 cm. Block and hollow concrete of thickness 10 cm from the inside and finishes for interior and exterior face as in Figure-12 and table-5.
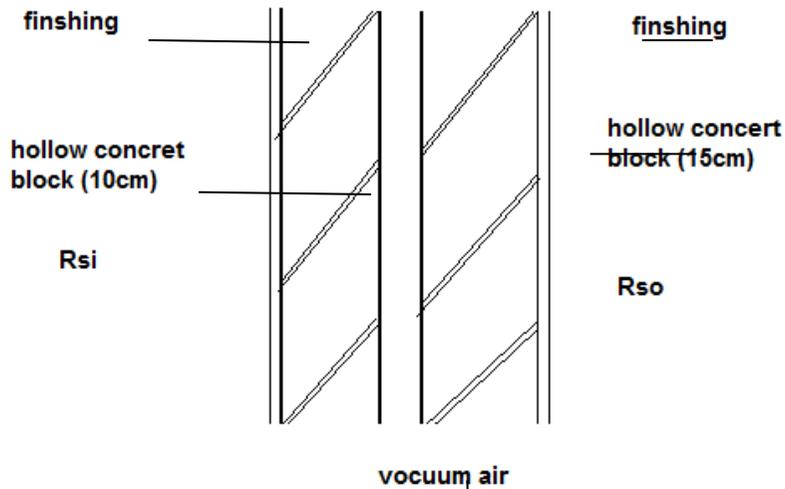
Figure-12; The layers of the wall design

Table-5; The values of thermal resistance elements of the external wall

Elements of external walls	k w/m².k	D (m)	R = d/k m² .k/w
External finishing	0.72	0.20	0.28
Hollow concrete block	0.49	0.15	0.30
Vacuum air		0.05	0.11
Hollow concert block	0.49	0.1	0.204
Internal finishing	0.72	0.0 2	0.028

The calculations are :

$R_{so} = 0.04$ m².k/w

$R_{si} = 0.13$ m².k/w

0.846 m².k/w $= R_T$

U = 1/ 0.846

U = 1.183 w/m². k

(2) the roof consists of a hollow concrete block of thickness 18 cm, light concrete layer - reinforced concrete of thickness 14 cm - finishes with asphalt and filancot as in figure-13 and table-6.
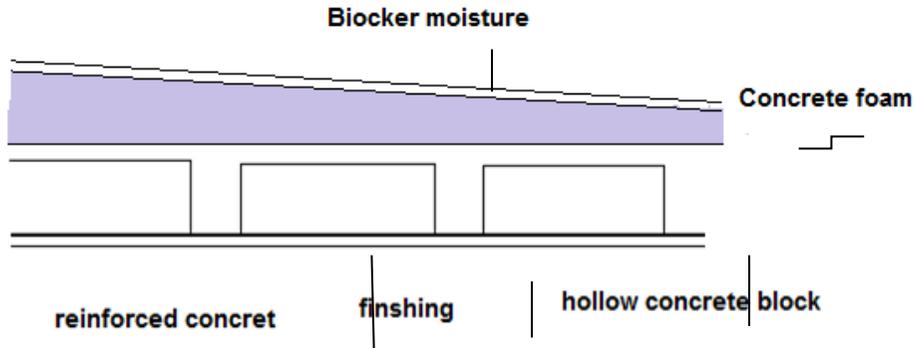
Figure-13; The elements of roof

Table-6; The values of thermal resistance elements of the Roof

Elements of construction Roof	k w/m².k	d (m)	R = d/k m².k/w
External finishing	0.70	0.02	0.028
Reinforced concrete	1.75	0.14	0.08
Concert foam	0.16	0.1	0.625
Hollow concrete block	0.95	0.18	0.189
Internal finishing	0.72	0.02	0.028

The calculations are :

$R_{si} = 0.1 \text{ m}^2 .\text{k/w}$

$R_{so} = 0.04 \text{ m}^2 .\text{k/w}$

$R_T = 1.087 \text{ m}^2.\text{k/w}$

$U = 1/ 0.465 = 0.919 \text{ w/m}^2 .\text{k}$

(3) The floors consist of a mixture of grit of thickness 10 cm, concrete layer of thickness 10 cm and tiles as in figure-14 and table-7.
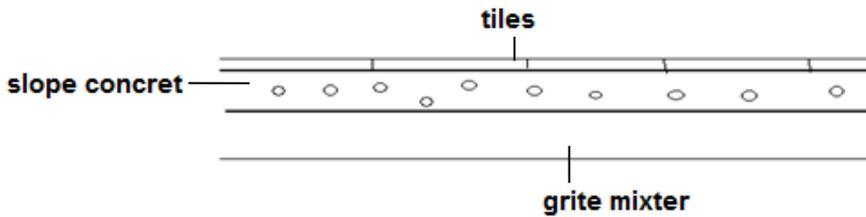
Figure-14; The elements of ground

Table -7; The values of thermal resistance elements of the ground floor

Elements of construction Ground floor	k w/m².k	D m)(	R = d/k m² .k/w
Tilles	0.99	0.25	0.253
Cément mixé	0.72	0.02	0.278
Concrète	0.56	0.1	0.178
Grit mixture	1.5	0.1	0.067

The calculations are :

R_{si} = 0.17 m² .k/w

R_{so} = 0.04 m² .k/w

R_T = 0.736m² .k/w

U = 1/ 0.736 = 1.359w/m². k

(4) The windows are openings normal with single- glaze layer and The external doors are glazed iron, the calculations are :-

$U_{glasses}$ = 5.7 w/m² . k

$U_{ceiling\ glasses}$ = 6.1 w/m² . k

$U_{average}$ =   Sum (A*U) /A_T

U_{wall} = 5636.56 * 1.183 = 6668.05 w/m² . k

U_{roof} = 3446.6 *0.919 = 3167.425 w/m² . k

U_{ground} = 3502.554 * 1.359 = 4759.9   w/m² . k

$U_{glasses}$ = 1514.05 * 5.7 = 8630.08 w/m² . k

$U_{ceiling\ glasses}$ = 55.950 * 6.1 = 341.30 w/m² . k

$U_{average}$ = 23566.755 / 14155.714   = 1.665w/m² . K

Q_{wall} = 1.183 *5636.56 *20 = 133361.009 w

$Q_{roof} = 0.919 * 3446.60 * 20 = 63348.508$ w
$Q_{ground} = 1.359 * 3502.55 * 10 = 47599.6545$ w
$Q_{glass} = 5.7 * 1514.05 * 20 = 172601.7$ w
$Q_{ceiling\ glass} = 6.1 * 55.95 * 20 = 6825.9$ w
$Q_T = 1411138.878$ w

(5) The Boiler Energy:

The boiler energy will be calculated as follows : 1411138.878 * 0.85 {Conversion Energy (watts) to the heat emitted (kcal)} = 1199468.046 kcal/h

The amount of heat emitted per unit of thermal radiators =130 kcal/h So, the number of units of thermal radiators needed for building is : 1199468.046 /130 = 9227 units

(6) Calculation of the amount of emitted CO_2:

The percentages for reducing the amount of values deduced = 6.9 % as shown in table-9 insulating air used, the thickness (5cm) only for walls.

Fuel consumption for the five the years (2011-2015) are:
= 22081.8*6.9% = 1523.6442 L/year. So, 22081.8 -1523.6442 = 20558.1558 L/year

The amount of emitted CO_2 = 20558.211* 0.84 kg/L (Diesel density in the winter = 0.840 kg\L)
= 17268.90 kg

The value 175 g/ 1 kg is the standard ratios of emitted CO_2 of the exhaust of diesel, so 17268.90* 0.175 = 3022.05 kg

(7) The economic feasibility of using the industrial construction thermal insulation :

The percentages for reducing the amount of values deduced = 6.9 % as shown in table-9 insulating air used, the thickness (5cm) only for walls:

The cost of (Boiler + radiators) = 70000 + (9227* 20) = 254540 JD

Fuel consumption for the five prior years (2011-2015) = 22081.8 L/year (table-1)
= 22081.8 * 6.9% = 1523.6442 L/year

So, 22081.8 - 1523.6442= 20558.1558 L /year and 20558.211* 0.35 = 7195.355 JD

Therefore, the total cost = 261735.355 JD

Payback Period Calculations:

The heating system works four months a year from the beginning of December to the end of March . The payback period was calculated in each case and summarized in table-11 and figure-23.

Discussion of the Results

The use of thermal insulation materials in buildings construction have a significant economic benefit through the rationalization of energy consumption as well as to reduce the environmental and health pollution by reducing CO_2 emitted ratio as a result of reducing fuel consumption. These results are shown in the tables (8, 9, 10 and 11) and are drawn graphically in figures (15 to 24) as follows:

(1) Figure (15) shows the average thermal resistance A_{verage} for all cases, it can be seen the followings:

Case-1: $U_{average} = 2.03$ w/m^2.k, which is the largest value because there is no use of any material of thermal insulation in all parts of the building.

Case- 2: $U_{average} = 1.665$ W/m^2.k , when using vacuum of thickness 5 cm between the outer wall of thickness (15 cm) and inter wall of thickness (10 cm), foam concrete roof, without isolating floors and ceilings. So, $U_{average}$ dropped to 17.98 % as shown in the table-9. The fact that the insulating the antenna cannot be considered good where the thickness 5 cm with allowing air movement because the air becomes a good conductor of heat transfer; so it should be of thickness no more than 2.5 cm, in order to make the air as insulators.

Case -3: $U_{average} = 0.84$ w/m^2.k, when using Rockwool material of thickness (10 cm) for walls to get to the limit where the standard specifications of Jordan for thermal insulation, in the ceiling using foam concert of thickness (10 cm), double glazed for the windows and external doors, so, $U_{average}$ dropped to 59% as shown in the table (17), the fact that the building is thermally isolated except for flooring where it is considered one of the Rockwool solutions to save energy due to the use of natural available materials, giving the characteristic of high fire resistance of up to 95% for materials of natural rocks. But it is difficult to be implemented in the ceilings and floors because of its ability to compression, which affects the heat transfer coefficient that requires more than the quantities required to reach the thickness for implementation.

Case 4: $U_{average} = 0.489$ W/m^2.k, when using Expended Polystyrene material of thickness (10 cm) for walls, and (5cm) for the floors and the ceilings, to get to the limit of the standard specifications of Jordan for thermal insulation of using double-glazed for windows and external doors, A_{verage} dropped to 76% as shown in the table-9. When the building is fully isolated and thermal conductivity coefficient (k) of Polystyrene expended is less than coil Rockwool and vacuum air, it is possible to be used in the ceilings and floors due to its ability to resist compression, and that the advantages of polystyrene does not damage rapidly for long-term, also it is characterized by high resistance to chemicals and has a high resistance to moisture because it does not absorb water or water vapor due to its nature of the closed cell

structure, which also prevents the passage of heat or cold. With regarding to the central heating system, the calculations were for the amount of heating load (Q_T) for each case of the above four cases to design Boiler Energy Agency, the number of radiators, the amount of fuel consumed per hour, the amount of spent fuel at the five years (2011-2015), the amount of emitted CO_2 in all cases as shown in the table-8.

(2) figures (16 to 20) and table-9 show the amount of the reduction in heating load (Q_T) for each of the four cases as follows:

Case-1, the reduction rate is 0.0% , because the non-use of insulations materials.

Case-2, the reduction rate is 6.9% due to the use of vacuum insulator.

Case-3, the reduction rate is 22.34% due to the use of Coil Rockwool for insulation.

Case-4, the reduction rate is 26.7% due to the use of Expended polystyrene for insulation .

(3) shows the cost of boiler and radiators for each case as follows:

It is clear that the cost of boiler and radiators gradually reduced from case-1 to case-4 due to the insulation type used in each case, which reduces the heat loads and the thermal conductivity coefficient for each material which are ; vacuum antenna ,coils rock wool, expanded polystyrene, respectively.

(4) figure (22) shows the annual cost of consumed fuel for each case. Also, the annual cost of consumed fuel gradually reduced from case 1 to case 4 due to the type of insulation used in each case, which reduces the heat loads and the thermal conductivity coefficient for each material.

(5) figure (23) shows the total cost of thermal insulation, boiler and radiator for each case:

This figure illustrates that the total cost in case-4 is the highest followed by the case-1, then thecase-3, then the case-2 and the reason is due to the use of thermal insulation or non use and how to insulate the building fully realized from the outside only as in the case-4; or when using polystyrene extender walls, ceilings, floors, and use double glazing for windows and door openings outer or isolated partially as in the case-2. While in case-3 isolated only wall by vacuum air and the use of foam concrete for the roof without isolating floors; where the isolated walls using coils rock wool and foam concrete for the roof and double glazing for windows the door openings as in the case-1.

Compared to the payback period in which the paid-up capital recovers for each of the four cases, which are summarized in table-11 and drawn in figure (24). It is clear that the payback period depends on insulation material type and on working days of the systems. So, the payback period for case-1over case-4 is the best period compared to the other periods. This is because the use of the polystyrene in the wall, roof and ground, due to its availability

in markets, the thermal conductivity is lower, and appropriate prices. The coil rock wool, on the other hand, is difficult to implement in the roof and the ground due to its flexibility, compression, the absorption of moisture, and the loss of insulation property, as shown in figure (24) for case-1 over case-3.

The role of engineering management in the use of thermal insulation in the building dates back to the ability and flexibility in making the right decision to select the high quality materials for thermal insulation and their suitability depending on the quality, price, market availability, ease of implementation, and their characteristics in terms of size and weight. Also, to reduce costs and time in the case of the use of thermal insulation dependence on choosing the right thermal insulation; so that the payback period amounts added to the cost of implementing the building to be within the allowed range, which is reflected on the economic side, through the provision of energy consumed?

Table-8 Parameters Calculations Summary of the Sudied Cases (1,2,3,4)

Values deduced	Case 1	Case 2	Case 3	Case 4
U_{wall}	1.539	1.183	0,309	0.265
U_{roof}	2.151	0.919	0.919	0.505
U_{ground}	1.359	1.359	1.359	0.418
U_{glass}	5.7	5.7	1.4	1.4
$U_{ceiling\ glass}$	6.1	6.1	1.6	1.6
$U_{average}$	2.03	1.665	0.840	0.489
heating Load Q: (W)	1515903.794	1411138.878	1177703.71	1111246.693
Boiler Energy (kcal/hr)	1288518.224	1199468.046	1001048.158	944559.689
Fuel consumption for the 5 years (2011-2015) (L/year)	22081.8	20558.211	17148.726	16185.96
Number of sections of thermal radiators needed for building	9912	9227	7701	7266
CO_2 emitted (kg)	3246.025	2820.795	2520.863	2379.336

Table-9; Parameters Percentages Summary of the Cases (1,2,3,4)

Value	Case 1	Case 2	Case 3	Case 4
U_{value}	0.0%	17.98%	59%	76%
Heating Load Q: (w)	0.0%	6.9 %	22.34%	26.7%
Boiler Energy (kcal)	0.0%	6.9 %	22.34%	26.7%
The amount of fuel (L/hr)	0.0%	6.9 %	22.34%	26.7%
Number of sections of thermal				
radiators needed for building	0.0%	6.9 %	22.34%	26.7%
CO_2	0.0%	6.9 %	22.34%	26.7%

Table -10; Costs Summary of all Cases (1,2,3,4)

Case study	The cost of boiler + Radiator (JD)	The cost thermal insulation (JD)	The cost of Consumer fuel annually (JD)	Total Costs (JD
Case 1	273240	0.0	7728.63	273240
Case 2	254540	0.0	7195.355	254540
Case 3	204020	64409.1	6002.054	268429.1
Case 4	190300	89247.967	5665.086	279547.967

Table-1; Summary of the Payback Period Costs of all Cases (1,2,3,4)

Cases	The Payback Period calculations (year)	The Payback Period calculations (month)	The Payback Period costs for heating system works four months a year from the beginning of December to the end of March (year)
1 over 4	3	36	9
1 over 3	2.7	32.4	8.1
1 over 2	35	420	105
2 over 3	11.6	139	34.8
2 over 4	16.3	196	84.9
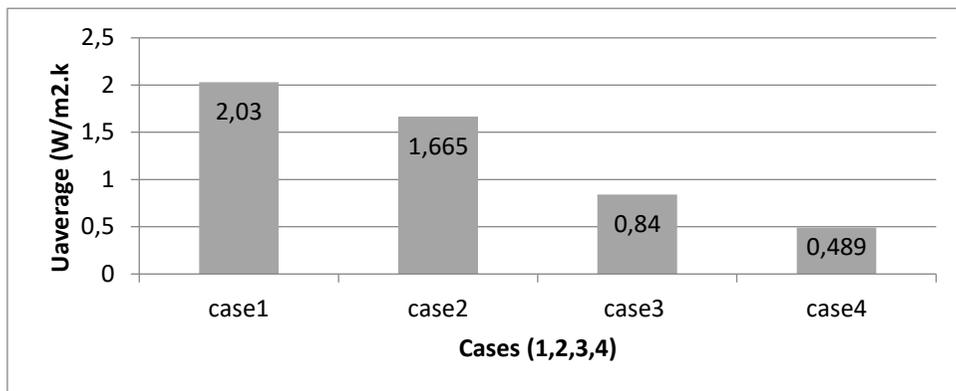
Figure-15; Thermal Transmittance A_{verage} (W/m^2.k) for Each Case
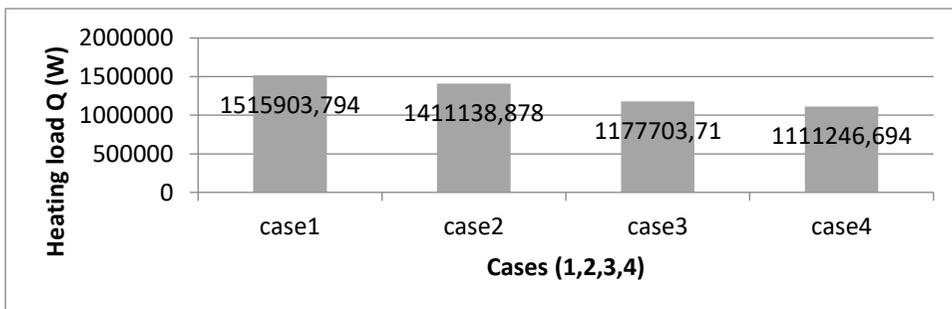
Figure -16; Total heating loads (Q_T) for each case study
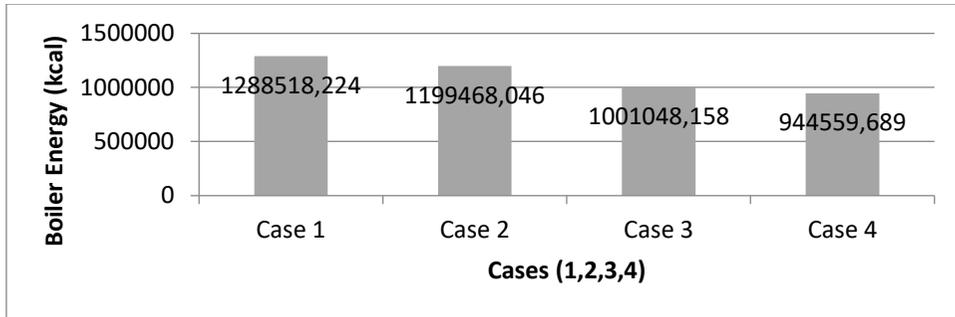
Figure -17; Boiler Energy (kcal/h) for each case
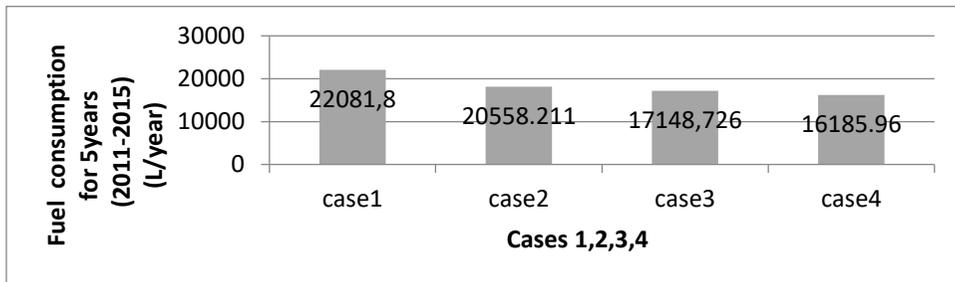
Figure -18; Fuel consumption for 5 years (2011-2015) L/year for each case
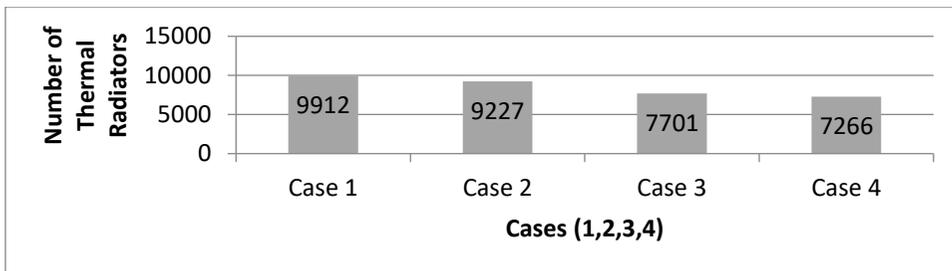
Figure -19; Numbers of Thermal Radiators needed for Building in each case
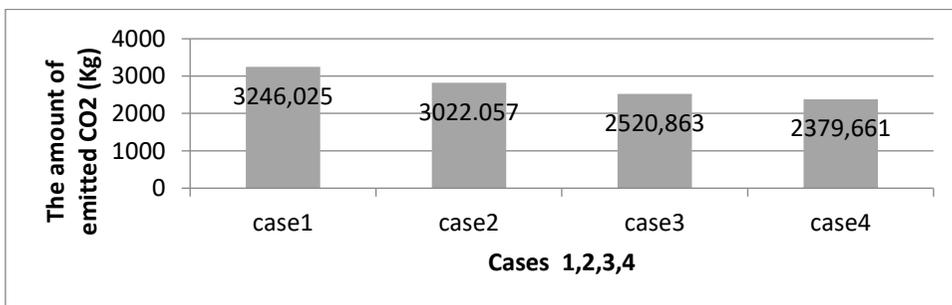

Figure-20; The amount of emitted CO2 (kg) for each case
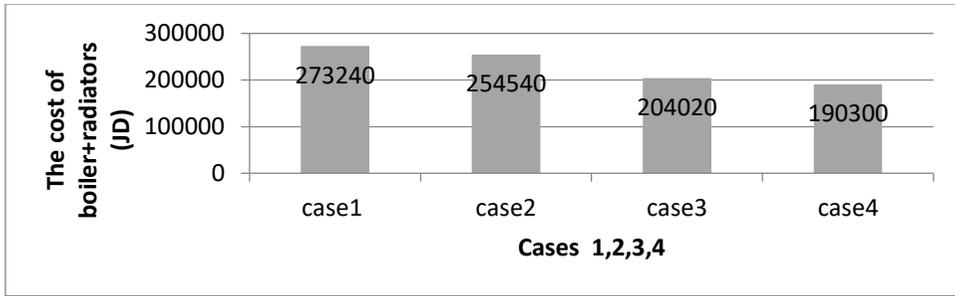
Figure -21; The cost of boiler and radiators (JD)
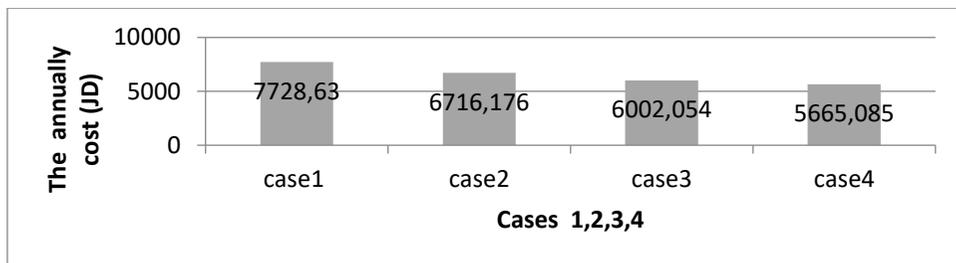
Figuer-22; The annual cost of the consumed fuel (JD)
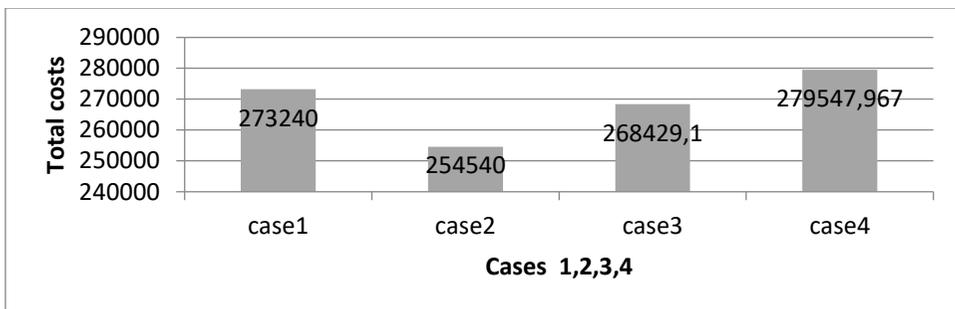
Figure -23; Total Costs of thermal insulation, boiler and radiators (JD)
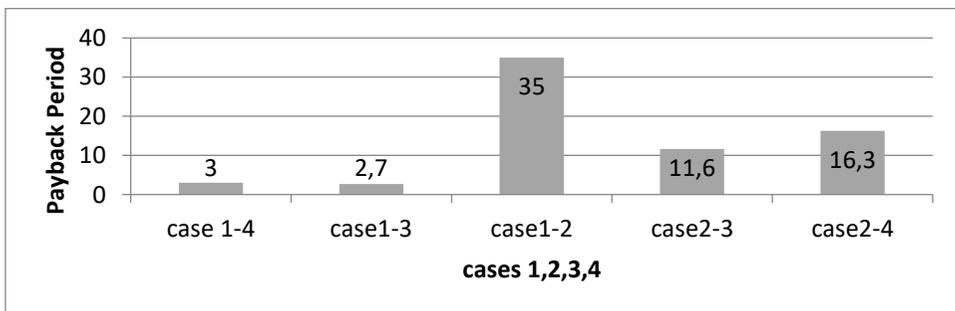
Figure-24; Payback period Costs for all cases

153

Conclusion

From the above results the following main points can be drawn:-

(1) The use of extended polystyrene, double glazing for windows and external opening as thermal insulation of building leads to reduction in thermal transmission (U) to about (76%), which is the highest among the four studied cases of insulation materials.

(2) The reduction in fuel consumption is the highest by using extended polystyrene which is about (26.7%), while the lowest in case with non insulation materials.

(3) Using an extended polyester of thickness 10 cm in walls resulted in lower fuel consumption and payback period.

(4) When using the extended polyester in all parts of building's envelope with double glazing windows and doors, the total cost of consumed fuel became the lowest value to about (5767.876 JD) in comparison with the other cases.

(5) The pollution is reduced when using good thermal insulation (polystyrene extended) and the lowest value of the emission of CO_2 reaching a ratio to 26.7% in comparison with other insulations. The highest ratio of emitted CO_2 is in case-1 without insulator (i.e. 0.0%).

(6)The use of coil rock wool in the ceilings, walls and floors showed the woerst due to the difficulty of implementation, its flexibility, the absorption of moisture, loss of its insulation property and compression in walls.

(7)The thermal insulation through the work of a vacuum air between the wall of thicknesses 5 cm unavailing because the air becomes a good conductor when it moves.

(8) The non-use of thermal insulation in building's envelope causes a high energy lost, also leads to the short life of the building, an increase in the burden cost of maintenance of the building' envelope and replacing appliances.

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Mental Illness and Opioid Epidemic in the United States

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Abstract
   Introduction: According to the World Health Organization (WHO), mental health is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community. A drug overdose is defined, by the Medical Dictionary, as the accidental or intentional use of a drug or medicine in an amount that is higher than is normally used. Accidental drug overdose may be the result of misuse of prescription medicines or commonly used medications like pain relievers and cold remedies. Overdose with opiate drugs causes sedation, low blood pressure, slowed heart rate, and slowed breathing. A serious risk is that the patient will stop breathing. **Methods:** A multiple correlational analysis was conducted to explore the potential strength, direction and significant of relationship between selected indicators related to mental illness, socio-economic factors and drug related deaths in the United States, at the state level. A level of significance of 0.05 was selected for all tests of significance. **Conclusion:** There is a strong and significant correlation at the state level between the mental illness, major depressive disorders, drug use/abuse and drug overdose related deaths. Veterans living in the state and un-insured individuals are significantly correlated with drug overdose related deaths. No significant correlation was identified between socio-economic factors typically associated with most health issues such as poverty and the current opioid epidemic affecting our nation.

Introduction
Mental Health

According to the World Health Organization (WHO), mental health is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community (WHO, 2014).[1]

In their article "Toward a new definition of mental health" published in *World Psychiatry*, the authors propose a new definition: "Mental health is a dynamic state of internal equilibrium which enables individuals to use their abilities in harmony with universal values of society. (Galderisi et al., 2015).[2]

The Mayo Clinic referred to mental illness as to a "wide range of mental health conditions — disorders that affect your mood, thinking and behavior" (Mayo Clinic, 2015)[3].

The National Center for Health Statistics, in its National Health Interview Survey Early Release Program, reported that in 2016, 3.6% (95% confidence interval = 3.35%–3.88%) of adults aged 18 and over had experienced serious psychological distress during the past 30 days. The percentage of adults who had experienced serious psychological distress during the past 30 days increased, from 2014 through 2016, the percentage of adults who had experienced serious psychological distress during the past 30 days increased from 3.1% to 3.6% (Reinberg, 2017)[4].

Depression

According to the American Psychiatry Association (APA), depression (major depressive disorder) is a common and serious medical illness that negatively affects how you feel, the way you think and how you act. Depression causes feelings of sadness and/or a loss of interest in activities once enjoyed. It can lead to a variety of emotional and physical problems and can decrease a person's ability to function at work and at home (APA, 2017).[5]

Post-traumatic stress disorder (PTSD)

Post-traumatic stress disorder is defined by The Mayo Clinic as a mental health condition that's triggered by a terrifying event — either experiencing it or witnessing it. Symptoms may include flashbacks, nightmares and severe anxiety, as well as uncontrollable thoughts about the event. According to The Mayo Clinic, most people who go through traumatic events may have temporary difficulty adjusting and coping, but with time and good self-care, they usually get better. If the symptoms get worse, last for months or even years, and interfere with your day-to-day functioning, you may have PTSD.

Getting effective treatment after PTSD symptoms develop can be critical to reduce symptoms and improve function. Some of the traumatic events leading to the development of PTSD include: combat exposure, childhood physical abuse, sexual violence, physical assault, an accident, among others.

PTSD is highly prevalent among military personnel, especially after they have participated in military/war conflicts. The prevalence of PTSD in deployed U.S. military personnel may be as high as 14 –16%, twice higher than the estimate for the general population (7%-8%) (Gates et.al, 2012).[6]

PTSD may also increase the risk of other mental health problems such as: depression and anxiety, issues with drugs and alcohol use and suicidal thoughts and actions (APA, 2013).[7]

Drug Overdose

Mental illness has been considered an important risk factor for substance abuse and drug overdose deaths. In an article published in *The Journal of Clinical Psychiatry*, the authors concluded that mental illness may have contributed to substance abuse associated with deaths and recommend that clinicians should screen for mental illness when prescribing opioids and recommend psychotherapy as an adjunct or an alternate to pharmacotherapy (Toblin et.al, 2010).[8]

A drug overdose is defined by the Medical Dictionary as the accidental or intentional use of a drug or medicine in an amount that is higher than is normally used. Accidental drug overdose may be the result of misuse of prescription medicines or commonly used medications like pain relievers and cold remedies. Overdose with opiate drugs causes sedation (sleepiness), low blood pressure, slowed heart rate, and slowed breathing. Pinpoint pupils, where the black centers of the eyes become smaller than normal, are common in opiate overdose. However, if other drugs are taken at the same time as the opiates, they may counteract this effect on the pupils. A serious risk is that the patient will stop breathing (GEM, 2008).[9]

According to the Centers for Disease Control and Prevention (CDC), there has been a significant increase in overdose deaths involving opioids, especially during the last five years. See Figure below from CDC/NCHS, National Vital Statistics System, 2017 (CDC, 2017).[10]

In March 2018, at the *Opioid Epidemic: The Crisis Next Door* event, President Donald J. Trump, in October 2017, directed the Department of Health and Human Services to declare the opioid crisis a public health emergency, taking action to address a rapidly escalating epidemic of drug use. The President, said that "no part of our society -not young or old, rich or poor, urban or rural- has been spared this plague of drug addiction and this horrible, horrible situation that's taken place with opioids" (Crisis Next Door, 2017).[11]

Data recently published by the White House claims that drug overdoses are now the leading cause of injury death in the United States, outnumbering traffic crashes or gun-related deaths. According to preliminary analysis, more than 64,000 lives were lost to drug overdoses in 2016, devastating American families and communities, represents a rate of 175 deaths a day in 2016. The White House reports that since 2000, over 300,000 Americans have died from overdoses involving opioids (Crisis Next Door, 2017).[11]

Objectives/Purpose

The purpose of this cross-sectional study is to explore the incidence and prevalence of mental health conditions, such as PTSD and major depression disorders and their association with drug addiction and its consecuenses in the United States at the state level. The study also aims to identify states with the highest drug overdose related mortality and concuomitant factors. Knowing that this is a very complex public health issue with no simple or easy solution identifying factors associated with mental illnes and drug overuse and abuse could facilitate the development of effective public health policies fundamentally at the primary prevention level.

Learning Outcomes

Identify the strength, direction and significance of the relationship between incidence and prevalence of mental health conditions such as depression, drug addiction/abuse, drug related mortality and socio-economic factors in the United States, at the state level.

Methods:
Sources of data

Indicators related to incidence and prevalence of mental illness, drug overuse/abuse and related mortality were selected and collected from the Centers for Disease Control and Prevention (CDC) while socio-economic related variables/indicators were extracted from the Census Bureau; we used the analyses data reported from the year 2016. Other sources of information were used and properly identified throughout the text. The study's selected variables associated with mental illness are: prevalence of serious mental illness including PTSD and major depressive disorder. The number of deaths related to drug overdose, pain killers misuse and heroin use during past year are the selected variables associated with drug overuse and abuse. Other socio-economic related variables such as poverty, educational level, veterans living in the state and veterans with potential or provisional PTSD were also collected and analyzed.

Statistical Analysis

A multiple correlational analysis was conducted to explore the potential strength, direction and significant of relationship between the incidence and prevalence of depression, other mental health conditions, drug overuse and abuse and related deaths in the United States at the state level. An evaluation of selected socio-economic indicators such as poverty and educational level and their relationship with mental illness and drug addiction was also performed. The Statistical Package for Social Sciences (SPSS 22®) was used to analyze collected data. A level of significance of 0.05 was selected for all tests of significance.

Results

The northeastern states of West Virginia, New Hampshire, Maryland, Ohio, Massachusetts and District of Columbia shared the highest number of mental illness, depression and opioid overdose death rate in the nation. Table 1.

Table 1. Top six states reporting Serious Mental Illness, Major Depressive Episode and Opioid Overdose Death Rate

State	Serious Mental Illness	Major Depressive Episode	Opioid Overdose Death Rate
West Virginia	1068	1786	43
New Hampshire	650	1132	36
Maryland	626	1026	30
Ohio	570	979	33
Massachusetts	453	693	30
District of Columbia	416	677	30

Significant increases in drug overdose death rates from 2015 to 2016 were seen in the Northeast, Midwest and South Census Regions, according to CDC reports. The top ten States with the highest and statistically significant increases in drug overdose death rates included District of Columbia, Maryland, Florida, Pennsylvania, New Jersey, Delaware, Maine, Virginia, Illinois and Vermont. Table 2.

Table 2. Top ten states reporting the highest and significant increase in drug overdose death rate

No	State	Percent Change from 2015 to 2016
1	District of Columbia	108.6
2	Maryland	58.9
3	Florida	46.3
4	Pennsylvania,	44.1
5	New Jersey	42.3
6	Delaware	40.0
7	Maine	35.4
8	Virginia	34.7
9	Illinois	34.0
10	Vermont	32.9

Correlation Analysis

A strong, direct and significant correlation was identified between serious mental illness, major depressive disorder and the number of deaths related to drug overdose in all states of the union. An even stronger correlation was confirmed between mental illness, serious mental illness, major depressive disorder and the number of deaths related to drug overdose when the top 20 states with highest opioid death rate were selected. Table 3.

Table 3. Pearson Correlation Coefficients and significant level from correlation analyses.

	Drug Overdose Number of Deaths	
	All States	Top 20 States†
Serious Mental Illness	.887**	.953**
Major Depressive Episode	.882**	.966**

*Note *p<.05, **p<.01, ***p<.001
†Top 20 States with highest opioid death rate in 2016

There is a strong, direct and highly significant correlation between the prevalence of serious mental illness and the number of deaths due to drug overdose, $r(50)=.89$, $p<0.01$. Major depressive disorder is directly and significantly correlated with the number of deaths related to drug overdose, $r(50)=.97$, $p<.01$. Figure 1 and 2.

Figure 1. Scatter diagrams showing the correlation between cases of serious mental illness reported and drug overdose number of deaths reported per state. US, 2016.
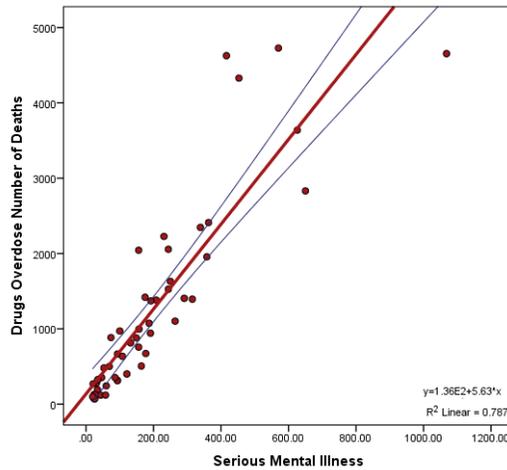

Figure 2. Scatter diagrams showing the correlation between major depressive disorder and drug overdose number of deaths reported per state. US, 2016.
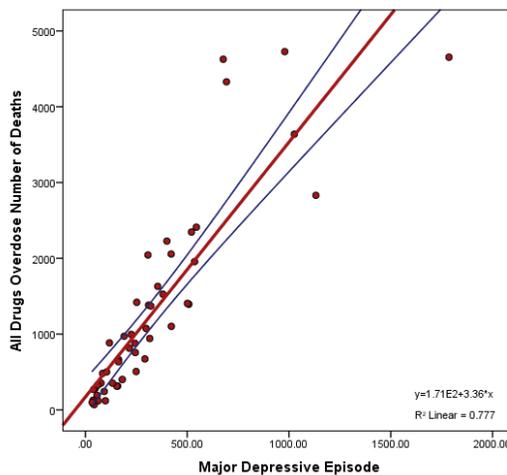
The number of pain killer misuse reported in 2016 is significantly and directly related to the number of drug overdose related deaths reported during the same year, $r(50)=.83$, $p<.01$. The correlation between the misuse of heroin during the past year (2016) and the number of drug overdose related deaths was even stronger, $r(50)=.90$, $p<.01$. Figure 3 and 4.

Figure 3. Scatter diagrams showing the correlation between pain killers misused during past year and drug overdose number of deaths reported per state. US, 2016.
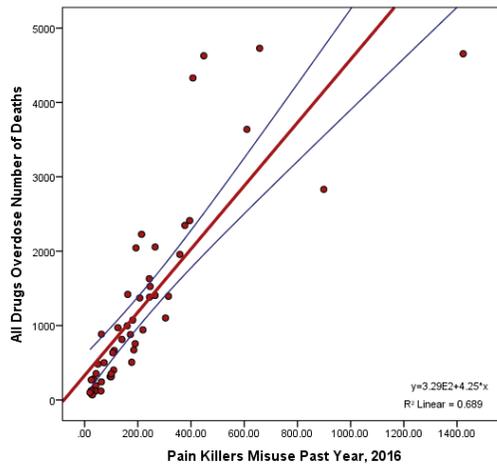

Figure 4. Scatter diagrams showing the correlation between Heroin misuse during past year and drug overdose number of deaths reported per state. US, 2016.
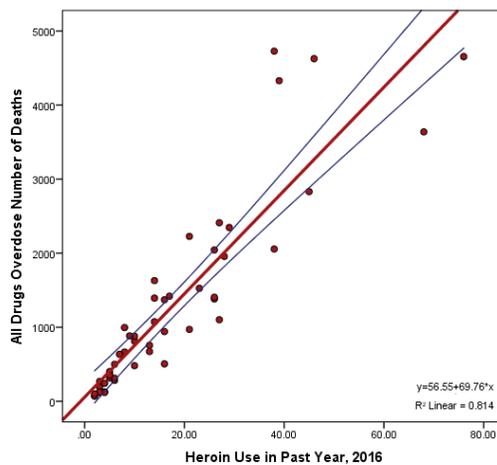
An interesting finding encountered during our exploratory investigation was the strong, direct and highly significant correlation between

the number of deaths reported due to drug overdose and the veteran population living in the state, $r(50)=.86$, $p<.01$. Table 4 and Figure 5.

When selecting the top 20 states with the highest opioid overdose related death, the correlation between the number of deaths reported due to drug overdose and the veteran population living in the state is even stronger. See Figure 6.

Figure 5. Scatter diagrams showing the correlation between the population of veterans living in the state and drug overdose number of deaths reported per state.
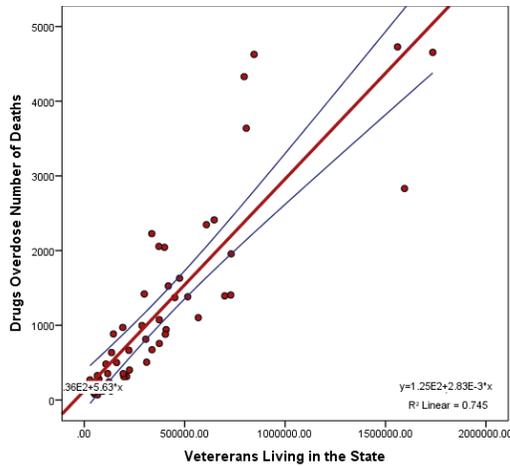

Figure 6. Scatter diagrams showing the correlation between population of veterans living in the state and drug overdose number of deaths reported per state.*
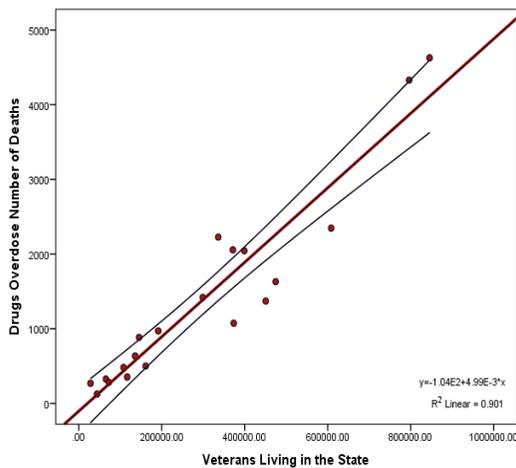
* Top 20 states with highest opioid overdose death rates are selected

The prevalence of veterans with potential or provisional PTSD is directly and significant correlated with the number of deaths reported due to drug overdose, $r(50)=.71$, $p<.01$. Table 4.

Table 4. Pearson Correlation Coefficients and significant level from correlation analyses.

Indicator	Drug Overdose Number of Deaths 2016
Veteran Population Living in the State	.863**
Veterans with Potential or Provisional PTSD (Prevalence)	.714**

*Note *$p<.05$, **$p<.01$, ***$p<.001$

Socio-economic factors such as poverty rate [$r(50)=.12$, $p=.39$] and median income per family [$r(50)=.02$, $p=.90$], typically associated with most health issues in US, do not appear to be significantly related to the current drug/opioid epidemic affecting our nation. Educational level continues to be a factor related to drug misuse and abuse. There was identified a significant but inverse relationship between heroin use during the past year (2016) and the proportion of the adult population who had completed high school or a higher educational level, $r(50)=-.35$, $p<.05$.

Discussion

According to the Centers for Disease Control and Prevention (CDC), opioid deaths have increased five-fold from 1999 to 2016 due to the use of prescription and/or illicit opioid drugs, that have contributed to over 42,000 deaths in 2016 (CDC, 2017)[12]. Data from the CDC further indicates that the highest rates from deaths due to drug overdose were in West Virginia (52.0 per 100, 000), Ohio (39.1 per 100, 000), New Hampshire (39.0 per 100,000), Pennsylvania (37.9 per 100, 000) and Kentucky (33.5 per 100,000) (CDC, 2017)[12]. These states tend to have about a 25% of their population in manual labor, which could lead that area to have more need for opioids to deal with on the job related injuries (Industries in the Northeast, 2015).[13]

Specifically in West Virginia, about eight percent of the state occupation is in construction which is 54% higher than the rest of the United States (Occupations in West Virginia, 2015)[14]. Our findings are concurrent with these reports; the north eastern states of West Virginia, New Hampshire, Maryland, Ohio, Massachusetts and District of Columbia shared the highest number of mental illness, depression and opioid overdose death rate in the nation.

We identified a strong, direct and highly significant correlation between the prevalence of serious mental illness, major depressive disorders and the number of deaths due to drug overdose. According to national surveys, 75 percent or more of patients with mental illness struggle with drug and/or alcohol problems.[1]

Our study found that the number of pain killer misuse reported in 2016 is significantly and directly related to the number of drug overdose related deaths reported during the same year. Dr. Anna Lembke, in her book *"Drug Dealer, MD: How doctors were duped, patients got hooked and why it's so hard to stop"*, argued the thesis that prescription drugs has turned the gateway to addition especially in young individuals.[15] On November 1, 2011, the Centers for Disease Control and Prevention (CDC), the agency of the government responsible for protecting Americans from major health threats, declared a "prescription drug epidemic"; and the CDC was unequivocal about what had caused this epidemic: "prescription opioid painkillers and psychotherapeutic drugs being prescribed more widely by physicians."[2]

Evidence suggests that drug overdoses related to opioids are underreported by as much as 24 percent, which would raise the estimated 2015 opioid overdose death toll to over 40,000. Since 2000, over 300,000 Americans have died from overdoses involving opioids. (The Crisis Next Door, 2017).[11]

In our study, we found that the direct and significant correlation between the misuse of heroin during the past year (2016) and the number of drug overdose related deaths was even stronger. According to The Opioid Epidemic and the Labor Market report, the decrease in the price of heroin also corresponds to a 143 percent increase in heroin seizures between 2010 and 2015 (FRBCL, 2017).[16]

An interesting finding encountered during our exploratory investigation was the strong, direct and highly significant correlation between the number of deaths reported due to drug overdose, the veteran population living in the state and the prevalence of veterans with potential or provisional PTSD. The Combat Posttraumatic Stress Disorder, Substance Use Disorders, and Traumatic Brain Injury reported that PTSD may also increase the risk of developing a substance use disorders (SUD) because individuals may use substances in an attempt to relieve symptoms of PTSD (Brady et.al, 2009).[17]

The access and quality of health services offered and provided to our veterans have been a focus of attention during the past decades. Recently, the Veterans Affairs Department Secretary, David Shulkin, was fired and new administration will be in place soon. Based on our results, we believe that our veterans are in the center of the opioid epidemic, suffering from the dire consequences of the combination of diverse mental illness and drug addiction. More resources should be placed in the Veterans Health Administration, better access to health services should be guaranteed to our veterans and advanced and more efficient management should be put into action.

Socio-economic factors, typically associated with most health issues in US such as poverty rate and median income per family, do not appeared to be particularly related to the current drug/opioid epidemic affecting our nation.

The Opioid Epidemic and the Labor Market report conclude that we need better data to understand the opioid epidemic, and that the relationship between drug use and the labor market warrants further study. (FRBCL, 2017).[16]

We believe that more specific data should be available at the local level, the access to current and valid data would be highly benefial to the local health departments and health officials in order to have a better picture of the mental illnes and opioid overuse in their communities; thus the effecicveness of interventions will significantly increase.

Conclusion

A strong and significant correlation between the incidence of mental illness, major depressive disorders, drug misuse/abuse and drug overdose related deaths was identified at the nation's state level.

No significant correlation was identified between socio-economic factors such as poverty rate and median income per family, typically associated with most health issues, and the current drug/opioid epidemic affecting our nation. However, the educational level appeared to be a protective factor related to heroin use and abuse.

Mental illness and its strong association with drug overuse and abuse is a complex and multifactorial public health issue, we understand that correlation does not necessarily imply cause and effect relationship, but we recommend, based on results from our study, that the factors selected and analyzed in this study should be taking into consideration by clinicians, government and public health officials when developing strategies to effectively reduce incidence, prevalence and mortality associated with drug/opioid epidemic in US. These factors must be taken into carefully consideration when developing and implementing interventions to control this public health crisis. It is a monumental task; we should be prepared for a long standing fight.

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