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CONTENTS

ENVIRONMENTAL AND SUSTAINABILITY DEVELOPMENT IN INTERNATIONAL TOURISM AND HOSPITALITY INDUSTRY

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ABSTRACT

The tourism and hospitality industry largely relies on nature and the environment as the primary resources; hence, most industries' activities and operations significantly impact the environment. The concept of sustainable development has gained significant popularity in the international tourism and hospitality industry following increased awareness of the need to protect the environment. Sustainability is essential to ensure that the industry remains economically viable by improving tourist experiences while protecting future generations' environment to meet their needs. This paper explores environmental and sustainable development in the international tourism and hospitality industry.

Keywords: International Tourism and Hospitality, Environmental Development, Sustainability Development, Strategy, Policy.

1. INTRODUCTION

The international tourism and hospitality industry is considered one of the largest industries in the world. However, the industry has been widely criticized for its degrading effects on the environment, raising concerns for quick actions to be taken. To address these concerns, stakeholders in the industry have adopted the concept of sustainable development to reduce the negative impacts associated with hospitality and tourism industry activities. As a result, environmental and sustainable development has become an essential focal point for most tourism industry stakeholders, including governments and local communities. The main objective of adopting sustainable development strategies is to improve the tourism experience while at the same time achieving economic, environmental, and social development within the communities (Amerta et al., 2018). The tourism and hospitality industry is a significant revenue source for many countries and employs millions of people directly and indirectly across the world. At the community level, sustainable development in the tourism industry is meant to improve community members' quality of life by optimizing tourism's economic and social benefits in the community. Internationally, environmental and sustainable development in tourism focuses on gaining maximum economic benefits while protecting the natural and built environment and enhancing

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the tourism experience. This paper discusses environmental and sustainable development in the international tourism and hospitality industry.

2. LITERATURE REVIEW

2.1 Sustainable Development in the International Hospitality and Tourism Industry

Sustainable development is increasingly becoming an essential part of the tourism and hospitality industry. The idea of establishing "sustainable tourism" was first introduced in the 1980s due to the growing awareness among researchers and professionals on the need for environmental management (Higgins-Desbiolles, 2018). However, sustainable tourism is believed to have emerged as a negative and reactive concept to counter the numerous negative consequences of tourism on the environment and local communities (Higgins-Desbiolles, 2018). The initial focus had been on expanding the tourism industry to increase revenues. However, as the negative impacts of the increased tourism and hospitality industry's increased activities became apparent, the need to develop strategies to enable the industry to develop while protecting the environment increased. Therefore, the primary target of sustainable development in the tourism and hospitality industry has been to minimize the physical impacts of tourism activities on the environment and the adverse outcomes that the activities have on local communities' quality of life.

Sustainable development has attracted significant attention from many researchers and stakeholders within and outside the tourism and hotel industry. Like all industrial development forms, the growth of the tourism and hospitality industry has also impacted the physical environment significantly (Rasoolimanesh et al., 2020). For the industry to generate income, tourists must visit the production place to consume the output and, in the process, impact the environment. Tourist activities have increased steadily over the last decade, with more than 1.5 billion international tourist arrivals being recorded in 2019, with the figure projected to grow to 1.8 billion by 2030 (United Nations World Tourism Organization [UNWTO], 2020). This enormous volume of tourist activities, coupled with the highly polarized nature of development, can increase the negative consequences on the environment, decreasing the local communities' quality of life and negatively impacting tourists' experiences. Environmental degradation may threaten the tourism and hospitality industry's viability and the global economy (Rasoolimaneh et al., 2020). Therefore, the tourism and hospitality industry's survival depends on establishing a sustainable system that minimizes the industry's negative impacts on the environment.

Given the rapid growth and economic importance of the tourism and hospitality industry, it is less surprising that scientists and experts from multiple disciplines have studied the industry's impact on different scales. In 2017, the international tourism industry generated US$7.6 trillion, which was equivalent to 10.2% of the global GDP

(Rasoolimaneh et al., 2020). Many nations and stakeholders have doubled their efforts to expand the industry and increase the industry's revenue. While these efforts could significantly improve the economy, failure to consider the industry's impacts on the environment could make it impossible for the industry to be sustained long-term. The tourism and hospitality industry largely relies on nature's beauty, as most tourists visit places that they consider fascinating and beautiful. Most hotels and vacation resorts are also located in areas with a peaceful and relaxing atmosphere and a clean environment. However, with consistent degradation of the environment, these sites are likely to become less attractive as the beautiful and relaxing environment is gradually replaced with a polluted environment (Sharpley, 2020). The long-term impact of the degradation would be the collapse of the tourism and hospitality industry and the loss of jobs for millions of people worldwide. To ensure that the industry continues to thrive, strategies to achieve sustainable development must be implemented.

2.2 Impacts of the Tourism and Hospitality Industry on the environment

The tourism and hospitality industry contributes to environmental degradation and depletes natural resources directly and indirectly. The environmental impacts of the industry can be witnessed on an unprecedented scale. These environmental impacts have been worsened by the scarcity of natural resources in most areas where tourist activities are increasing at a high rate resulting in overexploitation as businesses focus on maximizing profits.

2.2.1 Impacts on Water Resources

Water is a critical natural resource that is essential for the survival of all living things. Unfortunately, the tourism and hospitality industry overuses water resources, especially in hotels where large water volumes are used in swimming pools, golf courses, and even personal use. While it may be challenging to recognize the overuse of water resources in places with ample fresh water supply, the impacts are easy to recognize in places with scarce fresh water, like the Mediterranean. The climate is hot and dry regions also increase tourists' tendency to consume more water than they usually do, increasing water demand. The maintenance of golf courses also requires large quantities of fresh water every day, resulting in excessive water extraction. The long-term impacts of overexploitation of water resources include saline intrusion into the groundwater, which interferes with freshwater supply. Saline water contains large quantities of minerals, such as fluorides, which pose significant health threats to local communities that consume the water. Additionally, increased water salinity in the natural habitats also deprives wild animals of freshwater and forces them to migrate to places with fresh water. As a result, local communities and industries are negatively affected by its increased scarcity.

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2.2.2 Impacts on the Land and Local Resources

The rapid growth of the tourism and hospitality industry has increased the pressure on local resources and contributed to land degradation in many ways. The seasonal nature of the tourism and hospitality industry results in an influx of people during the high season, which increases the demand for natural resources such as energy, raw materials, and food (MacNeill & Wozniak, 2018). Increased extraction of these resources also intensifies the physical impacts on the environment that are linked to the extraction and transportation processes. The construction of more tourism and recreational facilities to cater to an increasing number of tourists results in the clearing of large tracts of forested land. Deforestation, as well as the construction processes, degrade the land and destroy attractive landscapes. The machines used in clearing the land and explosives used to blast rocks during construction destabilize the bedrock and increase landslides in the affected areas. Some hotels have cleared entire islands to build ultra-modern resort facilities for tourists, which has led to massive destruction of local resources and restructuring of the land to create room for the extensive facilities. Deforestation also leads to the drying up of water catchment areas and destruction of most-wild animals' natural habitat, which leaves the local communities suffering due to water shortages and constant conflicts with wild animals whose habitats have been encroached and destroyed build hotels.

2.2.3 Noise and Air Pollution

The tourism and hospitality industry can contribute to different pollution forms, including; air pollution, noise, water pollution, and aesthetic pollution. Air and noise pollution are of the biggest concern as the tourism industry involves much traveling. The vehicles and aircrafts used in air, water, road, and rail transport generate noise and release gases and toxic chemicals that pollute the environment. The transport industry emissions are associated with adverse climatic outcomes such as acid rain, photochemical pollution, and global warming, which have significant health effects on people and animals in the affected regions (Hoffmann, 2019). The tourist transportation sector contributes a significant portion of the global carbon dioxide emissions, which have been linked to increased depletion of the ozone layer and acid rain (Sadeghian, 2019). In frigid countries, most drivers leave the engines of tour busses running for hours while tourists go out to visit different places to ensure that the buses remain air-conditioned and warm. Such activities, which are pretty specific to the tourism industry, contribute to air pollution (Zhao & Li, 2018). Severe air and noise pollution are associated with an increased incidence of respiratory conditions and generally decrease residents' quality of life and other tourists who spend more time in the polluted areas.

2.2.4 Impacts on Biological Diversity

Nature is a key tourist attraction, especially for nature tourists. The rich and varied environment in most areas improves the aesthetics of the land. However, increased tourism and hospitality industry activities could contribute to biodiversity loss, which negatively affects food supply and ecological balance. Biodiversity is also lost as a result of the overexploitation of land and other natural resources. The marine environment is one of the worst affected by overexploitation to cater to tourism (Wang & Zhang, 2019). The recreational boats and cruise vessels used by marine tourists negatively affect the growth of aquatic vegetation and disrupt aquatic animals' lives by destroying breeding and feeding grounds. The impacts of the industry on vegetation and wildlife also contribute to the loss of biodiversity, which destroys the beautiful sceneries that attract tourists.

Additionally, loss of biodiversity decreases the ecosystem's productivity and has also been linked to increased natural disasters such as hurricanes and floods. Tourists may also introduce exotic species that may disrupt local ecosystems (Zhao & Li, 2018). The tourism and hospitality industry's sustainability depends on the maintenance of the tourist attraction sites; therefore, when these sites lose their attractiveness, tourist activities will also decline.

2.2.5. Impacts on Wildlife

Wildlife is one of the most prominent tourist attractions globally as most tourists visit parks and reserves to see different wild animals. However, the rapid growth of the international tourism and hospitality industry has resulted in the intrusion of the natural habits of wild animals and the disruption of wildlife in many ways. The industry's growth has resulted in the construction of massive hospitality and recreational facilities within the natural habitats of wild animals. The increased visual presence and movements, noise, and behavior of tourists disrupt wildlife and negatively affect different species (Pan et al., 2018). For instance, the increased noise and movements cause constant distress to most animals disrupting their everyday lives and reproduction. The increase in tourist activities has also been associated with significant feeding patterns, breeding seasons, alarm behaviors, and ecological niche competition (Rutz et al., 2020). Large tracts of land have also been cleared to construct roads and hotels in areas inhabited by wild animals. These processes have destroyed wildlife habitats and forced animals to compete for the little resources that have been left for food. Additionally, wildlife habitats' destruction has increased human-wildlife conflicts as wild animals search for food in areas where humans settle.

3. IMPORTANCE OF SUSTAINABLE DEVELOPMENT

In the 21st century, the concept of sustainable development is of great significance in any industry that aims to grow on a global scale. In the tourism and hospitality industry, sustainable development reflects the efforts to harmonize economic development with the necessity of environmental protection (Mackenzie & Gannon, 2019). Sustainable development in the international tourism industry aims to preserve sufficient quantities of natural resources that will meet and satisfy future generations' needs. To achieve this goal, drastic measures must be put in place to curb the industry's negative environmental impacts and develop new strategies that will promote the growth of the tourism and hospitality industry while also conserving the environment. A good understanding of two key concepts, needs, and limitations, is essential for sustainable development in the tourism and hospitality industry. The needs of the local communities and the poor in the affected societies must always be prioritized over all other needs. Unfortunately, in some areas, wealthy and powerful organizations ignore poor local communities' needs when establishing hotels and recreational facilities in their areas. Such organizations also take advantage of weak governments and intentionally fail to put measures to protect local communities from pollution and the negative impacts of their activities on the environment. Sustainable development is vital to end such practices as it will reduce the possibility of wealthy organizations harming local communities by subjecting them to short-term and long-term adverse effects of environmental degradation.

Achieving sustainable development in the international tourism and hospitality industry requires integrating social, economic, and environmental interests. By aligning the economic interests of tourism with the need for environmental protection, it will become easier to meet the industry's present needs without compromising the ability of future generations to meet similar needs. In most sectors, economic development tends to rely on the increased exploitation of natural resources. The concept of development has also been traditionally founded on the idea that development can only be achieved by increasing an industry's ability to exploit natural resources fully. While it is true that development is achieved through the exploitation of natural resources, there must be a limit to the extent to which natural resources that are renewed at a prolonged rate or that are insufficient can be exploited. All stakeholders in the industry must realize that the survival of the industry is dependent on the maintenance of the current attraction sites; therefore, as measures to promote the economic growth of the tourism and hospitality industry are established, measures to ensure that the attractive environment remains attractive and unaffected by the expansion of the industry must be put in place (Higham & Miller, 2018).

Sustainable development is also essential to curb the high degree of pollution caused by the international tourism and hospitality industry, causing irreparable environmental damage. Air, water, and soil pollution lowers the quality of life in local

communities and increases the risk of developing many health conditions that negatively affect residents' lives. Third world and developing countries in Africa, Asia, and South America have some of the most well-known international tourist destinations and attract millions of tourists each year. Because of the economic dependence on tourism by the local governments, very few measures have been put to minimize the tourism and hospitality industry negative impacts. As a result, these countries are more likely to experience more negative environmental impacts, such as pollution from the industry. Besides lacking effective government regulations to curb pollution, these nations also lack medical facilities to manage and treat the conditions resulting from exposure to pollutants. Setting up these facilities requires a large amount of capital that most developing governments lack. Therefore, sustainable development is significant in such nations as it minimizes the health risks to local communities and enables the governments to continue gaining revenue from the tourism and hospitality industry without risking their citizens (Siakwah et al., 2020).

Historically, the tourism and hospitality industry significantly impacts the environment through water and energy consumption, solid and hazardous wastes, and consumable goods. Some stakeholders have traditionally avoided embracing sustainable options claiming that it is more expensive to adopt "greener" operations (Pan et al., 2018). However, implementing sustainable development options saves hotels and other businesses in the hospitality industry millions of dollars in operational costs and enables them to build positive public images and strengthen their brands. With recent advancements in technology, businesses in the hospitality and tourism industry can cut costs using clean and renewable energy sources such as solar and geothermal. In addition, some studies have suggested that hotels and tour companies can quickly improve their customers' experiences by integrating natural elements that do not affect the environment. For instance, adopting clean energy sources, hotels, and tourist resorts can minimize air pollution, making the environment ideal and pleasing to tourists. Therefore, sustainable development is vital to minimize the negative environmental impacts of the tourism and hospitality industry and enable businesses to cut operational costs and increase their profits.

4. STRATEGIES FOR ACHIEVING SUSTAINABLE DEVELOPMENT

Achieving sustainable development in the international tourism and hospitality industry requires cooperation from all stakeholders, including businesses, government authorities, and local communities. Tourism is one of the most potent industries globally and relies on the natural environment, cultural, and historical sites, promoting sustainable development internationally. However, mass tourism is often accompanied by increased danger or destruction of the environment and long-term adverse effects on the local communities (Hall, 2019). Stakeholders in the tourism and hospitality industry always seek ways of increasing the number of clients they receive but fail to

strategize on balancing the increasing demand with environmental limitations and the welfare of the local communities. Several strategies can be explored to achieve sustainable development in the international tourism and hospitality industry to ensure that the industry's growth does not compromise the environment and the ability of future generations to meet their needs. Additionally, these strategies aim to improve tourist experiences while minimizing the disruption and degradation of tourist activities on nature and the environment.

4.1 Designing Sustainable Development Goals (SDG)

Designing sustainable development goals is the first and most crucial step towards the achievement of sustainable development. The international tourism and hospitality industry stakeholders must identify critical industry areas that pose the greatest threat to the environment and local communities (Saarinen, 2020). Most industries fail in implementing sustainable development programs because they lack clear goals to guide the programs. The businesses also focus on areas with the most negligible impact on the environment and hence do not achieve significant outcomes in protecting the environment. Therefore, stakeholders in the industry must get a clear picture of areas and activities that significantly impact the environment and those that require urgent interventions (Hall, 2019). For the hospitality sector, key areas that impact the environment include solid and hazardous waste disposal, overuse of freshwater resources, construction of tourist facilities in the natural habitats of wild animals, and increased tourist presence in wildlife areas that disrupt wild animals (Kapera, 2018).

On the other hand, the tourism sector can identify areas such as tourist transport and recreational facilities that result in pollution of the environment. Designing sustainable development goals enables all the industry stakeholders to identify the roles that they can play in promoting sustainability. Additionally, SDG also guides tour companies and hotels' operations and business objectives by ensuring that all activities are aligned with achieving the established goals.

4.2 Redesigning Corporate Strategies

The current business practices adopted by most businesses in the international tourism and hospitality industry do not consider the need for sustainable development. This can be attributed to the fact that most businesses have traditionally focused on expanding their operations to cater to the growing number of customers' needs without considering how this growth could be detrimental to the environment. By redesigning their corporate strategies, most businesses in the industry will be able to align their practices with sustainable development goals and focus on enhancing the experiences of their clients while at the same time protecting the environment. International

companies can rebrand their corporate images by adopting a sustainable corporate culture that will create a suitable environment to achieve business goals and sustainable development goals (Higham & Miller, 2018). With the increasing awareness among clients on the need to protect the environment, most customers are more likely to seek services from tour companies and hotels that show genuine concern to implement sustainable development. Companies that are committed to protecting the environment are more likely to build a positive image and report higher customer loyalty than those that only focus on increasing their profits. Therefore, businesses in the international tourism and hospitality industry should also consider redesigning their corporate strategies to be aligned with sustainable development goals as part of their marketing strategy and gaining a competitive advantage in the industry.

In addition to redesigning businesses' corporate strategies in the tourism and hospitality industry, companies can also alter their organizational structures to include departments or professionals responsible for enforcing sustainability goals. For instance, hotels and tour companies can create sustainability officers and establish sustainability committees responsible for implementing and monitoring the organization's efforts to achieve sustainable development. Sustainability committees can set short-term and long-term goals for the organization to achieve and guide the management in decision making, especially regarding sustainable operations. Sustainability committees and officers will also be responsible for researching and identifying the environmental impacts of the activities carried out by their companies and the overall consequences on nature and local communities (Saarinen, 2020).

4.3 Implementation of Environmental Protection Policies

The implementation and enforcement of environmental protection policies at the international and national levels can effectively promote sustainable development in the international tourism and hospitality industry. International organizations such as the United Nations, European Union, and other regional unions can establish policies to govern international tourist and hospitality companies' operations and ensure that they promote environmental protection efforts. These organizations can use their power and influence to enforce environmental protection laws and outline guidelines on how all companies in the tourism and hospitality industries are expected to operate (Hall, 2019). International organizations are also better positioned to protect the third world and developing countries from powerful businesses in the tourism and hospitality industry that may exploit weak governments to overexploit natural resources and pollute the environment (Boluk et al., 2019). In addition to establishing environmental protection policies, international organizations can also offer government and private agencies professional expertise on sustainable development and promote regional and global cooperation in research and experimentation of effective, sustainable development methods.

National governments are responsible for protecting local communities and the environment from overexploitation and degradation. For instance, governments can enforce environmental protection laws that prohibit the construction of different tourist and hospitality facilities in wildlife habitats and restrict tourists' movement in areas inhabited by wild animals. By identifying wild animals' natural habitats as protected areas, governments will ensure strict control of all tourist activities in the areas, including protecting the animals and resources from illegal exploitation (Kapera, 2018). This will help minimize the disruption of nature and wildlife caused by increased tourist activities and preserve the environment. Part of the requirements for businesses in the tourism and hospitality industry to operate in such areas will be establishing measures to protect wildlife and nature and ensuring that their operations do not pose threats to local communities and the environment (Siakwah et al., 2020). In developed countries, there is strict regulation of tourist activities, with some governments making it mandatory for businesses in the tourism and hospitality industry to adopt green operations. Such stringent government measures ensure that all stakeholders in the industry prioritize sustainable development.

4.4. Adopting Sustainable Technologies

Technological advancements have revolutionized nearly all aspects of human life. Technology has revolutionized business operations and tourist experiences on a significant scale (Ali et al., 2020). Several technologies have been developed over the past decade to promote sustainable development in different sectors, including the energy and transport industries, solid and hazardous waste management, air and noise pollution control, and water recycling. Hotels and tour companies worldwide can adopt these innovations and integrate them into their operations to minimize adverse effects on the environment (Sharpley, 2020). In the energy and transport sector, stakeholders in the tourism and hospitality industry can adopt clean and renewable energy sources such as solar and geothermal energy to cater to the industry's high energy demand. For instance, solar panels can be used to heat swimming pools rather than generators running on fossil fuels that emit significant amounts of greenhouse gases. Tour companies can also consider purchasing electric buses that produce less noise and emit less carbon to minimize air and noise pollution (Ali et al., 2020). Solid and hazardous waste management should be a priority for international hotels that serve hundreds of tourists daily. Disposing solid and hazardous waste can be costly for most hotels and restaurants, forcing the management to seek cheaper and unsafe disposing of such wastes. As a result, the wastes are dumped into the environment, causing water and air pollution and posing significant health threats to local communities. Adopting new technologies for managing and disposing of waste can help hospitality industry businesses cut operational costs and effectively dispose of the solid and hazardous waste generated without exposing local communities to harm.

5. CONCLUSIONS AND RECOMMENDATIONS

The tourism and hospitality industry is one of the world's largest industries, and it is undeniable that its operations have a significant impact on the environment. With the rapid growth of the industry and the increasing number of international tourists, the pressure on natural resources has increased, resulting in overexploitation of natural resources and the environment's degradation. The natural environment is the primary resource for the tourism and hospitality industry; hence, the industry's survival is dependent on the survival of the environment. Therefore, the concept of sustainable development is of great significance in the industry to ensure that stakeholders can balance economic growth with the need to protect the environment. Sustainable development in the tourism and hospitality industry aims to enhance tourist experiences and maximize the industry's economic benefits while also ensuring that future generations will meet similar needs. Strategies for sustainable development ensure that the tourism and hospitality industry's operations do not compromise and degrade the environment and expose local communities to the negative impacts of environmental pollution and overexploitation of natural resources (Amerta et al., 2018).

There is a need for more research to be done on environmental and sustainable development in the international tourism and hospitality industry to improve the current knowledge and understanding of the concept. Most studies have focused on the environmental impacts of the tourism and hospitality industry, but only a few have tried to offer suggestions on sustainable development in the industry. Future researchers in the tourism and hospitality industry should focus on addressing emerging environmental issues using multidimensional approaches and generate theoretical frameworks that establish a link between effective, sustainable development strategies and positive environmental impacts. In addition, future research should aim to identify new ways of reversing the damage that has already been done to the environment and how local communities can be protected from such negative impacts (Higgins-Desbiolles, 2018).

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HEALTHY AND ORGANIC FOODS AND DRINKS

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ABSTRACT

The demand for healthy and organic foods and beverages has increased over the past decades as a result of increasing evidence of the health implications of an individual's diet. Many studies have linked processed foods to lifestyle diseases like obesity and diabetes, and lower risks have been associated with consuming organic foods. As a result, the preference for organic food products has increased, with many hotels introducing organic food products in their menus. This paper discusses how hotels can switch to offering healthy and organic foods and drinks and the challenges that they may encounter.

Keywords: Organic Foods and Drinks, Hotel Industry, Health, Customer Preference.

1. INTRODUCTION

Over the past few years, discussions on the need for people to change their lifestyles, including diets and adopt healthy options, have become very common. Organic food products refer to foods and food products that have been produced through approved methods that focus on enhancing the purity, safety, and nutritional value of the foods and products. Organic food beverage production focus on using management practices rather than artificial farm inputs to enhance biodiversity, agro-ecosystem health, and biological cycles (Hurtado-Barroso et al., 2019). The preference for organic foods and beverages has also increased in most societies. The shifts in preferences towards healthy and organic foods and beverages have resulted from several factors, including research studies that have linked the consumption of processed foods with increased risk of developing diseases like cancer, diabetes, obesity, and cardiovascular diseases. Other research has also found a connection between low risk of diseases and healthy diets, mainly organic foods and beverages. In response to the changing preferences in society, many hotels and restaurants have had to adopt new menus and introduce new dishes consisting of food and beverages that are considered healthy and organic. Other hotels and restaurants have even opted to only offer organic and healthy foods and beverages as a strategy to attract and retain consumers seeking healthy food choices. The shift has also affected suppliers in the industry as those dealing with organic products register an increase in demand.

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In contrast, suppliers who only dealt with processes products risk reporting losses due to decreased demand. However, there are still conflicting views on whether or not organic and healthy foods and beverages are the solutions to the current health problems. While there is significant evidence linking diet to individual's health status, there are many challenges that make it difficult for hotels and restaurants to shift from processed foods to organic foods. Some of the challenges include the high cost of organic foods and the low production rate and supply of organic foods. This paper discusses the current trends in the hotel industry with regards to the adoption of healthy and organic foods and beverages and the challenges to shifting to healthy and organic foods and beverages. Additionally, the paper offers several recommendations on how hotels can successfully shift to offering healthy and organic foods and beverages.

2. LITERATURE REVIEW

2.1 Changing Customer Preferences and Needs

Customer preferences refer to the expectations, motivations, inclinations, likes, and dislikes that influence how clients make a purchasing decision (Kwok, Hallstedt, and Boeva, 2021). Customer needs refer to the products or services that customers require. Customer preferences are a significant factor that influence the demand for products and services. Individual preferences complement individual needs and shape the person's purchasing behaviour. Understanding customer preferences and needs is essential for businesses to identify products and services with which they are likely to succeed within a particular consumer segment. Customer preferences and needs are dynamic and change in response to different factors, including social, political, economic, and cultural changes. Generally, there has been a change in people's preferences for foods and beverages. In most societies, the change has been towards foods and beverages that are considered healthy options. According to Jose and Biju (2021), consumer preferences and needs have been changing in the food industry, as evidenced by the increased production and sales of organic, packed foods compared to processed foods. The differences in sales indicate an increased preference for organic foods over processed foods.

Lots of research has been conducted in order to determine the variables. They are contributing to the change in customer preferences and needs for foods and beverages. Mie et al. (2017) identify the growing scientific evidence supporting the link between the consumption of healthy and organic foods and beverages and low-risk many health conditions as factors that have led to the increased preference for organic foods. Many publications have also supported the arguments that organic food products are healthier and encourage people to switch to organic food products. Other studies have also proposed a link between processed foods and the increased prevalence of

conditions such as diabetes and obesity, which have become major public health issues in developed countries. As more people access such information, their attitudes and preferences shift towards organic food products. No one likes to be ill; thus, if there is a chance that taking certain foods can lower your chance of getting ill, then it is expected that most people would prefer the healthier option.

Another factor contributing to consumers' changing preferences is campaigns by environmental and human rights protection agencies on the dangers of processed foods. For instance, Mie et al. (2017) state that the production of processed foods involves using many chemicals, including pesticides known to contain carcinogenic compounds. The pesticides and chemicals used to make processed foods contribute to environmental pollution, which exposes the public to many pollutants, increasing their risk of developing health conditions. As a result, environmental and human rights protection agencies in many areas conduct campaigns against the production of processed foods and encourage people to switch to organic food products produced with very limited or no chemicals. Vega-Zamora, Torres-Ruiz, and Parras-Rosa (2019) also argue that the increased preference for organic foods results from increased public education by different agencies, which has helped increase people's trust in organic foods. Cerri et al. (2018) also state that increased environmental concerns and the need for ethical production have influenced consumer's attitudes and purchasing behaviour towards sustainable products such as organic food products. As more people are informed of their direct and indirect impacts on processed food products, their preferences shift towards organic food products.

A study by Apaolaza et al. (2018) established that consumers' preferences for organic food products had been influenced by changing health beliefs. Over the past few decades, health beliefs associated with the consumption of organic food products with better health outcomes have become popular and are accepted by many people. As a result, many people have developed a preference for organic food products because they believe that consuming organic foods will make them healthier and will decrease the risk of falling ill. Bai, Wang, and Gong (2019) examined the role of beliefs and subjective norms on customers' purchasing behaviour and that more people are purchasing organic food products because of the belief that the products are healthy options. Additionally, the increasing beliefs have also contributed to the increased perceived trustworthiness of organic food products (Bai, Wang, and Gong, 2019). Therefore, the health beliefs that organic food products contribute to good health have influenced the changing preferences and consumer needs.

2.2 Link Between Organic Food and Beverage Consumption and Health

The association between organic food consumption and beverages and health has been a topic of interest for many researchers. Mie et al. (2017) explored how consuming organic food products can impact an individual's health and found an

association between organic food consumption and low risk of many health conditions. For instance, in a clinical study involving pregnant women, researchers discovered that women who consumed organic food had a lower risk of developing pre-eclampsia or high blood pressure related to pregnancy than those who consumed processed foods (Mie et al. (2017). Another study by Apaolaza et al. (2018) revealed that the consumption of organic food products influences subjective well-being. Individuals who consume organic food products are more likely to feel happy and satisfied than those who consume processed foods. According to Apaolaza et al. (2018), organic foods contribute to overall well-being through the label effect. The findings also support the food-wellbeing concept founded on the idea that an individual's social, emotional, psychological, and physical well-being are closely linked with the food they consume. Thus, when individuals believe organic foods are healthy, they will prefer organic food products. Lim and An (2021), describe this as the perceived behavioural control which influences people's purchasing behaviour based on their perception of the link between organic foods and well-being. The more a person is convinced that organic food will make them healthy, the higher their purchasing of organic food products.

Medical studies have identified several organic foods and beverages with medicinal values to better healing and treatment outcomes for specific conditions. Hurtado-Barroso et al. (2019) state that most organic foods have a high concentration of dietetic fiber, promoting gut microbiota and reducing the risk of many diseases. In addition to reducing the risk of many diseases, it also promotes faster recovery in patients diagnosed with conditions affecting the digestive system. Baranski et al. (2017) also reviewed several cohort studies and found an association between the consumption of organic foods and reduced risk and incidence of diseases such as obesity and hypospadias. In other studies, researchers found that some organic foods can contribute to faster and better recovery in patients diagnosed with hypertension and high blood sugar (Hurtado-Barroso et al., 2019). The link between food and health is undisputed as many foods are known to positively or negatively impact people's health. Bhardwaj (2017) also established that organic foods could promote a better prognosis for conditions like cancer and reduce the risk of heart attacks and strokes. Based on these findings, organic foods and beverages improve an individual's nutritional status and promote their health by reducing their risk of developing many diseases.

While the evidence to support the efficacy of organic foods in preventing diseases might be scarce, comparative studies have established that societies that consume processed foods in high quantities report a higher prevalence of lifestyle conditions than societies that consume organic foods. In a systematic review of epidemiological studies conducted by Chen et al. (2020), high consumption of ultra-processed foods contributed significantly to the high prevalence of obesity, diabetes, cancer, strokes, and heart attacks. The study also established that the prevalence of lifestyle diseases

was significantly low in areas where people consumed less processed foods and more organic foods. Mie et al. (2017) also compared the health implications of organic food and conventional or processed foods. They found that organic foods had more positive health implications, including a lower risk of diseases than conventional foods. These studies reveal that the consumption of organic foods can contribute to better health outcomes compared to the consumption of conventional and processed foods.

2.3 Advantages of Switching to Healthy and Organic Foods and Beverages

Switching to healthy and organic food products can help promote a positive public image and attract more customers to a hotel or restaurant. Today, most customers are interested in the product or service offered by a business and understand how much a business shows concern for their well-being. A study by Ubeda-Garcia et al. (2021), on the link between corporate social responsibility and the performance of businesses in the hotel industry found out that hotels and restaurants that demonstrated a desire to improve the well-being of their consumers reported higher performance compared to those that only focus on profit maximization. By switching to organic foods and beverages, hotels will demonstrate to their clients their concern about their well-being and offer products and services that promote good health. As a result, customers are more likely to associate themselves with hotels and restaurants that show a genuine desire to promote their well-being compared to hotels that offer products to gain sales. Also, the switch to organic food products can be used as part of a business's corporate social responsibility program. Hotels can offer subsidized organic foods and beverages to community facilities such as hospitals and schools where patients and children can benefit from the healthier options. This will translate to an overall positive public image and attract more customers who would like to be stakeholders in a business determined to promote the community's well-being.

Many hotels and restaurants worldwide primarily serve processed foods or use processed raw materials to prepare most of their dishes. Therefore, switching to organic foods and beverages could benefit many businesses in the hotel industry. For instance, hotels could save a significant amount of money on garbage collection and disposal. One of the primary reasons for the extensive use of processed food products and raw materials is their low cost. However, most processed foods either contain non-biodegradable materials or are packaged in non-biodegradable materials that are disposed of after consumption. As such, hotels and restaurants spend large amounts of money collecting and disposing of the wastes. According to de Oliveira et al. (2021), the packaging of processed foods contributes to a significant percentage of the hotel industry's total waste. Switching to organic food products entails selling organic foods and beverages and packaging the foods in organic packages. Some of them can be consumed after finishing the food or easily discarded as they decompose readily. As a

result, hotels will decrease the amount of waste generated in their facilities and cut the cost of disposing of non-biodegradable packaging materials.

Another key advantage of offering organic foods and beverages is that it gives hotels and restaurants more options to include in the menu. Menu planning is significant, especially for hotels and restaurants that offer seasonal food. When the demand for organic foods and beverages is high, for instance, if hotels target tourists who prefer organic foods and beverages, the hotels will have more options to offer during the peak tourism season. Hotels can also expand their customer base by offering organic foods as they will cater to more customers' needs compared to when only offering processed food. Additionally, most customers often like to try out new recipes. Adding organic foods and drinks to the menu will enable hotels to give their customers more choices when seeking new dishes. This can be an effective strategy for promoting customer retention since customers will not have to go to another restaurant to try out a new dish.

2.4 Challenges to Switching to Healthy and Organic Foods and Beverages

While many people worldwide widely accept that organic food products are associated with good health, limited scientific evidence supports such claims. Rock et al. (2017) conducted a systematic review on the link between organic food and health. Unfortunately, the current knowledge on the health impacts of consuming organic food products is minimal; hence, it is impossible to recommend large-scale consumption of organic foods thoroughly. According to Rock et al. (2017), many problems may arise from using organic food products, including the risk of infections and diseases caused by bacteria and fungi common in organic foods. For instance, salmonella and Enterobacteriaceae are known to be prevalent in organic pigs and chicken, respectively, while the organic turkey is known to have campylobacter (Rock et al., 2017). This raises concerns among customers about whether organic foods contribute to good health or increase the risk of contracting diseases. However, the study does not dispute the possibility that organic food can lead to better health outcomes. Instead, the researchers argue that there is a need for more research to be done to ensure that organic food products are safe for human consumption. These findings are essential in ensuring that even as people switch to organic food products, they should be aware of the potential risks associated with organic foods to minimize potential health risks. In addition, hotels and restaurants must ensure that they assess the safety of organic foods and beverages before serving them to customers. This can be a challenge to small hotels and restaurants that may not have the human and financial resources to conduct safety assessments and quality checks on organic food products.

The high cost of dealing with organic foods and beverages is also a significant challenge impeding many hotels and restaurants from switching to organic food

products. According to Lu and Gursoy (2017), the high costs of organic foods make pricing issues inevitable for businesses in the hotel industry. As a result, many hotels and restaurants are hesitant to switch to organic foods and beverages as they try to avoid high prices that may discourage consumers. The high cost of the organic product starts from the production level. Unlike processed foods and beverages produced using cheaper synthetic compounds and require chemical inputs to prevent pests, the production of organic foods and food products requires practices and inputs. For example, organic foods do not interfere with the soil's biological activity or the biological cycles (Hurtado-Barroso et al., 2017). These management practices are expensive and require significant human and capital resources. This results in higher prices for organic food products to cater to the high production costs and guarantee profits for producers and hotels. Storing organic foods can also be expensive, and most products cannot stay for more extended periods. Some products have to be consumed the same day they are harvested to prevent degradation of their nutritional value. This makes it expensive for hotels and restaurants as they are compelled to make daily orders for organic foods and beverages, and in case the products are not sold on time, the hotels incur losses due to spoilage.

3. EFFECTIVE STRATEGIES FOR SWITCHING ORGANIC FOODS AND BEVERAGES

3.1 Aggressive and Innovative Marketing Strategies

Marketing is essential for creating awareness among consumers about a product. Hotels and restaurants seeking to offer organic foods and beverages should consider adopting aggressive and innovative marketing strategies to increase awareness of the organic food and beverages they offer. The marketing campaigns should also focus on educating customers on the advantages of consuming organic foods and beverages to influence their beliefs and preferences. According to Kovanoviene, Romeika, and Baumung (2021), an effective marketing strategy should improve consumers' perceived value to increase their willingness to purchase the products. When consumers perceive a product or service as of high value, they are less likely to consider the product's price, especially if it is more expensive than other substitutes. This can help hotels and restaurants convince customers that it is worth spending more on organic foods and beverages than on processed foods. According to Katt and Meixner (2020), consumers are more likely to be willing to pay more for organic foods when they are convinced that the products are worth the cost. For instance, when consumers are convinced that organic food products decrease the risk of developing diseases, they will be willing to pay more since consuming the product will decrease their chances of spending more on health care costs. In this case, it would be wiser to spend more on food that guarantees one good health than spending

less on food that may cause one to spend more on treating diseases that the cheap food may have caused.

There are several marketing strategies that hotels and restaurants can utilize to increase awareness of organic foods and beverages. First, social media marketing has gained popularity over the past decade due to the increased number of people accessing social media platforms. Hotels and restaurants offering organic foods and beverages can market the products through their social media platforms such as Instagram, Facebook, YouTube, and Twitter. Parvez et al. (2018) state that digital marketing through social media is one of the most effective ways of reaching a large audience in today's business environment. This argument is valid considering that more than 3 billion have access to social media. In addition to the large audience, social media marketing is also cheaper and easier to manage since the hotel only needs to have a person who can actively engage customers through the hotel's website. Social media platforms can also effectively conduct marketing research and receive feedback from customers on their views and preferences (Pavaloaia et al., 2019). Social media allows firms to interact with customers and collect their views on organic foods and beverages, which can be helpful when selecting which products to include in the menu.

Additionally, close interaction with customers through social media can help hotels address any issues or concerns about their products and services that customers may raise. However, social media marketing may have some disadvantages, including the high risk of negative publicity and tarnishing or a brand's image in case of a post that may be considered offensive or insensitive by social media users (Kayumovich and Kamalovna, 2019). Unlike other marketing strategies that undergo evaluation before approval, most social media posts are created by whoever manages the site and who posted as many posts as possible in order to increase traffic. As a result, some posts might be offensive to some users and tarnish the hotel's name.

Influencer marketing can also be an effective strategy to increase awareness of organic foods and beverages. Hotels can consider paying celebrities, athletes, and other influential persons in society to market organic foods and beverages. According to Kadekova and Holiencinova (2018), influencers are individuals whose opinions can significantly impact people's beliefs and attitudes towards an idea, product, or service. Thus, influencer marketing enables hotels and markets to change people's attitudes and beliefs towards organic foods and beverages and encourage more people to start consuming organic products. Customers are likely to start consuming organic foods and beverages when they see their favourite celebrity or athlete consuming the products. In addition, the influencers can help educate consumers on the advantages of organic foods and beverages and encourage them to switch to organic food products. Through the advertisements, the influencers can recommend the hotels and restaurants offering organic food products, hence marketing the hotels and increasing the number of customers willing to purchase organic foods and beverages.

3.2 Partnering with Organic Food Producers

Hotels and restaurants seeking to offer organic foods and beverages can consider partnering with organic food farmers and producers to guarantee timely deliveries of good quality and safe products. When forming the partnerships, the hotels must evaluate their partners to determine their capability to guarantee safe and quality organic products. This is very useful in reducing the risk of infections linked to the consumption of some organic food products. By establishing partnerships with suppliers, hotels and restaurants will also have access to storage facilities owned by suppliers to minimize spoilage and loss and help the hotel store organic food for extended periods without distorting their quality. This will also help hotels save on setting up storage facilities as they can utilize the facilities owned by their partners. Additionally, in case of spoilage, hotels can have the organic food producers collect the spoiled products to make manure or animal feeds, which can then be used to produce more organic food products. This can help minimize losses and waste produced in hotels.

Partnership with organic food producers can also be through research and development of better products. Hotels can obtain customer feedback on their preferences, informing how organic foods can be produced to achieve the desired final products. For instance, it is possible to alter the composition or concentration of certain compounds found in organic foods through certain management practices. Certain organic plants have varying concentrations of certain chemical compounds depending on the harvesting time or storage manner. Understanding such concepts can help producers and hotels ensure that the products are handled correctly to achieve the desired effects in terms of quality and taste. This can enable hotels to work with organic food producers to develop products best suited to address the customers' needs.

3.3 Setting up Organic Agricultural Farms

Hotels with sufficient financial resources can consider establishing their organic agricultural farms to increase access to organic food at lower costs. Some hotels can even consider establishing farms closer to the hotel to cut storage and transportation costs. This will guarantee the hotel's fresh suppliers, which guarantees consistency in offering quality products to customers. Also, some customers are very conscious of the food they consume and would like assurance that the food was obtained and prepared safely. This can be achieved when the hotel can convince its customers that it controls the whole process, including cultivating and preparing organic products. According to a report by CNN Travel, some of the most successful hotels offering organic foods and beverages prefer to grow their food. The Lodge at Woodloch: Hawley, Pennsylvania, Crosby Street Hotel in New York and Blackberry Farm in

Walland, Tennessee are some of the top hotels that own farms and grow organic foods (Tibaldi, 2018). The farms can also generate income for the hotels when used as tourist facilities where visitors can pay to access and view the plants. In addition, some customers might be attracted to a hotel because of the view offered by such farms hence making them marketing strategies for attracting and retaining customers.

4. CONCLUSIONS AND RECOMMENDATIONS

Organic foods and beverages are gradually becoming the preferred option for most people across the world. As more studies link people's lifestyle, including diets, to most health conditions on the rise, people seek healthy diets to promote good health. Also, healthy diets reduce the risk of developing diseases such as cancer, obesity, heart attacks, and diabetes which are closely linked to the high consumption of processed foods. Many studies have proposed that consuming organic foods can help lower the risk of developing many diseases and even promote healing or some conditions. However, other studies have revealed the health problems associated with the high consumption of processed foods. For instance, researchers such as Chen et al. (2020) found a close link between the high consumption of ultra-processed foods and the increasing prevalence of obesity, diabetes, and cancer in many societies. With more studies establishing a link between the consumption of organic foods and better health outcomes, it is predicted that many people will switch to organic foods and beverages in the future. This reflects a potential increase in the number of customers seeking organic food products. Hotels and restaurants can exploit the opportunity and start offering organic foods and beverages to address the growing demand for the products.

There are several recommendations presented in this study that hotels can implement—first, adopting aggressive and innovative marketing strategies to create awareness of the hotels' organic food products. These marketing strategies can include social media and influencer marketing, which can educate individuals on the health benefits of organic foods and beverages and inform customers of where they can access organic food products. Second, hotels can also consider partnering with organic food producers and suppliers who are guaranteed to supply quality and safe organic products on time. Most organic food products are delicate and cannot be stored for extended periods without losing their nutritional value, hence the need for reliable suppliers who can guarantee timely delivery.

Finally, hotels can consider establishing their farms and growing organic crops to cut the costs of outsourcing the products from suppliers. Owning a farm also gives the hotel better control over the quality and safety of the organic foods produced and served to customers. With time, the number of consumers seeking organic food products is predicted to grow, and owning a farm can help hotels increase supply to match the growing demand easily. All in all, organic foods and drinks are becoming

popular. It is recommended that hotels start developing strategies of integrating organic food products in their menus to cater to the changing consumer preferences.

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CHARACTERISTICS OF HOTELS IN CYPRUS THAT ARE VITAL IN INTERNAL TOURISTS' ASSESSMENT

PANDELIS MITSIS[*]

ABSTRACT

This paper identifies attributes of hotels in Cyprus that domestic consumers are either willing to make extra payments for, or they can actually do without. These findings can be useful in revitalizing businesses in the hospitality sector which the COVID-19 pandemic has forced to either scale down or cease their operations. This revitalization of the hospitality industry may be achieved if the hotel units maintain and enhance the attributes which domestic consumers prefer and, at the same time, they scale down or completely remove attributes which internal tourists find either indifferent or unwelcome. The latter measure may also succeed in cutting down the operational costs of the Cypriot hotels to a more manageable level.

Keywords: Tourism, Hospitality, Hotel Attributes, Cyprus, COVID-19 Pandemic, Hedonic Price Analysis.

1. INTRODUCTION

The COVID-19 pandemic has affected at an unprecedented level many economic sectors across the world, including hospitality and tourism. The actions undertaken by national governments to contain the rapid spread of the disease included to restrict the movement of people in and out of their countries and, as a consequence, domestic and international tourism has been reduced. Therefore, numerous adverse effects have been felt by the hospitality and leisure industries (Camilleri, 2018), especially in countries most reliant in tourism, such as Cyprus[1]. One of the papers discussing the effects of the pandemic on tourism and hospitality sectors is Iacovou and Charalambous (2020) who suggest that effective strategies to enable the tourism and hospitality industries to survive through the COVID-19 ordeal should include the promotion of domestic consumption (i.e. internal tourism) and a reduction on operational costs of the travel and tourism businesses.

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An effective promotion of tourism for domestic consumers may be assisted through an identification of the attributes of the hospitality industry that are valued by domestic customers the most. Those attributes should be maintained and enhanced in order to attract more domestic clients. On the other hand, attributes of the hospitality sector that are either indifferent or unwelcome to domestic consumers should be scaled down or completely removed, in order for the operational costs of the hospitality units to be effectively reduced. The current study identifies characteristics and attributes of the Cypriot hospitality industry that consumers are either willing to make extra payments for or they can actually do without them. The paper applies Hedonic Price Analysis (HPA), a method which assumes that each product is a bundle of specific attributes or characteristics which affect its price, either positively or negatively. The goal of the study is to contribute to the academic literature on hospitality and tourism in Cyprus, and also to provide some understanding of issues of interest to hospitality businesses in regards to promote their services to domestic consumers and endure the pandemic.

The rest of this paper is organised as follows. Section 2 provides the literature review, while section 3 describes the data set used. Section 4 provides the methodological framework, section 5 presents the estimation results and concluding remarks are provided in section 6.

2. LITERATURE REVIEW

Hedonic Price Analysis (HPA) has its origins in Lancaster (1966), according to which all goods and services are essentially bundles of characteristics that can be accurately assessed by the consumers (Schwieterman, 1995). HPA has been applied to many fields related to the pricing of products, such as computer industry (Chow, 1967), real estate (Goodman, 1978) and hospitality and tourism (Monty and Skidmore, 2003).

Hotel characteristics that affect room prices can, at a basic level, be thought to include type of room (e.g. standard or deluxe), amenities provided (e.g. access to indoors swimming pools and tennis courts) and attributes of the external environment, such as proximity of the hotel to a specific landmark and its outside views (Papatheodorou et al., 2012). As noted in Espinet et al. (2003), the rich variety of these characteristics and attributes render the analysis of hotel room prices a complex task. In addition, the selection of hotel attributes and evidence of their impact on room rates differs from study to study, despite the existing guidelines for selecting independent variables in hedonic price analysis (HPA) models (Andersson, 2000).

Studies applying HPA for hotels in the Mediterranean region (i.e. the touristic territory where Cyprus is traditionally designated to) include Papatheodorou (2002), Pashardes et al. (2002), and Haroutunian et al. (2005). The empirical findings of Papatheodorou (2002) and Pashardes et al. (2002) both suggest that the hotel rooms in

Cyprus are more expensive than in other Mediterranean destinations, something that cannot be fully attributed to the quality characteristics of the Cypriot accommodation units. The findings of Haroutunian et al. (2005) indicate that only a small number of hotel attributes, such as existence of playground, tennis courts, beauty salon and access to a mini-golf course, appear to be significantly associated with the room rates.

There are also papers utilizing demographic surveys in identifying the most desired features of the hospitality industry. Charalambous (2011) uses a representative sample of young Cypriots in the ages of 18-25 in order to investigate the hotel attributes which meet the domestic consumers' demands and needs the most. His findings indicate that in regards to entertainment, young Cypriots wish to have access to swimming pools, gym and Jacuzzi facilities, while in terms of hotel amenities they favour hotels offering fashion clothing and souvenir shops. Hotel facilities which Cypriot consumers find appealing include 'modern and quality' restaurants, bars and cafeterias, whereas the room facilities which young Cypriots enjoy the most are: satellite TV, wireless internet connection and radio with a variety of music channels.

Mitsis (2021), a recently completed study applying HPA to the Cypriot hospitality industry, examines which hotel attributes are vital in international travellers' assessment. His study finds that while some characteristics of the hotels (e.g. official star rating) are associated with room prices in a predictable (positive) way, some other characteristics (e.g. playground facilities) are related with room rates in a counter-intuitive (negative) way.

3. DATA

The current study uses a representative sample of hotels located across six regions: Famagusta, Larnaca, Limassol, Nicosia, Paphos and the Troodos Mountains. The data set is obtained from the catalogues of a private travel agency and the data collected for each hotel include its star rating, size (number of rooms), room rates and more than 80 attributes regarding location, amenities, room facilities and entertainment[2]. In order to capture the preferences of domestic residents as much as possible the data set is limited to the months August and December, which consist the peak season of the summer and winter periods of the domestic (or internal) tourism[3]. As of to standardise the comparisons, only the price per person for a one-night stay in a standard double room is collected[4]. Most of the hotels in the sample are three or four stars rated. It should be noted that the number of observations are not identical in the two seasons examined, since only a portion of the hotels are taking guests all year round, with the rest of the hotels remaining closed through some months or for the entire winter season (see Table 1).

The number of hotel attributes in the sample (more than 80) is too large for any version of hedonic price analysis to be carried out. Therefore, given also the well-known problem of multicollinearity in this kind of analysis (see, for example, Espinet

et al., 2003, and Mangion et al., 2005), stepwise regressions are used to narrow down the number of explanatory variables to those for which the parameter estimate has a p-value less than 0.05 (that is, significant at the 5% level)[5]. In that manner, the analysis only involves the hotel attributes which significantly affect their prices, which according to economic theory signifies that they are also vital to the consumers' assessment. Table 2 presents the final list of the explanatory variables (hotel attributes) used.

TABLE 1: DISTRIBUTION OF HOTELS BY REGION IN THE
WINTER AND SUMMER PERIODS

Winter Period	Stars				Total
	2	3	4	5	
Famagusta District	0	0	1	1	2
Larnaca District	2	5	5	1	13
Limassol District	1	2	7	4	14
Nicosia District	2	5	1	1	9
Paphos District	0	2	4	5	11
Troodos Area	1	0	0	0	1
Total	6	14	18	12	50
Summer Period	Stars				Total
	2	3	4	5	
Famagusta District	0	5	7	4	16
Larnaca District	1	5	6	1	13
Limassol District	1	4	9	5	19
Nicosia District	2	5	1	1	9
Paphos District	0	7	13	9	29
Troodos Area	2	1	1	0	4
Total	6	27	37	20	90

Source: Author's calculations from data contained in the brochures of a private tourist agency. The total number of observations are not identical in the two periods examined, since only 40 of the 90 hotels included in the sample were taking guests all year round, with the rest of the hotels having remained closed through the entire winter season.

Apparently, the final set of attributes examined include both quantitative and qualitative components. The only quantitative attribute to determine room price is the hotel star rating, which is measured as the total number of stars awarded to the hotel. The qualitative attributes include hotel location, amenities and other appropriate features. These latter attributes are comprised of location, proximity to a bus station, whether the hotel offers a spa, indoor swimming pools, tennis courts or table tennis

facilities. Also, whether the room amenities include a television set with movie channels, direct-dial telephone and air-conditioning. These amenities are measured on a binary scale involving dummy variables, in which '1' indicates presence and '0' indicates absence of the specific feature.

TABLE 2: DESCRIPTIVE STATISTICS

Variable	Description	Mean	Std. Dev.
Price:	The logarithm of the price of the hotel room (in €)	4.052	0.455
Location:	The district where the hotel is located:		
Famagusta	The hotel is situated in the district of Famagusta	0.129	0.336
Larnaca	The hotel is situated in the district of Larnaca	0.186	0.390
Limassol	The hotel is situated in the district of Limassol	0.236	0.426
Nicosia	The hotel is situated in the district of Nicosia	0.129	0.336
Paphos	The hotel is situated in the district of Paphos	0.286	0.433
Troodos	The hotel is situated in the Troodos area	0.036	0.186
Star Rating	The official star rating of the hotel (2 to 5)	3.776	0.904
Air-conditioning	The hotel room is air conditioned	0.557	0.496
Movies	The hotel room has a TV set with movie channels	0.093	0.292
Telephone	The hotel room has a direct dial-telephone	0.564	0.498
Spa	The hotel amenities include a spa	0.071	0.258
Table Tennis	The hotel has table tennis facilities	0.100	0.301
Indoor Pool	The hotel amenities include an indoor pool	0.200	0.401
Playground	The hotel amenities include a playground	0.071	0.258
Tennis	The hotel has tennis courts	0.293	0.457
Bus Station	The hotel is situated next to a bus station	0.043	0.203

Note: The data originate from the catalogues of a private tourist agency and it consists of 90 hotels in Cyprus. Of the variables listed above, only 'Nicosia' is not included in the subsequent estimations. That is equivalent with rendering the hotel rooms offered in the district of Nicosia as the 'reference group', that is the group with which all comparisons presented in Table 3 are being made.

4. METHODOLOGY

As mentioned in the previous sections, Hedonic Price Analysis (HPA) is a quantitative method based on Lancaster's (1966) approach to consumer theory. As a result of various developments in the tourism sector (Papatheodorou et al., 2012) this methodology has recently received considerable attention in the related literature, especially in the analysis of hotel room rates (Wang et al., 2019). In its most parsimonious manifestation HPA considers the market value of any heterogeneous good (or service) as a function of the implicit prices (i.e., consumers' willingness-to-

pay) of the attributes comprising the specific product. This function may be estimated via an appropriate statistical model and, therefore, allow policy-makers and practitioners to draw informed conclusions concerning the market in which the specific product is offered. The basic hedonic log-linear model is expressed as follows:

$$P_i = \alpha + \beta X_i + \varepsilon_i, \tag{1}$$

where P_i is the natural logarithm of the price of the hotel room, α is the intercept term of the regression, X_i is a vector of factors, characteristics or attributes which may affect the accommodation price (e.g., the location of the hotel, its star rating, whether the amenities include a spa, and so forth), β is a vector of coefficients which account the degree that each of those characteristics or attributes may affect the price of the hotel room (i.e. the hedonic or implicit prices) and ε_i is the residual term, assumed to be normally distributed[6].

Summarising the information presented above, the current paper identifies the most significant attributes of the Cypriot hospitality unit via the application of hedonic regression models, where the hotel room price is treated as the dependent variable and the explanatory variables listed in Table 2 are assigned as the independent regressors. Three regression models, including whole sample (Model 1), summer sample (Model 2) and winter sample (Model 3), are estimated separately. The empirical results are presented in the subsequent section.

5. FINDINGS

The empirical results of all three models are reported in Table 3. Overall, their explanatory power is strong, explaining between 74% and 78% of the variation in hotel room prices, as measured by the adjusted R-squared diagnostic. Since multicollinearity is often an issue in hedonic pricing models (Chen and Rothschild, 2010), the variance inflation factor (VIF) is used for detecting the seriousness of such an issue in each model. According to Kennedy (1985), a VIF value greater than 10 is an indicator of the presence of multicollinearity. The fact that the mean VIF values of the three models are 1.91, 1.99 and 2.94, respectively, suggests that multicollinearity is not an issue in the current study.

The estimation results from Model 1 (whole sample) indicate that 12 variables generate a significant impact on the prices of the hotel rooms in Cyprus, suggesting that these are the attributes which are most vital in the domestic consumers' assessment. Ten of those attributes influence hotel rates with a confidence level of 1%: hotel location (district of Famagusta), the official star rating, presence of direct-dial

telephone and a TV set with movie channels in the room, existence of spa and a playground in the hotel premises and proximity of the hotel to a bus station. The remaining two variables affect hotel rates with a confidence level of 5%: hotel location (Troodos mountains) and air-conditioning in the rooms. Since Model 1 conflates both summer and winter period results, it is likely to obscure or misrepresent some of the important relations in the analysis. As the current paper wishes to examine the vital hotel attributes for domestic tourism in summer and winter seasons separately, the results of Model 2 (summer sample) and Model 3 (winter sample), which follow, are of potentially greater interest.

TABLE 3: EMPIRICAL RESULTS FROM HEDONIC PRICE ANALYSIS

Variable	Model 1: Whole Sample	Model 2: Summer Sample	Model 3: Winter Sample
Location:			
Famagusta	0.062	0.282***	-0.360**
Larnaca	-0.213***	0.001	-0.414***
Limassol	-0.047	0.160*	-0.257***
Paphos	0.111	0.321***	-0.167*
Troodos	-0.235**	-0.081	-0.234**
Star Rating	0.280***	0.310***	0.254***
Air-conditioning	-0.140**	-0.142*	-0.117
Movies	-0.241***	-0.252***	-0.187**
Telephone	0.203***	0.191**	0.224
Spa	0.360***	0.327***	0.306**
Table Tennis	-0.254***	-0.257***	-0.211*
Indoor Pool	-0.268***	-0.216***	-0.362***
Playground	-0.255***	-0.262***	-0.399**
Tennis	0.236***	0.208***	0.294***
Bus Station	-0.317***	-0.314**	-0.383**
Intercept	2.741***	2.872***	2.999***
Number of Observations:	138	89	49
Adjusted R-squared:	0.774	0.743	0.758
Variance Inflation Factor (VIF):	1.91	1.99	2.94

Note: Table 3 presents results from estimating hedonic pricing models using data obtained for hotels in Cyprus. The estimated coefficients express the effects of various attributes on the hotel room prices, as compared with the reference group (i.e. economy-class hotels located in the district of Nicosia). (***) denotes statistical significance at 1%, (**) at 5%, and (*) at 10%.

In Model 2 the results indicate that only four hotel attributes have positive effects on room rates. As in Wang et al. (2019), the rates in hotels with spa are higher (about 38.7%) as compared with those in hotels without this amenity[7]. The room prices in hotels in Cyprus with access to tennis courts are also higher (about 23.1%) than those in hotels without such an access, a result also present in Alegre et al. (2013). The rates for rooms with a telephone are about 21% higher than those for hotel rooms where presence of direct-dial telephone is not advertised in the travel agent's catalogue. Turning to the star rating variable, this also has a positive and pronounced effect on overall hotel room prices. More precisely, the analysis suggests that one extra star in the hotel's official rating in Cyprus is associated with a 36.3% increase in the hotel room rates. The official star rating has previously been proved as a regular hotel price determinate, among others by Schamel (2012), who finds that star rating accounts for about 30% of the overall hotel price.

The results in Model 2 also indicate hotel attributes with a negative effect on room rates. The empirical findings suggest that Cypriot hotels who advertise the fact that their rooms are air-conditioned are about 13.2% cheaper than hotels where such an amenity is not included in the travel agent's descriptions. This is consistent with the argument that hotels at the top end of the quality scale are expected to provide such basic comforts anyway, therefore the travel agent advertises this feature only for hotels at the lower end of the price scale. It is also interesting that features like 'TV set with movie channels' appear to be associated with lower-price rooms. This is consistent with the argument that a hotel at the top end of the quality scale is expected to have satellite television in their rooms rather than a TV set with movie channels. Therefore, the travel agents advertise this feature (TV set with movie channels) only for hotels at the lower end of the price scale.

The rates in hotels offering table tennis facilities are about 22.7% lower than establishments where such an access is not advertised in the travel agent's catalogue, while the existence of a playground in the premises reduces the room rate by 23%. The latter findings are consistent with Haroutunian et al. (2005), where it is concluded that offering amenities such as table tennis and playgrounds is not a main attraction for an expensive hotel, as it may be for a hotel of average (or low) quality, targeting families with children.

The analysis also yields the surprising (and counter-intuitive) result that rates in hotels located near to a bus station are typically about 26.9% lower than those of hotels lying away from such public transportation hubs. Also, the results indicate that presence of an indoor swimming pool lowers the room rate by about 19.4%, ceteris paribus. The author returns to these question-raising topics below.

Regarding the effect of hotels being located in either one district or another, it is reminded that each related coefficient shows the effect on price of the same room being located in a hotel in the districts of Famagusta, Larnaca, Limassol, Paphos or Troodos, respectively, in comparison with a similar hotel room located in the district

of Nicosia. The results in Model 2 indicate that if the hotel is located in Famagusta, this increases the price of the room by 32.6% as compared with a similar room located in Nicosia, with the corresponding figure for the Limassol and Paphos districts being 14.7% and 37.9%, respectively. Famagusta and Paphos being indicated as the most expensive areas in the whole island it is hardly surprising, considering that the study of Papatheodorou (2002) finds that these two specific Cypriot destinations are associated with the highest willingness to pay *in the entire Mediterranean region*. There is no evidence for statistically significant hotel room rate differences between the districts of Nicosia, Larnaca and Troodos in the summer period.

Model 3 (winter sample) suggests some differences in the significance of certain variables when compared with Model 2 (summer sample). While some attributes, such as location (Famagusta, Limassol and Paphos), official star rating, spa, playground and table tennis remain significant determinants of room rates in the winter sample estimates, one location variable (Larnaca) changes from insignificant to significant, while some room amenities, such as air-conditioning and direct-dial telephone, turn out to be insignificant. A reason for the insignificance of the air-conditioning attribute in Model 3, as compared with Model 2, is that the winter customer is more likely to be in need of a central heating unit rather than an air-conditioning devise. However, the fact that winter hotel guests typically pursue outdoor rather than indoor amenities and activities makes it hard to explain the fact that the telephone variable turns out insignificant in Model 3.

It is again interesting to observe that rates in hotels located close to a bus station are lower than those in hotels outside the public transportation routes (as in the summer period estimations). One possible explanation for the strongly negative relationship between proximity to a bus station and room rates, which is at variance both with intuition and with results obtained in earlier studies, is that in Cyprus it is typically the case that hotels outside the public transportation routes are mostly associated with exquisite resorts. These hotels offer a wide range of amenities, such as wellness clubs and sports facilities, and many of these attributes are provided at a cost which is recovered in the room rate (Chen and Rothschild, 2010).

In Model 3 the coefficients for the location show that if the hotel is located in the district of Famagusta, this decreases the price of the room by 30.2%, while if it is located in the district of Paphos, this decreases the price by 15.4%. The results also indicate that if the hotel is located in the district of Larnaca, this decreases the price of the room by 33.9%, with the corresponding figures for Limassol and Troodos being -22.7% and -20.9%, respectively.

It must be noted at this point that the empirical results for the winter season should be interpreted with some caution. In addition to the fact that it is difficult to obtain sufficiently detailed information from travel agents' catalogues to enable precise identifications of what each hotel is offering, there is also a possibility that the room rates may be unrelated with the hotel amenities, especially during the winter season.

According to Ms. Elena Tanou, Vice President in a major travel agency, in Cyprus what really matters in hotel room pricing may not the characteristics of each hotel, but whether the specific establishment is popular within the local tour operators. If the hotel is quite popular then many of its rooms will be occupied and it will keep its prices high and if, on the other hand, the specific hotel is relatively unpopular then it will have many rooms available and its prices will be forced down.

Also, according to Mr. Philokypros Rousounidis, Director General at Cyprus Hotels Association (CHA), the hotels in Cyprus face decreased costs during the winter season, due to their loan repayment schemes (which distribute most of the payments in the summer) and the significantly lower number of staff they employ during winter. Many hoteliers would choose to combine this significant cost reduction with a room rate decrease, in order to have greater chances for profits in a demand-low period.

6. CONCLUSIONS

This paper employs HPA in order to investigate which hotel attributes are the most vital in domestic consumers' assessment. The author employs models for both the summer and the winter periods of the island's touristic activity and the empirical results are accompanied with some plausible explanations. While some variables, such as the official star rating and existence of spa amenities, are associated with rates in a predictable (positive) way, some other, such as air-conditioning and proximity to a bus station, are related in a counter-intuitive (negative) way. Moreover, it is evident that the relative importance of some explanatory variables changes according to whether it is a summer or a winter period that is being considered.

Economic theory suggests that the statistically significant characteristics are also vital in the consumers' assessment of the Cyprus tourism product. Since the paper finds that top-priority considerations that internal tourists have in mind when choosing a place to stay include its official star rating and certain facilities and amenities, the findings suggest that an addition of the specific attributes may significantly enhance accommodation prices and increase hoteliers' remunerations, especially in the winter season where both results and experts' opinions suggest a 'tricky' situation. Since the study also suggests that advertising certain features of the hotel in the travel agents' brochures may be sending signals that are perceived in a negative manner by the domestic consumers, hoteliers should consider excluding the specific attributes from their establishments' description.

For the above stated reasons, the current study results are intended as a contribution to both the literature on applications of the hedonic price approach and to the understanding of aspects of the Cypriot hotels' pricing, especially in terms of surviving though and recovering from the economic downturn of the COVID-19 pandemic. Future research might usefully explore the consumer's evaluation of this relationship and the implied willingness-to-pay for hotel rooms by using data collected

directly from consumers themselves. This may be achieved by using data collected from internet sources (such as online ratings) and for a considerably longer time period, in order to explore the impact of seasonality a bit further.

NOTES

1. According to the official website of the Statistical Service of Cyprus, the revenue from tourism in 2019 accounted for the equivalent of 12% of the nominal Gross Domestic Product (GDP) of the country.

2. The sample consists of 90 hotels advertised in the brochures of Top Kinisis Travel Plc. The sample size may seem small compared to other studies performing this type of research, but the scale of the Cypriot economy renders it quite representative. The total number of hotels registered in the government-controlled areas of the Republic of Cyprus is 258, as of 2020, distributed as follows: 88 in the district of Famagusta, 32 in the district of Larnaca, 33 in the district of Limassol, 17 in the district of Nicosia, 62 in the district of Paphos and 26 in the Troodos area (Deputy Ministry of Tourism, 2021).

3. In Cyprus, the 'summer tourist season' is defined as the period from April to October and the 'winter tourist season' is considered to include the months November to March. The decision on which months should be considered as the 'peak season' is based on information obtained from the Deputy Ministry of Tourism. A representative price for each season is obtained by taking the average value of the weekly room rates offered in the months of December and August, respectively (Top Kinisis Travel Plc).

4. Although the information obtained from Top Kinisis Travel Plc includes data on both hotels and hotel apartments, the current study focuses exclusively on hotels, in order to avoid any risk of heterogeneity induced by mixing different types of tourist accommodation units. Therefore, the establishments contained in the data set represent quite a homogenous group, which is a precondition for application of HPA (Haroutunian et al., 2005).

5. A variant of the general-to-specific approach proposed by Hendry (1983) is applied to all three cases (i.e. whole sample, summer sample and winter sample), where a general model is simplified in order to characterise the related empirical evidence using the least number of variables. The specific approach includes running step-wise regressions and the variables finally selected (see Table 2) are the ones whose coefficients appear statistically significant at the 5% level. For better comparison of the results (presented in section 5) if a variable is selected in one model (e.g. summer sample) then it is included in all three cases (i.e. whole sample model, summer sample model and winter sample model).

6. In the log-linear approach each estimated coefficient is interpreted as a percentage change in the dependent variable associated with one-unit increase in the independent variable (see, e.g. Fleischer, 2012). However, this straightforward interpretation does not apply in the case of dummy variables' coefficients, where the desired value should be calculated

according to Halvorsen and Palmquist (1980) (i.e. as the antilog of the related coefficient minus one).

7. Since the analysis in the current study employs dichotomous (dummy) variables, it is reminded that the interpretation of statistically significant coefficients of dummy variables should be performed by calculating their antilogarithmic values (i.e. the antilog of the related coefficient minus one), as suggested in Halvorsen and Palmquist (1980). Those values correspond to the percentage unit differences between the attributes of interest and the intercept term (i.e. the estimated effects of the corresponding attributes in percentage terms). Therefore, the percentages discussed in the text are not identical to the ones presented in Table 3. For example, while the coefficient of the variable 'spa' in Model 2 is 0.327, the related effect on the hotel price is calculated as exp (0.327) – 1 = 38.7%.

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IMPACT OF SOCIAL MEDIA ON THE PEOPLE OF DELTA STATE IN THE PERIOD OF COVID-19 PANDEMIC

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ABSTRACT

The paper x-rayed on impact of social media on the people of Asaba in Delta State in the period of COVID-19. The outbreak of corona virus, known as COVID -19 by the world health organisation has thrown the global community into fear and anxiety. In course of COVID-19, the use of social media contributed in the dissemination of information and information overload among individuals. Social media have long been recognized as powerful forces shaping how we experience the world and ourselves. The following sub-headings were discussed; concept of Coronavirus and COVID- 19, challenges of Asaba people in the period of COVID -19 pandemic, concept of social media, the importance of social media and the impact of social media during COVID 19 to Asaba people. The work emphasized the role social media platforms which really contributed enormously in providing information to the Asaba people regarding Covid-19. The following recommendation were made among others; a way to encourage Asaba people's productivity and students' academic efficacy during this COVID-19 pandemic. It is equally important that government and school authorities checkmate and regulate the use of social media among people of Asaba. This would enhance in building on the positive use of social networking sites such as joining students in group and helping them meet other student groups online. By this, they can bring to limelight the risks and benefits associated with the use of the social sites and help students to overcome the vices behaviour associated with these sites as well as educating students on the best and most efficient ways of using these sites to support learning.

Keywords: Impact, Social Media, Covid-19.

1. INTRODUCTION

The outbreak of coronavirus disease 2019 (COVID-19) has created a global health crisis that has had a deep impact on the way we perceive our world and our everyday lives. Coronaviruses are a large family of viruses which may cause illness in animals or humans. In humans, several coronaviruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). The most recently discovered coronavirus causes COVID-19. COVID-19 is a disease caused by a new strain of coronavirus. 'CO' stands for corona, 'VI' for virus, and 'D' for disease. Formerly, this disease was referred to as '2019 novel coronavirus' or '2019-nCoV.' The COVID-19 virus is a new virus linked to the same family of

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viruses as Severe Acute Respiratory Syndrome (SARS) and some types of common cold.

The COVID-19 pandemic in Nigeria is part of the worldwide pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first confirmed case in Nigeria was announced on 27 February 2020, when an Italian citizen in Lagos tested positive for the virus, caused by SARS-CoV-2 (Maclean & Dahir, 2020). On 9 March 2020, a second case of the virus was reported in Ewekoro, Ogun State, a Nigerian citizen who had contact with the Italian citizen (Nigeria records second case of Coronavirus, 2020).Nigeria is currently battling the novel Coronavirus (COVID-19) pandemic. So far, Asaba of Delta State has some confirmed cases, according to information released by the Nigeria Centre for Disease Control (NCDC). Nationally, the federal and state governments initiated various policy frameworks and actions to stem the spread of the virus. Some of the actions, including strict social distancing, has had a deleterious effect on people's livelihoods. In Asaba and elsewhere, state security agents enforcing government-imposed social distancing restrictions have violated the human rights of citizens, resulting in avoidable deaths. It has become clear that the harsh government policies and pronouncements are inflicting more pain on the citizens, as there are no adequate measures in place to cushion the effects on the populace.

Asaba is a city located at the western bank of the Niger River. It is the capital of Delta State, Nigeria. A fast developing urban area, Asaba had a population of 149,603 as at the 2006 census (Federal Republic of Nigeria (2016), and a metropolitan population of over half a million people. Asaba is well known for social activities due to the presence of large people and social amenities such as hotels, clubs, cinemas, malls, event centers, etc. It holds a yearly program named Delta Yaddah which always host series of gospel singers among others. Due to its large population, crime rate is high. Crimes such as pick pocketing, sideways robbery, etc, is rampart in Asaba. Because of the existence of foreigners in the state, the cost of living is high in Asaba (Okenwa, 2016).

The governor of Delta State (Ifeanyi Okowa) confirmed an index case of the novel coronavirus in Delta State, adding that the patient had been quarantined in a centre at Warri. This comes on the heels of announcement by the Nigeria Centre for Disease Control (NCDC) of a confirmed case in the state. The Covid-19 pandemic affects the people of Asaba and Delta State as whole. The study disclosed that it was a tough challenge making the people of Asaba who relied on daily income to comply with the sit-at-home order of the state government. Okowa, said that the state provided palliatives to cushion the effect of the lockdown on those in the informal sector, especially the vulnerable. Another challenge in Asaba was the issue of stigmatisation, but assured that the state was tackling it head-on. "People of Asaba challenge in managing the COVID-19 is two-pronged; one is the problem of dealing with the issues of the economy of the people, particularly the informal sector, because in the

process of trying to stop the chain of transmission, we have had to undertake a lockdown. "And, in dealing with that, it is actually very challenging for the fact that most of our people are in the informal sector and they have to live on a daily basis (Busari & Adebayo, 2020).

The demolition illegal erected structures by the state government's plan to keep Asaba clean led to the bulling down of many shops believed to have been built on the state's right of way. With the demolition, Abrakar traders have joined the list of thousands of displaced traders in the state capital territory even in this Coronavirus (COVID–19) pandemic period when most businesses in Nigeria and globally are negatively impacted as a result of lockdown. Governor Okowa said in the government's plan, to secure Asaba, it was agreed that there was the need for the whole of that place to be bulldozed and people there relocated to another part of Asaba. He said that relocation has already been done and the place has been brought down. Social media had played an important role to the people of Asaba in the COVID-19 pandemic.

Social media comprises of activities that involve socializing and networking online through words, pictures and videos. Kaplan and Haenlein (2015) defined social media as a group of internet-based applications that build on the ideological and technological foundations of Web2.0, and that allows the creation and exchange of user-generated content. It depends on mobile and web-based technologies to create highly interactive platforms through which individuals and communities share, co-create, discuss and modify user-generated content. In line with this, Overholser (2014), stated that social media introduced substantial and pervasive changes to communication between organizations, communities and individuals. These changes are the focus of the emerging field of techno -self-studies.

Today, social media such as, Facebook, Instagram, Whatsapp and Twitter, have become primary sources of information. They are also vehicles for fake news and disinformation. During COVID-19, the use of social media contributed to spread information and information overload among individuals. To boost individuals' motivation to adopt preventive measures such as self-isolation, actions should focus on lowering individuals' perceived response costs in addition to informing them about the severity of the situation. In Asaba during this covid-19 pandemic, companies use social media for commercial purposes or for communal purposes.

In other words, Asaba companies use social media to brand, sell, market their business (which is close to traditional marketing efforts using mass-media) versus using social media to connect with and co-create with customers and more importantly to provide a platform to customers to bond together. You can see this as the distinction between using social media to talk to your customers versus using social media to talk with your customers and have them talk to each other through your brand (Agbanu & Nwabueze, 2020). With companies of all sizes under threat due to the impact of coronavirus, social platforms are introducing new features specifically to help small

businesses survive through the pandemic. Therefore, this paper seeks to discuss the impact of social media on the people of Asaba in the period of covid-19.

1.1. Concept of Coronavirus and COVID-19

The coronavirus belongs to a family of viruses that may cause various symptoms such as pneumonia, fever, breathing difficulty, and lung infection (Wuhan Municipal Health and Health Commission (WMHC), 2020). These viruses are common in animals worldwide, but very few cases have been known to affect humans. The World Health Organization (WHO) used the term 2019 novel coronavirus to refer to a coronavirus that affected the lower respiratory tract of patients with pneumonia in Wuhan, China on 29 December 2019 (Guan-X, Wang-X and Zhou, 2020). The WHO announced that the official name of the 2019 novel coronavirus is coronavirus disease (COVID-19). And the current reference name for the virus is severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was reported that a cluster of patients with pneumonia of unknown cause was linked to a local Huanan South China Seafood Market in Wuhan, Hubei Province, China in December 2019.

Given the spread of the new coronavirus and its impacts on human health, the research community has responded rapidly to the new virus and many preliminary research articles have already been published about this epidemic. They conducted a scoping review to summarize and critically analyze all the published scientific articles regarding the new coronavirus in January 2020. This review aims to provide the evidence of early findings on the epidemiology, causes, clinical diagnosis, as well as prevention and control of COVID-19 in relation to time, location, and source of publication. This review can provide meaningful information for future research related to this topic and may support government decision-making on strategies to handle this public health emergency at the community, national, and international levels (WHO, 2020).

The virus is transmitted through direct contact with respiratory droplets of an infected person (generated through coughing and sneezing). Individuals can also be infected from and touching surfaces contaminated with the virus and touching their face (e.g., eyes, nose, mouth). The COVID-19 virus may survive on surfaces for several hours, but simple disinfectants can kill it. The most common symptoms of COVID-19 are fever, dry cough, and tiredness. Other symptoms that are less common and may affect some patients include aches and pains, nasal congestion, headache, conjunctivitis, sore throat, diarrhea, loss of taste or smell or a rash on skin or discoloration of fingers or toes. These symptoms are usually mild and begin gradually. Some people become infected but only have very mild symptoms. According to Xu, Chen, Wang, Feng, Zhou, and Li (2020). There is currently available vaccine for COVID-19. However, many of the symptoms can be treated and getting early care from a healthcare provider can make the disease less dangerous. There are several

clinical trials that are being conducted to evaluate potential therapeutics for COVID-19.

The coronavirus entered Nigeria through an infected Italian citizen who came in contact with a Nigerian citizen who was subsequently infected with the coronavirus. The coronavirus then spread to other citizens in Lagos and to other parts of the country. Some reported cases are shown in the table below.

TABLE 1: CONFIRMED COVID-19 CASES IN NIGERIA AS AT THE PERIOD OF RESEARCH

Timeline	Confirmed cases	Affected states
17/03/2020	3	Lagos
21/03/2020	22	Lagos, Abuja and Ogun
30/03/2020	131	Lagos, Abuja, Bauchi, Enugu

Source: Nigeria Centre for Disease Control (NCDC)

In Nigeria, after the confirmation of the first case on the 27th February 2020, and for the first time, researchers from the Centre for Human and Zoonotic Virology in Lagos University Teaching Hospital/College of Medicine of the University of Lagos, African Centre for Genomics of Infectious Diseases in Reedemers University and the Nigeria Institute of Medical Research Lagos successfully perform the genome sequencing of COVID-19. According to the Nigeria Centre for Disease Control, a second confirmed case was detected in the country on the 9th March 2020. This case was a contact of the index case. Out of a total of number of people screened for COVID-19 so far in Nigeria, there are 51 confirmed cases from 9 States of Bauchi, Edo, Ekiti, Lagos, Ogun, Osun, Oyo, Rivers and the Federal Capital Territory. Lagos State with a current population of over 20 million is leading with over 30 confirmed cases. One death has been recorded in the country while two cases including the index and first contact have been discharged to go home on the 13th March 2020 after testing negative to the virus twice consecutively (NCDC, 2020). Normally, a COVID-19 patient is expected to have cleared the virus and can be discharged after two to four negative qRT-PCR tests on nasopharyngeal and throat swabs sampled at 24 h interval (ECDC, 2020).

1.2. Challenges of Asaba People in the Period of Covid-19 Pandemic

The governor, in the Skype programme, monitored in Asaba, said that though the state provided palliatives to cushion the effect of the lockdown on those in the informal sector, especially the vulnerable, another challenge in the state was the issue

of stigmatisation, but assured that the state was tackling it head-on. According to Agbanu and Nwabueze (2020), the consequences of the COVID-19 pandemic in Asaba is the high cost of commodities and food items prices as a result of business stoppages and lockdown which critically affect daily income-earners. The rate at which the virus was spreading, and the heightened uncertainty about how bad the situation could get, led to flight to safety in consumption and investment among consumers and investors (Ozili and Arun, 2020). There was a general consensus among top economists that the coronavirus pandemic would plunge the world into a global recession and Covid-19 pandemic would trigger a recession in Asaba.

Nigeria is currently battling the novel Coronavirus (COVID-19) pandemic. So far, Delta State has some confirmed cases, according to information released by the Nigeria Centre for Disease Control (NCDC). Nationally, the federal and state governments initiated various policy frameworks and actions to stem the spread of the virus. Some of the actions, including strict social distancing, has had a deleterious effect on the livelihoods. In Delta State and elsewhere, state security agents enforcing government-imposed social distancing restrictions have violated the human rights of citizens, resulting in avoidable deaths. It has become clear that the harsh government policies and pronouncements are inflicting more pain on the citizens, as there are no adequate measures in place to cushion the effects on the populace.

This pandemic had caused some people in Asaba unemployment and poverty, especially those working in private enterprises or companies are sacked. The covid-19 pandemic lead Delta State Government, established food bank to alleviate the suffering of the people resulting from the lockdown to contain the spread of Coronavirus to the state upon that majority of people (80%) in Asaba did not received all these food items because of the people are not aware of the food items and other items shared by the government in Asaba. Also, the issue of brutality and intimidation of citizens by security agents because of coffin and other nonsense things, criminal cases as a result of the quarantine, cases of Fulani herdsmen and house people conflict against the people of Asaba people because of demolition of Abraka Market which put fear in people, humiliation of people by government armed forces because of face mask and so on affect the people of Asaba during the covid-19 pandemic.

In the first few months of 2020, information and news reports about the coronavirus disease (COVID-19) were rapidly published and shared on social media and social networking sites. While the field of infodemiology has studied information patterns on the Web and in social media for at least 18 years, the COVID-19 pandemic has been referred to as the first social media infodemic. However, there is limited evidence about whether and how the social media infodemic has spread panic and affected the mental health of social media users. It is understandable that people living in quarantine, isolation, or at risk of infectious disease outbreak are likely to experience psychosocial stress and adverse health outcomes, which may evoke

interests in learning more about the disease. However, such situations require assurance complemented by flow of correct information.

1.3. Concept of Social Media

Kaplan, and Haelein (2014), defined social media as a group of internet based application that allows the creation and exchange of user generated content. Gross (2016), emphasized that social media is that means that employs mobile and web based technology to create highly integrative platforms via which individuals and community share, create, discuss and modify users' generated content. Sometimes called social networking, social media is a collaboratively produced and shared media content to network communities. Enang. (2014), further explained that social networking sites are applications that enable users to connect by creating personal information profiles, inviting friends and colleagues to have access to those profiles, and sending e-mails and instant messages between each other. It is a web site that provides a venue for people to share ideas, information, knowledge and the like together which can come inform of videoes, audio, audio-visual, charts, text messages and so on (Okekeokosisi & Obi, 2019). Giving examples of social media, (Gupta, 2017) enumerated social network sites like *Facebook, Twitter, Linkedln, Google+, Internet forums, chatrooms* and *message boards* where people meet and discuss topics of interest, *Flickr* and *vimeo, blogs, wikis,* and *socialbook marking*. Since the year 2000, the world has witnessed exponential presence of social networking sites which continues to drive interaction of individuals and organizations that have common interest, not only in music, movies, friendship, but in education and business relations.

Kaplan, and Haelein (2014), categorized social media into seven type search indicating the purpose for which it could be utilized: collaborative projects (Wikipedia); Blogs and micro blogs(*Twitter)*; social news networking sites (*Digg and Leakernet*); content communities (*YouTube* and *Daily motion)*; social networking sites (*Facebook, Instagram and whatsapp)*; virtual game worlds (world of *warcraft*); and virtual social worlds (*second Life)*. Meanwhile, it does seem that very thin line exists regarding what uses these sites could be put as many of the sites are amenable to multiple applications.

1.4. Importance of Social Media

The issue of whether social networking sites are helpful or not is often couched in larger issues identified with the overall use of social media – psychological effects, privacy and safety concerns, individual self-discipline and self-regulation concerns, human adaptability concerns. Generally, the benefits of using social network according to Zwart, Lindsay, Henderson & Phillips, 2013; Rosen, 2015; Conolly, 2018), include: encouraging greater social interaction through electronic media;

providing greater access to information and information sources; encouraging creativity among individuals and groups; creating a sense of belonging among users of common social media tools; providing more choices to promote engagement among different individuals and groups; reducing barriers to group interaction and communication such as distance and socio-economic status; and increasing the technological competency level of users of social media. These benefits are expanded as follows:

- *Connectivity to friends and relations:* Social networking sites started as a place to connect with your friends in an easy and convenient way. Many found their old pals from school or college who were out of touch due to one reason or the other and reconnected to them. Social networking sites provide the opportunity to connect with people and build better relationships with friends and keep them abreast with happenings around them.

- *Reducing communication barriers:* With social networking sites, thoughts and perceptions over different issues and topics are shared with large audience. The sharing feature available on the social networking sites makes opinions about issues reach a large number of people at a time, including those who are not on the sharers friend list. Social networking sites provide opportunities to make group with people of like minds and share opinions and inputs about issues with them.

- *Business opportunities:* Social networking sites have become a crucial part of many people. This is more obvious when laptops and desktops are opened, and the web is accessed, as social sites are sub-consciously, there is an unconscious business update received. This shows that businesses have noticed the value of social networking sites to human life and therefore, are using various techniques to promote their products. Also, a number of customized applications are made on the social platform with the aim of promoting products and services. Social marketing is also seen as cost-effective, so businesses are shifting towards that.

Potential drawbacks identified with the use of social networking sites include risks of psychological disorders and health problems such as anxiety, depression, poor eating habits, and lack of physical exercise; increasingly short attention spans and subverted higher-order reasoning skills like concentration, persistence, and analytical reasoning among frequent users of social sites, a tendency to over-estimate one's ability to multitask and manage projects; seeing technology as a substitute for the analytical reasoning process (Zwart, Lindsay, Henderson & Phillips, 2013; Rosen, 2015; Conolly, 2018).

1.5. Impact of Social Media During COVID-19 to Asaba People

The outbreak of coronavirus disease 2019 (COVID-19) has created a global health crisis that has had a deep impact on the way we perceive our world and our everyday lives. Not only the rate of contagion and patterns of transmission threatens our sense

of agency, but the safety measures put in place to contain the spread of the virus also require social distancing by refraining from doing what is inherently human, which is to find solace in the company of others. Within this context of physical threat, social and physical distancing, as well as public alarm, what has been (and can be) the role of the different social media in the lives of Asaba people during covid-19 pandemic?

According to Allcott, Gentzkow and Yu (2020), social media have long been recognized as powerful forces shaping how we experience the world and ourselves. This recognition is accompanied by a growing volume of research, that closely follows the footsteps of technological transformations (e.g. radio, movies, television, the internet, mobiles) and the zeitgeist (e.g. cold war, 9/11, climate change) in an attempt to map social media major impacts on how we perceive ourselves, both as individuals and citizens. Within this ample framework of complexity, the researcher welcome research addressing media impact and its role to Asaba people during the COVID-19 pandemic, in the following ways:

- *Fundraisers organized and distributed on social help raise money for those in need:* COVID-19 has put many people in Asaba, especially the elderly, those with disabilities, working parents who are losing childcare, and those who are losing their jobs, in challenging situations. Communities are rallying together to support organizations and individuals by sharing fundraisers with large audiences on social media.

- People are also taking to social media to offer support in any way they can, such as picking up groceries for individuals who are unable to leave home or sharing information on how to support local businesses who are struggling to pay their employees (Ahmed, Alhassan and Alshammari, 2020).

- *People are posting pictures and videos to share their experiences through social media:* Posts from people quarantined at home have ranged from videos of living room yoga to pictures of snuggly pets who are thrilled their owners are with them 24/7. There have also been posts acknowledging how difficult and frightening this time is. Posts have ranged from commiseration to overwhelming support — neighborhood rainbow hunt to this "mental health check-in" on a Facebook neighbors group.

- *A source of information:* Never have we had more real time information available at our fingertips in the face of a worldwide event. Social media information, help us keep safe, providing us with a better understanding of what is occurring and how it might impact us and those we love (Jackson, 2020).

- *Social distancing and home quarantine are trending:* Until a few weeks ago, many of us hadn't even heard of "social distancing," which refers to staying at least 6 feet away from others to help prevent the spread of infection. Now, social media users, from friends and family to celebrities and governments, are regularly calling for social distancing.

• *An influence on public response to the outbreak:* Billions of people are free to publicly share their opinions on COVID-19 across various social platforms. In the past few weeks, we've seen individuals, organizations, and businesses use social media to spread awareness of COVID-19, as well as the public actions that can be taken.

The combination of quick and targeted interventions oriented to delegitimize the sources of fake information is key to reducing their impact. Those users voicing their views against the conspiracy theory, link baiting, or sharing humorous tweets inadvertently raised the profile of the topic, suggesting that policymakers should insist in the efforts of isolating opinions that are based on fake news. Many social media platforms provide users with the ability to report inappropriate content, which should be used. social media can also spread falsehoods, including miracle preventative measures, false claims about the implementation of martial law, conspiracy theories, and more.

2. CONCLUSIONS AND RECOMMENDATIONS

Based on the situation survey, Asaba and Delta State as whole is yet to grow technologically, especially in social media information awareness and use. Sharp growth on new cases based on daily update indicate that there is lack of authentic information that will aid in tracking victim contacts. Irregular statement by government based on prevailing information has created doubt in the mind of citizen regarding the authenticity of the news on COVID-19 in Nigeria. Furthermore, social media really contribute to spread information aimed to curtailing the spread of the virus, such as social distancing, latest confirm cases, online businesses and so on to people of Asaba which have been ignored by the peasants and religious sycophants who see the pandemic as farce.

Social media has positive vibes which contribute to other sectors. However, the persuasive interactive nature of various social media platforms and the multiple content and its varieties can lure people of Asaba rather than to help or improve radio and television channels. The paper conclude that social media platforms really contribute a lot to the people of Asaba to gain information about COVID-19. The nature of the impact of social media panic among people varies depending on an individual's gender, age, and level of education. Social media has played a key role in spreading various information about the COVID-19 outbreak in Nigeria and Asaba in particular.

2.1. Recommendations

Based on the conclusions, the paper recommends that:

- As a way to encourage Asaba people productivity and students' academic efficacy during this covid-19 pandemic, it is important that government and school authorities checkmate and regulate the use of social media among people of Asaba. Countries like china have strict restrictions for social media use, especially among people, which has helped the country's productivity and output.

- Students should be able to rightly place their priorities in their academic work social networking rather than misuse their times in non-profitable things.

- School administrators on their own should be able to build on the positive use of social networking sites such as joining students in group and helping them meet other student groups online. By this, they can bring to limelight the risks and benefits associated with the use of the social sites and help students to overcome the negative behavior associated with these sites as well as educating students on the best and most efficient ways of using these sites to support learning.

- The study recommends that parents should keep their eyes on the children to ensure that their use of the social media does not interfere with their studies and help the teenagers to achieve effective time allocation to tasks and management. This will help achieve efficiency and high productivity during this covid-19 pandemic.

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ECONOMIC FREEDOM AND INCOME INEQUALITY: A CASE OF EUROPEAN AND CENTRAL ASIAN NATIONS

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ABSTRACT

This paper presents an empirical evaluation of the nexus between economic freedom and income inequality. Economic freedom, income inequality and other socio-economic variables are used in the analysis with a panel of countries from the EU and Central Asian regions, from 1985-2019. Income inequality data are from the Standardized World Income Inequality Database, and Economic Freedom of the World Database is the source for economic freedom data. Unbalanced panel data estimations were carried out to study the influence of economic freedom on income inequality. Our results confirm a negative relationship between the economic freedom index (EFI) and the Gini index, i.e. lower income inequality is associated with an increase in EFI. However, as predicted, further increase in EFI will lead to an increase in income inequality in the sample of countries used in the analysis.

Keywords: Income Inequality, Economic Freedom, EU, Central Asia.

1. INTRODUCTION

Economic growth experienced by nations in the past few decades has often been associated with increased economic freedom. However, economic freedom in most nations has resulted in increased income inequality where in some nations the relationship is ambiguous (Ahmad, 2017; Pérez-Moreno and Angulo-Guerrero, 2016; Ashby and Sobel, 2008; Clark, 2008).

The theoretical and empirical ambiguity in the relationship between income inequality and economic freedom could be due to the long-run and short-run differences in impact of policies (Berggren, 1999). Such differences arise with increase in economic freedom via lowering of redistributive taxes, which benefits the rich in short-run, but the strong income growth in the long-run benefits the poor. According to Carter (2007)**,** the estimated relationship between economic freedom and inequality is U shaped and highly significant on a panel of 39 OECD[1] nations, based on the linear and quadratic specifications of all the explanatory variables (per capita income, political structure, education, demographics, and industrial composition) used in the analysis.

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Large institutional differences across countries could be another reason for the conflicting relationship between economic freedom and income inequality (Ashby and Sobel, 2008; Pérez-Moreno and Angulo-Guerrero, 2016). However, with little variation in institutional differences within states, the income inequality variation in U.S. states could be explained based on the state-level marginal differences in pro-market policy reforms (Ashby and Sobel, 2008). In contrast, a study by Apergis, Dincer, and Payne (2014) highlights the bidirectional causality between income inequality and economic freedom in both the short-run and the long-run, causing U.S. states to implement redistributive policies which cause a decline in economic freedom. As a result of decline in economic freedom, income inequality rises further and getting caught in the vicious circle of high-income inequality and heavy redistribution (Apergis, Dincer, and Payne, 2014).

Economic freedom, in market-oriented form, depends on several components such as freedom of individuals to make decisions, an environment that is supportive to market oriented personal and voluntary exchanges, freedom of competition in the market and ownership of property rights etc. (Ahmad 2017; The Fraser Institute 2021). Hence, the economic freedom index (EFI) as the Economic Freedom of the World (EFW) covers five main areas: size of the government, legal system and property rights, access to sound money, freedom to trade internationally, and regulation of credit, labor, and business. According to Pérez-Moreno and Angulo-Guerrero (2016), government size and regulation are robustly associated with greater income inequality while legal systems, property rights, sound money and trade freedom have no significant relationship to income inequality in European nations.

There have been considerable changes in policies to increase economic freedom around the world in the past few decades. As discussed in Pérez-Moreno and Angulo-Guerrero (2016) such efforts in the EU has in fact coincided with the widespread income inequality for the 2000s period they studied using a sample of EU nations. European nations have made numerous changes to their policies in the past few decades to entail greater economic freedom. Despite their efforts, inequality in Europe increased substantially starting in the mid-1980s and continued to increase until the end of the 2000s. The income gap between the poor and rich widened at different rates among EU nations, for example the United Kingdom showed widening of income gap further during the period where Germany, Slovenia, and Sweden which experienced low-income inequality in 1980s saw their inequality grow considerably towards the 2000s (Pérez-Moreno and Angulo-Guerrero, 2016).

The Pérez-Moreno and Angulo-Guerrero (2016) findings, EFI in EU nations (EU=1) is shown using the data employed for this paper. In Figure 1, economic freedom has increased from 1985-2019 (Panel A) but is also associated with an increasing trend in income inequality as well (see Panel B). In contrast, Central Asian nations show an increasing trend in EFI, but the income inequality has a slightly decreasing trend (see Figure 1 EU = 0 panels). Therefore, the ambiguous relationship

between economic freedom and income inequality needs further investigation to explain why such a difference exist in the sample of countries used in this paper.

FIGURE 1: ECONOMIC FREEDOM INDEX AND GINI INDEX
FROM 1985-2019
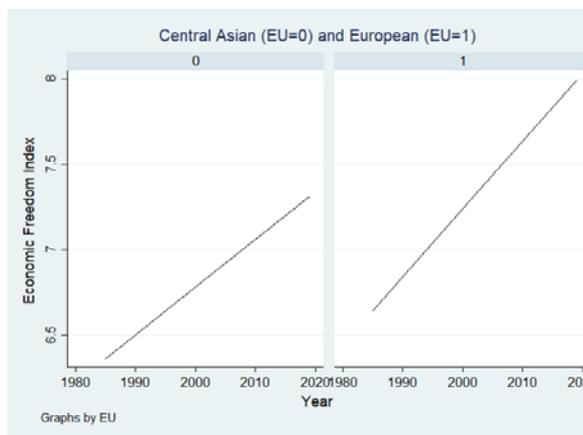
Panel A
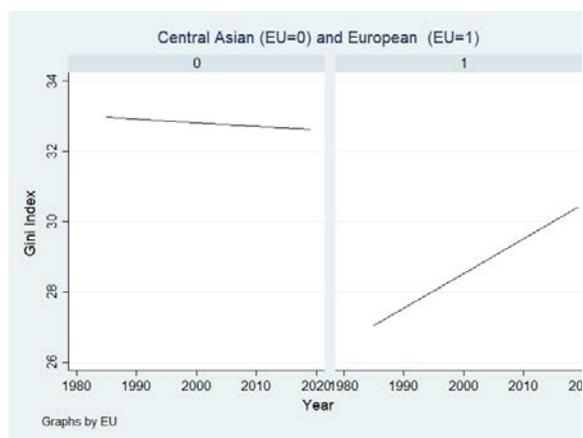
Panel B

This paper attempts to explain how a nation's economic freedom index (EFI), would affect the income distribution (Gini index), using a sample of countries in the EU[2] and Central Asia[3]. The pooled sample covers years 1985, 1990, 1995, 2000-19,

and represents 49 countries. The EU group consists of 27 countries and the Central Asian group represents 22 countries.

In the paper, we address three questions for the 1985-2019 period.

1. How does the EFI or its components (EFIAs) affect income inequality (Gini index) in a nation?

2. Does EFI or its components (EFIAs) influence on income inequality depend on the development stage of a nation?

3. Does income inequality (Gini-index) have a U shape (or inverted) relationship across different socio-economic variables?

To answer the second question outlined above, as suggested in the literature (Udayanganie and Charos, 2018; 2015), we focus on income classification (development stages) of nations by the World Bank's World Development Index (WDI). Income groups considered in the analysis are low middle-income, upper middle-income and high-income categories.

In Section 2 of the paper we present data and sources used in this study, summary statistics, unbalanced panel data results and post-estimation results. In Section 3 we present our discussion and conclusions and Section 4 outlines our summary and future research suggestions.

2. DATA AND ANALYSIS

2.1. Data Sources and Variables

A couple of data sources are used in this study and are summarized below. As shown in Table 1, our main variables, Gini index (based on household income) and Economic Freedom data are from the Standardized World Income Inequality Database (SWIID) and the Economic Freedom of the World (EFW) database, respectively. Other socio-economic variables, percentage of educated population (at least completed lower secondary), population density, population growth, per capita gross national income (GNI), are from the World Development Indicators (WDI).

Distributive, Labor and Social Studies (CEDLAS), national statistical offices from around the world (Solt 2019). The Gini index used in this study is based on the disposable income of household at country level. According to Solt (2019), SWIID has been compiled and standardized, using the Bayesian approach. Data used in SWIID estimates are from the World Bank, Eurostat, the Center for.

As described in Ahamad (2017), the economic freedom index area 1 (EFIA1), the size of the government is important because larger government size tends to reduce income inequality due to higher welfare spending, child benefits, free education, and health care etc. Hence, the size of the government in the EFI accounts for government consumption and transfers as a share of gross domestic product, state-owned enterprises, and marginal tax rates. That is economic freedom could generate economic growth while promoting more innovation and efficient allocation of resources. Therefore, economic freedom is negatively related to Gini index if we focus on the partial, immediate effect of a policy change such as lower taxes and increase in welfare expenditures. Hence, we hypothesize that increase in EFIA1 lowers the Gini-index.

The second area (EFIA2) of the EFI focuses on the legal systems which focus on the protection of property rights, rule of law and enforcement of law. Inherently, property rights are beneficial for individuals who own properties, hence the high-income individuals. Therefore, we hypothesize an increase in EFIA2 increases the Gini-index.

The third area, EFIA3, of the EFI accounts for volatility of money value due to unpredictable monetary policies and inflationary pressure in a country. Higher volatility of the value of money affects households whose assets are less protected against inflation thus it has more effect on low-income earners. Therefore, we hypothesize an increase in EFIA3 results in an increase in inequality of income, i.e. higher Gini index.

TABLE 1: DATA SOURCES AND VARIABLE DESCRIPTIONS

Variable	Source
Income Inequality Data (Gini index)	The Standardized World Income Inequality Database (Solt, 2019)
Economic Freedom Data	Economic Freedom of the World Database (The Fraser Institute, 2021)
Gross National Income per capita, Population Density, Population Growth, Education	World Development Indicators (The World Bank, 2021)

Variable	Description	Hypothesized linear sign to Gini index
Gini index	Gini index is based on the disposable income of household. 0 indicates perfect equality in income distribution and 100% (or 1) indicates perfect inequality in income distribution.	
Dens	Population density (people per sq. km of land area)	+
lnGNI and lnGNI^2	Growth rate of Gross National Income	-
EFI	A summary of economic freedom compiled based on five areas (EFIA) of economic freedom index.	-
EFIA1	The size of the government	-
EFIA1^2		+
EFIA2	Legal system and property rights	+
EFIA2^2		+
EFIA3	Volatility of money	+
EFIA3^2		+
EFIA4	Freedom to trade internationally	-
EFIA4^2		+
EFIA5	Regulation of credit, labor and business	?
EFIA5^2		?
Edu	Percentage educated (at least lower secondary level)	-
Pop and Pop^2	Population growth	+
EU	EU = 1 if country is in the European Union, EU = 0 otherwise (or in Central Asia)	
HI	HI = 1 if a country is classified as high-income in WDI, otherwise HI = 0 for middle-income	

The fourth area, EFIA4, of the EFI focuses on freedom to trade internationally. This measure has been widely used in terms of trade openness in the literature, to understand how it affects income inequality in a nation. However, in addition to trade openness (total value of exports and imports to country's GDP), EFIA4 accounts for

trade taxes, tariffs, and other trade barriers. As Keho (2017) suggests, an increase in trade openness leads to a decrease in income inequality in developing nations, due to increase in demand for low-skilled workers. This situation could decrease the wage gap between high-skilled and low-skilled workers, and therefore, we hypothesize an increase in EFIA4 decreases income inequality, i.e. a negative relationship between EFIA4 and the Gini index.

The fifth area, EFIA5, of the EFI focuses on regulation of credit, labor and business. Regulation on income inequality could be beneficial or detrimental (Keller and Kelly, 2015; Tanndal and Waldenström, 2016). Regulation could lead to a decrease in inequality due to increased access to credit for the low-income group, i.e. a positive correlation between EFIA5 and the Gini index. However, the correlation between the variables could be negative due to political pressure as well. Therefore, the predicted relationship between EFIA5 and the Gini index is ambiguous. As described above, EFIA1 and EFIA4 could lead a country towards more equality of income, while EFIA2 and EFIA 3 could increase income inequality if policies are not well coordinated in achieving more equality of resources and income in a country.

Also, we hypothesize that an increase in population density will increase income inequality in a nation (Sylwester, 2003). This is because population growth or increase in population density affect the age distribution of the population, hence a rapidly growing population will have a larger fraction of its members concentrated in the younger, lower-paid age groups. This could lead to an increase in population, or the density increase income inequality.

Economic growth (lnGNI) often is associated with increased investment (Ribaj and Mexhuani, 2021), and more job creation. Therefore, in this paper, we hypothesize an inverse relationship between lnGNI and the Gini index. Table 1 summarizes hypothesized signs of all the explanatory variables we have described above.

As suggested in the WDI, the development stage of nations is classified as high-income (HI), upper middle-income, lower middle-income and low-income. Most countries chosen for this study belonged to HI and upper middle-income groups during the period considered, 1985-2019. Four countries in the sample were reported as lower middle-income and they are: Kyrgyz Republic (1985-2019), Tajikistan (1990-2015), Ukraine (1985, 1990, 1995, 2000-19), and Uzbekistan (1990, 1995, 2000, 2001-03). With only four countries, the data available in the lower middle-income category was not sufficient to create a separate group in this study, and therefore, the upper middle-income and lower middle-income countries were pooled into one category, middle-income (MI).

2.2. Regression Models and Analysis

2.2.1. Fixed-effect Panel Regression

$$Gini_{it} = f(Dens_{it}, Edu_{it}, lnGNI_{it}, EFIA(x)_{it}, Pop_{it}, Pop_{it}^2, lnGNI_{it}^2, Year) + \varepsilon_{it} \quad (1)$$

$$Gini_{it} = f(Dens_{it}, Edu_{it}, lnGNI_{it}, EFIA(x)_{it}, Pop_{it}, Pop_{it}^2, EFIA(x)_{it}^2, lnGNI_{it}^2, Year) \quad (2)$$

$$Gini_{it} = f(Dens_{it}, Edu_{it}, lnGNI_{it}, EFI_{it}, Pop_{it}, Pop_{it}^2, EFI_{it}^2, lnGNI_{it}^2, Year) + \varepsilon_{it} \quad (3)$$

Models 1-3 present basic fixed effect models estimated, as a pooled sample as well as separately for the two groups: EU and HI, to account for countries in the EU and Central Asia separately and to compare EFI influence on income inequality based on the development stage of a country, classified by the World Bank.

As suggested in Carter (2007), most economic variables have a non-linear effect on income distribution in a nation and therefore, we have included non-linear effects variables: Pop^2, EFI^2, $lnGNI^2$ and $EFIA(x)^2$. In $EFIA(x)$, x represents different areas (1-5) considered in EFI calculation (see Table 1). Year in models 1-3 represents yearly fixed effects. EU and HI groups were used to observe any differences in income inequality for countries in different groups (high income versus middle income) and countries in the EU in comparison to countries in the Central Asia.

To determine whether models 1-3 should be estimated using fixed-effect (FE) or random-effect (RE), Hausman test (Greene 2008) was performed for all three models, with the null hypothesis "difference in coefficients not systematic." That is, the rejection of the null hypothesis recommends FE over RE in estimation. Chi-square values (and P-values) in models 1-3 are 73.25, 42.23 and 2177.81, respectively, with P values of 0.000 in all the models. Based on these test results, the null hypothesis of the Hausman test is rejected in all the models, and therefore, FE estimations are used in the analysis.

To see if time fixed effects are needed in FE model estimation, a joint hypothesis test was performed to see if the dummies for all years are jointly equal to 0. In all three model (1-3) estimations, reported F-values[4], and associated P-values are: 0.0000, 0.0007, 0.0002 respectively and the null hypothesis was rejected. Therefore, results of FE estimations presented in the paper include yearly FE estimations. The results are reported with random effect standard errors due to presence of heteroskedasticity and autocorrelated error in the models estimated.

3. RESULTS AND DISCUSSION

3.1. *Summary Statistics*

Data used in this paper consists of a pooled sample of European and Central Asian nations, a total of 49 countries. The study period includes data for the years 1985, 1990, 1995, and 2000-19. In this study, from 1985-2000 data are reported at 5-year interval due to data limitation of EFI. As shown in Table 2, average Gini index for the sample is 30.7, with a minimum of 17.5 and a maximum of 43. It can be seen that on average, 84% of the population in a country have at least completed lower secondary level of education. Table 3 provides a comparison of statistics between EU and Central Asian nations, and high and middle-income nations. On average, the Gini index in EU nations is 29.2, compared to 32.7 in Central Asia. Also, the summary statistics suggests a higher GNI growth rate and higher level of population density in EU nations (see Table 3). Although summary statistics show higher income inequality with a lower economic freedom in Central Asian nations, compared to EU nations, we investigated this relationship further by using panel data regression results presented in Tables 4-7.

3.2. *Fixed-Effect Panel Regression Results*

As described in the data and analysis section, three fixed-effect panel regressions, with random standard errors, are used in this paper to study the relationship between income inequality and economic freedom. All the models use population density (Dens), percentage of population with at least lower secondary level education (% Educated), population growth (Pop), GNI growth rate (lnGNI), economic freedom index (EFI) and different components (EFIA 1-5) which contribute to EFI calculation. Also, these models include variables to capture non-linear effects of population growth, GNI growth rate, EFI and EFIAs. Non-linear effects will help confirm whether there is a non-linear relationship between the above mentioned explanatory variables and income inequality. As suggested by (Carter, 2007), increase in economic freedom to a certain level might decrease income inequality and then further increase in economic freedom might lead to an increase in income inequality.

Table 4 presents FE panel regression results of the pooled sample. As expected, % educated consistently report lower Gini index, hence reduction of income inequality in models 1 and 3. The variable is statistically significant at the 5% level. For example, we could describe an increase in education in the population by 1% decreases the Gini index by 0.05. In model 1, none of the other variables are statistically significant at least at the 10% level although Pop, lnGNI, and EFIA1-3 have the predicted signs. In contrast to model 1 (Table 4), model 2's explanatory power of the Gini coefficient is considerably higher as shown in Rho and overall R^2 values of the model. As expected,

EFIA4 is negative and statistically significant at the 5% level. Also, the squared terms of EFIA1, EFIA3 and EFIA4 are significant and show the expected signs, which proves a non-linear relationship. As suggested in model 3 (Table 4) in general, an increase in EFI by 1 unit decreases income inequality by 13 points and it is statistically significant at the 5% level.

As described in the previous section, the pooled FE estimation includes yearly fixed effects as well. In summary of yearly FE, in all models', yearly fixed effects were statistically significant at least at the 10% level, except in 1995 in model 2[5]. See Table 4 for the rest of FE estimation results, with random standard errors.

Table 5 presents the FE estimation for the European nations in the sample. As expected, in all the models, an increase in percentage of population with at least lower secondary level of education has a significant negative effect on the income inequality index. In addition, density, GNI growth rate (lnGNI), EFIA1, EFIA3, and EFIA5 show expected relationship to the Gini index and lnGNI, EFIA3 and EFIA5 are at least statistically significant at the10% level. In contrast to the expected relationship between population growth and the Gini index, results in the European nations FE model suggest an inverse relationship between population growth and the Gini index. As expected, also the results in model 2 show a significant increase in income inequality with increase in EFIA2.

Tables 6 and 7 present FE estimation results for our sub samples: high-income and middle-income groups. This analysis was done to learn how explanatory variables in the study affect income inequality in nations at different economic growth levels. As shown in Table 6, in the high-income group, education, GNI growth rate and EFIA3 have a significantly expected effect on income inequality. However, EFIA2 and population growth predict the reverse relationship contrary to expected signs and are significant as well. In the low-income group (see Table 7) increase in population density in fact leads to increase in inequality, at least at the 5% level, as suggested in models 1 and 3. Interestingly, compared to EU nations and the high-income group, education effect on income inequality in middle-income nations is reversed, hence there is no significant effect from the percentage of the population educated on income inequality reduction in middle-income nations. As expected, population growth has a positive significant impact on the Gini index in middle-income countries and therefore, an increase in population will increase income inequality.

TABLE 2: SUMMARY STATISTICS – POOLED SAMPLE

Variable	Mean	Std. Dev.	Min	Max
Gini	30.71	4.87	17.50	43.00
GNI	21698.46	21213.18	160.00	104370.00
Density	110.92	102.96	0.14	563.07
% Educated	83.94	17.28	25.13	100.00
Pop growth rate	0.29	0.91	-3.85	4.37
EFIA1	6.24	1.05	1.57	8.98
EFIA2	6.72	1.31	4.18	9.06
EFIA3	8.72	1.49	0.01	9.92
EFIA4	7.91	0.98	2.00	9.78
EFIA5	7.24	0.89	1.15	8.76
EFI	7.37	0.76	3.43	8.77
GNI growth rate	9.32	1.36	5.08	11.56

TABLE 3: SUMMARY STATISTICS FOR EU, CENTRAL ASIAN, HIGH-INCOME, AND MIDDLE-INCOME GROUPS

	Central Asian Nations			EU Nations			Middle Income			High Income		
Variable	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Gini	32.74	22.10	43.00	29.22	17.50	38.00	34.00	22.00	43.00	28.88	17.50	35.80
GNI (in ,000)	13.54	0.16	104.37	27.09	1.49	88.00	4.09	0.16	15.19	32.15	3.21	104.37
Density	83.42	0.14	563.07	131.05	16.19	515.14	69.48	5.50	167.00	133.99	0.14	563.07
% Educated	84.53	29.00	100.00	83.73	25.13	99.86	83.03	29.00	99.46	84.27	25.13	100.00
Pop growth rate	0.41	-3.76	4.37	0.20	-3.85	2.89	0.14	-3.76	2.93	0.37	-3.85	4.37
EFIA1	6.98	1.57	8.98	5.90	3.00	7.83	7.08	1.57	8.98	5.89	3.00	8.18
EFIA2	5.97	4.18	9.06	7.07	4.30	8.99	5.27	4.18	7.35	7.34	4.30	9.06
EFIA3	8.02	0.01	9.92	9.05	0.74	9.87	7.79	0.01	9.81	9.12	1.85	9.92
EFIA4	7.19	5.05	9.25	8.25	2.00	9.78	7.13	2.56	9.12	8.25	2.00	9.78
EFIA5	7.06	1.15	8.76	7.33	2.25	8.65	6.87	1.15	8.34	7.40	2.25	8.76
EFI	7.04	3.68	8.77	7.52	3.43	8.56	6.82	3.68	8.31	7.60	3.43	8.77
GNI growth rate	8.39	5.08	11.56	9.94	7.31	11.39	7.93	5.08	9.63	10.15	8.07	11.56

TABLE 4: POOLED FE ESTIMATION WITH ROBUST SE

	Model 1			Model 2			Model 3		
	Coef.	Robust Std. Err	P>|t|	Coef.	Robust Std. Err	P>|t|	Coef.	Robust Std. Err	P>|t|
Density	-0.024	0.022	0.281	-0.015	0.021	0.469	-0.008	0.019	0.662
% Educated	-0.056	0.022	0.016**	-0.042	0.025	0.102	-0.051	0.024	0.044**
Pop	0.184	0.283	0.519	0.116	0.240	0.631	0.138	0.266	0.608
Pop^2	-0.161	0.098	0.108	-0.106	0.086	0.225	-0.183	0.090	0.047**
lnGNI	-3.43	5.789	0.556	0.401	5.033	0.937	-0.106	5.107	0.984
$lnGNI^2$	0.114	0.279	0.684	-0.092	0.251	0.716	-0.045	0.235	0.849
EFIA1	-0.147	0.245	0.552	2.335	1.458	0.116			
EFIA2	0.311	0.256	0.231	1.997	1.523	0.197			
EFIA3	0.138	0.171	0.422	-2.254	0.702	0.003***			
EFIA4	0.140	0.382	0.971	-6.065	2.838	0.038**			
EFIA5	-0.197	0.307	0.524	-3.539	2.057	0.092*			
EFI							-13.377	6.123	0.034**
$EFIA1^2$				-0.213	0.125	0.097*			
$EFIA2^2$				-0.131	0.111	0.242			
$EFIA3^2$				0.151	0.045	0.002***			
$EFIA4^2$				0.385	0.194	0.055*			
$EFIA5^2$				0.243	0.153	0.120			
EFI^2							0.927	0.430	0.037**
Constant	53.513	29.455	0.076	66.768	37.014	0.078*	83.676	37.407	0.031**
R-Sq				R-Sq			R-Sq		
Within	0.374	Sigma_u	4.410	0.445	Sigma_u	4.379	0.382	Sigma_u	4.083
Between	0.182	Sigma_e	0.688	0.178	Sigma_e	0.654	0.343	Sigma_e	0.680
Overall	0.229	Rho	0.976	0.275	Rho	0.978	0.484	Rho	0.973
Number of observations: 349			Number of Groups: 44						

TABLE 5: EUROPEAN NATIONS' FE ESTIMATION WITH ROBUST SE

	Model 1			Model 2			Model 3		
	Coef.	**Std. Err**	**P>|t|**	**Coef.**	**Std. Err**	**P>|t|**	**Coef.**	**Std. Err**	**P>|t|**
Density	0.013	0.011	0.241	0.013	0.012	0.253	0.013	0.011	0.242
% Educated	-0.032	0.014	0.019**	-0.025	0.015	0.091**	-0.031	0.013	0.017**
Pop	-0.263	0.126	0.037**	-0.289	0.128	0.025**	-0.285	0.126	0.025**
Pop^2	-0.090	0.044	0.041**	-0.066	0.047	0.158	-0.105	0.046	0.024**
lnGNI	-4.668	2.609	0.075*	-4.245	3.081	0.170	-2.518	2.514	0.318
lnGNI^2	0.329	0.139	0.019**	0.302	0.163	0.065*	0.233	0.131	0.077*
EFIA1	-0.004	0.151	0.976	1.726	1.153	0.136			
EFIA2	0.058	0.236	0.805	3.915	1.975	0.049**			
EFIA3	0.442	0.143	0.002***	2.192	2.192	0.318			
EFIA4	0.166	0.204	0.414	-7.395	4.941	0.136			
EFIA5	0.358	0.129	0.006***	-1.235	1.754	0.482			
EFI							-5.457	5.808	0.348
EFIA1^2				-0.144	0.097	0.138			
EFIA2^2				-0.277	0.142	0.052*			
EFIA2^2				-0.102	0.125	0.416			
EFIA3^2				0.453	0.299	0.130			
EFIA4^2				0.109	0.120	0.364			
EFI^2							0.441	0.386	0.255
Constant	35.688	12.228	0.004***	45.042	21.217	0.035*	48.124	19.448	0.014**
R-Sq				R-Sq			R-Sq		
Within	0.394	Sigma_u	5.401	0.419	Sigma_u	5.235	0.380	Sigma_u	5.449
Between	0.117	Sigma_e	0.639	0.097	Sigma_e	0.633	0.101	Sigma_e	0.642
Overall	0.118	Rho	0.986	0.103	Rho	0.986	0.102	Rho	0.986
Number of observations: 265			Number of Groups: 27						

TABLE 6: HIGH INCOME NATIONS' FE ESTIMATION WITH ROBUST SE

	Model 1			Model 2			Model 3		
	Coef.	Std. Err	P>|t|	Coef.	Std. Err	P>|t|	Coef.	Std. Err	P>|t|
Density	0.015	0.009	0.114	0.009	0.010	0.392	0.011	0.010	0.271
% Educated	-0.026	0.012	0.064[*]	-0.006	0.013	0.607	-0.019	0.012	0.118
Pop	-0.208	0.115	0.073[*]	-0.139	0.119	0.244	-0.234	0.117	0.046[**]
Pop^2	-0.135	0.039	0.001[***]	-0.1056	0.042	0.012[**]	-0.163	0.045	0.000[***]
lnGNI	-8.124	3.151	0.011[*]	-9.009	3.156	0.005[***]	-9.309	3.115	0.003[***]
$lnGNI^2$	0.461	0.160	0.004[***]	0.482	0.160	0.003[***]	0.545	0.157	0.001[***]
EFIA1	0.027	0.140	0.847	2.114	1.109	0.058[**]			
EFIA2	-0.152	0.224	0.498	1.881	1.992	0.346			
EFIA3	0.315	0.118	0.008[***]	-3.902	2.159	0.072[**]			
EFIA4	-0.279	0.186	0.134	-3.069	4.274	0.342			
EFIA5	0.465	0.117	0.000[***]	-2.910	1.539	0.060[**]			
EFI							-11.963	6.132	0.052[**]
$EFIA1^2$				-0.184	0.095	0.056[**]			
$EFIA2^2$				-0.133	0.139	0.340			
$EFIA3^2$				0.240	0.124	0.054[**]			
$EFIA4^2$				0.226	0.259	0.383			
$EFIA5^2$				0.230	0.105	0.029[**]			
EFI^2							0.844	0.405	0.039[**]
Constant	60.147	15.979	0.000[***]	99.916	26.547	0.000[***]	109.140	28.220	0.000[***]
R-Sq				R-Sq			R-Sq		
Within	0.335	Sigma_u	4.663	0.373	Sigma_u	4.275	0.295	Sigma_u	4.639
Between	0.035	Sigma_e	0.573	0.055	Sigma_e	0.562	0.038	Sigma_e	0.586
Overall	0.039	Rho	0.985	0.065	Rho	0.982	0.049	Rho	0.984

Number of observations: 261   Number of Groups: 28

TABLE 7: LOW INCOME NATIONS' FE ESTIMATION WITH ROBUST SE

	Model 1			Model 2			Model 3		
	Coef.	Std. Err	P>|t|	Coef.	Std. Err	P>|t|	Coef.	Std. Err	P>|t|
Density	-0.146	0.052	0.007***	-0.071	0.055	0.204	-0.132	0.052	0.015**
% Educated	0.040	0.025	0.123	-0.017	0.029	0.568	0.026	0.028	0.355
Pop	1.299	0.370	0.001***	0.888	0.400	0.031**	0.944	0.386	0.017**
Pop^2	-0.273	0.164	0.101	-0.300	0.165	0.074**	-0.383	0.172	0.029**
lnGNI	-15.562	7.262	0.036**	-17.579	7.732	0.027**	-15.266	7.061	0.034**
$lnGNI^2$	0.902	0.443	0.046**	1.043	0.471	0.031**	0.922	0.431	0.036**
EFIA1	-0.387	0.463	0.406	2.755	3.317	0.410			
EFIA2	0.558	0.551	0.315	7.399	4.317	0.092*			
EFIA3	0.068	0.256	0.792	-3.486	1.609	0.035**			
EFIA4	0.475	0.414	0.257	-7.112	3.109	0.026**			
EFIA5	-1.399	0.463	0.004***	-1.513	4.133	0.716			
EFI							-9.284	9.041	0.308
$EFIA1^2$				-0.202	0.238	0.400			
$EFIA2^2$				-0.617	0.373	0.104			
$EFIA3^2$				0.246	0.112	0.031**			
$EFIA4^2$				0.494	0.209	0.021**			
$EFIA5^2$				0.005	0.308	0.986			
EFI^2							0.598	0.642	0.355
Constant	116.604	30.808	0.000***	129.821	43.056	0.004***	142.653	40.865	0.001***
R-Sq				R-Sq			R-Sq		
Within	0.542	Sigma_u	8.227	0.625	Sigma_u	6.462	0.446	Sigma_u	8.082
Between	0.127	Sigma_e	0.850	0.102	Sigma_e	0.802	0.136	Sigma_e	0.913
Overall	0.084	Rho	0.989	0.013	Rho	0.984	0.104	Rho	0.987

Number of observations: 88   Number of Groups: 16

4. SUMMARY AND FUTURE RESEARCH SUGGESTIONS

We focused on studying the relationship between economic freedom and income inequality in nations, with a sample of 49 countries in the EU and Central Asia, during the period 1985-2019. In addition, we also focused on studying how GNI growth rate, educated percentage of the population and development stage of a nation, affect income inequality. Fixed effects panel data estimations, using a pooled and group sample were carried out. Based on the model 3 results of the pooled sample, we could confirm a U-shaped relationship between economic freedom and income inequality. That is, increase in economic freedom will decrease income inequality. However, further increase in economic freedom will result in increase in income inequality. Based on different groups, we could conclude that U shaped relationship between EFI and income inequality exist in high-income nations but does not hold for EU nations and middle-income nations. We assumed trade openness is better in reducing income inequality but further increase in trade openness (EFIA4^2) might result in increase in income equality. Our results from model 2 in the pooled model confirms the non-linear relationship we predicted between trade openness and income inequality.

We understand that this current analysis could be improved in numerous ways. The possible endogeneity issue between economic freedom and income inequality is one of the major issues. Therefore, instrumental variable approach might improve study results. Also, this study could be extended to other regions, to include other countries with more variations in income inequality and economic freedom.

NOTES

1. OECD: Organization for Economic Co-operation and Development
2. EU Nations: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, United Kingdom
3. Central Asian Nations: Albania, Andorra, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Greenland, Iceland, Kazakhstan, Kosovo, Kyrgyz Republic, Moldova, Montenegro, Norway, Russian Federation, San Marino, Serbia, Switzerland, Tajikistan, Turkey, Ukraine
4. $F_{(22, 272)} = 2.83$; $F_{(22, 267)} = 2.38$; $F_{(22, 275)} = 2.57$
5. Full results of this yearly fixed effect estimation are available upon request from the authors.

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