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## ***Generativity is a Core Value of the ESJ: A Decade of Growth***

Erik Erikson (1902-1994) was one of the great psychologists of the 20th century<sup>1</sup>. He explored the nature of personal human identity. Originally named Erik Homberger after his adoptive father, Dr. Theodore Homberger, he re-imagined his identity and re-named himself Erik Erikson (literally Erik son of Erik). Ironically, he rejected his adoptive father's wish to become a physician, never obtained a college degree, pursued independent studies under Anna Freud, and then taught at Harvard Medical School after emigrating from Germany to the United States. Erickson visualized human psychosocial development as eight successive life-cycle challenges. Each challenge was framed as a struggle between two outcomes, one desirable and one undesirable. The first two early development challenges were 'trust' versus 'mistrust' followed by 'autonomy' versus 'shame.' Importantly, he held that we face the challenge of **generativity** versus **stagnation in middle life**. This challenge concerns the desire to give back to society and leave a mark on the world. It is about the transition from acquiring and accumulating to providing and mentoring.

Founded in 2010, the European Scientific Journal is just reaching young adulthood. Nonetheless, **generativity** is one of our core values. As a Journal, we reject stagnation and continue to evolve to meet the needs of our contributors, our reviewers, and the academic community. We seek to innovate to meet the challenges of open-access academic publishing. For us,

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<sup>1</sup> Hopkins, J. R. (1995). Erik Homburger Erikson (1902–1994). *American Psychologist*, 50(9), 796-797. doi:<http://dx.doi.org/10.1037/0003-066X.50.9.796>

generativity has a special meaning. We acknowledge an obligation to give back to the academic community, which has supported us over the past decade and made our initial growth possible. As part of our commitment to generativity, we are re-doubling our efforts in several key areas. First, we are committed to keeping our article processing fees as low as possible to make the ESJ affordable to scholars from all countries. Second, we remain committed to fair and agile peer review and are making further changes to shorten the time between submission and publication of worthy contributions. Third, we are looking actively at ways to eliminate the article processing charges for scholars coming from low GDP countries through a system of subsidies. Fourth, we are examining ways to create and strengthen partnerships with various academic institutions that will mutually benefit those institutions and the ESJ. Finally, through our commitment to publishing excellence, we reaffirm our membership in an open-access academic publishing community that actively contributes to the vitality of scholarship worldwide.

*Sincerely,*

***Daniel B. Hier, MD***

*European Scientific Journal (ESJ) Natural/Life/Medical Sciences*

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## Rural Tourism Business as an Economic Instrument for the Development of Economically Backward Regions

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### Abstract

The disease COVID-19 caused by the virus SARS-CoV-2 has initially disrupted the Chinese economy after the first cases were reported in December 2019 in Wuhan city in Hubei province of China. The virus continued to spread throughout the rest of the world. This spread of the virus led to the official designation of the COVID-19 pandemic by the World Health Organization (WHO) in late February 2020, which resulted in the disruption of these economies due to the stringent lockdowns and restrictions in travel disease's evolution. The disruptive economic impact is highly uncertain, making it difficult for policymakers to craft an appropriate policy response to these macroeconomic disruptions. To better understand possible economic outcomes, this paper explores the use of the machine learning approach LSTM to assess the economic forecast in some selected countries. The empirical results from this paper demonstrate that there are temporary disruptions in macroeconomics in the short run and these economies rebound. The recovery of each selected country may be different as the forecast would imply.

**Keywords:** Importance of rural tourism development, Rural areas, Social and economic problems of the village

## **Introduction**

The development of tourism business in rural areas is a unique opportunity to advance economically backward regions. This can be achieved by harnessing the natural, cultural, and historical resources into tourism products. More so, the national, traditional, and historical identity will be preserved. Majorly, the population living in rural areas traditionally preserves national traditions. Therefore, the employment of local people in rural areas is a prerequisite for the survival of ethnocultural features (Hall, Kirkpatrick, & Mitchell, 2005).

This article discusses the economic and social problems of the rural region of Adjara and ways to solve them through the development of rural tourism. The mentioned method has been successfully used in many European countries for the past 50 years. Sharing the European model and experience of rural tourism business development was an essential issue of the article. Since this article focuses on an international experience that develops the rural tourism business, the Scandinavian countries stand out. An example of this is Norway, where rural tourism plays a decisive role in the economic and social well-being of the village, as well as in the preservation of cultural, ethnographic, and historical values.

The material used in the paper represents the research. Quantitative research was used as the method of the study, and questionnaires were administered through random sampling. The study was conducted in one of the regions of Adjara, which covered 70% of rural homesteads. As a result of analyzing and synchronizing data, diagrams and data counting scales were created

## **Literature Review**

Rural tourism is one of the many ways to solve economic and social problems in rural areas. It is regarded as an economic tool that advances backward and less developed regions in many countries. Sharing the Norwegian experience to develop tourism in rural areas is especially important. This is because Norway and Georgia are traditionally farming states. More so, the village not only has a traditional meaning but is the basis for preserving the cultural and historical features of the country as a whole.

Since 1980, globalization has damaged the economies of rural regions in many countries of the world, causing many agricultural households to go bankrupt. As a result, the migration of the rural population to the city has increased. The leading cause of these destructive processes was a significant decrease in demand for goods and services produced in rural areas. In this regard, the Ministry of Agriculture in Norway adopted a government program that supported private homesteads and formed a tourism business with the resources available on their base. Government support programs for

developing tourism business in rural areas have contributed to the creation of many exotic hotels in Norwegian villages, which are very popular among the Norwegian population and foreigners. Also, creating exotic and unique hotels contributed to developing agriculture, road infrastructure, transport, and other related areas in Norway. Tourism in rural areas, in general, became the main prerequisite for the social and economic development of the region (Edda Espeland, 2016)

Therefore, having the Norwegian experience of rural tourism business development is very important for Adjara. An interesting book by John Egeland and Solberg presents authentic rural tourism products that are based on the Middle Ages. According to the book, buildings, courtyards, interiors, and exteriors at tourism sites have been preserved as much as possible in their original form or have been restored following the medieval style. Sharing the Norwegian experience in the selection, development, and financing of the appropriate homesteads for developing rural tourism business is a unique method of rural tourism formation, which is very important to consider in Adjara. The creation of tourism in rural areas based on such homesteads ensures the sustainable development of tourism in the rural region (John Egeland & Solberg, 2007). Many European authors also address the great importance of tourism development in rural areas in their works, and this will be shared in this article as well.

Wanda Georgia and her co-authors address the role of tourism in rural areas in their work. The book discusses the role of rural tourism in the conditions of globalization, the part of cultural changes in rural communities, theoretical issues that define rural settlement and rural landscape, and methodological issues for developing rural tourism. Practical examples of tourism formation in rural areas of Canada such as Ontario and Alberta are given and analyzed in the book. The paper highlights topics such as the relationship between sustainable rural tourism and the well-being of the rural population. The authors pay great attention to the importance of using new approaches for the development of tourism in rural areas (Wanda George, Heather Mair, & Donald Reid, 2009)

The work of Marie Cavley and her colleagues is another interesting material that deals with the development of rural tourism business in Ireland under the conditions of globalization, where 57 rural farms and 23 related organizations are involved in the rural tourism business. The article talks about the importance of uniting the mentioned organizations to achieve success in the international market, the formation of niche rural tourism products, and the importance of implementing unified marketing (Cavley, Gaffey, & Gilmour, 2002).

The prerequisites for the formation of tourism business in rural areas are different in various countries. However, the appearance of tourism

business in rural areas is attractive in North America, Canada, and Spain. The social and economic foundations of the formation of tourism business in rural areas in these countries are well described in the guidebook "Rural Tourism and Sustainable Business" by Derek Hall and his colleagues. Sharing the experience of the mentioned countries is especially important to determine the economic role of the tourism business in the rural regions of Georgia (Hall, Kirkpatrick, & Mitchell, 2005)

Furthermore, sharing the Spanish experience of rural tourism business formation is also very important since Spain, like Norway, successfully occupies a niche role in the market of rustic tourism products. The paper talks about the importance of creating the appropriate state regulation in Spain and the activity of local farms in rural areas in the past year, which actively contributed to the development of tourism in rural areas in Spain (Barke, 1994)

Agrotourism is one of the directions of tourism in rural areas. For diversity and sustainable development of rural tourism business, it is necessary to share the international experience of agrotourism development. Temirbulatova and Borza (2015) identify the importance of agrotourism development in their article. The article discusses in detail the strategic model of rural agrotourism development as a prerequisite for creating a sustainable and green economy.

There are several ways to develop rural regions, one of which is tourism. Lenkovics, Kalmar-Rimoczi, and Beltane discuss the level of tourism development in their paper, using one of the rural regions of Hungary as an example. They also summarize the 10-year development plan in the background of 10-year integration with the European Union. The information used in the mentioned article was significant for Georgia, as a country moving towards European integration.

Tourism business development in rural areas should begin by researching tourist markets. Fred Selnes's book provides a market research methodology. The material is an in-depth work on studying needs and conducting research. The mentioned research methods were used during the research and analysis. It is necessary to consider the mentioned methodology and recommendations while researching tourist markets in the rural areas of Adjara (Selnes, 1993).

While working on the article, two important issues were studied: the issues of business, marketing, and innovations in the formation of tourism in rural areas and the issues of education and training of the rural population, which is a prerequisite for the formation of sustainable and intensive tourism business in rural areas. Rural tourism is an exciting and innovative opportunity to develop rural regions and give them a new historical meaning. The selected literature was chosen because it emphasizes the role of rural tourism in socio-economic development. The presented literature also identifies the

international practice for sustainable and intensive tourism development in rural areas.

Existing Norwegian works represent the main part of the literature, which was selected in the direction of tourism in rural areas. This is explained by the similarity between Georgia and Norway in terms of farming traditions and socio-economic problems in rural areas caused by globalization. Therefore, sharing the Norwegian experience by creating a tourism business model in rural areas and establishing appropriate state regulation is the foundation of this work.

## **Methods**

To study the social and economic problems of the villages in Adjara, Georgia, the quantitative research and analysis method was chosen. As a result, questionnaire was developed that included all important issues and the answers given were compared and analyzed. Research was conducted in the municipality of Keda, Adjara and a total of 158 homesteads were surveyed through random sampling. During the survey, all the homesteads were physically examined and the residents of the mentioned homesteads were also spoken to. The study was relatively large-scale and it covered all homesteads characteristic of the region. Thus, infallible and in-depth material were collected and the causes of social and economic problems in rural areas were investigated. The natural and cultural resources in the region, which are necessary for the sustainable development of tourism business in rural areas, were identified as well. The research included the questionnaires needed to study rural areas' resources and socio-economic conditions. In this article, only a part of the conducted research is presented, which illustrates an idea of the economic problems in rural areas.

The data obtained from the conducted research were calculated and distributed in pre-prepared tables. As a result of the received data, an analysis and a qualitative assessment of the research was made. Interestingly, the conducted research covered many more issues. Depending on the format of the article, only a certain part of the research is presented in the paper.

## **International Experience of Rural Tourism**

Rural tourism as an economic tool is used in solving rural problems, since the end of the last century in Norway and Spain. This is why the experience of the mentioned countries in solving rural issues was studied, and sharing it is critically essential for the Adjara region of Georgia. Norway is rich in open landscapes, untouched forests, fjords, and lakes. It is also attractive for its unique building style and architecture. The traditional activity of the Norwegian people was farming life. Nowadays, tourist facilities are created based on these farms and homesteads, which are on the national

monument protection list of the country. It is also an expression of the authentic and unique Norwegian culture.

Since the eighties of the last century, global processes have harmed the development of agriculture in Norway. Therefore, sharing the Norwegian experience of rural tourism business formation is very important because the Norwegian model of rural tourism development is the most acceptable for Georgian, private Adjara villages. To solve the mentioned problem, the Ministry of Agriculture of Norway developed a rural promotion program, with the aim to receive additional income for the population by receiving tourists based on the resources available on private homesteads in rural areas. However, due to the inefficiency of the mentioned program, the farmers refused to participate. One part of the farmers created the Norwegian Entrepreneurs' Union (NHO), and the other part was the association of owners of tourism businesses on private homesteads - an organization called "HANEN." The primary function of the mentioned organization became the general marketing of the tourist facilities that are members of it. However, even this organization could not get the effect the farmers wanted because they did not have the appropriate knowledge and qualifications. Later on, the organization, Innovasjon Norge (former Export Council of Norway), helped the said association. They created a unique program that took into account financial and professional assistance for farmers. With the help of the mentioned organization, outstanding, exciting farmsteads in rural areas were selected, which were transformed into tourist facilities in the financing program set by specialists. Based on the work plan and criteria, preference was given to a particular homestead (Preference was given to the history of the homestead, its age, the traditional architecture of the buildings on the homestead, the level of education of the population living in it, their knowledge of traditional handicrafts, etc.). Through Innovasjon Norge, courses were created to train and improve the skills of farmers, and the population living on the homestead was trained. It should be noted that as a result of the effective work of the mentioned organization, Norway has earned a name as a country of exclusive rural tourism, where the service standards and quality are very high.

The organization "HANEN" is still successfully functioning. Its functions have increased nowadays, and it includes the creation of uniform policies and standardization, improvement of reservation and service systems, and positioning in target markets. Since thousands of homesteads, tourist facilities, and families are already involved in the mentioned organization, the costs of implementing the mentioned activities provide a way to save money for each participant. In addition, homesteads and tourist facilities included in the organization are connected by several thematic routes, which provide equal economic opportunity for everyone.

The active development of the rural tourism business in Spain dates back to the 1980s. It is worth noting that Spain is one of the first countries in Europe to use the rural tourism business as an economic tool for developing peripheral regions. Spain was traditionally associated with seaside resorts. The developed part of the country was the maritime regions, which is why the rural areas were almost empty. Since the end of the 20th century, when there was an active discussion about the need to avoid a polluted environment, the Spanish government decided to promote the development of tourism businesses in rural areas.

For the first time, tourism as an economic phenomenon appeared in the rural regions of Spain in 1967, a program called "Vacaciones en casas de labranza" (Vacations in Farmhouses). Rural farmers were allowed to turn their homesteads into tourist attractions. In the first year of the program, the number of sleeping places needed to receive tourists in Spanish villages increased significantly. As a result of the implemented works, the number of travelers interested in rural tourism increased, which laid the foundation for more serious projects in Spain.

The Spanish government created a unique financing program and regulations for the development of tourism in rural areas, which was implemented for the first time in the Catalonia region. This was followed by the neighboring province of Aragon. The story of rural tourism business in the mentioned regions was exciting and attractive for other areas of Spain. All over Spain, the development of the rural tourism business began. As a result, the center of tourism moved from the sea resorts to the heart of Spain and significantly solved the socio-economic problems of the population living here.

The formation of the state regulation and model of rural tourism in Georgia is necessary to resolve economic problems in rural areas rapidly. This paper provides details of the development of rural tourism business in Norway and Spain, since these two countries have state regulations and models for rural tourism business. Rural tourism is developing in many countries, but the model of state regulation is only available in these two countries. Forming the business model of tourism in rural areas leads to the possibility of strategic approaches and consistent business development planning. Sharing the mentioned experience and bringing the Norwegian and Spanish model of state regulation to Georgia will contribute to the active development of the rural tourism business in Georgia.

## **Results and Discussion**

If the above-mentioned international experience is considered, the economic and social problems of the villages of Adjara can be solved. Therefore, special organizations should be created at the state level, which will



take care of rural development through the formation of tourism business. Adjara is exceptionally rich in natural, cultural, and historical resources. Historical monuments dating back to the first century are located in the region. Adjara region is distinguished by its religious features, lifestyle, and unique cultural heritage. If the Georgian government begins to develop rural tourism in the Adjara region by sharing international experience, it will be possible to create the area and preserve the traditional, unique cultural life of the Adjara villages. This, in turn, will attract travelers from many parts of the world.

Rural tourism has long existed in developed European countries as an economic tool for rural development. During the strategic planning of tourism, many developed countries play a significant role in developing tourism in rural areas. Therefore, the sustainable and intensive development of tourism business in rural regions of European countries is based on scientific research. Also, the state regulations and recommendations that are formed for the proper development of tourism business in rural areas are based on scientific work.

In the modern world, globalization significantly impacts economic and social life.

### **Globalization and its Consequences in the Adjara Region**

Globalization is the integration and unification of cultural, economic, and social processes in the modern world. Globalization processes during the development of specific business activities have both positive and negative aspects, which are vitally important to consider during the planning and organization of sustainable development of tourism business in rural areas. The integration processes, which the rapid growth of globalization has caused, face new challenges every day. Even in the world's leading countries, it is difficult to maintain national, traditional production and strengthen the national currency every day. In the conditions of globalization, it becomes more and more challenging to preserve national and cultural characteristics and identity. Nonetheless, globalization is an irreversible process. This is why it is important to maintain economic stability and sustainability in a changing environment.

As a result of integration and unification, Georgia faced new international requirements, which are difficult for developing countries to meet. In this regard, the government will have to meet the standards and requirements set at the international level, which in itself complicates business development processes and, at the same time, increases the cost of a specific product. Despite many negative factors, globalization is a new opportunity to produce unique and niche products that can compete with other similar products in the international market.

During the Soviet Union, the Adjara region was the leading supplier of citrus and tea to other republics of the Union. Therefore, the Adjara region

held a niche position during the sales of the mentioned products. After the collapse of the Soviet Union, citrus and tea appeared in these markets from other countries at a lower price. As a result, Adjara lost its niche position in the needs of its products. Georgian products could not compete with goods imported from other countries. Thus, citrus and tea production decreased in Adjara. At the initial stage, it was difficult for the rural population of Adjara to find new markets due to the political and challenging economic situation at that time.

Georgia was traditionally the homeland of agriculture. Agriculture and working on the land were not only a source of economic income for the Georgian people, it was an expression of history, culture, and tradition. Working with the land was related to ensuring the well-being of the vineyard and maintaining its identity. Georgian people's love for the land is expressed in the diversity and culture of agricultural activities. As a result of globalization, the country faced the danger of forgetting the said tradition. The main goal of the formation of any economic activity is to create jobs and ensure the well-being of the population. The presence of jobs leads to a stable economic and social environment. In recent decades, the issue of employment in rural areas has been one of the main problems. The level of work in the rural areas is low, and the wages for the existing jobs are also meager. Therefore, the villages are almost empty of young people, which hurts the preservation of traditions, culture, and the history there.

The main goal of sustainable development of tourism business in rural areas is to return the population to the village. Consequently, it is necessary to carry out essential measures in tourism development and create new jobs. For the sustainable and intensive development of tourism business in rural areas, it is also essential to involve the local population to restore cultural and historical features which are exciting and attractive for tourists.

As a result of disruption of traditional agriculture, unemployment, migration of newcomers, and the general decline of interest in the countryside, the traditional cultural characteristics in the villages of Adjara were forgotten. It is also worthy to mention that the authentic style of residential and commercial buildings, which is typical of Adjara and necessary for developing tourism business in rural areas is distorted by modern constructions. This dwindles the interest to grow tourism business in rural areas.

Nevertheless, the development of tourism in rural areas improves the social and economic situation of people living in rural areas.

The rural tourism can have many positive aspects, including:

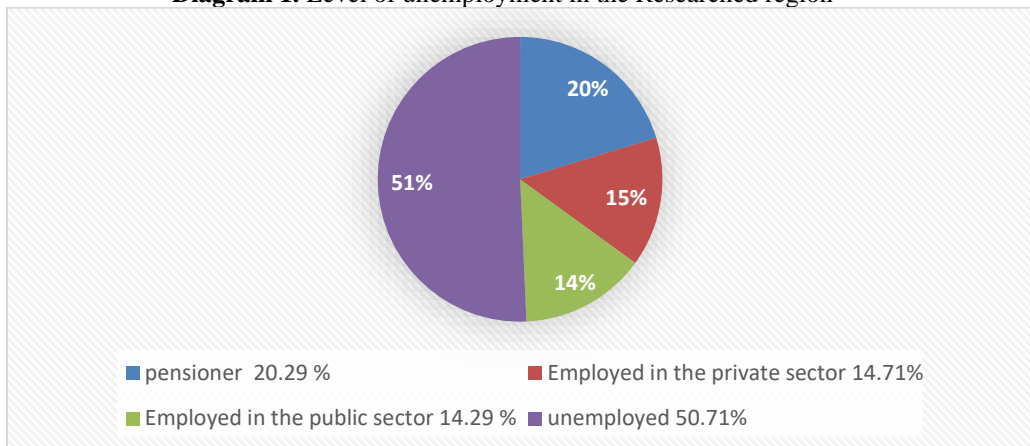
- Creation of new jobs for the local population in rural areas and obtaining additional income for the local population
- Formation of the tradition and culture of recreation in the countryside among the population living in the city, with the development of

comfortable and high-quality tourism products and services in the rural areas

- An opportunity for foreign tourists to get to know the culture, history, and customs of the highlands of Adjara
- Facilitation of road construction and general travel improvement of infrastructure in rural regions
- Promotion of civil infrastructure development
- Facilitating the formation of service facilities in rural regions and on the roads leading to the village
- Facilitating the arrangement of recreational and spectacular places from the city to the private homestead

The stoppage of local production in the Adjara region led to the migration of the rural population to the city and abroad in search of jobs. The villages became empty, and the people forgot the traditional, economic, and cultural life. The diagram below (Diagram 1) shows the level of unemployment in the region investigated, which clearly expresses the socio-economic situation that exists in this community.

**Diagram 1.** Level of unemployment in the Researched region

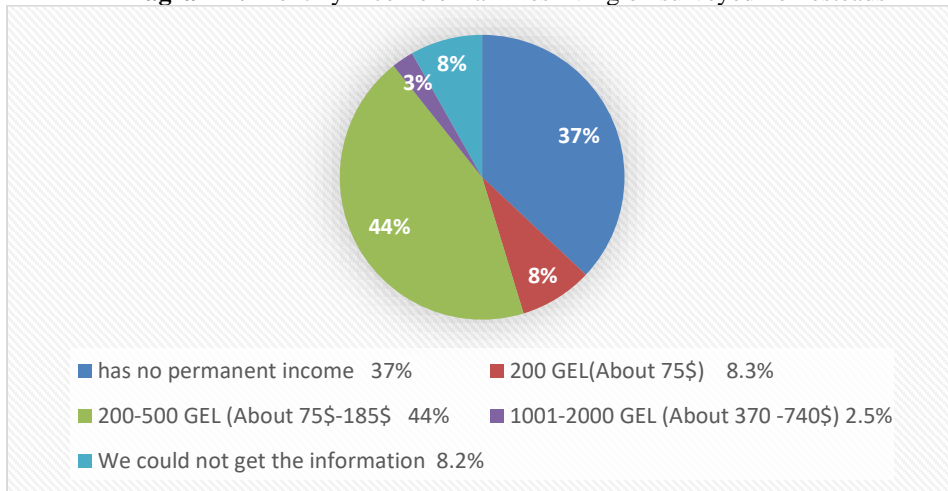


From the above, it can be concluded that there is a problem with employment in rural areas, which leads to the economic and social issues that exist in rural areas today. As a result of the research conducted in rural regions of Adjara, Georgia, it appeared that half of the population living in rural areas are unemployed (50.71% and 20.29% are pensioners). Many people are in search of new working conditions to meet their daily, necessary physical needs. The youth among the rural population are few as most of them have gone to study and work in the city. According to the information received from the respondents, they no longer return to the villages to permanently live there,

which makes Georgian villages lose the tradition of people living in the rural areas.

Diagram 2 below shows the monthly incomes of the households that were surveyed. Obtaining income information was necessary to prove to the population the necessity and expediency of getting possible additional revenues through developing tourism business in rural areas.

**Diagram 2.** Monthly income of families living on surveyed homesteads



This research aimed to first identify the difficult economic situation in the villages of Adjara, Georgia, and simultaneously study the international experience in solving similar challenges in rural areas. Based on the result of the research, 30.5% (which is the majority of the population) have meager incomes, 8.3% are below the minimum threshold, and 37% of the surveyed population do not have a regular monthly revenue because their incomes depend on the sale of small amounts of crops, which are seasonal. Only 2.5% of the surveyed population has a stable average income, and many of the mentioned population work in the city. The socio-economic situation of the people living on the surveyed homesteads is severe, and this is evidenced by the information on their monthly incomes.

The above-presented diagrams show the economic problems in the villages of Adjara. A large part of the population living in rural areas are unemployed, and a large part of the youth population have moved to the city. Although some of the population still lives in rural areas, they do not have stable economic income. This has caused a lot of social problems such as:

- Poverty and unemployment of rural population: Emptying of villages.
- Migration of youth from villages to the cities or abroad.
- Forgetting traditional agricultural life.
- Destruction of cultural and historical past.

Recommendations that will contribute to the development of tourism business in rural areas of Adjara include the following:

- The formation of a state institution will work in the direction of sustainable and intensive development of tourism business in rural areas.
- Acquaintance with international experience and formation of rural tourism business model.
- Development and implementation of appropriate state regulations for the active development of tourism in rural areas.
- Organization of marketing research and systematic processing of received data.
- Development of methodology and principles of selection of private homesteads to be financed.
- Regulation of tourism, transport, and security infrastructure.

## **Conclusion**

Globalization and related processes implemented in Adjara for the past 30 years have negatively impacted the region's socio-economic life. As a result of the negative impact, the rural population in the Adjara region has significantly decreased. Thus, the traditional, agricultural, and cultural life in rural areas has been forgotten.

The development of tourism in the rural areas of Georgia is especially important for mountainous Adjara. This is because the proximity of the seaside resorts in the region to the mountainous areas makes it possible to attract not only local tourists, but also foreign tourists to the rural areas.

Promoting rural tourism business development in Adjara will contribute to solving the social and economic problems. The intensive and sustainable development of tourism in rural areas will allow rural residents to earn income on their homesteads. It will improve not only the homesteads that accommodate but also the families who specialize in transportation, food products, and other services offered in rural areas.

The prerequisite for sustainable development of rural tourism business is the formation of niche and exclusive tourism products in rural areas. The village preserves the country's history, culture, traditions, and peculiarities. During the appearance of tourism products in rural areas, all the unique features and habits that make the village unique should be taken into account. It is impossible to attract local and foreign tourists to the countryside or keep them for a long time if there are no unique products that cannot be seen and bought anywhere else. The experiences of the above-mentioned rural tourism product formation can be shared from the Norwegian and Spanish approaches.

The development of rural tourism businesses based on private homesteads is a unique and modern economic opportunity for the development of backward rural regions, reduction of migration, and preservation of cultural-historical features. The difficult economic and social situation in the villages of Adjara can be solved if the relevant state bodies pay attention to developing rural tourism in the region. For the intensive and sustainable development of tourism in rural areas, legislative changes and the creation of unique normative acts are necessary. This will contribute to the rapid and intensive development of tourism in rural areas. For sustainable tourism development in rural areas, it is essential to create an appropriate organization by the state. Hence, sharing international experience will create a business plan that can be adapted and developed by the Adjara region (Hall, Kirkpatrick, & Mitchell, 2005)

Proper formation of tourism in rural areas will contribute to the formation of a healthy population. The development of tourism business in rural areas also contributes to the recovery and recreation of the local people, thus promoting rural tourism among the urban population and forming appropriate tourism products in rural areas. This research was carried out from May to June 2022. Questionnaire was used as a research method. Thereafter, it was compiled in advance and included all the necessary provisions. Through the provided answers, it was possible to identify the problems in rural areas. The root cause of such problems was determined as well. The research was carried out through a random selection of homesteads in one of the regions of Adjara, which is the most characteristic and rich in historical and cultural resources.

The purpose of carrying out any economic activity is to create jobs. If tourism in rural areas developed according to the international experience, it will allow the population living in rural areas and the youth who emigrated to the city to find employment in their homes. Through this research, the causes of socio-economic problems in the Adjara region were outlined. The tourism business was identified as an economic tool that procures ways to solve these problems.

The work aimed to show a modern way of solving economic and social problems in rural areas by sharing international experiences. Subsequently, rural tourism will contribute to revitalizing the villages of Adjara, which will provide new opportunities for rural development in the rural population.

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## Featural Identity and the Obligatory Contour Principle: Perspective from the Sound Pattern of Standard British English and Nigerian English

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### Abstract

Yip (1988) shows that, in English, the insertion of /ɪ/ between coronal sibilants, e.g., /s/ and /z/ in plural nouns like /fɒksɪz/ foxes, /tæksɪz/ taxes, etc. and the prohibition of geminate stress, as in \*thir'teen 'men is motivated by the Obligatory Contour Principle (OCP). She argues that /ɪ/-epenthesis and geminate stress avoidance are triggered in the language to satisfy the OCP, which prohibits adjacent identical elements in phonological representation. In this study, we show that the OCP also explains why: (i) English inserts /ɪ/ between coronal sibilants in genitive forms, ruling out \*/rəʊz(z) pɜ:s/ 'Rose's purse', (ii) the language drops yod after post-alveolars, /tʃ/, /dʒ/ and /ʃ/, ruling out \*/tʃju/, 'chew', \*/dʒju/ 'Jew', and (iii) it disallows heteromorphemic geminate consonants, e.g., /t # t/ by making them undergo fusion, /t/. This study investigates the extent of applying these native English OCP-motivated rules in Nigerian English (NigE) based on the data gathered from fifty educated NigE speakers. Results of the frequency count and constraint-ranking in this study showed that the OCP-based native English rules in NigE could be inviolable (56.48%) or violable (43.52%). We argue that the frequency of NigE violation of the OCP is in part determined by the complex nature of the sequential combinations of English identical features and the NigE speakers' level of competence in English usage.



**Keywords:** OCP, Standard British English, Nigerian English, phonological rules, constraints ranking, frequency count

## Introduction

Phonologists have long observed the natural tendency for languages to disallow structures whereby feature(s) of tone, stress and segment are repeated in lexical (or morphological) representations. Some authors like Goldsmith (1976), McCarthy (1982), (1986), (1988), Liberman & Prince (1977), Prince (1983) and Yip (1988) have argued that languages normally have preference for dissimilatory values, such as preferring  $x^0$  to  $x^0x^0$  on any given tier within the derivation. From phonetic perspectives, pieces of evidence from native grammars (e.g., English, Arabic, etc.) suggest that many languages naturally sanction distinct adjacent  $x^0x^1$  features while disallowing identical consecutive features, such as  $x^0x^0$  features. Results from the Obligatory Contour Principle (OCP) related research investigations show that the preference for dissimilation (or delinking of a superfluous feature) is due to the dire need to enhance perception, as a clash of the ‘same’ feature,  $x^0x^0$  tends to blur auditory perception of speech and consequently impairs comprehension on the part of the hearer.

Phonologists such as Leben (1973), Goldsmith (1976), who first discovered this linguistic tendency for languages to avoid similarity of adjacent elements in representations, suggest that the OCP is the condition that influences languages to avoid featural duplication in phonological representations. The researchers, some mentioned above, have shown that avoidance of adjacent identical elements, in part, results from concatenation effects that occur at both the lexical and morphemic domains. Such identical structures include identical tones, the same stress degrees, repeated segments, and identical phonemic features. As a condition on morpheme structure, following Goldsmith and Leben, McCarthy (1988), cited in Clements and Hume (1995) stated the OCP succinctly; thus, “adjacent identical elements are prohibited” (p. 262). Yip (1988), therefore, argues that the need to avoid two consecutive coronal consonants /s/ and /z/ in the English plural formation systems, specifically in words such as *foxes*, *taxes*, *churches* etc. Motivated the /ɪ/-insertion rule. She argues that the insertion rule is driven by the OCP, since it (the OCP) prohibits adjacent identical coronal features from occurring in phonological derivations.

Studies on OCP effects on segmental bound adjacency-repetition problems have focused primarily on first language (L1) phonologies, mostly in some varieties of (Classical) Arabic, in English, some language groups of the Estonian and Lithuanian extraction, Koya-India, Afar-Ethiopia, Chukchi-Siberia, among others. Presently, to our knowledge, no studies appear to have been carried out on OCP effects on second language (L2) phonologies. Thus,

this study perhaps is the first empirical study making a contribution that accounts for OCP-based native (L1) phonological phenomena in the L2 context. Specifically, the study examines the effects of the empirical content of the OCP in a domesticated English accent of Nigeria, a country located in sub-Saharan Africa.

Crucially, the study examines the functional operation of the OCP in native Standard British English (SBrE), which is the superstrate language and Nigerian English (NigE), the substrate language. In this study, bearing in mind the effect of interference in L2 usage, we attempt to explore four SBrE phonological rules and consequently find out whether speakers of NigE stringently observe the OCP conditions on the four English structures as do the British native speakers. The four phonological rules are:

- (a) /ɪ/-insertion rule, which, like in English noun formation, applies in genitive (possessive =POSS) forms. For instance, the /ɪ/-insertion rule applies in the form, such as /rəʊzɪz pɜ:s/ 'Rose's purse', thus ruling out *\*/rəʊzz pɜ:s/* or *\*/rəʊz pɜ:s/* as a correct form.
- (b) Yod rule blocking/dropping, which is categorically blocked or dropped after post-alveolar consonants, /tʃ/, /dʒ/ and /ʃ/ if followed by /u:/ (or /ə/) in native English, and consequently rules out the ill-formed strings *\*/tʃju:/*, 'chew' and *\*/dʒju:/* 'Jew' but sanctions /tʃu:/ and /dʒu:/ respectively.
- (c) Geminate stress avoidance rule, in which the 'thirteen men rule' (i.e., stress reversal rule) applies, thus ruling out the ill-formed pronunciation *\*θɪrˈteen men* but sanctions *θɪrˈteen men*.
- (d) Fusion of heteromorphemic geminate consonants /C.C/ as /C/ in fast speech, as in /'gʊd + 'deɪ/ 'good day', in which the first consonant is fused into the second consonant, thus sanctioning the surface form, [*gʊ'deɪ*] but ruling out the ill-formed surface form, *\*[gʊd'deɪ]*.

Based on the above-listed OCP-based phonological phenomena in SBrE, we will show via the simple percentage formula that L2-based OCP effect, like L1-based OCP effect extensively discussed in the literature is not absolutely universal (Goldsmith 1976, Odden 1988, 2013), and hence is potentially violable. More significantly, we will show that the observance or non-observance of the OCP effect in NigE depends, on the one hand, by the complex nature of the sequential combinations of identical gestures (i.e., features), and, on the other hand, on the L2 speakers' competence in native standard English pronunciation. In other words, some specific native OCP-driven rules could better be applied in NigE than others depending on the complexity of consecutive identical gestures, and speakers' phonological competence/awareness.

To account for the extent of observance of the OCP in NE, which is expected to be validated by the simple percentage calculations in this study, we will adopt the non-linear models: Autosegmental Theory (Goldsmith) and Grid Theory (Prince) together with Optimality Theory (OT) (Prince & Smolensky 1993). We adopt the first two theory because some type of OCP effects is assumed to be a primitive of the autosegmental theory, where the occurrence of adjacent identical elements are valid on any given tier (McCarthy 1988). We employ the last theory to account for constraints interactions militating against ‘adjacency-identity problems’ attested in the two Englishes, bearing in mind the assumption that the OCP is a primitive of autosegmental theory has been challenged (Boersma 1998), (Frisch et al. 2004). Nonetheless, we will not be concerned with the argument here, as it is beyond the scope of this work.

### **Mechanism of the obligatory contour principle in native phonologies**

Crosslinguistically, the OCP may operate at two levels of representations, the input and output levels (McCarthy), based on insights from L1 structures. Based on the implementation of the four SBrE rules in NigE, we will assume that, like in L1 phonologies, the OCP invariably influences phonological patterns of a second language (L2) as well. Accordingly, the OCP operates at both levels of representation in the L2 phonology, where English, as the source language, serves as the input and the actual utterances produced by the NigE informants serve as the output.

It is well known that at the heart of the underlying and surface representations in the superstrate phonology are some ‘specific’ (not all) types of phonological rules sensitive to the condition of the OCP re-stated in our version in (1) as follows:

- (1)                      Obligatory contour principle (OCP):  
*Only distinct (no identical) features are allowed within any given tier*

Under the restriction/condition in (1), which invokes the notion of ‘dissimilation’, the specific segmental (or stressal/rhythmic) rules influenced by the OCP are broadly classified into two. First, phonological rules triggered by the OCP, known as OCP-rule triggers. And second, phonological rules blocked by the OCP, referred to as OCP-rule blockers. According to Clements and Hume (1995), the OCP has three-fold empirical content, which is listed in (2) as follows:

- (2)                      Three-fold empirical content of the OCP (Clements and Hume, 1995, p.262)
- i                      The OCP may prohibit underlying representations which

violate it.

- ii. It may “drive” or motivate rules which suppress violations of it.
- iii. It may block rules that would otherwise create violations of it.

To make the mechanism of the OCP and its three-fold empirical content in (2) more revealing, we draw examples from three native phonologies, namely English (Germanic), Ewulu (Igbo, West Benue-Congo: Nigeria), and Afar (Cushitic, Afroasiatic: Ethiopia, Djibouti) to increase our understanding of how the OCP acts as a condition on similarity structures in languages.

### ***The OCP-rule trigger***

#### ***The OCP-rule trigger: The English example***

English (Germanic) exhibits an interesting phonological rule which is assumed to be triggered by the OCP. Yip (1988) presents the English plural formation rule operating in three ways: (i) suffixation of /z/ to any nouns if their segment ending is a voiced consonant, (ii) suffixation of /s/ if their final segment is a voiceless consonant, and (iii) suffixation of /ɪz/ if their final segment is a coronal sibilant. Respectively, the three rules explain why the pluralisation patterns in the noun words, *seed/z/* ‘seeds’, *seat/s/* ‘seats’, and *stich/ɪz/* ‘stiches’ vary. According to Yip (88-90), the insertion of /ɪ/ in the latter rule application is triggered to avoid two consecutive coronal segments, /tʃ/ and /z/, from occurring, since the two consonants are specified with the same feature [coronal], and if no contrasting feature is introduced (or inserted) between the two coronal consonants, the OCP would be violated on the Coronal-tier. In Section 5, we would argue that the rule inserting the epenthetic /ɪ/ in native SBrE genitive (i.e. POSS) form of nouns is motivated by the OCP as well.

#### ***The OCP-rule trigger: The Ewulu example***

Ewulu (Igbo variety: West-Benue Congo, southern Nigeria) the OCP effect adjusts the structure of some input structures that otherwise violate the OCP (Utulu 2006). For instance, certain underived and derived morphemes undergo consonant syncope. Utulu (11) ascribes the syncope rule to the effect of the OCP. The input forms, such as /**o**lulu/ ‘cotton’, /**a**kikɔ/ ‘story/tale’, /**a**fufu/ ‘hardship’, /**o**lile/ ‘buying’, and /**o**mumo/ ‘hoe’ are respectively realised as [oulu], [akɔ], [aʊfʊ], [oile] and [oumo]. He suggests the deletion of the first (in bold print) of two identical consonants, /...C...C/ becoming [...C...], yielding the output syllable shape VVCV, differing from the input VCVCV shape, is motivated by the need to avoid OCP violation. His assumption is based on the fact that the consonant feature and vowel feature

of the forms are arrayed on separate tiers, thus, compelling the consonant feature to be adjacent to a copy of itself. Native language examples such as this demonstrate the fact that the OCP does trigger rules cross-linguistically to avoid similarity of structures/features.

### ***OCP-rule blocker***

#### ***The Afar example***

One of the three-fold empirical content of the OCP (see 2, iii) states that the OCP may employ rule-blockers as alternative rules to suppress its violation. The Afar (Cushitic: Afroasiatic, Ethiopia, Djibouti) language presents an interesting native language data expressing the blocking effect. McCarthy shows the OCP-blocking effect in two separate rules: Vowel Deletion and Antigemination. In the former rule, McCarthy shows that unstressed penultimate vowels in the forms, *xamíla*, *ʃagára*, and *darúgu* (in underlined bold print) are deleted. Subsequently, the deletion yields the respective forms, *xaml-i*, ‘swamp grass’, *ʃagr-i*, ‘scabies’, and *darg-i* ‘watered milk’. However, McCarthy opines that the deletion rule is suppressed, or blocked in the forms *miḍaḍi* ‘fruit’, *sababa* ‘reason’, and *xarar-e* ‘he burned’. McCarthy argues that suppose the syncope rule is allowed to apply, it will generate geminate strings, such as *\*middi*, *\*sabba*, and *\*xarr-e*, which violates the OCP, and the morpheme structure condition of the language. Thus, to avoid gemination, which violates the OCP, Afar blocks vowel syncope in *miḍaḍi*, *sababa* etc. As it will be shown in (Section 3.2), a curious OCP rule blocker may apply in English, where Yod is prevented from applying after palatal/post-alveolar consonants.

### ***Four OCP-driven phonological rules of (British) English***

#### ***Genitive forms of nouns and the /ɪ/-insertion rule in English***

Regardless of arguments from linguists as to whether the English POSS marker is a clitic or edge inflection (Zwicky, 1987), it is a well-known fact (one with which the aforementioned author agrees) that in native English morphophonology, the head of a possessive noun phrase characteristically surfaces with three genitive POSS markers, namely, [s], [z] or [ɪz] indicated with the clitic affix, ‘s’. The three phonetic materials are derived from the abstract, /z/ which attaches directly to POSS nouns, subject to the *voicing* and *coronality* properties of the consonant-ending of the head noun. Like the rule that assigns the phonological materials in the English plural system reported in Clements (1985), Sagey (1986), and Yip (1988), [s] is attached to POSS nouns if their final segment is a voiceless consonant, [z] to POSS nouns if they end in a voiced consonant, and [ɪz] (or [əz]) if they end in a coronal sibilant.

Thus, the morphophonological rule of English explains why the following output forms, /fɪləps/ in ‘Philip’s car’, /bægz/ in ‘bag’s fastener’,

/fɪʃɪz/ in ‘fishes’ nets’ take different structural patterns. As we mentioned earlier, the consonant ending of each of the head nouns governs what specific rule may apply. Importantly, as we will demonstrate in Section 5, our concern is on /ɪ/-insertion in the body of our data reflecting POSS noun inflection rule and their implementation in NigE accent.

### ***Yod rule in English***

The term ‘Yod’ refers to the palatal glide /j/ (Wells, 1982) (Simo Bobda, 2007) (Glain, 2012). Yod derives from the historical type-/ɪu/ diphthong. According to reports, the palatal glide surfaced in the phonology of English when some middle English vowels had merged into what Wells referred to as ‘falling diphthong’ (206), specifically from the complex sequence, /ɪu/. The Yod rule is a regular feature of SBrE (but typically not quite active in General American English). Yod occurs contextually; it is found after a consonant (other than liquid /l/ or /r/, palatal /j/, post-alveolar affricates /tʃ/, /dʒ/, and post-alveolar fricative /ʃ/) then immediately followed by /u:/. Consequently, in SBrE, words such as *tune*, *assume*, *cute*, *new*, among many identical forms, have /j/ inserted. This explains why in SBrE, these words are pronounced /tju:n/, /əsju:m/, /kju:t/ and /nju:/ respectively.

However, in sequences in which a consonant (C) is followed by liquids, i.e. /Cl/ and /Cr/ sequence, /j/ is dropped. This constraint thus, prohibit ill-formed strings such as \*/clju:/ ‘clue’, \*/blju:/ ‘blue’ and /krju:/ ‘crew’, /brju:/ ‘brew’, respectively. Only the forms, /clu:/, /blu:/, /kru:/, and /bru:/ are sanctioned in the language. Moreover, in native English, after post-alveolar affricates and fricative, yod insertion is disallowed. In NigE, however, the Yod rule applies inordinately (Simo Bobda, 2007). Thus the “[...] rule explains the absence of /j/ in [ʃʊgə] (not \*[ʃjʊgə] *sugar*, [tʃu:] *chew* [...]” in English (288). Because Yod applies rather inordinately in NigE, it tends to be overapplied, as our data in this study tend to suggest.

Despite available studies on the subject of Yod both in native and non-native phonologies, which have explained the constraints cum contexts under which /j/ may be inserted or dropped, none of them (to our knowledge) has made reference to the fact that the suppression (or blocking) of Yod after /ʃ/, and /tʃ/, /dʒ/ and /u:/ is motivated by the OCP. Thus, in Section 5, we will show that the suppression of Yod after affricates /tʃ/ and /dʒ/ and fricative, /ʃ/ is a curious type of ‘OCP-rule blocker’ required in SBrE phonology to avoid adjacency of consecutive [+palatal] consonants that otherwise violate the OCP. However, examining how the Yod rule is handled in NigE accent after the palatal consonants, and its implication for the duplication theory is one of the goals of this study.

### ***Geminate stress avoidance in English***

English is one of the languages whereby stress is hierarchical. It is typical of the language for a prominence hierarchy to occur among multiple stresses (Lieberman 1975; Lieberman & Prince 1977; Prince 1983; Kager 1995). This may be the case when two or more words are concatenated in the formation of phrases. The combination of two words may, therefore, create a situation whereby two contiguous prominent/strong stresses ‘clash’, thereby violating the natural alternation of both stresses in regular intervals in the native English rhythmic pattern. A classic example of stress clash avoidance, also known as geminate stress avoidance, Yip (1988) comes from the archetype English combination, ‘thirteen’ and ‘men’.

The ‘thirteen-men’ combination invokes the notions, ‘the rhythm rule’ or ‘stress shift’ in the literature Selkirk (1984), Schane (2007), where stress assigned on the last syllable (unary foot) *-teen* is said to be retracted leftward to avoid a clash with that assigned on the following foot, *men*. As established in the literature, the adjacent stress sequence in ‘thir’*teen* ‘*men*’ will be realised phonetically as ‘*thirteen* ‘*men*’, in which the first stress is moved farther away to the left. Otherwise, as observed in our current data, a ‘clash’ would result. The clash thus explains why Yip refers to the phenomenon as ‘geminate stress’, modeled on the heading of this sub-Section. As Yip opines, however, stress reversal of this type is not always observed in English for no obvious reason.

Following Lieberman, and Prince, Yip assumes that the two underlying prominent stresses in *-teen* and *men*, if not resolved by retracting the stress assigned on the first syllable, *thir*, OCP violation would result, particularly when viewed from an autosegmental perspective. Therefore, she opines that the “clash avoidance [is] another instance of the blocking effect of the OCP demonstrated by McCarthy in the case of antigemination, since ‘stress clash’ would be an OCP violation (p. 90)”.

In this study, we examine our current set of data incorporating the native English Stress Reversal Rule (SRR) to ascertain whether the NigE participants observe stress-shift or not, as Akinjobi (2006) had previously investigated exclusively using Yoruba (Nigeria) participants.

### ***Heteromorphic geminate consonants and the fusion rule in English***

Phonologists agree that speech sounds are not indivisible atoms (Katamba 1989; Schane 1973). The cross-linguistic tendency for structural symmetry in phonological systems is valid in the predisposition of languages to exploit the same phonetic parameters in constructing their phonological systems. Consequently, there are patterns (i.e., featural assimilation) attested in every language and therefore recur quite frequently to justify this observation. It is an established phonological fact that, in languages, the

assimilation rule naturally applies to achieve ‘ease of articulation’. This is mostly due to physiological factors, where a specific articulatory gesture needs to be aligned in some way to achieve synchrony (i.e., enhance production) with another articulatory gesture, especially during fast speech.

Typically, where gestures align in the same feature(s), speech production tends to be enhanced for the benefit of speakers, but regrettably, to the ‘detriment’ of perception on the part of hearers. The consequence of the latter case is the potential inhibition of intelligibility, which is key to effective communication between interlocutors.

However, in this study, we shall consider how the OCP influences the assimilation effect within consonant features in certain English constructions, such as ‘*good day*’, ‘*red deer*’, ‘*big game*’ etc., where the concatenation of words might result in the adjacency (or overlap) of identical boundary consonant features tagged in this work as *heteromorphic geminate consonants*. We will, therefore, show that the combination of similar juncture consonants in the examples above results in the *merger* or *absorption* of the first consonant to the second one, a process we assume here to be fusion (see Crystal, 2008). Accordingly, we will argue that the rule that conflates the heteromorphic sequence, /t#t/ /d#d/ and /g#g/ in the respective consonant sequences in English speech is enforced by the OCP to avoid its violation, a phenomenon that validates the fact the OCP is a condition on adjacent identical elements (McCarthy 1988; Yip 1988).

## **Methods**

### ***The data***

The data for this study, comprising twenty-five English constructions, were purposively stratified into two categories to test: (1) Nigerian English renditions that conformed to native accents. (2) Nigerian English pronunciations that deviated from native pronunciation. Engaging fifty educated speakers from Nigeria in reading and recording sessions, we carried out a test on the following English rules: /ɪ/-insertion rule in genitive forms, Yod Insertion Rule, and Geminate Stress Avoidance Rule, and Consonants Fusion rule operating at phrasal boundary. The stratification of the data into the two, the ones conforming to native pronunciation, and the ones deviating from the native norm is, on the one hand, to help us establish the fact the OCP is inviolable, as suggested in the literature on native phonologies (McCarthy 1988; Yip 1988), and on the other hand, to help us establish the fact the principle is violable Goldsmith (1976), Odden (1988, 2013), Boersma (1998) and Frisch et al (2004). Importantly, we expect that the two factors would help our understanding of how the OCP functions in both the native and non-native phonologies.



### ***Participants***

The participants engaged in this study were fifty educated homegrown Nigerian citizens. Thirty informants (ten each) are from the three major Nigerian languages, namely, Hausa, Igbo and Yoruba, while twenty (ten each) are from Edo and Urhobo. Of the figure, twenty-eight were males and twenty-two females. The participants possess a minimum of a university degree from different fields of the humanities and sciences. Four reading materials were administered to them. The first material incorporated five noun phrases with genitive form of nouns to test their performance on /ɪ/-insertion in the POSS forms. The second material incorporated five simple sentences to test Yod-dropping process after palatals.

Moreover, the third material comprised five Adjective+Noun type of phrases to test the participants' performance on the SBrE Rhythm Rule, specifically that which Stress Clash is typically avoided in the native accent of SBrE. Lastly, we administered ten sentences to the participants to test performance on Consonant Fusion at word/morpheme boundary in connected speech. We then recorded their rendering of the materials to determine potential native and non-native pronunciation for subsequent statistical and perceptual analyses, which we assume would complement the theoretical analysis of the data. We did the recordings using a digital Zoom H2 Handy Recorder. A male and a female native British English speaker served as Control. In addition to the two native speakers, we used the e-Dictionary (2008) Cambridge Advanced Learner's Dictionary, 3rd Edition, to validate the performance.

### **Analytical procedure**

To determine whether the OCP effect was observed or not in the participants' performance, implicating the non-violability or violability of the OCP on representations in L2 phonology, as established in L1 phonologies in previous studies, we subjected all correct pronunciations and deviations in the data to three analytical procedures. First, we engaged a frequency count of the data using the simple percentage formula. We then complemented the statistical method by adopting the clustered column chart extracted from Microsoft Office Excel to provide graphic representations of the relative degree of the native and domesticated pronunciations of the NigE participants. Second, we analysed the perceptual-based L2 data autosegmentally, since some type of OCP-based phonological phenomena is assumed to be valid within any tier (McCarthy 1988). Lastly, we appealed to the Optimality Theory (Prince and Smolensky 1993) to capture constraints interactions that provide explanation for the four English OCP-induced phonological rules outlined in the foregoing.

## Results and discussion

### *Frequency count analysis*

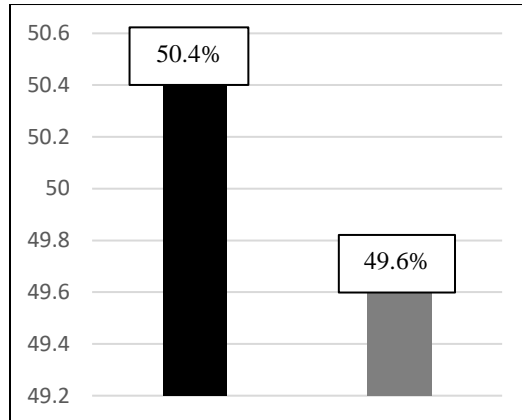
In this Section, we analyse the data using simple percentage formula to determine the percentage degree (or significance) of native pronunciation and domesticated pronunciation elicited from the NigE data. All calculations and derivation of percentages are based on the figure of near-native pronunciation (as well as figure of non-native pronunciation) multiplied by a hundred and then divided by the overall score of the token of each of the rules tested. The simple percentage calculations are presented below.

### *Frequency count of the performance on the English possessive form of nouns*

In Table 1, we present the percentage score of the NigE participants' performance on the SBrE /ɪ/-insertion rule in genitive/POSS form of nouns, as follows:

<b>Table 1.</b> NigE participants' performance on /ɪ/-insertion rule in POSS nouns						
S/N	SBrE control perform-ance in POSS noun	Expected Score	Participants' application of /ɪ/-insertion rule	% Score	Participants' nonapplica-tion of /ɪ/-insertion rule	% Score
(1)	[rəʊzɪz pɜ:s] '...Rose's purse'	50	8	16%	42	84%
(2)	[fɪʃɪz nets] '...fishes' nets'	50	23	46%	27	54%
(3)	[wɒtʃɪz keɪs] '...watch's case'	50	39	78%	11	22%
(4)	[tʃɑ:lsɪz belt] '...Charles' belt'	50	11	22%	39	78%
(5)	[dʒɔ:dʒɪz kəθi:drəl] '...St George's cathedral...'	50	45	90%	5	10%
	<b>TOTAL</b>	<b>250</b>	<b>126</b>	<b>50.4%</b>	<b>124</b>	<b>49.6%</b>

Given the comparative percentage of the frequency count of application (correct pronunciation) and non-application (incorrect pronunciation) of the English /ɪ/-insertion rule in Table 1, we may present a clustered column chart in Figure 1 to capture the relative values graphically as follows:



**Figure 1** – Visual information showing the relative values in Table 1.

- Application of /ɪ/-insertion rule in POSS noun.
- Non-application of /ɪ/-insertion rule in POSS noun.

As the values in Table 1, charted in Figure 1, indicate, the percentage of the participants that applied the SBrE /ɪ/-insertion rule and that of the participants that failed to apply the rule is almost the same. However, it is interesting to note that the application of the epenthetic rule appears to be salient in the context where affricates are adjacent to the POSS marker /z/. By implication, the statistics results show that /ɪ/-insertion rule POSS is not stringently observed in NigE, given the insignificant 8% realised in the difference between 50.4% and 49.6%. However, the implication of the relative percentage in Table 1 on our current theoretic approach would be laid bare in Sections 5.2 and 5.3.

### ***Frequency count of the performance on the English Yod rule***

In Table 2, we present the percentage score of the NigE participants' performance on the English Yod rule, where the informants significantly 'overapply' the rule in *chew*, *Jew*, *juice*, *issue*, and *tissues* incorporated within the string of utterances tested. From the statistics, a significant number of the participants rendered the respective words as \*/tʃju:/, \*/dʒju:/, \*/dʒju:s/, \*/ɪʃju:/ and \*/tɪʃju:/, while others produced native forms, /tʃu:/, /dʒu:/, /dʒu:s/, /ɪʃu:/, where /j/ was dropped as expected. The relative values of the two performances are presented below:

**Table 2.** NigE participants’ overapplication of the English Yod rule after /tʃ/, /dʒ/ and /ʃ/ consonants

S/N	SBrE control performance on Yod	Expected score	Participants’ application of Yod	% Score	Participants’ non-application of Yod	% Score
(1)	/hɑ:d tu tʃu:/ ‘...hard to chew’	50	03	6%	47	94%
(2)	/hiz ə dʒu:/ ‘He’s a Jew...’	50	15	30%	35	70%
(3)	/teɪk sʌm dʒu:s/ ‘...take some juice’	50	17	34%	33 <sup>3</sup>	66%
(4)	/ɪts æn ɪʃu:/ ‘It’s an issue...’	50	19	38%	31	62%
(5)	/ə rəʊl əv tɪʃu:s/ ‘...a role of tissues’	50	23	46%	27	54%
	<b>TOTAL</b>	<b>250</b>	<b>77</b>	<b>30.8%</b>	<b>173</b>	<b>69.2%</b>

Based on the relative total percentage figures in Table 2, we may present a clustered column chart in Figure 2 to show the values graphically, thus:

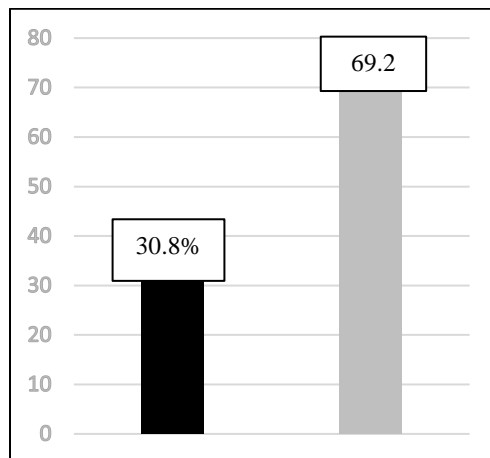


Figure 2 – Visual information showing the different values in Table 2.  
 ■ Application of Yod insertion rule after /tʃ/, /dʒ/ & /ʃ/  
 ■ Non-application of Yod in the same context.

The total percentage of the values in Table 2, and Figure 2, (suggesting a difference of 38.4%) implies that Yod insertions in the participants’ rendition is rather inordinately applied, a result that corroborates Simo Bobda’s (2007:288) observation. The consequence of the Table 2 result on our theoretical approach in Sections 5.2 and 5.3 would be brought to the fore.

***Frequency count of the performance on English geminate stress avoidance***

This Section presents the percentage of the participant’s performance on SBrE geminate stress resolution otherwise known as ‘thirteen men rule’ in some selected phrases, where we expect the strong leftward stress to be retracted further to the left to avoid a clash with the strong rightward stress. The results are presented in Table 3:

**Table 3.** NigE participants’ performance on native stress clash resolution

S/N	SBrE control performance on geminate stress avoidance	Expected score	Participants’ application of geminate stress avoidance	% Score	Participants’ non-application of geminate stress avoidance	% Score
(1)	[‘θɜ:tm ‘men] ‘...thirteen men’	50	0	0%	50	100%
(2)	[‘ka:tu:n ‘netwɜ:k] ‘...cartoon network...’	50	3	6%	47	94%
(3)	[.tʃɪm‘pænzɪ: ‘təʊz] ‘...chimpanzee toes’	50	0	0%	50	100%
(4)	[‘bitwi:n ‘dʒɒn] ‘...between John (and...)’	50	0	0%	50	100%
(5)	[.ʃi: spi:ks ‘ɪŋɡlɪʃ] ‘She speaks English...’	50	0	0%	50	100%
	<b>TOTAL</b>	<b>250</b>	<b>03</b>	<b>1.2%</b>	<b>247</b>	<b>98.8%</b>

We present, in Figure 3, a graphic representation of the relative percentage values in Table 3 thus:

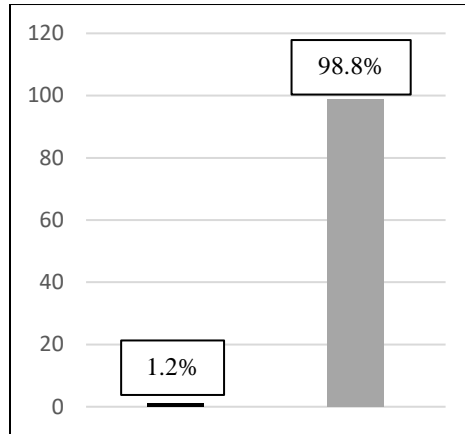


Figure 3 – Visual information showing the contrasting values in Table 3.

- Application of geminate stress
- Non-application of geminate stress

As can be seen, there is a sharp contrast between the values of the accurate use of the native rhythm rule and deviations from the rule. The difference is quite a huge one, 97%. This remarkable variation is a reflection of two Englishes that have been described in the literature, one (English) as stressed-time rhythm language, and the other (NigE) as a syllable-/tone-timed rhythm language. Accordingly, we would bring to the fore the implication of the significant percentage of deviation in L2 pronunciation to the theory of OCP, and constraints interactions in Sections 5.2 and 5.3.

***Frequency count of the performance on heteromorphemic geminate consonants***

Table 4 presents the percentage calculation of NigE participants’ performance on heteromorphemic geminate consonants, where we expect the native fusion rule to apply across the board in the following constructions:

S/N	SBrE control performance on heteromorphemic geminate consonants	Expected score	Participants’ application of the fusion rule	% Score	Participants’ nonapplication of the fusion rule	% Score
(1)	[.gʊ'deɪ] ‘good day...’	50	50	100	0	0%
(2)	[.redɪə] ‘...red deer...’	50	50	100	0	0%
(3)	[.bɪ'geɪm] ‘...big game’	50	50	100	0	0%
(4)	[.træfɪ'keɪʊn] ‘...traffic cone’	50	50	100	0	0%

(5)	[,tɒ'brɑ:s] '... <b>top</b> <b>brass...</b> '	50	50	100	0	0%
(6)	[,flæ'taɪə] '... <b>flat</b> tyre'	50	50	100	0	0%
(7)	[,klæsi'kɑ:] '... <b>classic</b> car'	50	50	100	0	0%
(8)	[,bæ'kɒpi] '... <b>back</b> copy...'	50	50	100	0	0%
(9)	[,tʊəris'træp]'... <b>tourist</b> trap...'	50	50	100	0	0%
(10)	[,sɪmp'li:f] '... <b>simple</b> leaf'	50	50	100	0	0%
	<b>TOTAL</b>	<b>500</b>	<b>500</b>	<b>100%</b>	<b>0</b>	0%

As Table 4 shows, all the participants applied the fusion rule. The 100% accuracy in the implementation of fusion of identical juncture consonants, therefore, makes a graphical analysis of the result in Table 4 unnecessary.

However, we present deductions of the relative overall frequency count of native pronunciation versus non-native pronunciation recorded in Tables 1 through 4 in Table 5 as follows:

**Table 5. Overall frequency count of participants' performance on four English OCP-induced phonological rules**

S/N	Table	Overall expected score	Overall application of the four English rules	Overall % score	Overall non-application of the four English rules	Overall % score
(1)	Table 1	250	126	50.4%	124	49.6%
(2)	Table 2	250	77	30.8%	173	69.2%
(3)	Table 3	250	3	1.2%	247	98.8%
(4)	Table 4	500	500	100%	0	0%
	<b>OVERALL TOTAL</b>	<b>1,250</b>	<b>706</b>	<b>56.48%</b>	<b>544</b>	<b>43.52%</b>

The statistics of Table 5 in a clustered in Figure 4 is as follows:

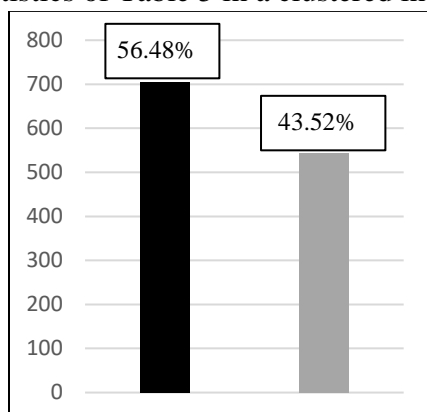


Figure 4 – Visual information of the overall relative differences in values of near-native and non-native pronunciation by NigE participants shown in Tables 1 through 4.

- Participants' overall observance of the English OCP-motivated rule
- Participants' overall non-observance of the rules.

Given the overall frequency count of the participants' observance of the OCP bound English rules, approximately (56.5%) and non-observance (43.5%) in Table 5 (and Figure 4), it will be noticed that the OCP is not hugely observed in L2 (NigE) phonology. Comparable to the Control's accurate processing of the four rules, a fairly significant 43.5% deviation from the native rule was recorded. Conversely, a 56.5% figure indicates that the OCP effect is potentially pervasive in the domesticated English. This, therefore, might suggest that observance of the OCP is rule/structure-specific, (considering the high percentage figures recorded in both the /ɪ/-insertion and heteromorphemic geminate consonant fusion rules).

### **Non-linear (autosegmental and grid) analysis**

Any OCP-based rules (including the ones we have explored so far) are phenomena recognised as primitives in autosegmental phonology (McCarthy1988). Following McCarthy, we adopt the framework proposed by Goldsmith (1976) to explain the functional interpretation of L2-OCP effects operative on the rules espoused in Tables 1, 2, 3, and 4. as it affects NigE treatment of the four English rules espoused above.

### ***An autosegmental analysis of /ɪ/-insertion rule in POSS nouns***

We take the first output form [rəʊzɪz] in 'Rose's purse' in Table 1, which is derived from the inflected/abstract form /rəʊzz/ for non-linear analysis in (3a &b), as follows:



(3) a.		<i>...Rose's purse</i>								
i.	Input	/rəʊzZ/	Inflectional suffix, /Z/ occurring after coronal sibilant results in input violation of the OCP in POSS formation							
ii.		rəʊz# #Z	Adjacency of two coronals, /z/~Z/ results, which violates the OCP (see the statement in (1), Section 2).							
iii.		rəʊz#ɪ#Z	/ɪ/ is introduced between /z/ and /Z/, as OCP-rule trigger (repair strategy) to avoid the OCP violation							
iv.	output	[rəʊzɪz]	/ɪ/-insertion satisfies the OCP, where the input /rəʊzZ/ fails to do so.							
(3) b.										
Seg. tier		Input	Output							
		/r ə ʊ z Z/	[r ə ʊ z ɪ z]							
Feature-tier		<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="border: 1px solid black; padding: 2px;">[cor]</td> <td style="border: 1px solid black; padding: 2px;">[cor]</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">[-son]</td> <td style="border: 1px solid black; padding: 2px;">[-son]</td> </tr> </table>	[cor]	[cor]	[-son]	[-son]	<table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td style="border: 1px solid black; padding: 2px;">[-son]</td> <td style="border: 1px solid black; padding: 2px;">[cor +son]</td> <td style="border: 1px solid black; padding: 2px;">[cor]</td> </tr> </table>	[-son]	[cor +son]	[cor]
[cor]	[cor]									
[-son]	[-son]									
[-son]	[cor +son]	[cor]								
		<p style="text-align: center;">Identical features violate the OCP</p>	<p style="text-align: center;">Intervening /ɪ/ prevents adjacency of [cor] to resolve OCP violation</p>							

In (3a, i), the inflectional suffix /Z/ is introduced to form POSS in nouns. The need to establish the English genitive case leads to (3a, ii). This results in the adjacency of /z/ ~ /Z/, which as a consequence incurs a violation of the OCP in (1), Section 2, and the statistic figure, 49.6% in Table 1). Because the OCP must be satisfied, /ɪ/ is therefore inserted between the two coronal consonants, as shown in (3a, iii & iv), and confirmed by the statistics, 50.4% in Table 1.

Relating to autosegmental association lines cum feature specifications, the rule inserting the inherent feature [+son] for the high front vowel is laid bare. Observe in (3b), the duplicated feature [(cor)onal, -(son)orant] links /zZ/ by broken association lines, a reflection of the derivation in (3a, i & ii). To avoid similarity of feature(s), the intervening contrasting feature [+son] surfaces between the coronals, mirrored in the rule in (3a iii & iv). Here, the autosegmental treatment of /Z/ inflection after another coronal in (3b) enables a more transparent account of the English POSS rule operation triggered by the OCP, basically to satisfy the statement in (1), Section 2.

**Yod rule**

In Table 2 and Figure 2, five examples illustrate overapplication of the SBrE Yod, confirmed by the statistical figure 69.2% as against 30.8%. In (4a) and (4b), we analyse the first example \*/tʃju:/ ‘chew’, in which /j/ is introduced after palatals in NigE and thus violates the OCP.

(4) a. *...had to chew*

i.	L1 Input	/fju:/	Yod dropping (as in native SBrE) satisfied the OCP
ii.	L2 Input	*[fj]u:/	Yod insertion/overapplication
iii.		*[fj]u:	Adjacency of two palatal consonants, /fj/~j/ violates the OCP (see also the statement in (1), Section 2).
iv.	L2 Output	*[fj]u:]	Inserting palatal, /j/ after another palatal consonant, /fj/ violates the OCP

(4) b.

A feature must not be a copy of itself, otherwise the OCP is violated. The Output form with the same feature violates this constraint

As (4a, ii-iv) indicates, (including the other forms in Table 2), /j/ is introduced after a palatal, /fj/, a pattern that appears to be intractable in the L2 (NigE) phonology. The introduction of the glide inherently specified with the feature [(pal)atal] becomes a copy of [+pal] also specified for /fj/ (or /dʒ/ and /ʃ/ as the case may be), a scenario that incurs the OCP violation. Our assumption of featural violation of the OCP here is hinged on the fact that the feature [+pal] is a copy of itself.

Autosegmentally, the featural duplication [+pal]-[+pal] incurring OCP violation is demonstrated in (4b). Here the association lines show the adjacency problem. This explains why \*[fj]u:/ is ill-formed, and violates the OCP but the native /fju:/ is not. Yod insertion after palatals is indeed one of the canonical transfer features in NigE. It is interesting here to find two Englishes (native vs. non-native Englishes) applying the same rule differently. Both the domesticated pattern and the native pattern are captured statistically in Table 2, 30.8%, as against 69.2%.

### ***Geminate stress resolution***

The observance of SRR rule, which repairs a clash of adjacent strong stresses, demonstrated in Tables 3 is analysed non-linearly, using the grid model in (5). In (5), we take the form in Table 3, (1) ‘thirteen men’ as a case study:

(5) a. *...thir'teen 'men*

i.	Input	/θɜ: 'ti:n 'men/	A clash of two strong stresses created input violation of the OCP
----	-------	---------------------	---

ii.	'θɜ:tɪn 'men	Strong stress on <i>teen</i> is shifted leftward to avoid the potential clash with that on <i>men</i>
iii.	Output ['θɜ:tɪn 'men]	The leftward stress shift satisfies the OCP

(5) b.

Input	→	Output
/θ ɜ:t i: n 'm e n/		['θ ɜ: t ɪ n 'm e n]
*            *		*            *
*   *   *   *		*   *   *   *
-----		-----
↑		↑
Two adjacent parallel grid marks indicates stress clash/OCP violation		Stress shift to the left satisfies the OCP. Thus, violation of the OCP is avoided

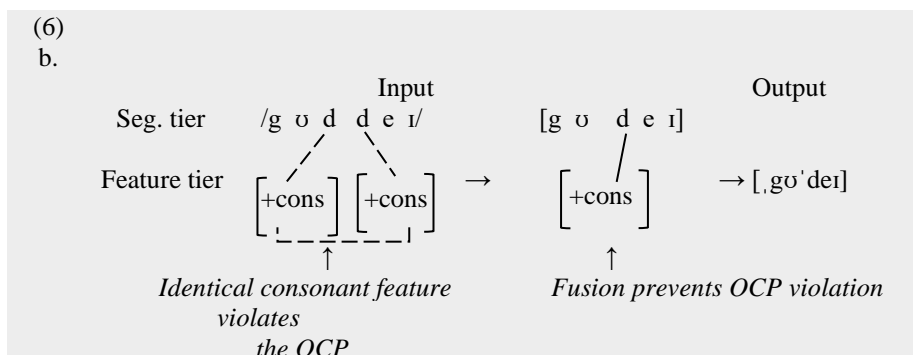
The violation of the SRR in (5a, i) is clear: in the input, two strong stresses inevitably clash due to the concatenation of *thirteen* and *men*. Following Prince (1983) and Goldsmith (1990), the insight of metrical Grid in (5b) helps our understanding of the native implementation of output ‘geminate stress resolution’, a term Yip (1988) adopted to describe what Prince refers to as ‘stress clash’ or ‘clash avoidance’. Regardless of either terminology, the mechanism of the autosegmental theory and the OCP is invoked here to insightfully capture the surface SRR, as (5b) demonstrates.

In NigE, the rule is not productive, given the 98.8% figure representing non-observance of the rule. Understandably, the nonproductivity of stress clash avoidance is hinged on the fact that the NigE rhythm is syllable-/tone-timed, unlike English whose rhythm is stressed-timed rhythm (Gut 2002; Udofot 2007, 2011, 2020; Akinjobi 2004). Below we analyse the last of the four OCP-related phenomena explored in this study.

***Heteromorphic geminate consonants and the fusion rule***

The ten constructions in Table 4 exhibit fusion of adjacent identical juncture consonants, which we label here as ‘heteromorphic geminate consonants.’ As Table 4 indicates, we find that the first of the two juncture consonants absorbed into the second one. We assume here the curious ‘absorption’ is meant to satisfy the empirical content of the OCP, as (6a) and (6b) reveal. The transformational process is shown below:

(6) a.	<b>...good day</b>
Input	/'god'dei/    Input formation of heteromorphic consonants
	'gud'dei    Adjacency of identical consonants, /d/~d/ creates input violation of the OCP (see the statement in (1), Section 2).
Output	[.gʊ'dei]    Fusion rule is forced by the OCP, merging [+cons] ~ [+cons] into one feature [+cons] to satisfy it.



In (6a), input /C#C/ is reduced to [C] on the surface. The fusion rule is transparently captured in (6b), where one of the adjacent identical features is absorbed into the other (see 6b, second column). A fusion rule such as this is only expected in heterogeminate consonants. This explains why fusion is not expected to occur in the form /big fiʃ/ ‘big fish’, since /g/ and /f/ are not geminate consonants. It is fascinating to discover that the native heterogemination consonant rule stands as the only rule in the L2 phonology that recorded a 100% of native accent/pronunciation. However, we adopt the OT to help understand why NigE application of the first three rules does not strictly follow the native norm.

### **Analysis – A comparative OT analysis of Standard SBrE and NigE pronunciation**

In this Section, we adopt the theoretical paradigms of Optimality Theory (OT) (Prince and Smolensky) and (Kager1999) to account for, particularly, the non-native/deviant pronunciation in NigE. The theoretical machinery of the OT, which recognises the interaction between conflicting constraints in language, or among languages, is adequate to capture the phonological variation exemplified in Sections 5.1 and 5.2. For simplicity of analysis, we adopt fewer constraints to capture the peculiar patterns attested in SBrE and NigE accents.

#### ***An OT treatment of /ɪ/-insertion in POSS noun***

#### ***An OT treatment of /ɪ/-insertion in POSS noun in SBrE***

In OT, taking the first examples /rəʊzɪz/ ‘Rose’s in Table 1, (1), constraint ranking for the Control’s and the 50.4% Participants’ insertion of /ɪ/ between coronals in genitive case would look like the tableau in (7). It should be noted that the constraints: *No [i]* and *No POSS [z]* are markedness constraints disallowing /ɪ/-insertion, and POSS marker /z/ in non-native pronunciation. Also, it should be noted that the hierarchically ranked

constraints in (7) and (8) would account for all the genitive forms describe in Table 1)). (Note [F] stands for ‘feature’.

*/ɪ/-insertion rule in POSS Noun: Constraints ranking in SBrE*

(7)	$\begin{matrix} /rəʊzɪz/ \\ \swarrow \quad \searrow \\ \text{COR} \quad \text{COR} \end{matrix}$	OCP	IDENT-IO[F]	No [ɪ]	No POSS [z]
a.	$\begin{matrix} [rəʊz] \\ \quad \searrow \\ \quad \text{COR} \end{matrix}$		*!		
b.	$\begin{matrix} [rəʊs] \\ \quad \searrow \\ \quad \text{COR} \end{matrix}$		*!		
c.	$\begin{matrix} \rightarrow [rəʊzɪz] \\ \swarrow \quad \searrow \\ \text{COR} \quad \text{COR} \end{matrix}$			*	*
d.	$\begin{matrix} [rəʊzz] \\ \swarrow \quad \searrow \\ \text{COR} \quad \text{COR} \end{matrix}$	*!	*		*

In (7), candidate (c) is the optimal form, indicated by a pointing arrow. This is so because it reflects the Control (native) pronunciation and the NigE (Participants’) 50.4% observance of the rule that inserts /ɪ/ between successive coronal consonants, /zZ/, having satisfied the first two higher-ranked constraints, OCP and IDENT-IO[F]. Though candidates (a) and (b) do satisfy the higher-ranked constraint, OCP, they are ruled out as optimal candidates in that they fail to satisfy the second-ranked constraint, IDENT-IO[F], which requires that every unit in the output must match those in the input. The inconceivable output, candidate (d) is least optimal because it incurs a fatal violation of the higher-ranked constraint, OCP.

***An OT treatment of /ɪ/-insertion in POSS noun in NigE***

Taking the /rəʊzɪz/ example, an OT account of the participants’ 49.6% non-observance of the /ɪ/-insertion rule in the English genitive will look like the tableau in (8), where the specification of constraints is in a reversed order from those posited in Tableau 7, as follows:

*Suppression of /ɪ/-insertion rule in POSS nouns: constraints ranking in NigE*

(8)	$\begin{matrix} /rəʊzɪz/ \\ \swarrow \quad \searrow \\ \text{COR} \quad \text{COR} \end{matrix}$	No POSS [z]	No [ɪ]	IDENT-IO[F]	OCP
a.	$\begin{matrix} \rightarrow [rəʊz] \\ \quad \searrow \\ \quad \text{COR} \end{matrix}$			*	
b.	$\begin{matrix} \rightarrow [rəʊs] \\ \quad \searrow \\ \quad \text{COR} \end{matrix}$			*	

c.	$\begin{matrix} [rəʊzɪz] \\ \swarrow \quad \searrow \\ \text{COR} \quad \text{COR} \end{matrix}$	*!	*		
d.	$\begin{matrix} [rəʊzɪz] \\ \swarrow \quad \searrow \\ \text{COR} \quad \text{COR} \end{matrix}$		*!	*	*

Note: Candidate (b) reflects the /s/-pronunciation is common with some Yoruba participants. The substitution of /z/ for /s/ is possibly the result of the absence of /z/ in the Yoruba consonant inventory (see Aziza & Utulu 2006).

On the evaluation of the candidates in (8), there are two ‘winning’ forms, candidates, (a) and (b). The two candidates reflect pronunciation that typifies NigE accent. Clearly, candidate (a) reflects native /z/-pronunciation for the letter <s> in Rose, while candidate (b) reflects non-native /s/-pronunciation for the same letter. The optimality of both candidates is the results of their satisfaction of the undominated No POSS [z] >> No [ɹ]. Significantly, the analysis in (7) and (8) helps our understanding of how universal constraints are ranked differently by different languages on language-specific basis.

### **An OT treatment of Yod**

An OT analysis of Yod avoidance after post-alveolars in native English and overapplication of it via insertion after the class of palatals in NigE is carried out in the next sub-Sections, respectively.

### **An OT treatment of Yod avoidance after palatals in SBrE**

We take the first example in Table 2, /tʃu:/, as a model for analysis here. In English, as we mentioned earlier, yod must only appear after a consonant, provided the consonant is not /j/ or any of these: /Cɹ/, /Cr/, /tʃ/, /dʒ/ and /ʃ/. In (9), the tableau depicts how constraints are hierarchically ranked for the performance of the Control and the participants (30.8%) on /tʃu:/ (including the other examples in Table 2):

*Yod dropping after /tʃ/, OCP violation avoidance rule: SBrE Constraints ranking*

(9)	/tʃu:/ ↓ +pal	OCP	IDENT-IO[F]	PAL-PALGLIDE
a.	$\begin{matrix} [tu:] \\   \\ -\text{pal} \end{matrix}$		*	*
b.	$\begin{matrix} \rightarrow [tʃu:] \\   \\ +\text{pal} \end{matrix}$			*
c.	$\begin{matrix} [tʃu:] \\ \swarrow \quad \searrow \end{matrix}$	*!	*	

	+pal	+pal			
--	------	------	--	--	--

In (9), which reflects native pronunciation, the most harmonic output candidate is represented in (b), which, unlike (a) and (c), meets the structural condition required for Yod suspension after palatals in native English, and in the accent of 30.8% of the NigE participants. However, the non-observance of the rule in NigE is captured in (10) as follows:

***An OT treatment of Yod insertion after palatals NigE***

An OT account of overapplication of Yod by a significant number of NigE participants, 69.2% is laid bare in Tableau 10, as follows:

*Yod insertion after /tʃ/ as OCP violation in NigE: Constraints ranking*

(10)	/tʃu:/   +pal	PAL-PALGLIDE	IDENT-IO[F]	OCP
a.	[tu:]   -pal	*!	*	
b.	[tʃu:]   +pal	*!		
c.	→ [tʃju:] / \ +pal +pal		*	*

On the evaluation of the candidates in (10), candidate (c) is the winning candidate. It satisfies the higher-ranked constraint, PAL-PALGLIDE (i.e., adjacent palatal consonants must be allowed), which reflects NigE /j/-insertion rule after palatal consonant. Whereas candidates (a) and (b) are ‘losers’ in that they incur violations of the higher-ranked constraint. Thus, the differences in ranking in (9) and (10) are the source of variation in applying the Yod rule between the Control, the 30.8% of the participants versus the 69.2% of the participants.

***Geminate stress avoidance in OT***

The OT accounts for the SBrE stress/rhythm rule in Table 3, which characteristically retracts one of two adjacent input strong stresses to the left in avoidance of a clash with the one flanked at its right, but is overly not observed in NigE accent.

***Geminate stress avoidance in SBrE: An OT analysis***

By the native application of geminate stress (stress clash) avoidance rule in SBrE, an OT analysis will look like the Tableau in (11), taking the example, ‘thirteen men’ (1) in Table 3 as a case study.

*Geminate stress avoidance: SBrE constraints ranking*

(11)	/θ ɜ: 't i: n 'm e n/ * * * * *	*CLASH	OCP	IDENT-IO(Stress)
a. →	['θ ɜ: t i: n 'm e n] * * * * * *			*
b.	[θ ɜ: 't i: n 'm e n] * * * * * *	*!	**	*
c.	[θ ɜ: 't i: n 'm e n] * * * * * *	*!	**	

Note: To guide against bias, we have used the functionally synonymous constraints, \*CLASH and OCP here, following Kager (1999) and Yip (1988). This is because both constraints are conditions militating against adjacent identical phonological materials, though the former constraint has been restrictedly used for metrical phenomena, such as stress in the literature.

In 11, candidate (a) is the most harmonic form of the three, satisfying two higher constraints, \*CLASH and OCP. The two constraints require that two strong stresses must not be adjacent to each other. Unfortunately, candidates (b) and (c) fail to obey the constraints, thereby ruling them out as the optimal forms.

**Non-application of geminate stress avoidance in NigE: An OT analysis**

Geminate stress avoidance is rarely observed in NigE (see 1.2% indication of NigE application of the rule in Table 2). A reflection of the non-observance of the rule in NigE (98.8%) is brought to the fore in (12) as follows:

*Geminate stress violation: NigE constraints ranking*

(12)	/θ ɜ: 't i: n 'm e n/ * * * * *	IDENT-IO(Stress)	OCP	*CLASH
a.	['θ ɜ: t i: n 'm e n] * * * * * *	*!		
b.	[θ ɜ: 't i: n 'm e n] * * * * * *	*!	*	*



c.	[θ ɜ: 't i: n 'm e n]		*	*
→	* *			
	* *			

As (12) indicates, the most harmonic candidate is (c) whose stress assignment pattern corresponds with that in the source (SBrE) input. The domesticated harmonic candidate is accorded its status due to the hierarchical ranking of the correspondence/faithfulness constraint, IDENT-IO(Stress). The faithfulness constraint dominates the two lower-ranked constraints, OCP and \*CLASH. The latter two constraints functionally prevent adjacency and repetition (or clash) issues which satisfy the OCP, but yet are lowly-ranked in NigE.

**An OT account of heteromorphemic geminate consonants**

The OCP effect in the SBrE phonology is very pervasive on heterogeminate consonants. The constraint-based paradigm of OT captures how the phenomenon is handled in a constraint-interaction framework in (13), taking the first surface form, [ ,gʊ'deɪ ] ‘good day’ in Table 4, as follows:

*Constraints ranking for heteromorphemic geminate consonants in SBrE and NigE*

(13)	/'gʊd'deɪ/ +cons +cons	OCP	IDENT-IO[F]
a.	[ ,gʊd'deɪ ] +cons +cons	*!	
b. →	[ ,gʊ'deɪ ] +cons		*

In (13), candidate (a) is ruled out by the OCP for failing to fuse two adjacent identical features. The failure thus accords candidate (b) the winning status, since it is specified with only one feature [+cons], unlike in the case of candidate (a) whereby the feature is duplicated. The OCP-triggered fusion attested in the phonologies of SBrE and NigE to resolve the featural duplication problem is a natural, ‘zero pause’ process instigated by the need to facilitate speech production. However, featural fusion of this sort may blur the auditory perception of discrete units across morphological/syntactic strings, especially on the part of foreign listeners coming across the English language for the first time.

## Conclusion

Based on the findings of previous studies, native grammars show quite clearly that the OCP can be pervasive on representations with duplication/repetition of elements within a given tier. Thus, the native languages typically eliminate such ‘illicit’ (adjacent identical) elements/structures by triggering or blocking rules. However, it has been shown that some languages do not strictly obey the OCP, which gave rise to the assumption the OCP is merely a ‘soft’, violable constraint (Goldsmith 1976; Odden 1988, 1995, 2013; Boersma 1998; Frisch et al. 2004).

In comparing the state of affairs of the OCP effects in the superstrate (SBrE) system versus the substrate (NigE) system, as we have done in this study, the result shows the OCP is potentially inviolable, and as well as violable. The former seems to be true for the OCP-bound L1 structures adopted in this work, in which SBrE functions as the superstrate language. In the same vein, the second stance does appear to be true, especially when the degree of enforcement of the OCP is not sufficiently at the optimal level, considering critically the phenomenon of ‘foreign accent’, and constraint ranking in substrate language, in this case, NigE. The established contrast in statistical values between NigE near-native pronunciation (56.5%) and NigE non-native pronunciation (43.5%), together with the hierarchical ranking of constraints, seems to justify the two positions in this study.

Crucially, given the results of the current study, which reflect a ‘loose’ observance of the OCP in L2 phonology, the findings apparently invoke Odden’s (1995:464) assertion that, “[...] languages retain the option of doing nothing about OCP violations”. The incomplete adherence to the OCP in three of the four phonological phenomena tested in the present NigE data could largely be determined by two factors. First, the complex nature of sequential combinations of identical gestures (or features). Second, the level of competence the NigE speakers have attained in the mastery of the SBrE phonological grammar during the acquisition process. In other words, whether OCP-based native/SBrE rules are observed moderately, inordinately or generally in L2 usage depends upon (i) structure-specific SBrE phonological rules, and (ii) speakers’ level of competence<sup>1</sup> in English usage.

Crucially, one significant contribution of this study to the body of knowledge, as our data have demonstrated, is that the OCP, acting as a ‘soft’ condition on representations of similarity or duplication of structures in L2 phonology, is not exclusive to native grammars.

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### List of OT constraints employed in this study

OCP	A feature (or segment) must not be a copy of itself
IDENT-IO[F]	The specification for <b>feature</b> of an input segment must be preserved in its output correspondent
IDENT-IO(Stress)	The specification for <b>stress</b> of an input syllable must be preserved in its output correspondent
No [ɹ]	/ɹ/ is not allowed between two coronal sibilants
No POSS	POSS marker /z/ is not allowed
PAL-PALGLIDE	Palatal consonant must be followed by palatal glide
*CLASH	No stressed syllables are adjacent

*NB: To explain the conflict between SBrE and NigE grammars, we propose the markedness constraints, No [ɹ], No POSS, and PAL-PALGLIDE in this study to capture the peculiarities in the phonologies of the two Englishes.*

### Appendix

Simple sentences (data) administered to fifty educated Nigerian speakers of English (Note items tested are put in bold print).

#### Passage 1 – (see Table 1)

1. This is **Rose's** purse.
2. They are **fishes' nets**.
3. That's my **watch's case**.
4. That's **Charles' belt**.
5. Emeka attends St. **George's** Cathedral Church.

#### Passage 2 – (see Table 2)

1. The nut is hard to **chew**.
2. He's a **Jew** by birth.
3. I will love to take some **juice**.
4. It's an **issue** we need to resolve.
5. Please, can I have a role of **tissues**?

#### Passage 3 – (see Table 3)

1. This row is reserved for **thirteen men**.
2. I like watching **cartoon network** channel.
3. These shells look like **chimpanzee toes**.
4. The matter is **between John** and Mary.
5. **She speaks English** fluently.

**Passage 4 – (see Table 4)**

1. **Good day**, Madam.
2. A **red deer** with brown fur.
3. It is a **big game**.
4. The red object is called **traffic cone**.
5. They are **top brass** in the military.
6. It is a **flat tyre**.
7. It is a **classic car**.
8. I need a **back copy** of the magazine.
9. It's one of the biggest **tourist traps** at the country side.
10. The tree typically grows **simple leaf**.



## Possibility to Identify Bullets and other Components of the Cartridges by Consideration on Barrels and Projectiles Types

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### Abstract

There are three types of barrels - polygonal rifling, traditional (conventional) rifling, and smooth bore. Since the internal shape of each barrel is different, the projectiles passed in these barrels have different marks and some are more depicted than others. Identifying private signs is necessary for comparison. If such marks do not remain on the surface of the bullet, it will be unusable for the identification process, which is based on a comparison of general and individual marks. Although scientists have different opinions on this issue, some of them claim that it is possible to identify small shot fired from a smooth bore. This issue has been explored and reflected in this paper, and it is possible to conduct an identification research on bullets. The paper also focuses on the issues the expert should consider when identifying. It is probably clear to everyone that it is impossible to conduct research of this scale on objects (shots, pellets, plastic container) that do not have sufficient identification marks. A reasonable conclusion used in court as evidence should be based on a combination of durable individual barrel channel marks with other bullets or a combination of durable individual barrel marks of the experimental weapon. In some cases, the expert's conclusion is used as direct evidence in court and a wrong conclusion can result in the conviction of an innocent person.



**Keywords:** Polygonal rifling, traditional rifling, smooth bore, barrel, bullet, identification

## **Introduction**

In the process of investigating crimes, various evidence are always investigated and identified, since the latter is one of the main sources of information for the investigation. This is because when bullets are removed from the crime scene or removed from the body, the extent to which it is possible to investigate and identify individual studies on it is taken into consideration. In situations where a firearm, apart from bullets, is presented for examination or experimental bullets previously obtained from this firearm are stored in the appropriate service, it is possible to compare each bullets removed from the crime scene, including bullets from the body and test bullets, which in most cases is evidence in court. In this case, a special role is assigned to a specialist with highly professional knowledge about investigation of crimes that are committed using firearms. In order to do this, properly selected research objects are used.

Numerous papers have been devoted to the study of objects fired from firearms, but many of them have remained as theoretical researches and have not found practical application. This is especially true of papers dealing with the identification of objects fired from the barrel of a smooth bore weapon. These issues will be discussed in the article to examine cases and objects that allow specific identification studies to be conducted. Based on their credibility and high-level examination, the results can be used by the court as evidence in a criminal case.

Recently, firearms and ammunition have evolved. Civilians use weapons of various types and calibers, both smooth-bore and rifled, and many types of ammunition intended for them. The urgency of the topic is as a result of the increased number of crimes where firearms are used and the increased role of expertise in solving the problems of the investigation. It should be noted that, in most cases, criminals use illegal weapons. Experimental cartridge cases and bullets, obtained from these weapons, are not even stored in expert institutions, which, in turn, complicates the identification process. Also, there are frequent cases when crimes are committed using remade weapons, shortened shotguns, remade gas, signal pistols, and handmade firing devices.

The aim of the research is to classify the barrels of firearms and the components of different types of projectiles and cartridges fired from the barrel. Analysis of such issue, the type of barrel, and the type of projectile can be identified in case of firing. To achieve this goal, it is necessary to analyze the theoretical and practical knowledge that still exists on this issue and most importantly, the knowledge of the objects that are specifically subject to

identification, their individual private marks, identification process with other objects, and the credibility of the results of identification. This is because the results of the comparison, in a particular case, may be considered as direct evidence in court and form the basis of the judgment.

### **Study Methods**

Quantitative and qualitative research methods, as well as analytical research methods, are used in the article. First, it should be noted that quantitative research methods are extremely popular and widespread in a number of scientific disciplines, including social, technical, and natural sciences. In the quantitative research, many similar objects, bullets, and projectiles were examined. During the qualitative research, the properties of these objects and the features of the marks on them were also analyzed. During the analytical research, the opinions of various scientists regarding this matter were analyzed. However, some of their opinions were rejected and others were accepted with justification. This implies that research does not simply describe events, but also explains their causes.

### **Used Equipment and Material Means**

Automated Ballistic Comparison System known as "Balscan" was used. Experimental bullets were also obtained from the same firearm at different times. Remade firearm, handmade ammunition, and ammunition of various metals and damaged bullets were collected from the crime scene as well.

### **Polygonal Rifling, Traditional (conventional) Rifling, and Smooth Bore Barrels**

In order to address the identification of projectiles, it is necessary to consider the types of barrels of firearms. Knowledge of this is essential as it is necessary to determine how identification studies on projectiles are generated. The inner form of the barrel does the formation of the mark on the projectile. This means that the inner surface of the barrel as well as the shape and size of the projectile are significantly important.

Shotguns are generally smooth-bored. However, some older weapons were provided with a short length of rifling at the muzzle for use when firing solid slugs. This system of rifling was called "paradox rifling". Rifling consists of a series of spiral grooves cut into the inside surface of the bore of the barrel, and these are placed there to impart a spin to the bullet through its longitudinal axis. This gyroscopic effect stabilizes the bullet during its flight, which prevents it from tumbling end over end and losing its accuracy. Identification of the type of rifling used in a barrel and the knowledge as to how it is produced can be highly significant for the investigation of a case and

the interpretation of the results (Heard, 2013). In this type of shotgun, it is possible to shoot bullets, pellets, and shots. The barrel channel of such a weapon is smooth as it does not have lands and grooves, and the projectiles do not undergo obturation when they enter the barrel channel. As a result, it is difficult to identify them by individual identification marks.

Rifling in a barrel consists of “lands” and “grooves”. The grooves are the depressions cut away by the rifling cutter. The lands are the portions of the barrel that have not been touched by the rifling cutter and are, therefore, left standing proud. Some writers assign the invention of spiral grooved barrels to Gaspard Kollner, a gunsmith of Vienna, in the 15th century. Others fix the date at 1520 and attribute it to Augustus Kottler of Nuremberg. German weapons bearing the coat of arms of the Emperor Maximilian I and made between 1450 and 1500 have spiral grooved barrels, which are the earliest identifiable rifled weapons. Both straight and spiral forms of rifling are encountered in early weapons. Nonetheless, it is generally accepted that the straight form of rifling was to accommodate the fouling produced in these early black-powdered weapons. The number of grooves encountered can be anything from a single deeply cut rifling, up to twelve or more in micro-grooved rifling. The form of groove also varies and could be square, round, triangular, ratchet or even comma-shaped grooves. The actual number of rifling grooves appears to have little influence on the stabilising effect of the rifling (Heard, 2013).

In 1854, Whitworth patented the first polygonal rifling system, which overcame most of the problems and proved to be extremely accurate as well. Unfortunately, Whitworth did not have practical experience in the manufacture of weapons and was unable to produce guns with the consistency required. As a result, his invention was soon overtaken by others. The invention of the breech-loading weapon eliminated the problems of having to expand the bullet to fill the bore. The bullet could be made of the correct diameter to fill the bore and could be inserted into the rifling at the breech end of the barrel. In addition, instead of the deep grooving and a long, soft bullet necessary for easy loading and expansion at the breech of a muzzle-loader, shallow rifling and harder bullets could be used. This configuration resulted in more uniform bullets, higher velocities, better accuracy, and improved trajectory (Heard, 2013).

There are basically three types of barrels - polygonal rifling, traditional (conventional) rifling and smooth bore, which have different internal shapes. Therefore, the projectiles passed in these barrels have different marks of form and some are more depicted than others. Identifying private signs is necessary for comparison. If such marks do not remain on the surface of the bullet, it will be unusable for identification. This is because the identification process should be based on a comparison of general and

individual marks. In the case of bullets, the first step is to determine the compatibility of a combination of durable individual barrel channel marks with other bullets or the combination of durable individual barrel marks of the experimental weapon. Professor Kyle rightly points out that identification for only the chemical composition and caliber of lead are inadmissible (Kiely, 2006, 2001).

Richard Safferstein also asserts that every firearms manufacturer chooses a rifling process that is best suited to meet the production standards and requirements of its product. Once the choice is made, the class characteristics of the weapon's barrel will remain consistent. This implies that each will have the same number of lands and grooves, with the same approximate width and direction of twist. Although these class characteristics permit the examiner to distinguish one type or brand name of weapon from another, they do not impart individuality to any one barrel as no class characteristic can do this. If one could cut a barrel open lengthwise, a careful examination of the interior would reveal the existence of fine lines or striations running through the length of the barrel's lands and grooves. These striations are impressed into the metal as the negatives of minute imperfections found on the rifling cutter's surface. They are also produced by minute chips of steel pushed against the barrel's inner surface by a moving broach cutter. The random distribution and irregularities of these markings are impossible to duplicate exactly in any two barrels. No two rifled barrels, even those manufactured in succession, have identical striation markings. These striations form the individual characteristics of the barrel (Safferstein, 2018).

The identification is based on the fact that the machine on which the weapon parts are made changes shape and the studies left on the firearms by these parts of the machine are microscopically different. Therefore, all the details, despite their similarity, have individuality, which can be seen with the naked eye (Burrard, 1962).

Freeman (1978) obtained three consecutively manufactured 9 mm caliber Heckler and Koch polygonal rifled firearm barrels. Freeman was able to correctly distinguish the questioned bullets from the consecutively manufactured Heckler and Koch polygonal rifled firearm barrels. It was established that consecutively manufactured gun barrels differ from each other and produce different signatures. The key limitation reported by Freeman reveals that one of the Heckler and Koch polygonal rifled firearm barrels used in his study did not mark as well as the other two (Thomas et al., 2013).

It is the formation of these marks on lead that is influenced by the shape of the inner surface of the barrel. More so, the shape of the inner surface of the barrel is as important as the type, size, and shape of the projectiles.

## **Types of Projectiles and other Components of the Cartridge**

A cartridge consists of a cartridge case containing the powder charge, a bullet (projectile) rigidly fixed in the mouth of the case, and the priming mixture introduced in the base of the cartridge case. Although the term “base” would seem to be the more appropriate, the base of the cartridge case is commonly termed “the head”. The priming mixture is exploded by the impact of a hammer or plunger, and the flame thus produced is communicated to the powder charge. Ammunition assembled in the form of cartridges is termed “fixed ammunition”. Cartridges can be obtained and loaded with shot or buckshot instead of a single bullet, while shotgun cartridges can be obtained and loaded with a single ball. Three types of fixed ammunition are used in small arms: pin-fire, rim-fire, and centerfire. Each type has its particular means for introducing and exploding the priming mixture (Gunther & Gunther, 2015). However, it should be noted that in modern times, pin-fire cartridges are almost no longer used, as well as cartridges without cases. Also, weapons that are charged from the front of the barrel are no longer used. Cartridges of this type, which have a single projectile, can be full jacketed, semi jacketed or non-jacketed. Full jacketed and semi jacketed bullets are coated on the outside with a layer of copper or other metal.

Cartridges may be special purpose, which, according to the Council of Europe directive, is prohibited in civil circulation. An example of such is ammunition with penetrating, explosive or incendiary projectiles (Council Directive, 1991). Regardless of the type of core the ammunition has, most of them, except the .22 caliber cartridges, have a jacket. These types of bullets are much better for identification than non-jacketed bullets since the identification marks on the jacket are better reflected. Non jacketed bullets have a lead core that is a relatively soft metal, and individual marks on it are easily removed as a result of contact with the object.

After firing, the lead core and jacket can be separated. In most cases, such jackets are usable for identification, but one land must be undamaged. As for the core, it is unsuitable for identification since it has no contact with the inner surface of the barrel when fired.

In addition to projectiles and gunpowder, shotgun cartridges may have wads, plastic containers, and shot cups. Its projectiles are shots, pellets, and slugs. Such cartridges are fired in a smooth-bore gun that does not have lands or grooves on the inside of the barrel. Also, no obturation occurs except in the case of slug. In most cases, only the plastic containers and shot cups have contact with the inner surface of the barrel.

As previously discussed, unlike rifled firearms, a shotgun has a smooth barrel. Thus, projectiles passing through a shotgun barrel are not impressed with any characteristic markings that can later be related back to the weapon. Shotguns generally fire small lead balls or pellets contained within a shotgun

shell. A paper or plastic wad pushes the pellets through the barrel on ignition of the cartridge's powder charge. By weighing and measuring the diameter of the shot recovered at a crime scene, the examiner can usually determine the size of shot used in the shell. The size and shape of the recovered wad may also reveal the gauge of the shotgun used and, in some instances, may indicate the manufacturer of the fired shell (Saferstein, 2020).

In addition to factory-made ammunition, handmade ammunition is often used at the crime scene. Most of these types of ammunition have projectiles of inappropriate size, which makes it even more difficult to conduct ballistic examinations on them.

Therefore, the identification of bullets largely depends on the type of projectile, the type of manufacture, the condition and, most importantly, the inner surface of the barrel.

### **Ballistic Examination of Projectiles Fired from Firearms and their Possibility of Identification**

The inner surface of the barrel of a gun leaves its marks on a bullet passing through it. These markings are peculiar to each gun. Hence, if one bullet found at the scene of a crime and another test-fired from a suspect's gun show the same markings, the suspect's gun is linked to the crime. These inner surface striations are important for bullet comparison, and it is significant to know why and how they originate (Saferstein, 2020).

Firearm identification techniques were first used in 1907 when members of the Frankfurt Arsenal were asked to determine which weapon was fired during a riot in Brownsville, Texas. Using enlarged photographs of the needle traces on the cartridge cases removed from the scene, they were able to determine which of the four guns they fired from. However, the technology was not yet sophisticated to identify bullet at that time (Sedlacek, 2012). According to Brian Hardy, it will be difficult to know when the gun was first identified. The bullets fired from the gun also had a certain number of equally spaced fields that was tilted and directed at the same angle (Heard, 2013).

The gun barrel is produced from a solid bar of steel that has been hollowed out by drilling. The microscopic drill marks left on the barrel's inner surface are randomly irregular and impart a uniqueness to each barrel. However, the manufacture of a barrel requires the additional step of shaping its inner surface with spiral grooves, a step known as rifling. The surfaces of the original bore remaining between the grooves are called lands. As a fired bullet travels through a barrel, it engages the rifling grooves. These grooves then guide the bullet through the barrel, giving it a rapid spin. This is done because a spinning bullet does not tumble end over end on leaving the barrel, but remains on a true and accurate course (Saferstein, 2020).

When firing from a firearm, traces of lands on the inner surface of the barrel remain on the lead part of the bullet. These studies contain information on the number, height, and width of the fields (Bertovsky, 2018,). The focus here is on general signs, which can only be used for group identification.

Richard Safferstein rightly points out that bullets should be identified only on the basis of general and private marks. General marks are caliber, number of fields, and direction, while private (individual) marks include micro-relief in lands and groove (Safferstein, 2018).

Therefore, forensic examination is the first step in determining the compatibility of a combination of durable individual barrel channel marks with other bullets or the combination of durable individual barrel survey markings of the experimental weapon. It should also be noted, that when bullets and guns are presented for research, bullets are not compared to the original weapon. Yuri Orlov (2016) mentions that when it is impossible to study the properties of material evidence directly, comparisons are made with experimental samples taken from the object. For example, when identifying a bullet with a firearm, the lead studies are not directly compared to the barrel of the weapon, but rather to the experimental bullets obtained from the weapon. It should also be noted that in such cases, it is advisable to use bullets of the same manufacturer and material removed from the scene (Warlow, 2012). This will facilitate further research for the expert.

In addition, the process of identifying bullets involves a rather complex process in which the coincidences and differences of the general and private marks detected on their surface are determined. General marks include lead diameter (caliber), number of fields, direction, average width of fields, depth of surveys, the angle of inclination of the fields, as well as location and expression of primary studies arising from the barrel. On the other hand, private marks can be thought of as micro-relief in the lead fields and on the entire surface, which are expressed in the form of fine scratches and grooves. According to Robert Thompson, the successful completion of this time-consuming task depends on the knowledge and experience of an expert (Thompson, 2010). However, this should not be taken to mean that the expert is an omniscient and omnipotent person. Some authors point out that it is possible to identify a weapon with a shotgun bullet, a shot, a pellet, and a plastic container fired from a smoothbore gun. This, however, is an arguable statement. Nevertheless, some authors consider it to be a reality, since the expert may be asked the question: What time has passed since the last shot (Seleznev & Sysoyev, 2012)?

The book "Criminalistics of Socialist Countries" was edited by Professor Koldin (1986) and states that "The ability to identify firearms through shots and pellets has radically changed the tactics and methods of investigating relevant crimes" (p. 110). A similar entry is made in the book

titled “Criminalistics”, which was edited by Filipov (2007): “With the development of forensic–ballistic examination methods, there has been the possibility of identifying a smooth-bore firearm with a slug. In the modern period, the possibility has been established and a methodology has been developed for the identification of smooth-bore firearms through pellets and shots” (p. 90-91). The authors discussed the possibility of identifying pellets and shots in the book “Criminalistics”, which was published in Moscow between 2005 and 2018. According to the authors, regarding identification issues, the investigator can ask the expert a question to examine whether a slug, a shot, or a pellet was fired from a particular weapon (Criminalistics, 2018; Balashov et al., 2005).

Back in 1972, the American Journal of Criminal Law and Criminology published an article titled "Identifying shots", where the authors point out that the identification of a shot fired from a smooth-bore firearm is seen as an unexplained problem.

In their opinion, scratches are observed on relatively large shot grains and it is possible to identify them. Notwithstanding, the authors also point out that the probability of repeating the same scratches is very small. Since the entire surface of the projectile is expected to touch the entire inner surface of the barrel, there is a greater chance that identification marks will remain on the projectile (Sinha & Kshetry, 1972).

The possibility of identifying objects fired from smoothbore weapons (slugs, shots, pellets and containers) is discussed in the article of Bakhtadze and Golenev (2019). Although the authors conclude that objects fired from smoothbore weapons can be identified, experimental studies are still needed

Leaving aside the practical aspect, it is highly doubtful even in theory to identify smooth bore weapons by containers. A container is a warehouse made of plastic material in which shots, pellets, or slugs are placed at the time of firing. At the moment of firing, high pressure is generated in the barrel. Thereafter, compaction of projectiles is placed in the container, which creates obturation and increases friction between the barrel channel walls and the container. Consequently, the temperature generated by the combustion of the gunpowder causes the walls of the plastic container to soften. After the shot, the micro-relief formed on the walls of the container loses its high temperature and cools down. Then the plastic hardens again and the shape of the micro-relief changes, which already in itself precludes the persistence of individual traits on it and its suitability for identification.

The rationale of some authors that smoothbore firearm can be identified by shot, pellet, and container is based on only small theoretical considerations. Every theoretical research and reasoning exists in order for it to find application in practice, otherwise it has no theoretical value either. Ideal conditions are created in the laboratory to conduct experiments and obtain



experimental bullets without damaging them. Even under these conditions, it is almost impossible to obtain shots and/or pellets, which can be used for further identification. However, an identification study based on them will yield results. The focus here is not on shots and pellets removed from crime scenes because they are mainly made of soft metal and their shape and fragmentation changes upon contact with the objects. Despite numerous experiments and researches carried out in the laboratory, no experimental shots and pellets were obtained from the smoothbore weapon. Thus, the expert unequivocally concluded that they had been fired from the same weapon.

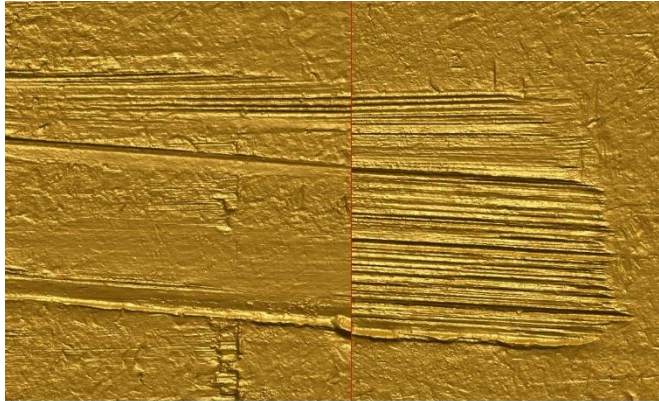
Unlike shots and pellets, it is possible to use only one slug fired from a smoothbore to identify a slug whose diameter is equal to or slightly greater than the inside diameter of the barrel channel, which is completely or partially obturated at the moment the slug enters the barrel. In this case, it would be ideal if the inner surface of the barrel have any defects, since the smooth surface of the barrel has no lands and grooves.

Aside from the barrel of a smoothbore weapon, it is often difficult to even compare bullets fired in a rifling barrel for a variety of reasons. When an expert has both bullets and firearms from the scene, it is possible in this case to obtain experimental bullets from cartridges of the same manufacturer that were used at the crime scene. However, it is much more difficult when the bullets of different manufacturers are presented from the crime scene and the weapon is not presented. This makes it impossible to obtain test bullets. In such cases, it is very difficult to compare objects with each other and to some extent, it depends on the experience of an expert.

It is widely believed in scientific literature that details of weapon, including the inner surface of the barrel, are made of relatively durable materials and retain their individuality for a long time. At the same time, everyone points out that details of weapon are changeable, just like all objects in the material world. Variability details is determined not only by exploitation but also by storage conditions. Complications of the identification process, in addition to the long exploitation of the weapon and the variety of lead metal, can be caused by the shape and size of the bullet, including additional marks on the bullet, which are generated before and after the shot. Ballistic scanner known as “Balscan” was used during the research.

### **Long Exploitation**

In the process of identifying, the expert compares most of the marks on the bullet and identifies similarities and differences. However, in the case of similarity of the majority of marks, it is possible to draw a conclusion that the bullet was fired from a barrel of a particular firearm. In other cases, the expert can only discuss general similarities.

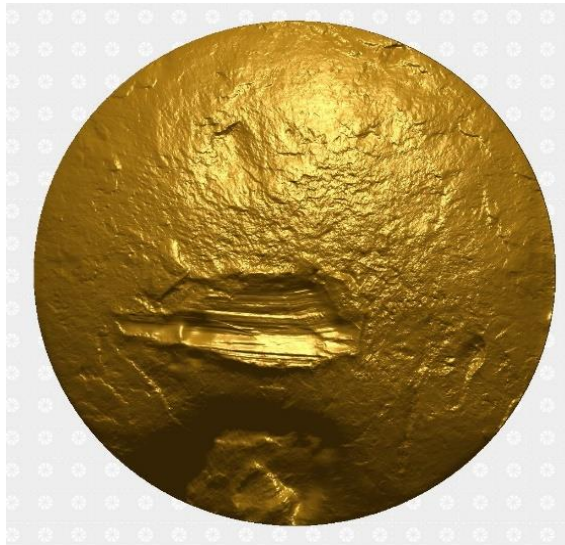


Nagant. Test bullet. 2001      Nagant. Test bullet. 2020  
Photo N1

As mentioned earlier, compared to the inner surface of the barrel, the jacket of bullet is made of soft metal, which ensures the durability of the marks formed on the surface of the bullet for a long time. Nevertheless, since all objects in the material world are changeable due to the conditions of long exploitation and bad storage, the inner surface of the barrel of the weapon also changes shape and new marks emerge on it or existing marks disappear. (Photo N1).

### **The Shape and Size of the Projectile**

The reflection of individual identification marks on a bullet is highly dependent on the specificity of the projectile. In modern times, there are frequent cases when a partition, restraint or stopper is removed from the barrel channel of gas and signal pistols. Thereafter, it is possible to fire a projectile from this type of weapon, which is loaded in a handmade manner within a cartridge case of nominal caliber. The inner channel of the barrel of such a weapon is smooth.



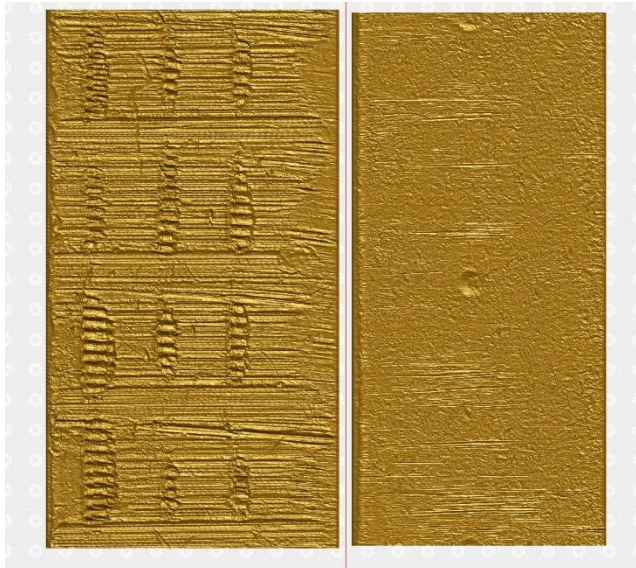
Handmade cartridge. Charged with 1 piece of shell. 9mm nominal caliber.

Photo N2

When firing such cartridges, the closer the diameter of the projectile is to the diameter of the barrel channel, the better the detection private marks will be. In this case, it would be ideal if the inner surface of the barrel have any defects, (Photo N2) since the smooth surface of the barrel has no lands and grooves. Like handmade cartridges, the same can be said for cartridges that are used for smoothbore weapon, since they are usually charged with different types of projectiles and other elements. At the moment of firing, they do not come into contact with the inner surface of the barrel, especially since the projectiles in modern cartridges are placed in plastic containers.

### **Metal Variety**

When identifying bullets, it is important to consider the specifics of the metal used to make the jacket of lead. There are many enterprises in the world where both military and commercial cartridges are manufactured. Cartridge manufacturers have different technologies and they produce jacket of bullet using different technologies and metals. (Photo N3) Certainly, traces of relatively soft metal are easily imprinted and contain more information for identification.

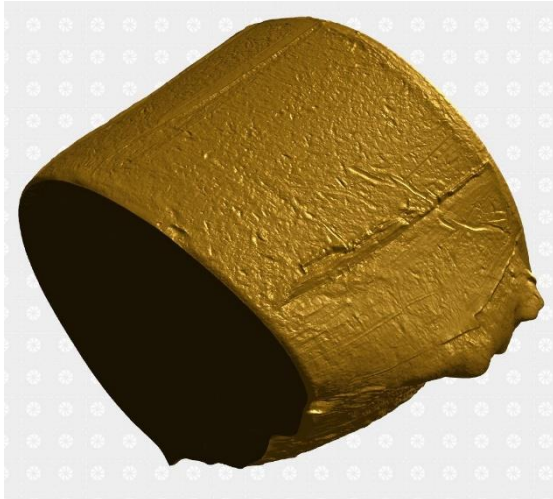


Nagant bullet.                      Nagant bullet.  
Non jacketed bullet.              Jacketed bullet.  
Fired from the same barrel  
Photo N3

When an expert from the crime scene presents both bullets and firearms, it is possible in this case to obtain test bullets from cartridges of the same manufacturer that were used at the crime scene. However, it is much more difficult when the bullets of different manufacturers are presented from the crime scene and the weapon is not presented.

### **Additional Marks on the Bullets**

When identifying bullets, it is important to consider that many traces may be reflected on them before and after the shot (Mechanical damages resulting from contact with a solid object in the form of scratches), which do not belong to the weapon in which the particular bullet was fired. (Photo N4)



Bullet, damaged after the shot.  
Photo N4

There are frequent cases when a cartridge which was made many years ago (Including decades ago) is used at the crime scene and this cartridge has been changed by many owners since its manufacture. In such a case, the bullet may show multiple marks that formed before the shot. It should also be noted that after the shot, when the bullet hits a different object, additional marks will be reflected on it that do not belong to the barrel of the weapon. In many cases, the bullet could also have reflected marks from inner surface of the cartridge cases. This often happens when there is a separation of cartridge cases and bullet. These additional studies, however, complicate the identification process.

## Conclusion

As previously mentioned, there are basically three types of barrels - polygonal rifling, traditional (conventional) rifling, and smooth bore. Since the internal shape of the barrels are different, the projectiles passed in these barrels have different marks of form and some are more depicted than others. Therefore, identifying private signs is necessary for comparison. If such marks do not remain on the surface of the bullet, it will be unusable for identification. This is because the identification process should be based on a comparison of general and individual marks.

The rationale of some authors that smoothbore firearm can be identified by shot, pellet, and container is based on only small theoretical considerations. Every theoretical research and reasoning exists in order for it to find application in practice, otherwise it has no theoretical value either. Despite numerous experiments and researches carried out in the laboratory, no experimental shots and pellets were obtained from the smoothbore weapon.

As a result, the expert unequivocally concluded that they had been fired from the same weapon.

Aside from the barrel of a smoothbore weapon, it is often difficult to even compare bullets fired in a rifling barrel for a variety of reasons. When an expert has both bullets and firearms from the crime scene, it is possible in this case to obtain experimental bullets from cartridges of the same manufacturer that were used at the crime scene. Notwithstanding, it is much more difficult when the bullets of different manufacturers are presented from the crime scene and the weapon is not presented. This makes it impossible to obtain test bullets. In such cases, it is very difficult to compare objects with each other and to some extent, it depends on the experience of an expert.

It is widely believed in scientific literature that details of weapon, including the inner surface of the barrel, are made of relatively durable materials and retain their individuality for a long time. At the same time, everyone points out that details of weapon are changeable, just like all objects in the material world. Variability details is determined not only by exploitation but also by storage conditions. Complications of the identification process, in addition to the long exploitation of the weapon and the variety of lead metal, can be caused by the shape and size of the bullet, including additional marks on the bullet, which are generated before and after the shot.

In addition, comparison is a very difficult process. Therefore, common features that reflect the structural arrangement of the barrel channel must first be combined by common marks that reflect the degree of wear of the barrel channel. Also, appropriate (compatible) marks must be established on test and experimental bullets. Thereafter, private (individual) signs must be compared according to the micro-relief in the lands and on the surface. After this process, the expert can then establish a specific decision and formulate a conclusion about coincidence, non-coincidence or inability to resolve the issue. It is probably clear to everyone that it is impossible to conduct research of this scale on objects (shots, pellets, plastic container) that do not have sufficient identification marks. A reasonable conclusion used in court as evidence should be based on a combination of durable individual barrel channel marks with other bullets or a combination of durable individual barrel marks of the experimental weapon.

As previously stated, the expert's categorical opinion in some cases is used as direct evidence in court. Accordingly, the court is less interested in the probable conclusions, since the court must pass judgment on the basis of the conclusion and the combination of other evidence.

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## **Challenges of Dispute Settlement through International Court of Justice (ICJ): the Case of Ukraine v. Russian Federation the Decision on Provisional Measures on Alleged Violation of Genocide Convention**

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### **Abstract**

This article aims to study the challenges faced by the ICJ in the international dispute resolution processes by analyzing the case between Ukraine v. Russia emphasizing the decision of the court on claims of provisional measures to stop Russian military operation in Ukraine. The qualitative approach was utilized in this research referring to both primary and secondary sources. The finding shows that ICJ has been facing challenges which is revealed in Ukraine's case too. Regardless of the marvelous efforts of ICJ, state parties are quitting the jurisdiction of ICJ by rejecting the principle of international law of treaties. Besides, the gap in institutional independence in the process of election of judges has involved the veto power of the Security Council which is a political organ. Even more, the election of ad hoc judges is based on the intention of national representation. To this effect, the verdict on Ukraine's claim has been decided by the split majority vote and judges' individual independence in decision-making has been influenced by national interest, the political orientation of judges, ideology, and, diplomatic relations of states. The worst is that the judgment enforcement UN Security Council's structural posture caused failure to execute decisions.

Favoritism and intervention by unilateral sanction are also other problems. Therefore, the writer suggests the court demand a radical change to attain its intended object.

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**Keywords:** Challenges, ICJ, Ukraine, Russia, Genocide, Provisional Measures

## 1. Introduction

Under the United Nations system, ICJ is the principal dispute settlement organ (UN Charter, Article 92). The court has established to settle international disputes from all over the globe. The assumption of the court has fantasized to be a world court forum that endorsed solving multifaceted cases which could be submitted by the state parties. It has the goal to solve international conflicts in an amicable manner that keeps peace and security in the world (UN Charter, Article 1-2).

The motive for the establishment of the world justice forum was a complex phenomenon and it was not a simple task. ICJ had passed long historical progress to be as it is today's institutional capability (ICJ Handbook, 2019). Before ICJ there were other established juridical organs; their historical development shows that there were challenges before and after its establishment. At the end of WWI, the world states had a great deal of enthusiasm to found an international justice forum that was believed to protect the world from another bloody war (Spiermann, 2004). The League of Nations (LN), also known as the predecessor of the UN, was a unique institution proposed to unify the universe to the common agenda of peace and security and had taken a mandate for the formation of the world court that can solve international conflicts. However, the progress of the establishment was doubtful among the delegates of different nations. The invited legal scholars and drafting commissioners faced dilemmas in the institutional formation, the structural organization, the composition of the court, and the system that it implements (Spiermann, 2004). The dilemmas were related to, first the different types of legal systems of the world (Casals, 2022), there are many legal systems and even similar legal system followers have significant variations from one state to another. So, assuming a global justice system in such a complex diversified legal spectrum had created absolute confusion. Second, political ideology \_ has a great impact on the formation of the courts; the court should be planned to be established considering the west and the east block dubious political competition (Leeuwen, Rasmussen, ed. Morris, 2021). Third, at that time the world states' were not united to a common goal which made them not confident in the universal court idea. The World War II winners (Allies) planned to prosecute and charge the perpetrators, such a move frustrated many states including Japan, Germany, Italy, and others started to

withdraw from the League of Nations by referring the Article 1 of the League of Nations. The Covenant Article 1 provides “Any Member of the League may, after two years' notice of its intention so to do, withdraw from the League, provided that all its international obligations and all its obligations under this Covenant shall have been fulfilled at the time of its withdrawal” (LN Covenant, 1920). The fourth is related to the impact of the war itself derogated the mutual trust between the members of the League of Nations. These and other specific state concerns made the establishment's progress challenging to draw common ground.

However, those challenges were contributing factors to further improvement and the LN played a fundamental role to bring the Permanent Court of International Justice (PCIJ) which was functional from 1922 to 1946. Article 14 of the Covenant of the League of Nations and the statute of PCIJ provide the first international permanent court. The newly formed court, like its establishment process, had faced hurdles after it started exercising its judicial responsibilities. The problems faced by the PCIJ include states' resistance to the compulsory jurisdiction of the court, states reluctance to be a party to the PICJ statute, the member states' hesitation and lack of trust to bring cases, and the continued trend of military conflict world and beginning of the WWII had twisted the world into unstable phenomena and political rivalries between states were repeatedly mentioned drawbacks. All those problems were lessons to further renewal of PCIJ yield to the establishment of ICJ (ICJ Handbook, 2019).

The devastated Second World War was over the LN and its apparatus for a peaceful solution, the PICJ, have lost their credibility in the face of the world, so, the new beginning had to start again to discuss the peaceful solution to international conflicts. Then the agenda of peaceful resolution of conflicts was basic in founding discussions of the United Nations (UN), and ultimately the UN charter in its first two articles identified and incorporated basic principles of pacific solution. Besides, the charter has also magnificently organized ICJ as one of the six bodies of the UN. ICJ has been considered a judicial organ of the UN and is mandated not only adjudication but also empowered to provide advisory opinions for special units of the UN (ICJ Statute 1945, Article 65-68 and Aliaghoub, 2006).

However, just like that its predecessor, the ICJ has been facing challenges. Challenges are not only problems that are emanated from the ICJ itself but included multi-dimensional hurdles that originated from the legal frameworks, the structural establishment of institutional independence, and also other external factors.

To show the challenges of ICJ this article applied the case analysis method and the recently submitted case between Ukraine v. Russia raised concerns by many international law scholars (ILSA webinar, 2022). Initially,

the case was pretexted by Russian President Vladimir Putin's announcement of a "special military operation" in Ukraine on Feb. 24, (Ukraine V. Russian Federation, 2022). Then a day after of military operation begin, Ukraine took steps to challenge Russia in ICJ and the written application was submitted to the court registry on Feb. 26 (Provisional order, para 1). Ukraine's application to ICJ basically used Genocide Convention; the claim was to get the decision of non-violation of the Genocide convention which is unique because the request is to disprove the Genocide allegation by Russia and to get the order of the court to stop the use of force.

Ukraine argues the jurisdiction of the court based on Article 36 statute of ICJ and Article 9 of the Genocide Convention that, Russia's justification for the invasion by allegations of genocide in the eastern regions of Luhansk and Donetsk is false and an insufficient rationale for the use of force (Order, para.2 & 20). On Feb. 26, Ukraine subsequently submitted a request for provisional measures to protect its rights based on "the risk of irreparable prejudice and urgency." This requests the court to order that Russia suspend military operations and ensure all actors take no further action in support of any such operations (Order. Para 5, ICJ statute Article 41, ICJ Rule of court Article 73, 74 & 75).

However, Russian Federation rejects the jurisdiction of the court and declare not to appear (Order, para 12 & 20). Russia stressed to justify its military operation by asserting the Neo-Nazi group's commission of the Crime of Genocide in the region of Luhansk and Donetsk in Ukraine (Russia Official Letter to ICJ 2022). Whereas, the Russian latter reject the court's jurisdiction by claiming they didn't apply the Genocide Convention; rather they contend Ar. 51 of UN Charter self-defense and argue that the Ukrainian application is not valid and the case must be canceled because Ar. 51 is not the jurisdiction of ICJ (Order, para 33).

Then after the court accept the prima facie jurisdiction Russia used Genocide as a justification to use force, and then the court invoked Ar.1 and Ar.9 of the convention to assert jurisdiction (Order, para 37). Besides, the court also analyzed the use of the Article 51 \_ rule self-defense cannot bar ICJ's jurisdiction due to the fact one matter can be covered by two or more treaty rules (Order, para 40 & 46).

After a discussion of the issue on March 16, the court issued its order on provisional measures, the first decision made in the case. The court announced three orders; first, the Russian Federation shall immediately suspend the military operations, Russia was ordered to take no steps in furtherance of the military operations, and; third, both Parties were ordered to refrain from any action which might aggravate (Order, pp.19). The first two orders were decided by a majority vote of thirteen against two and the Russian and Chinese-appointed judges submitted their dissenting opinion (Ibid).

However, the last order has approved by a unanimous vote of the court which decided for the two parties to refrain from military engagement.

Laterally, the case seems nothing different from other cases, however, to discuss the ICJ's challenge we must consider the following questions. Did the Russian Federation accept the ICJ jurisdiction and appear? Who were the judges? How does an ad hoc judge appointed? How do the judges vote on provisional measures? Are the orders enforced? How fast the proceeding is? Why does the UN Security Council fail to enforce the ICJ order? The attempt to respond to these questions would assist expose challenges that are hindering the ICJ. Therefore, this article aims to analyze five basic challenges and tries to suggest solutions in general and specifically by referring to the decision given on the provisional measures in a pending case between Ukraine and Russia on the allegation of Genocide.

## **Method**

In doing so, the article applied a qualitative approach that uses both primary and secondary sources as references to analyze research findings and the research tends to utilize a case analysis approach. International laws are used as a primary source; secondary sources include books, journal articles, investigation reports, news, articles, ICJ court reports, online sources, and other documents utilized as references.

The article has four parts; the first part is allotted to discuss introductions about brief schematization of the challenges of ICJ and establish relevant facts of the pending case between Ukraine and Russia. The second part aims to provide the institutional and legal frameworks of the ICJ by focusing on the challenges related to independence and impartiality. The third part discusses the challenges in detail explanation of the case of Ukraine v. Russia. The final part of this article will conclude the finding and present suggestions.

## **2. Institutional and Legal Frameworks of ICJ**

### **2.1. Institutional Independent and Individual Independence**

The institutional framework of the ICJ is different from its predecessor while it is organized as one of the six principal bodies of the United Nations (Debbas, 2019, Yusuf, 2019). Thus, under Art. 92, the court's statute forms an 'integral part' of the union (ICJ Statute, 2005). Accordingly, UN members are automatically parties to the court's Statute. Regarding the overall institutional governance of the ICJ's former President Justice Abdulqawi said that;

The establishment of the Court under the Charter as one of the principal organs of the UN was meant to ensure that it would not be subordinate to any of the political organs of the UN. The drafters of the

Charter sought to create a system of governance of the Court based on two pillars: judicial independence and administrative autonomy (Yusuf, 2019).

UN Basic Principles on Independent of Judiciary has set the general standard of the institutional independence of the judicial organ it shall be considered the rule of separation of judiciary from other organs. The UN has provided the principle to rule the independence of judicial organs of the states. So, the judiciary shall be free from any influence by the executive or legislative organ of the government. United Nations Basic Principles on the Independence of the Judiciary, adopted by the Seventh United Nations Congress on the Prevention of Crime and the Treatment of Offenders held at Milan from 26 August to 6 September 1985 and endorsed by General Assembly resolutions 40/32 of 29 November 1985 and 40/146 of 13 December 1985.

Despite the above assertion the ICJ had faced challenges regarding its institutional independence from different horizontal co-organs of the UN and even there are also allegations related to the court's frustration with the influence of some superpower nations (Murphy, 2008). For this purpose the relationship between the ICJ and the Security Council is prominently scrutinized in fact the two bodies should have deemed the rule of checks and balances. However, the two spectrums of the ICJ, i.e. judges' election processes and enforcement of the decision interlinked the two organs (ICJ statute Article 10).

One of the assessment mechanisms of institutional independence is the method of appointment of the judges of ICJ. The Statute of ICJ has incorporated the election processes of judges shall be bi-cameral that demands dual confirmation of the unanimous votes of the General Assembly and the Security Council (Ibid). The nominees needed to fulfill the requirements incorporated under Article 2 of the ICJ statute reads; "persons of high moral character, who possess the qualifications required in their respective countries for appointment to the highest judicial offices or are Juris -consults of recognized competence in international law"(ICJ Statute, Article 2).

Besides, the Universal Charter of the Judge devises "the independence of the judge is indispensable to impartial justice under the law. It is indivisible. All institutions and authorities, whether national or international, must respect, protect and defend that independence" (International Association of Judges (IAJ), Universal Charter of Judges, 199, Article 1).

Therefore the ICJ nominees for the position of a judgeship are expected to fulfill these minimum criteria. However, the statute has a unique mode of selection of ad hoc judges in case of the absence of a delegated judge for the party of a case. This unique feature of the temporary judges' election has made the process susceptible to bias and impartiality (ICJ Statute Article 31).

Generally, the ICJ has fifteen judges normally elected and in some circumstances 17 judges when the parties of the case have no delegation. The elected judges will select their President, and Vice President of the court and they appoint the registry of the court (Rule of Court, 2005, Article 10-14).

## **2.2. ICJ's Legal Frameworks**

The ICJ has its own legal frameworks that are used as a pillar of its establishment. Those laws are the UN charter, ICJ statute, & Procedural Rules (Rules of Court) as amended in 2005. However, the ICJ can provide decisions by using sources of international conventions, international customs, and the general principles of law recognized by civilized nations (ICJ Statute, Article 38).

There are detailed rules of application for proceeding and provisional measures for applicant's written memorial and written respondent memorial (ICJ Rule of Court, Article 44 & 45). After the memorial submission, the oral hearing will be at a fixed date by the court and parties should appear to present their case. It is evident the ICJ proceeding procedure has been influenced by the adversarial trial process of the common law legal system. The hearing and evidence presentation is mainly oral base and the decision of the court is on the rule of precedent (ICJ Rule of Court Article 54). In addition to the application for proceeding, the applicant can claim provisional measures to stop urgent and irreparable harm (ICJ Statute Article 41 and ICJ Rule of Court Articles 73, 74, & 75). Lastly, the final ICJ's judgments and orders are confirmed by a majority vote of the judges who adjudicate the case and judges can dissent from the majority (ICJ Rule of Court, Article 94).

Ukraine has submitted a written application to challenge the Russian military intervention which is claimed an unjustified use of force. Ukraine has also submitted the claim for order on provisional measures to stop Russian military intervention urgently. Then after, the ICJ, pending the merit of the case, satisfied the *prima facie* jurisdiction of the court and declared Russian shall immediately suspend military operation in Ukraine pursuant to Ar. 41 statute and Ar. 75 (2) of Court rule.

## **3. Result and Discussion**

After the brief schematization of the case between Ukraine and Russia and the presentation of the legal and institutional framework of ICJ, this part of the article discusses five findings of research identified as basic challenges of ICJ.

### **3.1. Russia's Rejection of ICJ Jurisdiction as a Challenge in the *Ukraine v. Russia* case**

The jurisdiction of ICJ is sourced only when state parties to the case agree to compulsory jurisdiction with the consent of states. Sources may include special agreements, treaties, and conventions. Selection of the jurisdiction is a sovereign right of the state, however, the law of treaties has the rule of *pacta sunt servanda* that after the treaty parties consent to the international treaties they must abide by the terms of the treaty (International Law Commission Report, Draft Vienna Convention on Law of Treaties (VCLT), 1966). International laws' basic source of obligation is a treaty, so, every state should moderate the strict sense of sovereignty. Some writers alleged that a strict sense of sovereignty of a state would block the contemporary phenomena of international relations. Hathaway (2007) explained the problem by saying "At the international level, governments aim to maximize their ability to satisfy domestic pressures, while at the same time seeking to avoid adverse foreign developments"(Hathaway, 2007, pp.118). Nevertheless, states are frequently rejected the ICJ's jurisdiction after they consented to a certain treaty. In the case at hand, both Russia and Ukraine are members of ICJ and both are also ratified the Genocide Convention. The two countries submitted their reservation on Article 9 of the Geneva Convention, however, they withdraw their reservation (United Nations, Treaty Series, vol. 78 p 227, Genocide Convention). However, the Russian government declared the rejection of the court's jurisdiction by writing a letter quoted by the court;

The Ambassador of the Russian Federation to the Kingdom of the Netherlands indicated that his Government had decided not to participate in the oral proceedings ... and he requests the Court to refrain from indicating provisional measures and to remove the case from its list" (Order, para 12 & 16).

The court had no chance only it announced 'regrets the decision taken by the Russian Federation not to participate in the oral proceedings. Besides that, the court clearly pinpointed that 'the non-appearance of a party has a negative impact on the sound administration of justice, as it deprives the Court of assistance that a party. Despite these issues, the court recalls that the non-appearance of one of the States concerned cannot by itself constitute an obstacle to the indication of provisional measures. In the case, of military and Paramilitary Activities in and against Nicaragua, the non-appearance of the US couldn't halt to entertain the case. However, the ICJ's decision failed to be enforced (ICJ Judgment, Nicaragua v. the United States of America, (1986)).

The Russian Federation has submitted a letter of rejection of the ICJ's jurisdiction, it is not an official defendant memorial. The letter has repeatedly insisted the court couldn't hear the case due to two dubiously articulated



reasons; the first defense is, that Russia denied using the Genocide Convention to justify the military operation, and asserted Ukraine's application by using the convention is wrong to claim jurisdiction of the court. The second randomly articulated defense is Russia's claim of self-defense by using the UN Charter Article 51 \_ 'inherent right of individual or collective self-defense if an armed attack occurs against a member state of UN until the security council has taken measures necessary to maintain peace and security'" (Order, para 33). Therefore, Russia throwaway the jurisdiction of the court because the case that arises from the UN charter wouldn't be the jurisdictional limit of ICJ. Russia's claim summarized that the court shall revoke the case from the list because there is no issue attached to Genocide Convention rather the issue is self-defense.

The court ruled \_ that there is prima facie jurisdiction \_ in all the official declarations referring protection of citizens of Luhansk and Donetsk from genocide. Besides, the court affirmed that the use of UN charter states' self-defense cannot bar the ICJ jurisdiction.

To assess the case in consideration of the challenge of jurisdiction, one would ask, do that Russia has good faith to receive the ICJ's admission of the case. The problem was beyond the legal argument; it marked the total rejection of the court before hearing the merit of the case. The Russian Federation's unilateral declaration not to appear in the court and submission of an informal 'letter' from Russia's Ambassador in the Netherland, and request the court remove the case from the list, suffices the disrespect and inconvenient to the ICJ.

The ICJ has faced a dilemma when parties reject and failed to appear in court. As a dignified organ of the UN, it would have to be respected and all parties should abide by international law. However, countries like Russia marginalize the very purpose of the ICJ by degrading its legitimate authority. It is difficult to justify such rejection as it is the right of the state to choose jurisdiction because no one would be interested to be prosecuted by the court after the commission of a certain violation. So we have to draw the line between the principle of the sovereign right of the state and the legitimate responsibility of the state to abide by international treaties. Accordingly, the act of Russia's rejection is a challenge for ICJ that misconstrued international laws. Such a move to denial interrupts the true purpose court to solve international disputes peacefully and as we understand the war in Ukraine is a devastating impact on both Ukraine and Russia.

The issue is what type of legal remedy in case of some countries totally deny the ICJ's peaceful adjudication. The only alternative to ICJ is to hear the case in absence of the appearance of the party by the rule of *proprio motu* circumstance when the court decides the admissibility of jurisdiction as legitimate for trial without the attendance of the respondent (Rule of court,

Article 53(1)). Then the final decision would be pronounced by the court. Such an approach has difficulties, first, a trial in absence of one party could be the question of due process of law; plus the decision will not be acknowledged and enforced by the party that failed to appear. It is believed that rejection of the appearance by the respondent primary rejection of any final outcome. The decision of the ICJ in the pending case *Ukraine v. Russia* has the same effect of stagnation.

Generally from the case, we can assert that rejection of ICJ's jurisdiction is a challenge emanated from the state parties that subsequently damage the effectiveness of the court and could lead to violent means of dispute resolution.

### **3.2. Institutional and individual Independence of ICJ Judges in Ukraine v. Russian Case**

#### **3.2.1 Institutional Independence and Election of ICJ's Judges**

The current composition of ICJ's judges has shown fifteen judges from different nationalities (ICJ Judges profile, 2022). The ICJ's current President is Justice Joan E. Donoghue is US national and the Vice President Justice Kirill Gevorgian is a Russian national. The decision of the two presidents is expected immediately after the case is submitted to the court. Because, the Vice President (Russian) is presumed to favor his nation, whereas, the President is also assumed to protect the firm political rival of Russia and diplomatic interest in the European Union (EU). The statistics show that in every term of the election ICJ of judge the permanent members of the Security Council are elected at least as a member judge (ICJ Presidency, 2022). Beyond that, from the 26 presidents of ICJ 10 were elected from the United Kingdom (four times), French (three times), and the USA (three times). This show the continuous problems that impulse to raise a question about the institutional independence of appointments that favor the permanent members of the Security Council.

The other unique appointment procedure is when the state is a party to the case and is not delegated by a judge the ICJ statute permits the election of an ad hoc judge who could represent the state (ICJ Statute, Article 31). In the case at hand, Ukraine was not delegated by a judge, so Ukraine appointed ad-hoc judge Mr. Yves Daudet, a French national, to adjudicate the case on behalf of Ukraine (UN Audiovisual Library of International Law, Biography). The question does this ad hoc judge really free of any influence? If ad hoc judges are elected to delegate to the nation that appointed them, what type of decision they will make?

ICJ judges are supposed to be elected by the standard of the ICJ statute and they are believed to be free from any influences voted by unanimous decision of the General Assembly and Security Council. According to ICJ

statute and the Rule of the court, the appointment of judges shall be independent of any influence and judges shall be of high moral character and best legal qualification.

The case Ukraine v. Russia is set to be heard by fourteen permanent judges and one ad hoc judge. The court's structural setup for the appointment of the judges has challenged and faced the issue of impartiality of the election. The Security Council is considered a political organ of the UN that can influence the election result and voting system. The worse is also the ad hoc court that clashed against the fundamental Universal Character of the judges. Some conclude ad hoc judges are "semi-legal, semi-judicial, semi-political bodies which nations sometimes accept and sometimes not" (Ma and Guo, 2017 p.163), that abuse the fundamental principles of impartiality. ICJ's institutional composition is a challenge that shows a visible alignment of domination political and ideological influence of the west blocks and the resistance of the east blocks.

### **3.2.2. Individual Independence of ICJ Court Judges and Decision on Provisional Measure**

Judges have the fundamental principle to take their responsibilities free from any influence and shall be impartial, of good character, and morally responsible (Universal Charter of Judges, Article 1). The ICJ judges have also an oath that declares "I solemnly declare that I will perform my duties and exercise my powers as judge honorably, faithfully, impartially, and conscientiously (Rule of court, Article 4).

However, the ICJ's judgments have been criticized for the problem of impartiality. Judges favored the state appointing them \_ for the strategic interest of their state; some judges favored the state wealth closer to them; some judges also favored the states which have the same political system, and some judges also favored language and cultural similarity with theirs (Posner and Figueiredo, 2005).

The current composition of ICJ judges includes the president is US national and the vice president is being from Russia. The other member judges were delegates from Germany, Morocco, Japan, China, Slovakia, Uganda, India, Jamaica, Somali, Lebanon, Australia, and French (ICJ Current members of Judges). The ad hoc judge who delegates Ukraine is a French national.

The ICJ has decided on two provisional measures by majority vote and one measure by unanimous vote. The two orders are first, Russian Federation shall immediately suspend the military operations and the second order against Russia to take no steps in furtherance of the military operations. The third is to order is for both parties shall refrain from any action which might aggravate or extend the dispute. Regarding the vote, the Russian and Chinese judges voted against the majority vote. It would be difficult to presume Ukraine and

the Russian judge vote against their national interests. Besides, why do the Chinese judges vote against the majority? Why did the US and its allies decide to vote against the Russian military operation in Ukraine? This is a clear indication that shows inside the courtroom of ICJ, there is visible revelry to the protection of national interest, and some judges could easily be influenced by different ideological consumption of the West and the East ideology. Therefore, the ICJ's judges are presumed independent and free from any type of influence, while, their vote on the provisional measures in *Ukraine v. Russia* exposed impartiality. The ICJ has judges who try to defend their national interests and it has also judges who favored siding in the protection of their countries' diplomatic relations. Therefore, the ICJ's judges' biased role is a fundamental challenge that affects the overall institutional effectiveness and efficiency.

### **3.3. Challenges related to Enforcement of Judgment by UN Security Council**

The court had pronounced provisional order which was presumed to be implemented. As it has described above the court instructed the Russian Federation to stop military intervention in Ukraine. Each party should comply with the decision of the court in good faith. Besides, the court had also delivered the order to suspension of further military provocation for both parties. However, both parties execute none of the orders; and there is still ongoing war in Ukraine (UN News Global Perspective, 2022). Rather, Russian Spokesperson Dmitry Peskov told reporters on March 17, 2022, that "Russia cannot take this decision into account" (Leeson, 2022).

The Security Council was organized as the executive body of the UN that empowered the enforcement of court rulings. UN Charter Art. 94 (2) the terms that are used for granting Security Council mandate to enforcement have disputed assertion because the provision select words 'the Council 'may exercise if deems necessary' that allocates for the discretionary power of the council and optional to choose. Despite this legal confusion as to the enforcement of the ICJ decision, the council believed the executive organ of the UN and its authority suffices to enforcement of the provisional orders however, the execution of the decision must be passed by a vote of permanent members of the council. So, the enforcement of the decision of the ICJ is subject to the veto power of permanent members of the council. In this respect, there is one contentious case between *Nicaragua v. United States* (1986) \_the Court found in its verdict that the United States was in breach of its obligations under customary international law not to use force against another State, 'not to intervene in its affairs, however, the US banned the enforcement of the judgment by using its veto power.

In the case between Ukraine v. Russia, the Security Council didn't attempt the enforcement of the provisional measures against Russia. After the verdict of the court, the issue of enforcement of the order was not an agenda of discussion to the council, it is obvious if the council attempted it would be quashed by the veto power of Russia. So, it seems the decision of the court was left stagnant as it is done for formality. Therefore, this shows that the ICJ judgment has been left unenforced which weakens the system.

The UN Security Council should be a legitimate organ to enforce ICJ's decision but the institutional mandate have confiscated by the complicated national interest of 'world powers' domination. It has unimaginable consequences watching the UN judicial organ verdict rejected by the veto power of a single state. If the case is in the national laws the issue of independence of the judiciary would be protected. The decision of the court should not be barred by the executive organ, whereas, the UN structurally mandated the political organ to overrule the decision of the ICJ. In this regard, the independence of the decision made by the Security Council was criticized by many as it has been abused by those permanent members. It is obvious the problem is not emanated from the court itself however, it is one of the challenges to the functional role of the organ of the UN. There will be no state to bring a case to ICJ if the decision continues as vacant and nominal.

Recently, to avoid such enforcement provisional measures the ICJ adopted Article 11 of 1976, Resolution Concerning the Internal Judicial Practice of the Court (Rule of court, Article 19). The provision is basically instated to establish an enforcement monitoring committee mandated to supervise and report the finding to the ICJ. The role is not a strong-enough executive mandate. The court tries to evaluate whether the provisional orders are implemented or not, such assessment would not add the capability of the court to enforce its decision. Nevertheless, this new development did not attempt to assume responsibility up until now.

### **3.4. Institutional Favoritism of ICJ**

The UN is presumed as the global home of every nation which perused equality between all the countries disregarding the economic status, differences in political ideology, the composition of the ethnic groups, the language they speak, and other status of the countries. The UN charter has been established by the fundamental principle of the sovereign equality of members' states (Article 2(1)). Therefore, the ICJ as one branch of the UN is believed that avoid any discriminatory treatment between the states in handling the cases, providing verdicts, and any other communications.

However, the case Ukraine v. Russia has gained extra-ordinary emphasis like it never happened before; not only the ICJ, the other bodies of the UN have been discussing it in different units of the union \_ and the General

Assembly voted to exclude Russia from the Human right council (GA/12414). The General Secretary of the UN has been declaring repeated announcements and there are many more discussions (UN Secretariat Activities, 2022).

The day after the Russian Military operation started on February 26, 2021, the file was opened by the court's registry. The next day, on February 27, the registrar communicated with Russian officials using electronic email, on February 28, the court wrote an official summon to Russia to appear to the court to defend the issue of the provisional measure. On February 30, the Ukraine delegate ad hoc judge was appointed to delegate Ukrainian. On March 1, the President of the court wrote a letter to Russia to call the attention of the Russian Federation in exercising responsibilities. On March 1, the registry also wrote a letter fixing the date of hearing on provisional measures calling parties to appear on March 7 to present their case. The Russian Ambassador to Netherland wrote a letter on March 5 to ICJ indicating his government decided not to appear in the court. On March 7 hearing opened and Ukraine present the claim while Russia failed to appear. Finally, on March 16, the court announced its verdict on a claim against the provisional measure. It is simply visible to see how the court is really concerned about the issue of provisional measures decided within 20 days. This case has gained tremendous emphasis. The court concludes its decision period on the claim of provisional measures. This would not a problem, it would be prized if such diligence and commitment were for all the cases presented. One would ask, why the UN and its units really care about the war in Ukraine.

The Standard of attention is different from the earlier cases that were submitted, which is the discriminatory treatment between parties. Some writers believed that 'the court [ICJ] had 'remained sympathetic to Ukraine's arguments to justify its decision (Lopez, 2022).

The verdict on the provisional measure in a case between Gambia v. Myanmar which was claimed by the Gambia had taken around three months while Ukraine's claim was decided with a certain urgency (*Gambia v. Myanmar, 2019*). Besides, some UN officials and media outlets describe discriminatory remarks that "war and conflict would only feature for only African and Arabic countries some assert that the Ukrainians didn't deserve such war \_ which is very outrageous. These and other specific UN units' extra care for Ukrainian cases affirmed the existence of favoritism.

The other argument is, that there were similar military interventions by the US and NATO in Iraq, Libya, Syria, and other countries by the name of humanitarian intervention while those military interventions were little or no emphasis given by ICJ or the UN in general. The case at hand and other many symptoms have vindicated the ICJ's nutshell motive has visible favoritism towards the western political ideology. Such discriminatory favoritism has been a serious problem that was raised by third-world countries.

Therefore, the court has been challenged by critics of institutional impartiality in the handling of all the cases equally.

### **3.5. Interference of Unilateral Sanctions and Effect on ICJ**

Sanction is an apparatus of the UN Security Council that is used to solve conflicts non-peacefully exceptionally, used forceful methods of solution to 'to maintain or restore international peace and security (UN Charter, Article 39). While such sanctions are imposed by the multilateral decision of the council but the unilateral sanction against a state is incompatible with international *jus cogens* of the sovereignty of the state (Bjorge, 2022). Beyond that \_ that prohibits any intervention against the sovereign state extra-territorial sanction. Article 2 (4) UN charter proclaims, "All members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the purposes of the United Nations" (Charter Article 2(4))."

The US, EU, and other allies of the west including Canada, Australia, Japan, etc. have waged the unilateral sanction against Russia. More than 30 states passed hundreds of sanctions on Russia and currently, Russia ranked first in the number of sanctions (Reuters Graphic, July 7, 2022). The basic question is will such sanction solve the problem? The unilateral economic sanction is not effective to stop the Russian military operation. Besides, most of the sanctions have been directed towards individuals' economic infrastructures which is an unrealistic motive. Nowadays unilateral sanctions becoming a tool to protect the western hegemony; while international institutions like the UN have ignored the disguise silently. The US has recorded thousands of sanctions against other countries (US Department of Treasury, 2022).

The unilateral economic sanction against Russia by the western allies has a serious impact on aggravating the conflicts. In this regard, for the ICJ it is difficult to assume its responsibility to solve international disputes when the states are declaring unilateral sanctions. So, unilateral sanctions are another method of isolationism that instigate the escalation of conflicts, which would end in the fatal disaster of another world war.

## **IV. Conclusion and Recommendation**

### **4.1. Conclusion**

Despite tremendous effort and ambition, ICJ has been facing plenty of challenges. One of the challenges is states after they entered into a treaty by consent to be bound by the jurisdiction of ICJ, reject the principle of international law of treaties\_ *pacta suntan servanda*. The red line of the sovereign right of a state to choose jurisdiction and state responsibilities to

abide by the treaty should be clearly demarcated. However, there are visible symptoms of states like Russia, damaged trust in the role of ICJ which is reflected by rejecting jurisdiction and appearance.

ICJ also faced the challenge of institutional independence in the election of judges that intervened by a vote of a political organ of the UN i.e. Security Council. The election of ad hoc judges is based on the motive of the national delegation. Therefore, it is clear the ICJ is not free from the influence of the Council and other superpower countries with respect to the appointment of judges and functional roles. The verdict on the claim of Ukraine's provisional measure is the decision by split vote and the judges' individual independence in decision-making power has been influenced by national interest, political biases of judges, and ideological diplomatic reasons. The order on the provisional measure in Ukraine v. Russia case failed to be enforced. The judgments of the court are nowadays becoming nominal and are not executed. The Security Council's structural posture with ICJ caused failure to execute decisions as it seemed to be.

The war in Ukraine attract the attention of the world and the case has gained extraordinary emphasis from the ICJ the fast procedure and the verdict reflects the unique handling of cases\_ that would amount to favoritism in the treatment of states. To the worst, the unilateral sanction against any state would not be supportive of a peaceful solution to any dispute.

In, the current scenario there are diverging interests regarding ICJ, on one side there are states who want to sustain the statuesque, on the other side, there are also states who desperately demand amendment and equal treatment.

#### **4.2. Recommendation**

Based on the above analysis the following suggestions can be taken as the solutions;

- a) Challenges regarding the rejection of jurisdiction \_ the states shall commit to the international treaties \_ one of the basic rules of international law is 'good faith', so each state has to act in good faith. There is no means of a warrant to arrest a state so, each party state should collaborate with ICJ to keep a peaceful solution to international disputes. Besides, the court shall assess its organizational status and overall functions and shall be free of any intervention to regain the confidence of the states. The alternative of the court to continue the hearing without the appearance of the defendant shall be complemented by the active role of the judges to equalize the two sides that make the final verdict trustworthy.
- b) Regarding Institutional and Individual Independence \_ ICJ demands fundamental change;



- The appointment of judges \_ should be direct and free of political and other influences of the Security Council. The Council is a political organ so the judiciary shall not be appointed by the executive. Therefore, the bicameral approach to the election must be abolished. The UN General Assembly must empower itself to election of judges direct and transparent way by avoiding any political delegations.
  - Increase the number of Judges \_ the current maximum number of judges is 15, but it should be increased the number to make it better diversified and participatory.
  - Allot cases randomly by lot to decrease impartiality \_ when if the number of judges is increased, judges for single a case can be allotted with the lottery method to minimize the biasness. By default, there will be no fixed judges, rather their will circulation of judges. For example, if the number of judges increased to 45, then 15 of them may be appointed for a single case, and the presidency is also possible to make rotational each case.
  - Regarding Ad hoc judges \_ it is better to avoid the votes of the ad-hoc judges in the decision-making process \_ *defacto* delegate defense lawyers should be prohibited from casting their vote.
- c) Revoke the Security Council's veto power on ICJ decisions, \_The decision of the ICJ shall be free to be enforced without the veto of permanent members of the Security Council. The Council is a politically castrated organ, so that, the verdict of the court shall not be subject to veto. Rather, it is difficult to assume the independence of the judicial organ.
- d) Increase the number of permanent members of the Security Council \_ the other alternative solution is, to increase additional member states to the Security Council, avoid political rivalry and make it an independent executive organ by diversifying its representation.
- e) Avoid non-peaceful means of solutions including unilateral sanctions and let ICJ work effectively. After all, the UN shall play a significant role to attain the goals of peace and security world, thus it shall be devoted to establishing an independent organ to safeguard peace and security for all nations.

Generally, to attain its objectives, the ICJ should contemplate the current changing global world to re-consider the interest of all nations to serve justice based on equality, and impartiality, without discrimination. So that laws and experiences that emulate discrimination, impartiality, and injustice should be avoided or amended.

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## **Influence of Labour Migration on the Rate of Youth Unemployment within the European Union: A Study Review**

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### **Abstract**

The European Union has been working on migration issues for several years now and several policies and structures have been developed to better manage processes connected to migration. Legal labour migration remains one of the challenges and is still a very fragmented and limited process. For some specific categories, legal labour migration is much easier, for example, highly qualified workers, seasonal workers, students, researchers, etc. This paper focuses on finding the role of labour migration on unemployment. Paper analysis cases within the European Union and methodologies used are research based on primary or secondary sources (documents, literature). The methods used in this paper are mainly qualitative and include document and text analysis and some case studies. The approach does not refer to the main challenges of migration in the European Union as the labour market does not legally integrate migrants from outside Europe (for example, third-country nationals) and does not legally integrate family members of legally migrated people, asylum seekers or even students studying in the European Union member state.

**Keywords:** Youth unemployment, Migration, Labour migration, Migration policy, EU migration

## Introduction

The labour market still has several challenges such as the articulation of international migration processes within and outside the EU. One of the challenges is to record and manage the process inside the union, movement between states and the compatibility of competences. Under the labour migration processes and its challenges, the recognition of qualifications from different states is significant.

The internal migration rate between member states is significantly low. For example, according to Eurostat, the inter-EU migration rate was 0.3% of the population of the whole member states, which includes all labour-migrated ages between 15-64. Despite the rise in the rate of unemployment and an economic crisis, the European Union member states still face the challenge of a labour and skill mismatch. The European Union, therefore, has started to create a strategy which focuses on growing geographical migration. The idea behind it stands for reducing the mismatch for supply and demand inside the labour market.<sup>1</sup>

In the European Union's growth strategy of 2020, it was highlighted that the labour movement within member states is a key element and a primary mechanism for the future of the labour market. Each member state is encouraged to share information about a lack of skills and qualifications in order to promote labour mobility between countries and regions. This strategy has increased chances for job seekers to get employed and to find a job easily in a wider area. Also, for companies, it has a big advantage by way of finding proper and highly-qualified workers.

Nevertheless, it is worth mentioning that the competitiveness of job seekers within the European Union also has its own challenges. The changed incentive for encouraging a geographical migration of labour at the EU level is somehow dominated at the national level by worries about negative side effects such as migrant inflow to the national labour market. These might include discarding local workers, the possibility of abusing the welfare system, and financial problems that migrants might introduce to the labour system of the receiving state.

The idea behind promoting geographical mobility is to advocate the notion of a single market within the EU and to generally enhance regional integration. The free movement principle of internal EU labour was first presented by the Treaty of Rome (1958). The job of the European Court of Justice is also significant as they have supported the idea of general free movement, not only labour migration. Later on came the Maastricht Treaty (1993), consolidating freedom of movement inside the European Union

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<sup>1</sup>Eurostat (2019) – Youth unemployment statistics  
[https://ec.europa.eu/eurostat/statistics-explained/index.php/Main\\_Page](https://ec.europa.eu/eurostat/statistics-explained/index.php/Main_Page)

member states and bringing into the loop the idea of European Citizenship. This was then followed by the Amsterdam Treaty (1997), which also further promoted free movement within the Union with the cooperation of the Schengen Agreement: “Every citizen shall have a right to move and reside freely within the territory of any Member State” (Maastricht Treaty, Article 18).

## Results

The principle<sup>2</sup> of free migration and free movement is usually protected and regulated by European Law, where many cases can be found involving national policy-makers of migrant-receiving states being concerned about the negative outcomes within their national labour market following the migration of such labour. The enlargement process of the European Union always plays a negative role too, as there are usually migration flows from newly joined states to more economically developed member countries. According to practices of last year on each EU enlargement case, many existing EU member countries applied limits and restrictions on the national labour market to avoid excessive migration flows. In 2004, when the EU underwent one of its biggest enlargements, most of the existing member states applied some restrictions to the new member states and the ones with lower economic performance, mainly Eastern European ones. Restrictions were different for each member state but they did not last long since all restrictions within the EU member states were dismissed around May 2011.

Mobility processes inside the European Union were implicated in and had direct influences on the performance of labour markets at national level. For example, the labour market in Germany demonstrated a higher level of unemployment in the years of 2004-2006. Here, majority of the German people started to use freedom of movement and to migrate to the United Kingdom and Ireland. By that time, the labour market of the UK and Ireland recorded a very low rate of unemployment.

Enlargement Action Plan for European Job Mobility was adopted by EU for the years 2007-2010. The action plan was mainly dedicated to encourage geographical free movement within the European Union. The action plan did not follow its content due to the economic crisis in 2008 when attention changed direction and everyone began to focus on the main issue of crisis times: unemployment.

During the crisis, member states realised the direct link of labour migration and unemployment and as an outcome, employment committees started to work on free movement rights protection and upgrading skills at

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<sup>2</sup>Directive 2014/36/EU, adopted in February 2014, regulates the conditions of entry and residence of third-country nationals for the purpose of employment as seasonal workers.



national level. Further coordination between nations regarding labour mobility and creating a strong common European labour market became a priority for the European Commission and state authorities. Thus, in 2011, all mobility barriers were removed inside the European Union. The recognition of qualifications and the use of more efficient language diversity became a priority. As part of free mobility, barriers like access to social security and national services became available for the employed migrants within the EU.

Generally, the aim of creating labour-related migration policies is to make sure supply and demand are matched on the labour market. As an example, most of the labour policies are dedicated to making sure that qualified workers are available in the labour market without additional transactional costs for companies. The connection between migration policies to labour market policies are usually well connected to the national and European level.

Both national and European policies try to ensure human capital availability and facilitate processes of migration connected to the labour market. To access the connection between labour migration and the needs of the labour market, one has to underline the issue of transaction cost. Companies that usually seek employees try to avoid recruitment from abroad due to the inherent costs. All of these changes from country to country but, for the case across the board, the documentation companies usually have to apply for the employee. Only in cases of a lack of qualification on the national labour market can companies seek employees from the global labour market. The same goes for the EU.

The above could be considered the reason for international initiatives but at the same time, they aim to restrict other actors into handling the costs regarding labour movement.

There are other types of migrants who, at the first stage of migration (when they enter the new state), are not considered as a job seeker. In certain periods, they begin to enter into the labour market. In such a group, people arriving for the purpose of study, family reunification, research, etc. can exist. Countries nowadays are working to reduce costs as much as possible which will directly strengthen the idea of having a strong and common European Union labour market.

To speak about legal perspectives, the Lisbon Treaty gives the full right to each EU member state to fully regulate their national migration policy and the freedom to establish conditions of obtaining a work permit. Usually, member states use this opportunity and freedom to monitor the process and limit the volume of entries to their national labour market. The Lisbon Treaty advises the institutional setting that it must be valued in any new initiative of the European Union connected to the field of labour migration. It is highly important to guarantee step-by-step implementation of any labour migration

connected to the EU and to articulate between international migration to the EU and migration inside the EU for its citizens.

Besides developing several strategies at the European Union and national level, intra-EU labour mobility still has several challenges and obstacles to overcome. One of the remaining obstacles is the lack of recognition of qualifications and educational backgrounds. To manage the processes of labour mobility in a good way, several frameworks and directives have been implemented and applied at EU level. Some directives were directly connected to the issue of the recognition of qualifications to establish a framework for common European qualifications. EU directives promote the idea of recognising professional qualifications when citizens of the European Union have to automatically receive authorisation to work in a certain occupation in any EU state if they are qualified workers in their home country. This recognition is guaranteed by minimum training requirements in the member state where one is willing to immigrate.

Besides all these regulations and directives, some European Union member states still require obtaining a license before permitting a person to enter their labour market. Those restrictions usually apply to medical personnel such as doctors, surgeons, dentists, pharmacists, nurses, etc.

For socio-demographic characteristics of migration within the European Union, there are a lot that make almost all EU member states have common trends. The most important and significant trend is the age group of migrants. Most of the labour migrants within the European Union are younger than the average population. According to the statistical data from Eurostat, the majority of migrants inside the EU are within the age range of 20-40. Mainly in northern European states, Sweden, Finland, and Norway recorded that the majority of migrants are under the age of 30. Similar data exists in some states of central and southern Europe such as Austria and Italy.

There are different pictures about the gender of labour migrants, which varies a lot from country to country. Women tend to be marginally more in mobility data in Eastern European member states, whereas men are more mobile in the old EU member states. However, the gender differences are usually very low which is the reason gender-orientated labour mobility has never been an issue to be taken into consideration. Another trend that has to be noted is repetitive mobility, which means that a person has already relocated several times from one state to another. A high record of this pattern of labour mobility exists in Spain, where the influence of this type worsening the labour market is significant.

Analyzing backgrounds and data on the educational levels of migrants is not possible in numbers as most member states do not record it. It is only according to a few member states' records that labour migrants often possess higher average education levels. One of the European Union member states

which records the educational background of migrants is Hungary. Here, statistics show, for example, that women with higher education mainly move to central regions of the EU compared to the ones with lower education. Data from Slovakia shows that the majority of migrants from the country are the ones with lower or no formal education. In Hungary and Slovakia, very low levels of labour migration are recorded for the people with an average formal education level. It can only go as far as generalized to speak about tendencies of migration linked to educational background as only 4 member states tend to keep such records.

Regardless of the economic crisis in 2008, some regions and states kept a shortage of labour and skills in their national labour market. The main challenge of the European institutions and policy-makers is still in balancing the labour market of each member state, which is not easy since many patterns, trends, and challenges characterizes the mobility of labour within the EU.<sup>3</sup>

One of such trend is mobility to the countries with high economic performance from the states with low GDP. This process seems very natural as job seekers concentrate on a better working environment and welfare, especially in the case when they have a high level of qualification. Within the European Union, the main destination country for labour migrants is characterized by high economic performance. In the EU, mobility records are less in Eastern European states compared to Central European States. The highest level of labour mobility is recorded in Germany, Austria, and Northern European Union member states. Labour mobility in some states increased after the economic crisis of 2008 in those countries which performed fast recovery economic actions and had strong post-crisis plans. It is also important to mention that big cities and the capitals are usually the major places that benefit from labour migration in the European Union.

Generally, youth labour migrants make up more than 10% of the overall migration of about 200 million people worldwide. Labour migration of young people is characterized by many trends and is considered the most mobile social group. This is why, within the many European states, they tend to be the majority in annual migration movements. Many reasons motivate young people all over the world to consider labour migration. First of all, there are opportunities to have a better life and achieve personal and professional development through the educational opportunities offered by the receiving state. Living abroad for young people gives additional value to the motivation to immigrate, which gives an additional opportunity to personal development as well as improvements of social and professional skills. Yet, the main motivation for young migrants is always related to the low economic

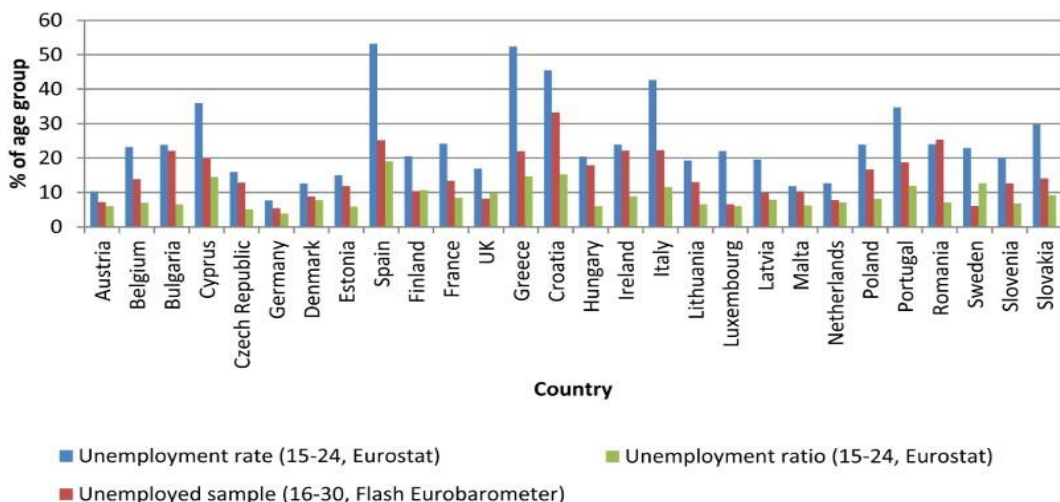
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<sup>3</sup>OECD-EC (2014). Matching Economic Migration with Labour Market Needs, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264216501-en>

performance, youth unemployment rate, and working conditions in their home country.

The unemployment rate is usually double for young people in comparison to the adult generation. According to a report by the International Labour organisation (ILO) entitled ‘Global Employment Trends on Youth’, 621 million young people between the ages of 15-24 have little or no education, are not employed, or are not undergoing any training. It is further assumed that around 23% of the youth currently working earn not more than \$1.25US per day. This data shows the main motivation and a need for young people to seek a job abroad and join labour migration statistics. As a negative aspect, a lot of young labour immigrants are frequently victims of job-related abuse and they very often face exploitative jobs and unconsciously turn up into forced labour environments.

It is very common when labour migrants and more often young job seekers become victims of the economic and social system performance of their home country. Usually, when the reason behind the immigration of young people is the lack of freedom, dignity, equality or a lack of security in their home country, it can lead to very positive economic and social developments for the home country as well as for the receiving country. This is the main reason why the International Labour Organisation always includes young people as main stakeholders in the processes of social exchange, where the youth have a say in what decision are made. Thus, this promotes coherent labour migration policies and offers better work for young job seekers.



**Figure 1.** Comparison of Eurostat youth unemployment rates and ratios with the share of unemployed young people in the sample.<sup>4</sup>

<sup>4</sup>Christof Van Mol (2016). Migration aspirations of European youth in times of crisis, Journal of Youth Studies, 19:10, 1303-1320, DOI: 10.1080/13676261.2016.1166192

Young worker migration tends to be one of the main characteristics of changes in the unemployment rate throughout the European Union. The labour market situation for young citizens very much depends on general economic performance and employment policies that in the end create the whole economy of the EU. Inside the European Union, labour mobility is, at some level, promoted as a turning mechanism which ensures more effective labour migration. Such migration inside the EU is also understood to be advantageous to create a better labour market with better matching possibilities and at the same time reducing regional inequalities in unemployment.

Significant European Union enlargement in 2004 and 2007 caused an unexpected flow of internal EU labour migration from central and eastern European states to Western Europe. These facts were mainly linked to the economic performance of each member state and it varied between countries. The youth programs that were created under the youth policy strategy paper also promoted and encouraged young society for internal EU migration. East to West migration flow after the enlargement of the European Union had a proportion of youth migration with higher education. Thus, it is necessary to mention the negative sides of labour migration which, in the case of intra-EU migration, had played a significant role. First and most important is that, despite the qualification and educational background of employees, a majority of immigrants got employed in low-skilled jobs with fewer possibilities of promotion and with salaries lower than that of locals.

Youth mobility during those times was also quite high and was caused by the multifaceted set of push and pull aspects. It very much depended on the economic background of the sending and receiving country of an immigrant. Several migration flow factors have been identified which link the sending and receiving countries of an immigrant. Such reasons can be geographical, cultural backgrounds, religion, language and many more, which sometimes have bigger values than the economic stability of the country. Migrant networks and communities in Europe also play a significant role in migration flow inside the Union.

The labour mobility of young people from East to West could simply have been caused by the choice to exit the local labour market due to an experience of low economic performance and difficult labour conditions. Another significant motivation for young migrants is better access to higher education and a better fit for their qualifications to the labour market of a different state. With this example, attention should be given to education and labour market performance problems of recently joined member states.

Another big wave of labour migration inside the EU was caused by the financial crash in 2008. It also had a big impact and slowed down outward migration flow, which has slowly restarted since the big flow of migration from Central and Eastern member states in 2007. The crisis had a big impact

and promoted a new type of migration from those countries where finding a job became more difficult than before. An important fact about the crisis was that some countries suffered less than others and even in some states, return-migration occurred. For example, Poland and Slovakia had a big flow of migration when they joined the European Union but when the economic crisis of 2008 did not affect their economic performance, return-migration started to occur. The same effects were applied to the countries that began to experience quick recoveries from the crisis, for example Estonia and Lithuania.

The biggest influence of the crisis was visible on the South and Northern states of the European Union. Spain, Greece, Italy, Portugal, and Ireland were the ones who suffered most from the large immigration of young people. Receiving countries in most cases appeared in central Europe but many young people also moved outside of the European Union during the crisis period. Internal migration within the European Union might also have positive consequences in terms of projecting lower unemployment rates through the EU and increased levels of better options and experiences for the youth generation of Europe.

Nevertheless, intra-EU labour mobility might result in some young labour immigrants appearing employed on a temporary flexible contract and in most cases they have to accept jobs which do not match their qualifications. Employers, in this case, benefit from lower wages and a cheaper labour force. The eventual effects of youth labour migration and re-migration are usually linked to a migrant's accumulation of their financial and social capital, which they targeted before and during their migration experience. Also, returns are usually caused by the economic well-being of the sending state. Thus far, not much is known about the discernment of Western and Eastern return labour mobility and their work-related path or what labour market outcomes and consequences this has recently caused.

However, the positive consequences of labour migration might be limited if the returning migrants face the same economic environment in the home country and face the same financial difficulties caused by the performance of the state economy. There are several policies which have been created and inspired by labour migration in the European Union. Policies tend to apply and affect mobility processes and provide welfare and social security for the migrants, but they often turn out to have more political issues than intended (Bruzelius, Chase, & Seeleib-Kaiser, 2014).

In one way, there have been different opinions regarding freedom of labour movement within the European Union. One party (critiques and Euro-sceptics) opposed the idea and tried to restrict regulations and decried migration of the labour force. At the same time, another group argued policies and tried to promote the idea to facilitate and promote mobility to have potentially transparent prosperity and social security rights via a social

insurance fund. This idea promoted reforms in migration policy and investment on the social well-being of immigrants.

The Erasmus Mundus program has to be mentioned, as it is one way for young people in Europe to start their mobility. In addition, a series of policies have been pursued to achieve better job search results and promote a better exchange of relevant knowledge through various European employment packages. This process also led to the extension of the Erasmus Mundus mobility area to include formal education in the scheme of vocational education and to turn more towards the traditional education system. This occurs combined with other sides of the labour market such as mediator companies and temporary and permanent recruitment agencies whose role is to shape the mobility of youth labour and influence characteristics of employment contract details (wages, working conditions, security, etc.). These come with both negative and beneficial effects on the host community and state, as well as on the labour migrant community.

Recently, more attention has been given to the migrants that move to another state with families and who settle down there permanently. Research by the Organisation for Economic Co-operation and Development (OECD) from 2014 showed that the proportion of 15 year-olds with two foreign parents has doubled in recent years and already second-generation migrants, whose parents were in the low skilled labour force, tend to perform at higher levels in the labour market. Their integration into society and the labour market is more natural and less painful.

## **Conclusion**

Labour migration in the European Union generally has a huge influence on the rate of unemployment, particularly youth unemployment. The policies applicable to immigration characteristics do not protect or influence immigrants and do not prevent countries from immigration flows as they are supposed to. There have been several discussions and debates regarding immigration policies recently, especially after the immigration crisis of Europe that started in 2017 and was caused by the Syrian war. Many new policies have been applied within the European and local levels of each member state with the topic becoming a more serious talking point since many states used discriminatory approaches to protect themselves from the flow of immigration. Also, to mention non-EU migration to the European Union, dramatic differences are caused by the policies of each state, including a significant downgrade and slow work-related recovery during the first ten years of workforce mobility in the European Union. To reduce the mismatch of skills and education to the labour market, many migrants start their first years spending on education to get better qualifications and recognition in the destination state. For the second generation of young migrants, at the earlier

stages of migration, many things like social status and ethnic recognition depend on the performance of their parents. Nonetheless, according to the above-mentioned research of OECD, second-generation migrant perform well on the labour market with better qualifications, skills, education, and work-related status than their parents.

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## Investigating Bodily Injury

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### Abstract

This study shall analyse the statutory provisions on bodily injuries or batteries with a special outlook on the difficulties caused by the pandemic. The study formulates forensic recommendations based on the Hungarian national standard and knowledge of criminal procedure and analyzes the methodology of the investigation of bodily harm exclusively from the Hungarian point of view. It approaches the detection of the crime from a practical and empirical point of view, as well as from a legal point of view. The study shall introduce the relations of corona virus and HIV virus to bodily injuries. Interpretation of the recommendations of criminalistics is indispensable for the detection of bodily injuries, similarly, the identification of the methods revealing criminal actions and the questions to be asked during the interrogation of the suspect are also absolute necessities in the process.

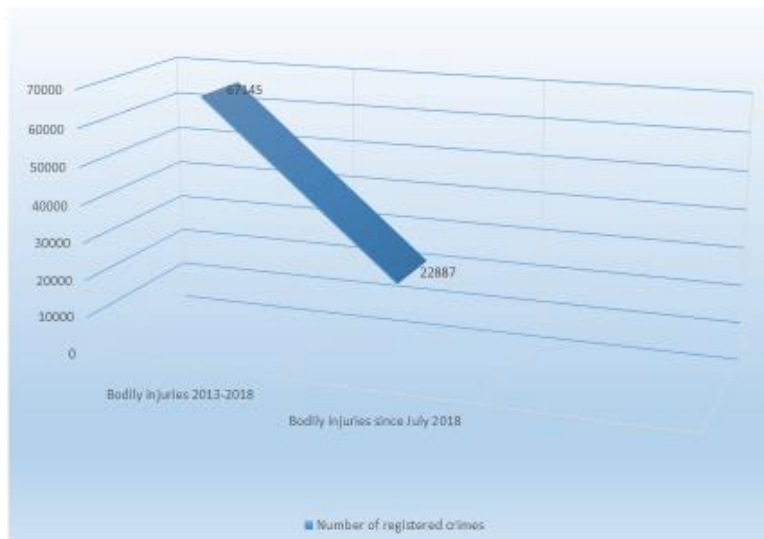
**Keywords:** Bodily injury (battery), corona virus, HIV virus, interrogation, data source

### Introduction

Both in our country and worldwide, committing bodily injuries are almost acknowledged as an everyday issue that may be conducted by causing

bodily harm on the one hand or by abuse on the other. Quite often, other criminal acts might be conducted parallel to bodily injuries, for example, vandalism or truculence. Multiple counts of offenses may be established if a singular action of the perpetrator meets the statutory provisions of the criminal acts of truculence and bodily injury or vandalism, under the condition that the statutory punishment of bodily injury or vandalism does not exceed the punishment of truculence (34. Bkv.).

In the time interval of 2013-2018, 67145 cases of bodily injuries offenses were registered, while further 22887 cases have been recorded from July 2018 until today (bsr.bm) (Figure 1).



**Figure 1.** Number of registered bodily injury cases

Statistics confirm that it is advisory to analyse the relevant statutory provisions, as well as to introduce the recommendations and methods of criminalistics that may promote and facilitate the efficiency of the criminal procedures. Last but not least, the reintegration of penitentiary efficiency is also supported (Czenczer, 2019., 135-146.).

### **Statutory provisions of bodily injury**

In accordance with the provisions of Section 164 of Act C of 2012 on the Criminal Code the statutory provisions on bodily injury are applicable as follows:

### Section 164

- 1) Any person who causes bodily harm or injuries to the health of another person is guilty of bodily injury (battery).
- 2) If the injury or illness caused by bodily injury takes less than eight days to heal, the perpetrator is guilty of the misdemeanor of minor bodily injury punishable by imprisonment not exceeding two years.
- 3) If the injury or illness caused by bodily injury takes more than eight days to heal, the perpetrator is guilty of the felony of grievous bodily injury punishable by imprisonment not exceeding three years.
- 4) The penalty for a felony shall be imprisonment not exceeding three years if the minor bodily injury is committed:
  - a) with malice aforethought or with a malicious motive;
  - b) against a person incapable of self-defense or unable to express his will;  
or
  - c) against a person whose ability to defend himself is diminished due to his old age or disability.
- 5) The penalty shall be imprisonment between one to five years if the minor bodily injury results in permanent disability or serious health impairment.
- 6) The penalty shall be imprisonment between one to five years if the grievous bodily injury is committed:
  - a) with malice aforethought or with a malicious motive;
  - b) against a person incapable of self-defense or unable to express his will;
  - c) against a person whose ability to defend himself is diminished due to his old age or disability;
  - d) causing permanent disability or serious health impairment;
  - e) with particular cruelty.
- 7) Any person who engages in preparations for the criminal act referred to in Subsection (3) or (6) is guilty of a misdemeanor punishable by imprisonment not exceeding one year.
- 8) The penalty shall be imprisonment between two to eight years if the bodily injury is life-threatening or results in death.

In the legal facts, two basic cases appear, a light physical and a serious physical one, depending on whether the injury or the illness caused by bodily harm heals within eight days or beyond eight days.

The perpetrator of the criminal offense of minor bodily injury shall only be prosecuted upon private motion. In the case of a criminal offense that may only be prosecuted based on a private motion, no criminal proceedings can be instituted unless the entitled party lodges a complaint. The lack of the complaint shall hinder and finally exclude criminal adjudication. Minor bodily injury (assault) may only be committed intentionally, in a deliberate manner.

However, (aggravated cases) of grievous bodily injury may also be committed by way of negligence (complex or praeterintentional criminal offenses). Minor bodily injury shall be deemed as an aggravated offense if it is conducted

- with aforethought malice or with malicious motive,
- against a person incapable of self-defence or unable to express his will; or
- against a person whose ability to defend himself is diminished due to his old age or disability.

Preparation of any grievous bodily injury is penalised by law. The conduct of the offense remains in the stage of attempt if the perpetrator engages in the actions suitable to cause bodily injuries or harm of health without finishing it and without a result (for example, he attacks the injured party with a spear). If the desired result is reached, we refer to a complete criminal act.

Grievous bodily injuries are classified as aggravated acts if the assault is committed

- with malice aforethought or with malicious motive,
- against a person incapable of self-defence or unable to express his will,
- against a person whose ability to defend himself is diminished due to his old age or disability,
- causing permanent disability or serious (irreversible) health impairment, or
- with particular cruelty.

Special classification of aggravated cases if the bodily injury threatens life or results in death.

The protected legal subject is the social interest in other persons' physical integrity. In accordance with Section (1) of Article XX of the Fundamental Law of Hungary, everyone shall have the right to physical and mental health. The injury or illness appears in the form of bodily harm or injury to the health of another person, as the result of the criminal offense. Actions that cause harm to body parts and the integrity of the organs or tissues of the body shall be considered as acts assaulting the physical integrity of an individual (for example, smashes, or bruises). The injury of health is realised when the physiological functions of the organs, body tissues, and the nerve system are disrupted and illness forms, but the organs and tissues remain intact (Karsai, 2012). Thus the injury of the physical integrity is an illegitimate physical impact and assault on the one hand, whereas the external stimulus results in injuries to the human body or in its organs. The harm to health, on the other hand, is not the result of direct abuse of the human body, but caused

by other means of action, for example, poisoning, infecting one with some illness (transferring HIV or corona virus infection), or causing a psychic or mental illness. However, when making a distinction between minor and grievous forms of bodily injuries, the time interval of healing has a role of vital concern.

The establishment of the time of healing has a decisive importance in the process of classification which is a professional issue to be decided by forensic medical experts, determining whether the act is recognised as a minor or grievous bodily injury. 'However, in the legal classification of crimes committed by causing bodily harm, the so-called actual duration of treatment must be taken as a basis. The actual time of recovery or healing is the time interval determined by medical science under which the injury, the health damage, or illness primarily (not entirely, but actually) does heal. The fact, whether the actual time of recovery is less or more than eight days shall determine the issue of classification between minor or grievous battery. ...'(Karsai, 2012). The adjudication of the criminal action shall always be based on the actual time of healing. Generally, the professional opinion of a forensic medical expert is required in order to establish the actual time of healing (Petőfi, Tóth, 2015. 183-184.).

Furthermore, in some cases we may refer to the presumptive or delayed time of healing, for example, in case the injured party suffers a fatal traffic accident before recovery, the experts participating in the procedure shall presume the time, under which his illness or injury would have been settled (the injured party deliberately delays the recovery). Also, the court shall base its decision on a presumptive recovery time if the act remains in the stage of attempt. Therefore, in case the perpetrator swings his stick towards the shoulder of the injured party with only medium force and does not actually hit the victim, because his friend pushes him away from the attacking force, the court shall only presume the level of injury the victim would have suffered in case of a successful abuse (magyarorszag.hu).

With reference to Methodology Recommendation No. 16 of the Hungarian Institute for Forensic Sciences on forensic expert opinions on bodily injuries and health damages, according to general professional experiences of forensic experts, the following injuries heal in more than 8 days:

- hematomas slurred on more than 10% of the surface of the body (for example, affecting body regions),
- hematoma on the tunica albuginea (inside the testicles) causing pain and walking dysfunctions,
- slurred excoriation or bruising of the epidermis on a larger area (on several or bridging body areas),

- scored, cut, bruised, smashed injuries whereas the side of the scars cannot be overlapped (due to shortage of tissue),
- stabbed, cut, or carved wounds and injuries invading body cavities or the organ/space, or injuries causing significant loss of blood (hgb. and hematocrit),
- bullet wounds,
- -open wounds of the joints, dislocations, string injuries,
- veins or nerve injuries,
- first degree burns or freezing of 10% or more of the body,
- second degree or worse burns, scalds, freezing, or damages to the body from a caustic chemical (chemical burns),
- medium or heavy concussion of the brain,
- organic damages to the central nervous system the brain or other internal organs and their consequences,
- injuries of the sensory systems (provably over 8 days of dysfunctions),
- all fractures (including the nasal bone),
- serious forms of poisoning,
- sexual diseases (except for primer-treated gonorrhoea).

Certainly, all these statements may only be valid in general, whereas the professional determination of the time of recovery of any injuries may only be completed individually, for the relevant case. (Methodology Recommendation No. 16 )

## **The connection between the virus and bodily injuries**

### ***Corona virus***

Questions have arisen on whether someone is aware of his illness (being infected), yet, decides to breach the epidemic regulations to commit the felony of bodily injury or not.

According to István Ambrus, irrefutable determination of criminal liability for bodily injury could only take place in the extreme situation, where the perpetrator and the victim would be locked together, for example in a room properly disinfected previously, hermetically separated and isolated from any other person or subject, and it would be provable that the perpetrator was already a virus carrier when entering the room, while the victim was still healthy and the virus was not even incubated in his organism, and, when - after at least three days later - released from the premise the victim's Covid test would also be positive (Ambrus, 2020, 9-10.). Further analysing the subject, for example, Ambrus also points out, that attempted grievous bodily injury may be established, if a corona-infected perpetrator would deliberately (*dolus directus*) leave the official quarantine with the intention to infect the hostile victim, and when visiting the victim, he would cough at the victim or onto his

personal effects, or maybe the perpetrator would intentionally infect some objects (maybe with his drool) and sneak items into the victim's apartment (Ambrus, 2020, 9-10).

Ordering the state of danger due to the pandemic required the modification of certain general regulations in the fields of criminal law, criminal procedural law, and in the regulatory frame of law enforcement as well (Tóth, 2020, 45.).

Obstructing the epidemic of the corona virus was not only a health care issue, but also challenged law enforcement to make substantial efforts (Veprik, 2020, 185.).

Due to the epidemic, police had to face several additional tasks, including particular:

- recording data (in the Arrest Warrant Registry System), that is suitable to support conditional measures such as monitoring the duties related to keeping the rules of the official home quarantine;
- monitoring the electronic official home quarantine from a distance [a smartphone that operates by downloading (the application of) the home quarantine system, enabling the authority to monitor the individuals keeping quarantine rules automatically];
- monitoring the observation of the defense measures (curfew and restrictions, monitoring the observation of the rules on the opening hours of shops, and the obligation of wearing masks);
  - on the spot measures (fine or motion of misdemeanor, for example, for breaking the rules of wearing a face mask, or the rules applicable for shops, venues, hotels, and leisure facilities);
  - securing and monitoring crossing the state border (for example, checking the observation of the rules of entering the territory of Hungary by Hungarian citizens and also individuals other than Hungarian citizens)
- execution of operational tasks arising upon the establishment of hospital commandship (supervision of using health care assortments acquired from budgetary resources and monitoring the observation of epidemic measures);
- cooperation with epidemiologist experts – contact tracing [tracing contacts of COVID-19 positive individuals, identifying persons who were or may have come into contact with an infected person];
- participation in the Operative Corps or in The National Police Headquarters Corps (main tasks of the Operative Corps are analysis, evaluation of COVID, furthermore, an efficient organization of the necessary measures, coordination of the operations of the state bodies accordingly) (Nyitrai, 2021, 339-341.)



The listed tasks represent and confirm that the police had to face several extra tasks during the epidemic of the corona virus. Similarly, the criminal interpretation and evidentiary proof of deliberate infection by the virus is a further challenge to the authorities.

### ***HIV virus***

The felony of bodily injury may also be committed if the perpetrator infects the victim with the HIV virus intentionally or due to gross negligence.

András Szabó refers to the solution, implemented by court practice to the problem, according to which even in the life of the victim, or in other words, before his death as the condition of aggravated classification would occur, the court shall condemn the perpetrator for causing grievous bodily injury, referring to symptoms revealed at early stages of the illness or to the disfigurement of the victim. Nevertheless, in case the victim dies before or during the criminal procedure, due to the infection or to conditions connected to it thereto, the liability for bodily causing death may be established (Szabó, 2013)

However, according to a study, most criminal procedures ordered for bodily injury committed by HIV infection in the 2000ies were terminated in Hungary (Nogel, 2009, 234.).

### **Criminalistic aspects of bodily injury**

There are various motives for committing the bodily injury, such as revenge (love affairs, child custody disputes), anger, jealousy (Ürmösné, 2018, 126-133), retribution for perceived or real offense, moreover, the consumption of alcohol or any kind of sedatives may also be a factor of conduct.

In a narrow sense, authorities may gain knowledge of bodily injury offenses upon a complaint, (anonymous) notification, recognition by health care institutions (notifications of a practitioner, family doctor, or hospital), recognition of the investigating authorities, or upon interrogation or intelligence gathering pursued in relation to other criminal acts. Certainly, such means of gaining knowledge of a crime shall also apply to other criminal offenses as well.

County (Metropolitan) Police Headquarters exercise competence for the criminal offenses of

- felony of life-threatening bodily injury and bodily injuries causing death
- misdemeanor of bodily injury by way of negligence causing a life-threatening injury.

Police department as a local investigating authority

- in any other case.

Data sources supported in the detection of bodily injury offenses:

- notification, statement/testimony of the witness discovering the offense
- report of the officer securing the site; issuing an arrest warrant
- records are taken at the inspection (and annexes)
- interrogation of the witness
- camera footages (public transportation) – securing the footage of surveillance or other cameras
- still image face recognition (Gárdonyi, 2020, 22-33)
- data sources related to the victim (mobile phone, text messages, chat records) (Ürmösné, 2019, 65-75)
- witness testimonies
- registries, databases (discharged persons)
- social media – contact systems, net-cop contact system
- presentation for identification
- arrest warrant (identification)
- expert opinions, assessments (related to the inspection)
- evidentiary procedures (on-site interrogation)
- coercive measures (search)
- testimony of the suspect
- public communication measures, involving the public, bounty fees.

Priority measures for tracing witnesses:

- intelligence gathering at the crime scene,
- intelligence gathering among individuals present or moving around the scene of the crime,
- persons generally present or appear at or near the crime scene due to their scope of activities, personal habits (at the presumed time of conduct)
- accessing public communication instruments (vehicle cameras, news)
- intelligence gathering in the surroundings of the victim or the suspected perpetrator,
- questioning (for example, the interrogated person is able to name another person) (Figure 2).



**Figure 2.**Tracing witnesses

In the course of investigating bodily injuries, at the stage of collecting substantive testimonies (thus at the significant part of the interrogation), the victim is advised to be asked the following relevant questions in particular:

- where did the assault has taken place (city, district)?
- who was the abuser and who was the abused?
- what kind of injuries were suffered (time of recovery)?
- did the abused visit a doctor, did the victim get a medical report, and if so, where?; he should be asked to attach the injury report!
- did anyone call the ambulance to see the victim?
- did the victim receive any medical care at the hospital?; if so, in which hospital?
- what kind of object was used at the attack? (description of the object: size, material, weight)
- size/measure of the force of the attack (medium; great; smaller, than medium)
- a number of occasions of the impact – hitting, kicking, stabbing
- direction of the impact or attack
- what did the perpetrator say during the assault?
- the body area affected by the hit, kick or stab
- did the perpetrator hit the victim with his hand or fist?
- did the perpetrator kick?; if so, did he use his knee, legs, or feet to trample to the injured?
- did the victim lose consciousness because of the abuse?
- what kind of furnishings, facilities, features, or landmarks was at the site of the assault?
- what was the reason for the assault?
- are there any witnesses?; if so, the victim should give their contact details

- In case the time of healing is less than 8 days, the victim should be asked to make a statement regarding the private motion. During the interrogation, it is important to use the same term consistently for the same thing or phenomenon, thus avoiding misunderstandings (Gárdonyi, 2021, 65).

The most frequently involved expert specialists during the investigation of bodily injuries are: forensic genetic specialists (DNA), other forensic specialists for footprints, tools, objects, fingerprints (evidence research/identification), forensic chemists (on-site technicians), forensic toxicologists, forensic medics, forensic mental specialists, forensic psychiatrists.

Nevertheless, several other evidentiary measures could have been referred to in this study, such as for example, the inspection, questioning on the scene, reconstruction, presentation for identification, confrontation, and the instrumental examination of testimonies (Gárdonyi, 2020, 89-93). These evidentiary measures may also provide various relevant information in order to support the investigation.

## Conclusion

We may conclude that relevant data from the past has the most significant role in tracing and proving bodily injury offenses. In order to recognize the relevant factors of the past, or in the case of serial criminal offenses, also the present and future events, knowing and using the recommendation of criminalistics is indispensable. It must be emphasized that a significant amount of electronic data will have to be analyzed and evaluated in the course recognition and assessment, to which artificial intelligence shall prove to be a great assistance.

In the study, the relationship between the coronavirus and the HIV virus with physical assault was presented, as well as the data sources helping to detect the investigated crime, the witness search methods, and the list of relevant questions that can facilitate obtaining a meaningful testimony.

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ESJ Humanities

## **Disparités D'aménagement des Infrastructures Scolaires Publiques dans l'Arrondissement de Godomey (Communes d'Abomey-Calavi) : Facteurs Explicatifs et Défis pour la Scolarisation des Enfants**

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### **Résumé**

La présente étude vise à comprendre les contraintes des disparités spatiales liées aux infrastructures scolaires de l'arrondissement de Godomey. En effet, l'arrondissement ne connaît pas une bonne répartition en infrastructures scolaires sur son territoire. Ce qui engendre des difficultés d'ordre éducatif, social et économique. La démarche méthodologique utilisée s'articule autour de la recherche documentaire, des enquêtes de terrain et l'utilisation du model SWOT. L'analyse des résultats montre que des facteurs explicatifs comme la démographie, l'histoire, la distance, la politique sont à l'origine de cette situation. Des résultats obtenus, la majeure partie de la population dit que leurs enfants ont de problème d'inaccessibilité à cause de la longue distance qui les sépare de ces infrastructures scolaires. Ce problème est loin d'être réglé en ce sens que le développement ne suit pas le rythme de

la démographie pour corriger ces disparités. Cependant, des mesures qui garantissent une meilleure répartition des infrastructures dans le cadre d'une bonne gouvernance locale participative ont été suggérées.

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**Mots clés :** Bénin, Godomey, disparité d'aménagement, infrastructures scolaires

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**Disparities in the Development of Public School  
Infrastructure in the Arrondissement of Godomey  
(Communes of Abomey-Calavi): Explanatory Factors and  
Challenges or Children's Schooling "**

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**Abstract**

This study aims to understand the constraints of spatial revelations related to school infrastructure in the district of Godomey. In fact, the borough does not have a good distribution of school infrastructures on its territory. This creates educational, social and economic difficulties. The methodological approach used revolves around documentary research, field surveys and the use of the SWOT model. The analysis of the results shows that explanatory factors such as demography, history, distance, politics are at the origin of this situation. From the results obtained, most of the population says that their children have a problem of inaccessibility because of the long distance that separates them from these school infrastructures. This problem is far from resolved in the sense that development is not keeping pace with demographics to correct these improved outcomes. However, measures that distribute a better distribution of infrastructure within the framework of good participatory local governance have been proposed.

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**Keywords :** Benin, Godomey, conversion disparity, school infrastructures

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## **Introduction**

L'installation des infrastructures sociocommunautaires connaît depuis des décennies de véritable problème d'aménagement dans les pays en voie de développement. L'origine principale de ce problème est la rapide croissance démographique dans le monde qui oblige les populations à une occupation anarchique et expansive des espaces urbains et ruraux (T. Azonhè, 2011). Cette croissance démographique engendre des problèmes dans la répartition des infrastructures sociocommunautaires en général et celles scolaires en particulier. L'INFRE (2004), dans ces analyses a montré que la question de l'éducation constitue un véritable problème social auquel une attention particulière est accordée aussi bien dans les pays développés que ceux en voie de développement. En effet, au Bénin comme dans d'autres pays du monde, l'éducation reste et demeure le socle de tout développement. Aussi, le Plan Décimal pour l'Éducation (2006-2007) indique que tous les jeunes enfants devraient bénéficier d'une scolarisation pertinente tant pour permettre leur développement personnel que pour faciliter le développement social et économique de leur pays (P. Djègbé, 2009).

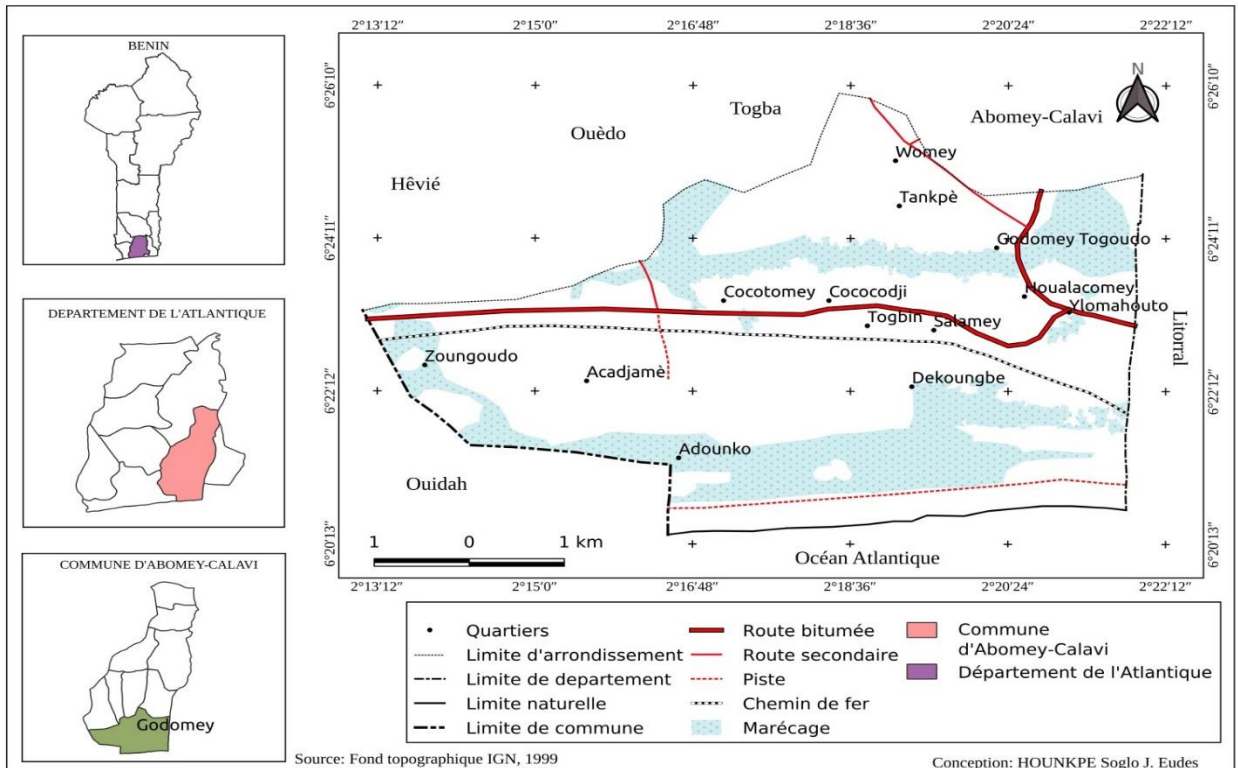
Depuis les années 1990, les populations des communes du Bénin ne cessent de s'accroître à un rythme exceptionnel. La gestion de cette croissance démographique constitue pour le pays un défi d'aménagement de son territoire. Ainsi, cette croissance de la population et la politique de mise en place des infrastructures scolaires et équipements ne suivent pas le même rythme entraînant ainsi la mauvaise répartition de ces infrastructures scolaires. Aussi, I. Soulé, (2005), a noté que toute croissance spatiale et démographique engendre de nouveaux besoins à satisfaire. En effet, la population de l'arrondissement de Godomey est passée de 153447 habitants en 2002 à 253262 habitants en 2013 (INSAE, 2013). Cette croissance a donc un effet sur la répartition des infrastructures scolaires et il se pose donc le problème de la bonne répartition de ces infrastructures. Alors vu l'importance de l'éducation, il est nécessaire de réfléchir sur la politique à mettre en place afin d'identifier et de mettre en œuvre des interventions et actions d'investissement scolaires dans l'arrondissement de Godomey.

## **1. Matériel et Méthode**

### **1.1. Milieu d'étude**

Situé entre 6°20' et 6°25' de latitude Nord et entre 2°15'et 2°22' de longitude Est,—l'arrondissement de Godomey fait partie des neuf (09) arrondissements de la commune d'Abomey-Calavi. Administré par un chef choisi parmi les conseillers communaux, il est subdivisé en neuf (09) quartiers à savoir : Cococodji, Cocotomey, Dèkounbé, Godomey NGèho, Houalacomey, Salamey, Togoudo et Ylomahouto. L'arrondissement de Godomey

est limité au Nord par l'arrondissement de Calavi, de Togba, au Nord-Ouest par l'arrondissement de Ouèdo et de Hèvié, à l'Ouest par l'arrondissement d'Avlékété dans la commune de Ouidah, à l'Est par la commune urbaine de Cotonou et au Sud par l'océan atlantique. La figure 1 montre la situation géographique de l'arrondissement de Godomey.



**Figure 1.** Situation géographique et administrative de l'arrondissement de Godomey

L'arrondissement de Godomey est situé dans la commune d'Abomey-Calavi qui présente un relief peu accidenté. Les principaux traits caractéristiques sont : une bande sablonneuse avec des cordons littoraux, un plateau de terre de type subéquatorial marqué par deux saisons pluvieuses et deux saisons sèches. Le réseau hydrographique est constitué essentiellement de deux plans d'eau que sont le lac Nokoué et la lagune côtière. Par ailleurs, la commune dispose d'une façade maritime juxtaposée à la lagune côtière, des marais, des ruisseaux, et des marécages. Tout cela lui offre des potentialités touristiques et halieutiques. La plus grande partie du territoire de la commune d'Abomey-Calavi est occupée par des sols ferrugineux tropicaux et des sols sablonneux peu propices à l'agriculture. Les sols hydromorphes très inondables n'occupent qu'une petite partite au nord du territoire, les terres

cultivables sont estimées à 464,5km<sup>2</sup>. Sur le plan humain, la population de l'arrondissement de Godomey serait de 153447 habitants en 2002 et est passée à 253262 habitants en 2013 selon le troisième Recensement Général de la Population et de l'Habitat (RGPH3) avec un taux d'accroissement de 5,84 % en milieu urbain et de 2,89 % en milieu rural. Ce qui montre une croissance démographique non négligeable de l'arrondissement de Godomey.

## **1.2. Démarche méthodologique**

La démarche méthodologique adoptée dans le cadre de cette recherche est une combinaison des approches de recherche qualitative. Elle s'appuie essentiellement sur la collecte, le traitement et l'analyse des données obtenues par enquête de terrain.

### **1.2.1. Collecte de données**

Plusieurs types de données sont utilisés dans le cadre de cette recherche. Il s'agit des :

- Données démographiques relatives à l'arrondissement de Godomey; RGPH 1,2, 3 et 4 obtenues à l'Institut Nationale de la Statistique et de l'Analyse Économique,
- Statistiques relatives au nombre d'infrastructures scolaires dans l'arrondissement de Godomey,
- Informations générales sur les contraintes des populations relatives à l'inégale répartition des infrastructures scolaires,
- Information sur les facteurs explicatifs des disparités liées à l'installation des infrastructures scolaires,
- Les données biophysiques de l'arrondissement obtenues à l'arrondissement de Godomey,
- Coordonnées géographiques relatives aux infrastructures scolaires dans l'arrondissement de Godomey.

Ces différentes données ont été collectées grâce à la recherche documentaire et les enquêtes de terrain. Les travaux de terrain ont été effectués en deux phases à savoir la phase de la pré-enquête et la phase de l'enquête proprement dite. Ainsi, la phase de la pré-enquête a permis d'explorer le terrain d'étude afin de recueillir des informations relatives aux infrastructures scolaires ; de les recenser afin de rendre compte de quelques inégalités. Quelques responsables de certaines structures telles que l'arrondissement de Godomey et la circonscription scolaire ont été interrogés. Certaines écoles et établissements publics ont été également visités. Les informations recueillies ont permis de faire une orientation réelle de la recherche et de déterminer les outils de travail à utilisés au cours de la phase de l'enquête proprement dite.

Cette phase a été effectuée en se basant sur l'échantillonnage, les outils et les matériels de travail.

### - *Échantillonnage*

Tous les 49 quartiers de l'arrondissement de Godomey ont été pris en compte dans le cadre de cette étude. Les élus locaux, les chefs d'établissement et les parents d'élèves constituent le groupe cible identifié par choix raisonné. En effet, sur écoles, complexes scolaires, collèges publics et privés que compte l'arrondissement de Godomey, 42 personnes ressources ont été enquêtés selon un choix raisonné de pourcentage. Le nombre d'école retenue par quartier est en rapport avec les infrastructures scolaires disponibles dans ces quartiers. L'effectif des apprenants et la position géographique des écoles sont également pris en compte.

Le choix raisonné a permis également d'identifier les ménages à enquêter. L'unité statistique est le ménage ayant résidé en permanence au moins dix ans dans la localité. Ces ménages doivent avoir des enfants qui fréquentent et au moins un élève au secondaire. Le nombre d'individus enquêtés dans les ménages est en fonction du nombre de ménages par quartier de ville. À cet effet, la taille de l'échantillon a été déterminée de façon aléatoire. Le tableau 1 présente le nombre d'enquêté par quartier.

**Tableau 1.** Nombre de ménages enquêté par quartier

<b>Quartier</b>	<b>Nombre de ménage</b>	<b>Nombre de ménages en enquêtes</b>
Cococodji	<b>7356</b>	<b>25</b>
Cocotomey	<b>7279</b>	<b>25</b>
Dèkounbé	<b>4227</b>	<b>15</b>
Godomey Gare	<b>5256</b>	<b>18</b>
Hlouacomey	<b>2423</b>	<b>09</b>
Salamey	<b>8019</b>	<b>26</b>
Togbin	<b>3815</b>	<b>12</b>
Godomey Togoudo	<b>17481</b>	<b>48</b>
Ylomahouto	<b>2635</b>	<b>09</b>
Total	<b>58491</b>	<b>187</b>

Au total, 187 personnes ont été enquêtées dans l'arrondissement de Godomey, de même 42 personnes ressources ont été entretenues.

### ➤ *Outils et matériels de travail*

Pour collecter les données, divers outils ont été utilisés au cours de l'enquête. Il s'agit notamment du questionnaire, du guide d'entretien, de la grille d'observation, d'un appareil photo numérique pour la prise des vues et d'un GPS qui a permis de prendre les coordonnées géographiques de quelques infrastructures scolaires. Les techniques de collectes utilisées sont les observations, la recherche documentaire, les enquêtes et les entretiens.

## 1.2.2. Traitement et analyse des résultats

Un dépouillement manuel des données de terrain a été fait, ce qui a permis de regrouper les informations par catégories suivant les questionnaires et le guide d'entretien. Les données qualitatives sont traitées par le logiciel Word. Quant aux données quantitatives, elles ont été saisies dans le logiciel Excel. Ce logiciel a permis également à la réalisation des tableaux et des diagrammes. Pour l'analyse des résultats, le modèle SWOT (Strengths, Weaknesses, Opportunities, Treats) qui signifie en français (Forces, Faiblesses, Opportunités et Menaces) a été utilisé.

## 2. Résultats

### 2.1. Disponibilités en infrastructures Scolaire

L'arrondissement de Godomey dispose des infrastructures en général. Les infrastructures de l'éducation concernent celles de la maternelle au secondaire, ce qui fait l'objet de cette étude.

#### 2.1.1. Au Niveau Maternel

Dans l'arrondissement de Godomey, les écoles maternelles sont présentes dans tous les 09 grands quartiers et sous-quartiers. Par ailleurs, on recense 104 écoles maternelles dont 95 privées et 09 publiques réparties inégalement dans les quartiers. Les écoles maternelles privées qui sont de 95 comptent 1650 écolier(e)s pour la grande section, ce qui fait un total de 3966 écoliers(e)s. Les écoles maternelles publiques qui sont de 09 comptent 504 écolier(e)s pour la petite section et 554 écolier(e)s pour la grande section. Ce qui fait un total de 1058 écolier(e)s inscrits en maternelles. Eu égard de ces données statistiques on constate un faible recouvrement des écoles maternelles publiques dans l'arrondissement de Godomey.

**Tableau 2.** Effectif d'écoles maternelles publiques

N °	Ecoles	Nombre de section	Effectifs des élèves		Ensemble
			Section petit	Section Grand	
1	Agbogbaville	05	49	53	102
2	Cocotomey	05	67	56	123
3	Dèkounbé	05	58	73	131
4	Godomey-centre	06	110	73	183
5	Cococodji	04	27	43	70
6	lobozounkpa	05	65	85	150
7	Sèdégbé	03	25	50	75
8	Togoudo	05	53	67	120
9	Womey-yénawé	05	50	54	104
<b>Total</b>		<b>42</b>	<b>504</b>	<b>554</b>	<b>1058</b>

Il ressort de l'analyse de ce tableau 2 que tous les quartiers disposent d'au moins quatre écoles maternelles publiques hormis le quartier de Togoudo qui en compte trois malgré qu'il occupe le 1<sup>er</sup> rang en matière de population.

### 2.1.2. Au Niveau Primaire

L'arrondissement de Godomey compte 151 écoles primaires dont 56 publiques et 95 privés. On note par ailleurs une meilleure répartition équitable des écoles primaires publiques qui sont présentes dans tous les quartiers de l'arrondissement de Godomey en nombre suffisant. Cependant certains quartiers comme Adounko-Daho, Agbocodji, Amahoun, Togbin-Daho ne disposent que d'un seul groupe d'école primaire publique. Après l'enquête effectuée dans ces quartiers on relève que pendant les périodes des pluies, ces quartiers sont inondés et les élèves ont du mal à accéder aux salles de classes. L'arrondissement de Godomey dispose d'un nombre assez important d'école primaire publique ainsi que privée lié à son poids démographique. On constate également un besoin plus au moins en nombre de salles (337) avec un effectif important des écoliers (17461). Ces chiffres montrent que des efforts se font en matière de la promotion de l'enseignement primaire dans cet arrondissement. Cependant des efforts restent à faire au niveau de l'enseignement primaire surtout dans les écoles nouvellement créées.

### 2.1.3. Au Niveau Secondaire

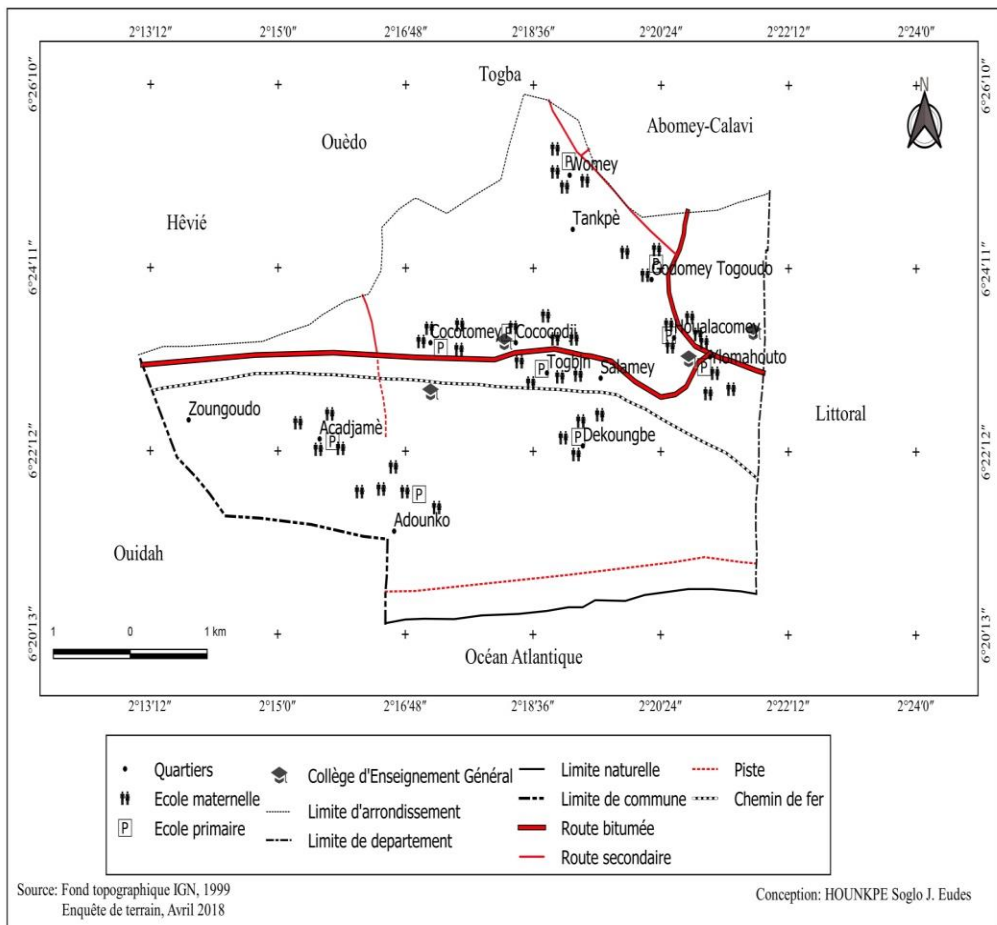
On distingue dans l'arrondissement de Godomey 09 collèges publics et privés. Ces collèges sont répartis équitablement dans les quartiers de l'arrondissement. Chaque quartier de l'arrondissement dispose d'au moins un collège général public avec un second cycle sauf le Collège d'Enseignement Général d'ATROKPOCODJI qui n'a pas encore pu ouvrir ses salles de classes du second cycle. La situation géographique du collège public fait en sorte que les élèves sont contraints de parcourir 4 à 5 kilomètre avant d'accéder à la salle de classe. Ceci donne raison à la présence en grand nombre des collèges privés dans cet arrondissement qui est la porte d'entrée dans la ville de Cotonou. Dans l'arrondissement, seul le Collège d'Enseignement Général de Godomey et celui de Cococodji communément appelé le MERIDIEN dispose d'une bibliothèque. Le tableau 3 présente les caractéristiques des collèges publics à Godomey.

**Tableau 3 . Caractéristique des collèges publics à Godomey**

Quartier zone	Nombres des élèves	Effectifs des élèves	Groupes pédagogiques	Besoin en salles de classes
Godomey	01	3442	63	25
Dèkounbé	01	2322	48	35
Logozounkpa	01	537	11	7

Atrokpodji	01	386	08	20
Cocotomey	01	3385	66	33
Cococodji	01	5620	96	55
<b>Total</b>	<b>06</b>	<b>15692</b>	<b>292</b>	<b>175</b>

Le tableau 3 ci-dessus présente les caractéristiques des collèges d'enseignement général de l'arrondissement de Godomey par quartier. Ces collèges ont des besoins variables en salles de classes compte tenu de leurs effectifs et de leurs situations géographiques. Seul le CEG Logozounkpa à un faible besoin en salles de classes (06). Les autres CEG à part celui d'Atrokpodji nouvellement créé ont un besoin important en salle de classe malgré leur ancienneté. Ce qui fait dire que chaque année le nombre de nouveaux élèves inscrits s'associaient. Ce qui fait aussi ressortir l'objet de notre étude qui est le manque d'infrastructure scolaire (salles de classe) dans les collèges d'enseignement général. La figure 2 ci-dessous montre la répartition des écoles dans l'arrondissement de Godomey.



**Figure 2:** Répartition des écoles dans l'arrondissement de Godomey

La figure 2 ci-dessus montre la répartition des écoles (maternelle, primaire et collège) dans l'arrondissement de Godomey. Cette même figure prouve que l'arrondissement est doté au moins dans chaque quartier de trois écoles maternelles, d'au moins deux écoles primaires et d'au moins un collège

## **2.2. Facteurs de disparités des infrastructures scolaires**

Plusieurs facteurs expliquent la disparité des infrastructures scolaires dans l'arrondissement de Godomey. Les plus importants sont la démographie, la distance et autres facteurs.

### **2.2.1. Principaux facteurs de disparités des infrastructures scolaires et mauvaises répartition**

Les enquêtes conduites sur les terrains d'études montrent que près de 16 % d'une classe d'âge n'a pas accès à l'école et que près du tiers des enfants n'achèvent pas le cycle primaire. L'atteinte de la scolarisation primaire universelle nécessite donc que d'importants progrès soient réalisés aussi bien en termes d'accès que de rétention. Dans cette perspective, il est utile de déterminer quelles sont les responsabilités des facteurs d'offre et de demande de performance. En ce qui concerne l'accès à l'école, les responsabilités peuvent se situer du côté des lacunes de l'offre scolaire (par exemples une école trop éloignée du domicile familiale) et ou de la demande de scolarisation. Le cas palpable est celui que présente l'école primaire publique de Womey-Sodo, située à Togoundo dans l'arrondissement de Godomey ; Commune d'Abomey-Calavi, qui est laissée pour compte présentant une image qui montre, élèves et enseignants qui siègent sous les arbres dans la cour de l'école pour apprendre. Une situation peineuse qui mérite l'attention des autorités en charge de l'enseignement. Pourtant, elle est une référence en ce qui concerne ses résultats aux examens du Certificat d'Etude Primaire. La distance pour aller à l'école également exerce une influence sur la rétention, c'est le constat fait dans l'arrondissement de Godomey où pour avoir accès au CEG Godomey, les élèves parcourent 3 à 4 kilomètres. Ce même constat est fait au niveau du CEG Cocodji et du CEG Cocotomey. L'accompagnement des différents acteurs et subventions de l'État prennent des années avant d'être à la possession des plaidants afin de satisfaire le manque d'infrastructures didactiques dans les écoles et collèges respectifs. Par ailleurs, le fait que les zones urbaines, les zones nomades sont plus vite satisfaites en matière d'infrastructure scolaire que les zones rurales, lacustre déshérités, frontières. La mauvaise foi aussi des différents responsables au sommet des prises de décisions sont également à l'origine des facteurs de disparités et de la mauvaise répartition des infrastructures scolaires.





**Photo 1.** Aperçu d'une école primaire publique de Womey-Sodo

La photo 1 montre l'aperçu sur les conditions de déroulement des cours à l'école primaire publique de Womey-Sodo. Ce qui révèle que l'arrondissement est en manque d'infrastructure scolaire. Le tableau 4 présente la répartition des enfants selon la distance à l'école 2012-2013.

**Tableau 4 :** Répartition des enfants selon la distance à l'école 2012-2013

Temps pour aller à l'école primaire la plus proche (minute)	Urbain		Rural		Ensemble	
	% d'enfant 6-15 ans	Taux d'abandon en cours de cycle	% d'enfant 6-15 ans	Taux d'abandon en cours de cycle	% d'enfant 6-15 ans	Taux d'abandon en cours de cycle
0,29	79 %	4 %	69 %	9 %	72 %	7 %
30+	21 %	5 %	31 %	16 %	28 %	13 %
<b>TOTAL</b>	100 %	4 %	100 %	11 %	100 %	9 %

### Facteurs politiques

Selon les autorités de la circonscription scolaire et de la Direction Départementale de l'Enseignement Secondaire de l'Atlantique, les acteurs politiques jouent d'importants rôles dans le système éducatif du milieu. Mais la politique à outrance prend de nos jours le dessus sur des décisions administratives compétentes. En effet, à travers les relations politiques entre des autorités et des localités, certains établissements qui ne devraient pas abriter certaines infrastructures scolaires parviennent au détriment d'autre et sans tenir compte d'un bon nombre de critère dont la position géographique. Ce qui se fait souvent sans le consentement de la majorité des populations des localités bénéficiaires, laissant ainsi des inégalités sociales.

De même, ses acteurs politiques interviennent dans des localités avec des dons de diverses natures. L'actuel chef quartier d'Atrokpodji (l'un des

quartiers de l'Arrondissement de Godomey), soucieux des problèmes liés aux infrastructures scolaires dans son quartier et de l'implantation d'un CEG (Collège d'Enseignement Général), à fait des efforts avec l'aide des acteurs politiques (Dons) et surtout avec la contribution financier de chaque ménage du quartier pour aboutir à la construction progressive et l'installation du CEG d'Atrokpocodji et la réhabilitation des modules de classe au niveau de l'EPP (Ecole Primaire Publique d'Atrokpocodji comme l'a montré la photo).



**Photo 2** .État de salle de classes en matériaux à l'EPP d'Atrokpocodji

La photo 2 montre que toutes les écoles primaires publiques de l'arrondissement de Godomey visitées sont dotées des matériaux de construction définitifs.

### **Insuffisance des salles de classe**

L'état des lieux des infrastructures scolaire dans l'arrondissement de Godomey a permis d'observer le manque ou l'insuffisance notoire des salles de classe surtout en matériaux définitifs à tous les niveaux de l'enseignement notamment au niveau primaire et secondaire. Ces besoins en salles varient d'une école à une autre. Pour les chefs d'établissements, cette insuffisance de salle oblige les apprenants et enseignants à poursuivre les activités pédagogiques jusqu'à samedi soir parfois. Dans le but d'éradiquer ce phénomène, certains chefs d'établissement et même la majorité ont mis en place un système de frais de scolarités qui s'élève à une somme dérisoire payable uniquement par les élèves garçons au premier cycle et à partir du second cycle, les élèves filles également sont concernées. Aussi chaque nouvelle année scolaire, le nombre de nouveaux ou nouvelles élèves s'accroît. Et pour pourvoir accueillir ces élèves, la construction de nouvelles salles de classes s'avère indispensable. Ainsi, sur la base des informations recueillies au niveau des chefs d'établissements, le CEG Godomey a eu besoin de 25 salles de classe, le CEG Lobozonekpa a besoin de 55 salles de classes, le CEG

Cocotomey a besoin de 33 salles de classes et enfin le CEG Atrokpodji a besoin de 20 salles de classes. Comme la planche suivante.



(a)



(b)

**Planche 1.** État des salles de cours au CEG Lobozoukpa et au CEG Atrokpodji  
**Source :** *Enquête de terrain, 2018*

La planche 1 montre les besoins en infrastructure scolaire dans les différents établissements dans l'arrondissement de Godomey (le CEG Godomey a besoin de 25 salles de classe, le CEG Lobozoukpa a besoin de 55 salles de classes, le CEG Cocotomey a besoin de 33 salles de classes et enfin le CEG Atrokpodji a besoin de 20 salles de classes).

### **Insuffisance du personnel enseignant**

L'analyse des informations sur les établissements d'enseignement primaire extraites du recensement annuel fait état de disparité notable dans les écoles. Cette insuffisance oblige les Directeurs à faire appel à des ACE (Agent Contractuel de l'État) pour donner les cours aux élèves et ceci à des conséquences majeures sur la qualité d'enseignement offerte du faite du manque de formation de leurs part, et aussi les vacataires qui viennent

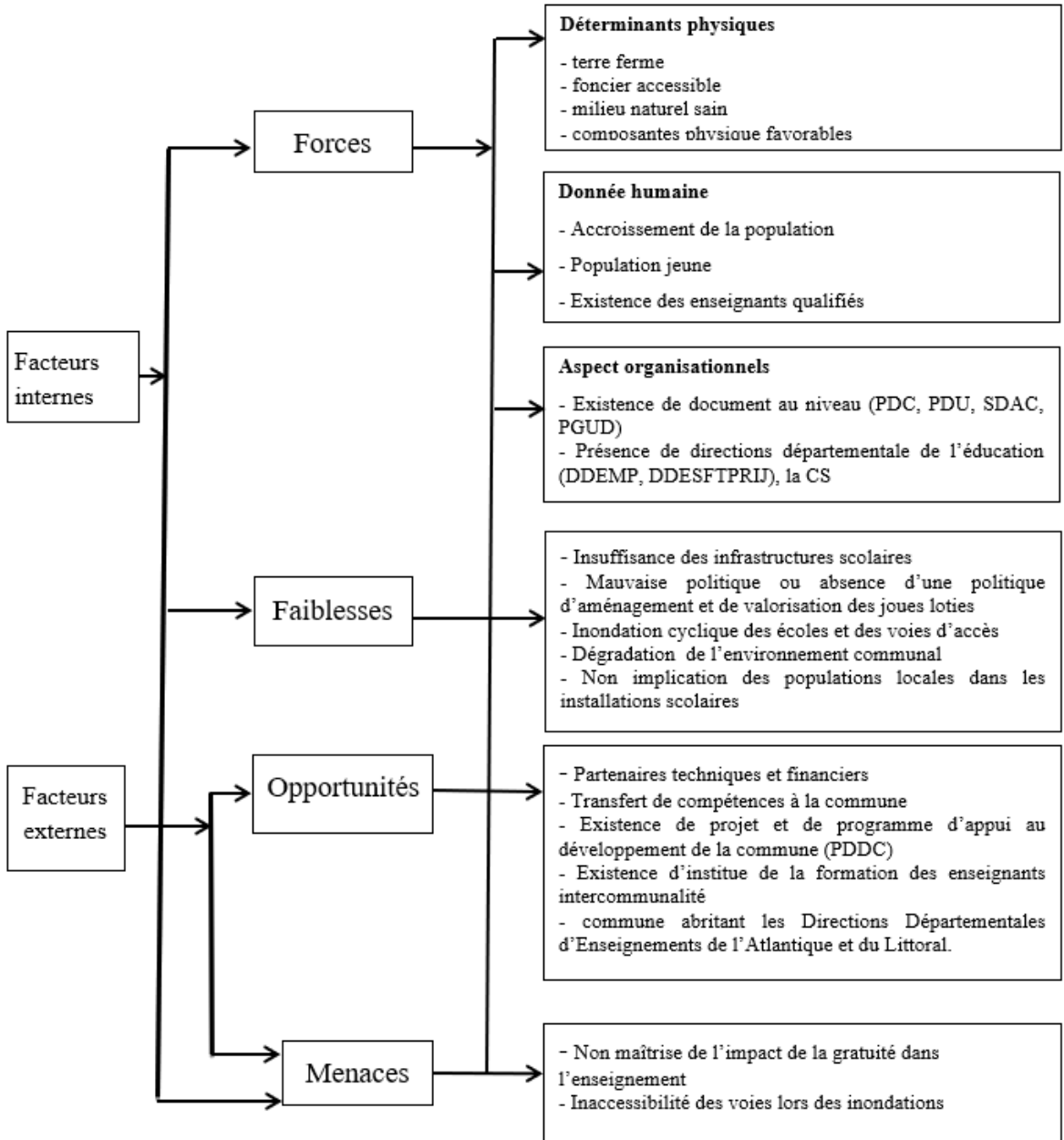
aggravés la qualité de l'enseignement donnée. Sur le total de ces CEG, on note 29 ACE (Agent Contractuel de l'Etat) et 729 Vacataires. On retient que le nombre de vacataire dans ces CEG sont dominants, ensuite viennent les ACE. Cela contribue à la baisse des niveaux des apprenants en affectant ainsi le développement de l'arrondissement.

### **Absence de cantines et dispensaires**

Les investigations menées dans l'arrondissement ont permis d'affirmer l'absence totale de cantines et de dispensaires dans les écoles et collèges. En effet, tous les apprenants de la maternelle au secondaire se servent des mets préparés par les vendeuses depuis leurs maisons respectives qu'elles apportent dans leurs écoles ou établissements respectifs. Ces mets ne sont en aucun cas contrôlés par les chefs d'écoles ou d'établissement exposant les apprenants à toutes sortes de maladies chroniques alors qu'il n'y a pas de dispensaires dans ces écoles et établissements. Les apprenants souffrant lors des activités pédagogiques sont automatiquement renvoyés à la maison pour aller suivre les soins dans une clinique ou centre de santé le plus proche.

### **Facteurs favorables à une bonne répartition des infrastructures scolaires**

Des facteurs internes et externes, autrement dit des forces et opportunités existent pour une bonne planification de la répartition des infrastructures scolaires dans l'arrondissement de Godomey. Mais ces forces et opportunités rencontrent des faiblesses et menaces dans la répartition des infrastructures scolaires pour un développement harmonieux et durable. La figure 3 ci-dessous résume les forces, opportunités, faiblesses et menaces qui influencent la répartition des infrastructures scolaires dans la commune d'Abomey-Calavi en particulier dans l'arrondissement de Godomey.



**Figure 3.** Forces, opportunités, faiblesses et menaces qui influencent la répartition des infrastructures scolaires dans la commune d'Abomey-Calavi en particulier à l'arrondissement de Godomey

### **Insuffisance des équipements**

Les investigations menées dans les écoles scolaires de la commune d'Abomey-Calavi, en particulier dans l'Arrondissement de Godomey ont permis de constater l'insuffisance effective des équipements scolaires. En effet, il est constaté dans tous les écoles et établissements scolaires l'insuffisance des instruments de travail et des matériels didactiques pouvant permettre aux enseignants et apprenants la bonne exécution des activités pédagogiques. Par ailleurs, on note dans certains collèges comme le CEG de Godomey la présence de laboratoire ne contenant aucun équipement de travail. Il est alors à souligner que l'insuffisance des équipements fait ressortir des contraintes sur l'exécution des activités pédagogiques, ce qui est à la base de nombreux problèmes dans l'enseignement dans l'arrondissement de Godomey.

### **2.3. Approches de solution**

L'éducation reste et demeure le socle de tout développement. La réalisation des infrastructures dans ce domaine tant au niveau du secteur public que privé nécessite assez de moyens. Il s'avère alors important de connaître le rôle joué par chaque acteur du monde éducatif afin de faire des suggestions et de mener des perspectives pour une meilleure répartition des infrastructures scolaires.

### **Rôle de l'État**

Comme prévu par la constitution du 11 Décembre 1990, l'État dans le but d'assurer l'éducation et la formation professionnelle à tous ses citoyens à l'obligation d'intervenir dans la création des écoles, dans la construction et dans l'équipement des infrastructures en vue de garantir une meilleure condition de vie des populations.

En effet, l'arrondissement de Godomey bénéficie de l'aide de l'État dans la construction des infrastructures et leur équipement dans tous les domaines de l'enseignement surtout dans l'enseignement primaire. Des mobiliers sont parfois reçus de l'État pour équiper les salles de classe en tables et bancs. Sur cette base, le Programme National de l'Éducation et de la Formation des Filles et Garçons au Bénin propose des actions dont la mise en œuvre implique l'intervention de plusieurs acteurs du secteur de l'éducation à savoir le ministère des enseignements maternel et primaire, les partenaires nationaux et internationaux, les organisations et associations intervenant dans le secteur, les enseignants, les apprenants ainsi que les organes des communautés à la base. Chacun a une partition importante à jouer dans ce processus.

### **Rôle des acteurs locaux**

La construction des infrastructures est une priorité pour la commune d'Abomey-Calavi en particulier pour les autorités de l'Arrondissement de Godomey car cela relève de la compétence déléguée par l'État à la commune qui à son tour l'a délégué à chacun de ces arrondissements. Pour les autorités communales d'Abomey-Calavi, le maire reçoit chaque année plus d'une dizaine de demande de construction de module de classe. Mais eu égard des moyens disponibles, ce dernier en concertation avec le chef de la circonscription scolaire priorisent les arrondissements dont les écoles sont plus défavorisées en infrastructure parce que les besoins sont énormes et chaque jour le monde scolaire s'accroît. Cette évolution du monde scolaire n'est pas en adéquation avec les moyens disponibles et surtout les subventions reçues de l'État. Les problèmes perdurent alors malgré les efforts consentis dans ce domaine.

### **Rôle des populations**

Dans le but de doter les écoles et collèges en infrastructure scolaire, certaines personnes notamment les acteurs politiques interviennent en apportant des dons financiers. Certaines associations des parents d'élèves font également des dons en mobiliers. De plus, à l'approche d'une nouvelle rentrée, les populations de certains quartiers de l'arrondissement s'organisent et font le nettoyage de la cours des écoles maternelles et primaires. Les populations jouent alors d'importants rôles dans le système éducatif. Néanmoins, des difficultés s'observent toujours dans ce domaine.

### **Rôles des partenaires techniques et financiers**

La commune d'Abomey-Calavi, et en particulier l'arrondissement de Godomey, dans l'installation de ses infrastructures scolaires bénéficie de l'aide de certains partenaires comme le Japon, l'Amérique et la France. Ces partenaires viennent en aide à la commune en construisant surtout dans les collèges les modules de classes et des laboratoires. De plus, la commune bénéficie de l'appui des structures comme FADEC (Fond d'Appui du Développement des Communes), le FDT (Fond de Développement du Territoire), et des ONG comme ALCRER (Association de Lutte Contre le Racisme, l'Ethnocentrisme et le Régionalisme). Ces structures interviennent dans la construction et l'équipement des modules de classes.

### **Conclusion**

Cette étude a permis de faire la mise en évidence des disparités spatiales liées aux infrastructures scolaires dans l'arrondissement de Godomey. Une attention particulière doit être accordée à la question d'aménagement des infrastructures scolaires qui constitue une préoccupation

majeure dans l'arrondissement, car ces infrastructures constituent la base du développement socio-économique. Il est alors important pour l'arrondissement de Godomey de faire des analyses de disparités spatiales non seulement pour les infrastructures scolaires mais aussi pour toutes autres infrastructures sociocommunitaires pour un développement harmonieux.

Les résultats ont montrés en partie au sein de chaque quartier, non seulement des insuffisances mais surtout des déséquilibres en infrastructures scolaires de la maternelle au secondaire dans les publiques. Les inégalités remarquées soumettent les populations à d'énormes contraintes en infrastructures scolaires. Ces investigations sur le terrain d'étude ont permis de confirmer les deux premières hypothèses de travail. Cependant, malgré une croissance démographique importante et l'insuffisance des moyens financiers de la commune à l'ère de la décentralisation, des efforts sont entrepris pour pallier à ces insuffisances et inégalités liées aux infrastructures scolaires. Ces efforts doivent être revus par les autorités à divers niveaux qui doivent respecter les politiques de planifications des infrastructures scolaires et impliquer réellement les populations locales dans des instances de décisions, de réalisations et de gestion des liens communautaires. Il faut corriger les insuffisances des outils d'aménagement de la commune et intégrer convenablement les nouvelles propositions. Enfin, le modèle SWOT d'analyse des résultats utilisé, les observations directs sur le terrain et les entretiens effectués ont permis de savoir que les espaces existent pour une bonne planification en matière de la réalisation des infrastructures scolaires dans l'arrondissement de Godomey.

De la maternelle au secondaire, il existe des déséquilibres mais aussi des insuffisances en infrastructures scolaires au sein de chaque arrondissement et entre les quartiers. Plus de 65 % de la population est confrontée aux difficultés d'inaccessibilité due à la distance trop longue qui les sépare de ces infrastructures. Mais les efforts se font malgré l'insuffisance des moyens financiers dans l'arrondissement et la croissance démographique exceptionnelle pour pallier aux insuffisances et inégalités liées aux infrastructures scolaires. Ces efforts doivent respecter les politiques de planification des infrastructures scolaires et de gestions des liens sociocommunitaires. Ces autorités doivent aussi revoir les mauvaises politiques d'aménagement afin de corriger les différentes inégalités spatiales. Enfin, le modèle SWOT d'analyse des résultats utilisés, les observations sur le terrain et les entretiens effectués ont permis de révéler les contraintes et les opportunités que l'arrondissement de Godomey peut saisir pour limiter ces disparités observées.

Pour atténuer les déséquilibres en infrastructures scolaires dans l'arrondissement de Godomey, à travers la mobilisation de l'État, du conseil communal, des partenaires locaux, nationaux et autres, il urge de :



- Construire les écoles maternelles dans tous les villages et quartiers de l'arrondissement,
- Respecter les conditions d'attributions des infrastructures scolaires,
- Construire et équiper les salles de classes,
- Associer les populations des localités bénéficiaires d'une infrastructure scolaire,
- Sensibiliser les parents d'élèves à inscrire les enfants dans les établissements scolaires nouvellement créés,
- Réfectionner à temps les infrastructures scolaires qui nécessitent un réaménagement,
- Construire et entretenir les voies d'accès aux infrastructures scolaires,
- Accélérer le lotissement dans tout l'arrondissement d'un commun accord avec les populations à la base.

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