# INTERREGIONAL DISPARITIES OF THE COLLABORATIVE ECONOMY IN ROMANIA. THE CASE OF ACCOMMODATION SERVICES

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***Abstract***

*The growing collaborative economy supports sustainable economic development and the circular economy. It aims to reduce over-consumption of resources and ensure efficient use of idle resources. The collaborative economy has emerged strongly in the tourism sector through shared tourism services, pioneered by Airbnb. This paper focuses on the analysis of inter-regional disparities of the collaborative economy in Romanian tourism. To this end, Gini concentration curves have been plotted and Gini concentration indices have been calculated for the three hierarchical levels of territorial units: NUTS1, NUTS2, NUTS3. The indicators analyzed were the number of stays for total tourists and the number of overnight stays for total tourists. As expected, the results showed a higher degree of concentration at NUTS3 level (higher disparity) and a lower degree of concentration at NUTS1 level (lower disparity). As a result of these calculations, the main regional poles were identified for NUTS1 level (macro-regions One and Four) and for NUTS2 level (Centre and South-West Oltenia regions). Surprisingly, the Bucharest-Ilfov region, the most economically developed region in Romania, failed to outperform the other regions over the whole period analyzed. The overall trend of inter-regional disparities was downward.*

***Keywords:*** *collaborative economy; sharing; inter-regional disparities; Gini coefficient; Gini concentration curve*

***Classification JEL:*** *L83, R12, Z32*

## 1.Introduction

Although sharing is a phenomenon that is lost in the mists of time, the collaborative economy is the result of the internet age [3]or the Industrial 4.0 age [16]. The development of digital technology has enabled the emergence of new business models run through the internet. These take place in the so-called collaborative economy in which economic activities take place differently from the traditional economy, which involves the management of idle resources through digital platforms. The collaborative economy is based on new markets, perceived as extensions of existing ones and based on trust and collaboration [6].

The economic actors involved in the collaborative economy are: 1) private individuals who provide certain services through occasional sharing of their own idle resources, or professional service providers; 2) service beneficiaries; 3) intermediaries who connect service providers and service users through so-called collaborative platforms [8]. While in the traditional economy we see the transfer of ownership to the recipients of goods and services, in the collaborative economy this transfer no longer occurs. Those who use shared services benefit occasionally/temporarily from the right of use and not from the right of ownership.

An important area of activitycharacterizedbythepresence of thesecollaborativeplatforms, alsocalledpeer-to-peer, istourism. In thisfield, there are a number of platformsworldwidewhichprovide tourismservicesandwhichbringsignificantrevenuestopropertyowners, whichtheycanshare for shortperiodswithpotentialvisitors/tourists. Withtheexception of the pandemic period, theproportion of peopleusingsuchplatformshasbeensteadilyincreasing in recent years. For example, at EU level, in

2019 comparedto 2017, therewas a 4% increase in the total populationusingplatforms/apps for thepurpose of rentingaccommodationfrom a third party [6].

This paper presents an analysis of inter-regional disparities across the three hierarchical levels (NUTS1, NUTS2 and NUTS3). In this respect, specific indicators of accommodation services offered through the collaborative platforms (number of stays and number of overnight stays) were used. The choice of only two indicators was based on objective reasons related to the size of the paper. The statistical data used covered the period 2018-2022 and were downloaded from the EUROSTAT database. Unfortunately, the number of stays at NUTS3 level was not available, so disparities at this level were not analyzed.

The paper is structured as follows: introduction, overview of the collaborative economy; methodology, results of the analysis and main conclusions of the paper.

## 2. Collaborative economy - general aspects

The collaborative economy, also known as the shared economy [4]-[18]-[15], peer-to-peer economy [12]-[22] or collaborative consumption[5]-[3]-[7]-[10]-[21]-[12], is becoming increasingly prevalent around the world. According to the European Commission, it creates new opportunities for both consumers and entrepreneurs and is also a way to support the circular economy [8]-[2]-[23].

Barbu șicolab. [2]mention in their paper the main advantages of the collaborative economy while specifying the criticisms that are brought to it by specialists. However, it is recognized that the collaborative economy can play an extremely important role in sustainable economic growth [4], being at the same time an environmentally friendly economy [23]. In fact, the goal pursued in the collaborative economy is to increase access to underutilized goods and spaces [15].

Starting from the fact that in a collaborative economy no transfer of property rights takes place, Bonciu&Bâlgăr[4] point out another interesting idea worth highlighting. In the collaborative economy, the main verb that characterizes the way business works is "to use something" and not "to have something", which is specific to the traditional economy. Many of the new businesses sell access and not ownership [19], and can be perceived as ”green” business models. At the same time, for the recipients of shared goods and services, brands are no longer important and as such they no longer seek to display social status [14].

A number of factors have contributed to the emergence and development of the collaborative economy. Many specialists generally consider the following as the main factors: technological, political, economic and social [11]. In the case of tourism, the literature refers to the following groups of influencing factors: technological, economic, socio-cultural and ecological. Of these, the major role is of course played by technological factors. Digital technology offers potential tourists the possibility to book and pay for tourism services online and to benefit from more information [16]. In addition to the development of digital technology [9], there are also mentioned other favourable premises for the emergence and development of the collaborative economy: urbanization, the massive presence of generation Z and the widespread use of smartphones [17].

Much has already been written about the collaborative economy in tourism. It was the economic crisis in 2008 that led tourists to seek cheaper services. The pioneer of the collaborative economy in tourism [1]-[17]is Airbnb, an online platform launched, in 2008, in the US and expanded to many countries, including Romania. It mediates accommodation services, other than traditional ones, between people looking for accommodation and people who are willing to make their own accommodation available on a short-term basis. The Airbnb example has been followed by other online platforms for shared tourist services.

The effects of the collaborative economy in tourism are manifold. Economically, they are related to: lower prices as competition intensifies and the quality of services increases; increased

savings for consumers of services offered by online platforms [19]; new jobs and increased employment; new sources of income [8]; increased income outside of traditional employment relationships; meeting the needs of customers who are constantly diversifying; continued diversification of the tourism offer [16]; entrepreneurship development; more efficient use of resources [17]; waste reduction and environmental protection [20]-[16] etc.

## 3. Methodology and preliminary clarifications

In our scientific approach we used two indicators specific to the accommodation services of the collaborative economy (number of stays and number of overnight stays), found in the EUROSTAT database [24].

In order to highlight the inter-regional disparities of these services, we used the graphical representation of the concentration curve and the calculation of the GINI concentration index at the level of NUTS1, NUTS2, NUT3 regions.

The Gini index has been established on the basis of the trapezoidal method, using the following relations as calculation relations:

$$CG = \frac{A}{0,5} \quad (1) \quad \text{și } A = \frac{1}{2} - \sum_{i=1}^{k} \frac{F_{i-1}(x)+F_i(x)}{2} p_i \quad (2)$$

where: CG = GINI concentration coefficient

A = area of concentration (area of the surface below the line of absolute equality)

the line of absolute equality = the diagonal of a square with sides equal to 1/100%.

Fi(x) = cumulative weight of indicator "x" at the level of territorial unit "i".

$i = \overline{1,k}$; where: k=4 for NUTS1; k=8 for NUTS2; k=42 for NUTS3

pi = weight of a territorial unit at NUTS1, NUTS2, NUTS3 level

Establishing and understanding inter-regional disparities started from the composition of NUTS1 and NUTS2 regions.

Each NUTS1 region (macro-region) in Romania is made up of two NUTS2 regions and each NUTS2 region of several NUTS3 regions (counties). Their composition is:

1. Macroregion One (M1) - the North-West (NV) and Centre (C) regions;
a) NV region - counties: Bihor, Bistrița Năsăud, Cluj, Maramureș, Satu Mare and Sălaj;
b) Region C - counties: Alba, Brasov, Covasna, Harghita, Mures and Sibiu;
2. Macroregion Two (M2) - North-East (NE) and South-East (SE) regions;
a) NE region - Bacău, Botoșani, Iași, Neamț, Suceava and Vaslui counties;
b) SE Region - Brăila, Buzău, Constanța, Galați, Tulcea and Vrancea counties;
3. Macroregion Three (M3) - South Muntenia (S) and Bucharest-Ilfov (BI) regions;
a) Region BI - Ilfov county and Bucharest municipality;
b) Region S - counties: Argeș, Călărași, Dâmbovița, Giurgiu, Ialomița, Prahova, Teleorman;
4. Macroregion Four (M4) - South-West Oltenia (SV) and West (V) regions;
a) SV region - counties: Dolj, Gorj, Mehedinți, Olt and Valcea;
b) Region V - counties: Arad, Caras-Severin, Hunedoara and Timis.

At the same time, in order to understand the causes of these inter-regional disparities, other tourism-related clarifications must be made, namely:

- the Center region, which is considered one of the regional poles and is ranked first at national level in terms of tourism structure and total number of tourists (in 2021), has a rich natural and man-made tourism potential. Mountain, spa, cultural and rural tourism is practised there [25];

- the Bucharest-Ilfov region, although the smallest in terms of surface area, accounts for a quarter of the national economy [26], and is the destination for those wishing to practice forms of tourism such as business tourism, cultural tourism, leisure and recreational tourism and transit tourism;

- the North-West region has a number of natural and cultural tourist attractions, characterized by forms of tourism such as cultural, religious, rural, mountain and hunting tourism [27];

- the North-East region, with its tourist attractions, allows rural, religious, cultural and mountain tourism [31];

- the South-East region, which benefits from the presence of the Black Sea coast and the Danube Delta, has 21% of the national accommodation capacity and more than 22% of the total overnight stays. The tourism practised here is leisure and recreation, seaside, rural, cultural, sports and religious tourism [28];

- the South Muntenia region is characterized in particular by mountain tourism (the most famous mountain resorts in Romania are present here: Predeal, Sinaia, Bușteni, Azuga). Also here you can practice spa and cultural tourism [29];

- the South-West Oltenia region is particularly sought after for spa tourism (Căciulata, Călimănești, Govora) and cultural tourism (Constantin Brâncuși's sculptures). It should also be noted that the South West Oltenia Region was the second regional pole identified in our analysis;

- the West region is the destination of those who practice mainly spa tourism (through the resorts of Bihor county) but also cultural, rural and mountain tourism [30].

## 4. Results & Discussion

a) Number of stays through accommodation offers of collaborative platforms

For this indicator, inter-regional disparities have been established at NUTS1 and NUTS2 levels. Data for NUTS3 level were not available and this prevented the calculation of these gaps.

As shown in table 1, the total number of overnight stays in Romania - total tourists increased from 425,316 to 785,806. However, the year 2020 interrupted this upward trend, with the number of stays falling below the 2018 level, representing approx. 56% of the previous year. The onset of the COVID-19 pandemic led to a decrease in the number of stays by approx. 44%. Moreover, the evolution of the number of stays in relative terms can be seen in the same table (no. 1). According to the calculations, the largest increase in the total number of overnight stays was recorded in 2021, with an increase of 55.9% compared to the previous year. At the same time, also in 2022 there is a substantial increase in the number of stays as a result of accommodation services offered through collaborative platforms, 48.02% compared to 2021.

However, if we use 2018 as a basis for comparison, the percentage changes in the number of tourist stays-total tourists are -19.95% in 2020 and +24.81% in 2021. In contrast, the increase in the last year (2022) compared to 2018 is significant, +84.73%.

**Table 1. Total number of stays through collaborative platform accommodation services - Romania (2018-2022)**

| Indicators | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Total stays | 425,316 | 608,393 | 340,477 | 530,820 | 785,706 |
| Change compared to the previous year (%) | - | +43.04 | -44.03 | +55.90 | +48.02 |
| Change compared to 2018 (%) | - | +43.04 | -19.95 | +24.81 | +84.73 |

Source: adapted by the author based on EUROSTAT data

Looking at Table 2, we see an uneven distribution of the number of stays at NUTS1 and NUT2 level. The highest values were marked in the table with yellow and the lowest with green. At NUTS1 level, the highest percentages were recorded by M1 (46.48%, in 2021) and the lowest by M4 (7.59%, in 2018), which are also considered the regional poles of Romania. The percentages held by M1 were between 43.97%-46.48%, while the percentages for M4 were in the range 7.59%-9.06%. M1 was followed by M3, which includes the capital city of the country where most stays were recorded in 2018 and 2019. The combined shares of M1 and M3 ranged from 71.81% (in 2021) to 79.63% (in 2018).

In terms of dynamics, we are talking about a certain fluctuation in the values for M1, M2 and M3 respectively an increasing trend for M4.

As can be seen, the annual percentage changes on a chain basis have also been included in Table 2. From this point of view, the most significant changes were for M2 (+5.8% in 2020 compared to 2019) and M3 (-7.57% in 2020 compared to 2019). In terms of direction of change, the changes were insignificant for M1 (-0.09% in 2019 compared to 2018) and M4 (+0.04% in 2021 compared to 2020).

At NUTS2 level, the highest percentage over the whole period analyzed was observed for the Bucharest-Ilfov region (32.5% in 2018) and the lowest for the South-West Oltenia region (1.48%). In terms of the direction of change, the most significant changes were observed for the Bucharest-Ilfov region (-8.85% in 2020 compared to 2019 and +5.31% in 2022 compared to 2021). The most insignificant changes were in the West region (-0.05% in 2020 compared to 2019) and in the South-West Oltenia region (+0.06% in 2022 compared to 2021).

For a better visualization of the evolution of the shares of stays by NUTS2, graph no. 1 has been produced. According to it, the regional poles are, with small exceptions, the Centre Region and the South-West Oltenia Region.

**Table 2. Stays through the accommodation offers of collaborative platforms, NUTS1 & NUTS2 regions– Romania (2018-2022) - %**

| NUTS1 / NUTS2 | 2018 | 2019 | Δ2019-2018 | 2020 | Δ2020-2019 | 2021 | Δ2021-2020 | 2022 | Δ2022-2021 |
|---|---|---|---|---|---|---|---|---|---|
| **M1** | **44.13** | **44.05** | **-0.09** | **45.36** | **1.31** | **46.48** | **1.12** | **43.97** | **-2.51** |
| NV | 14.62 | 15.1 | 0.51 | 15.27 | 0.13 | 15.39 | 0.12 | 16.09 | 0.71 |
| C | 29.51 | 28.91 | -0.60 | 30.09 | 1.18 | 31.09 | 1.00 | 27.88 | -3.21 |
| **M2** | **12.78** | **13.78** | **1.00** | **19.58** | **5.80** | **19.71** | **0.14** | **16.86** | **-2.85** |
| NE | 3.61 | 4.24 | 0.63 | 4.88 | 0.64 | 5.24 | 0.37 | 5.70 | 0.45 |
| SE | 9.17 | 9.54 | 0.37 | 14.70 | 5.16 | 14.47 | -0.23 | 11.16 | -3.31 |
| **M3** | **35.50** | **34.20** | **-1.29** | **26.63** | **-7.57** | **25.33** | **-1.30** | **30.11** | **4.78** |
| S | 3.00 | 3.33 | 0.33 | 4.61 | 1.28 | 4.72 | 0.11 | 4.20 | -0.53 |
| BI | 32.50 | 30.87 | -1.62 | 22.02 | -8.85 | 20.60 | -1.42 | 25.91 | 5.31 |
| **M4** | **7.59** | **7.97** | **0.38** | **8.43** | **0.46** | **8.48** | **0.04** | **9.06** | **0.58** |
| SW | 1.56 | 1.48 | -0.08 | 1.99 | 0.51 | 1.86 | -0.13 | 1.92 | 0.06 |
| W | 6.03 | 6.49 | 0.46 | 6.44 | -0.05 | 6.62 | 0.18 | 7.14 | 0.52 |

Source: own calculations based on EUROSTAT data

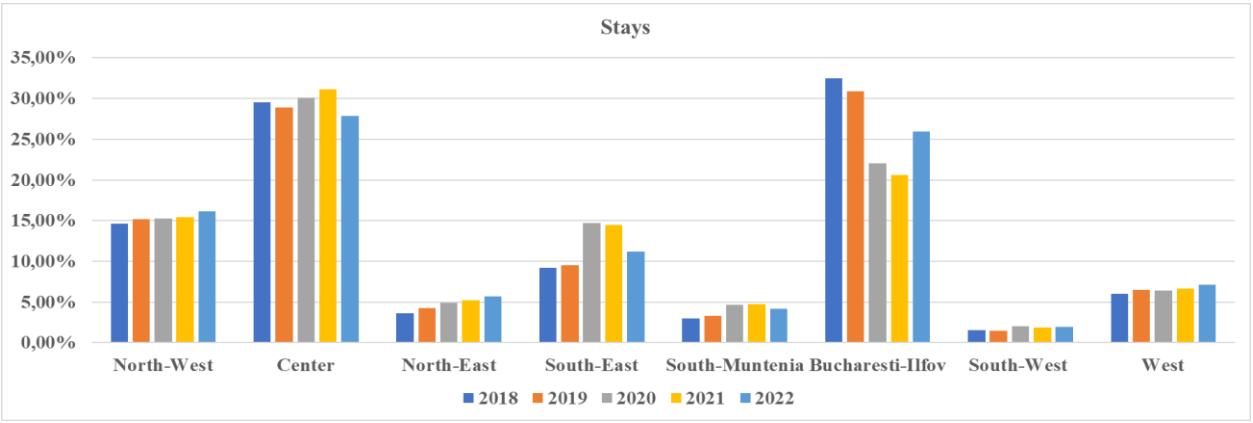



**Figure 1. Stays through the accommodation offers of collaborative platforms, by NUTS2, Romania (2018-2022) - %**

Source: own calculations based on EUROSTAT data

Even if the existence of inter-regional disparities was easily perceived from the data in Table 2, their level can only be known through the Gini concentration index. From this point of

view, we can see some differences. Thus, the NUTS2 concentration level is higher than NUTS1, which means a more unequal distribution across Romania's 8 development regions (Table 3). If we look at the evolution of the Gini index by NUTS1 and NUTS2, we can notice that the trend is downward. However, compared to previous years, there is a slight increase in concentration in 2021 (NUTS1 case) and 2022 (NUTS2 case).

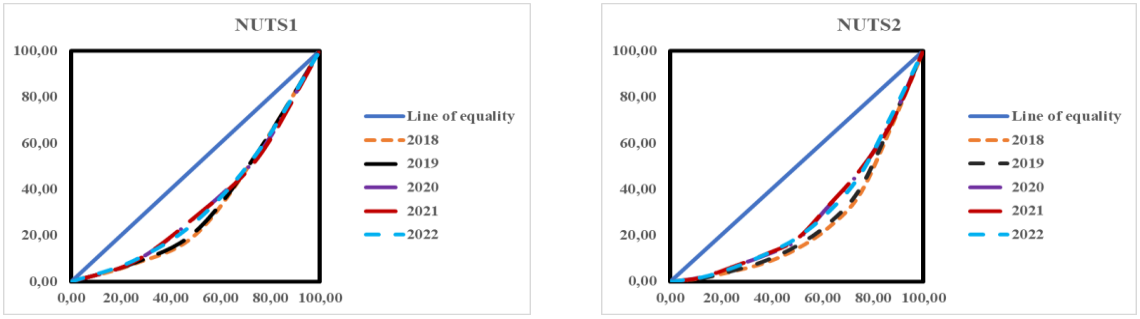
The NUTS1 and NUTS2 inter-regional disparities are also shown graphically by the Gini concentration curves (Figures 2 and 3). Figure 2 highlights the GINI concentration curves over the whole period analyzed, separately for NUTS1 (a) and NUTS2 (b). For NUTS1 (Fig. 2a), there was a more visible approximation of the concentration curve to the line of perfect equality in the last three years (2020-2022). Similarly, for the NUTS2 concentration curve (Fig. 2b). However, these curves reflect small changes in concentration.

Figure 3(a-e), reflects separately for each year studied the concentration curves of both hierarchical levels. According to them, the lowest concentration area for NUTS1 is in the year 2020 (Fig. 3c), while for NUTS2 it is in the year 2021 (Fig. 3d).

**Table 3. GINI Concentration Index for stays, by NUTS1 & NUTS2 regions, Romania(2018-2022)**

| GINI Concentration Index for regions | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| NUTS1 | 0.330867 | 0.321647 | 0.294554 | 0.299048 | 0.294949 |
| NUTS2 | 0.481621 | 0.461736 | 0.403947 | 0.402878 | 0.406860 |

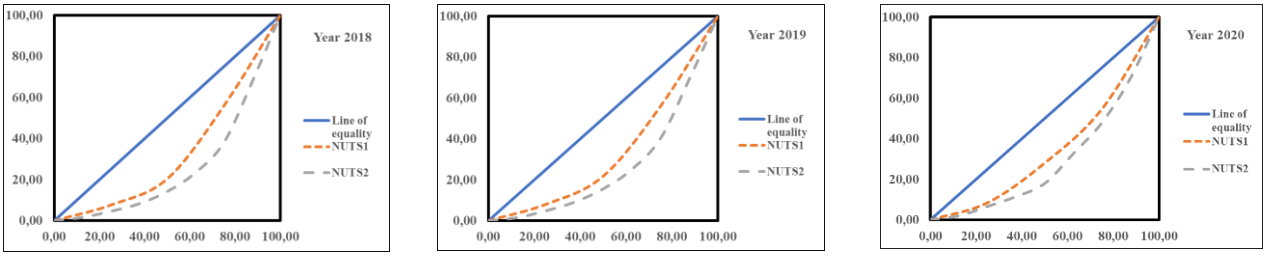
Source: own calculations based on EUROSTAT data



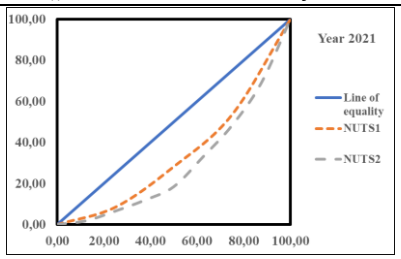

(a) (b)

**Figure 2. GINIConcentration Curve – Stays, by NUTS1 (a)& NUTS2 (b) regions – Romania (2018-2022)**

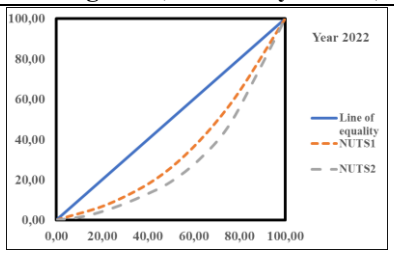
Source: own calculations based on EUROSTAT data




(a) Year 2018 (b) Year 2019 (c) Year 2020




(d) Year 2021




(e) Year 2022

**Figure 3. GINIConcentration Curve – Stays, by NUTS1 & NUTS2 regions and years – Romania (2018-2022)**

Source: own calculations based on EUROSTAT data

b) Number of overnight stays through accommodation offers of collaborative platforms - total tourists (Romanian and foreign)

According to the data in Table 4, there is a fluctuation in the total number of overnight stays, with a minimum in 2020 and a maximum in 2022. If we refer to the percentage changes with a chain basis, then we can notice the following: with the exception of 2020 when there was a decrease in the number of overnight stays by approx. 45%, the remaining years saw annual increases. The highest increase can be observed in 2022, of +59.16%.

In the same sense, the percentage changes with a fixed base (base year 2018) also occurred. Compared to the previous situation, we see that in 2020, the decrease in the number of overnight stays was only 22.75% compared to 2018, and the increase in 2021 compared to the same base year was only 20.35%. For the year 2022, however, we see a significant increase in the number of overnight stays compared to 2018 by more than 91%.

**Table 4. Total number of overnight stays through accommodation services offered by collaborative platforms, Romania - total tourists (2018-2022)**

| Indicators | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Total nights spent | 2,992,968 | 4,191,792 | 2,312,171 | 3,601,903 | 5,732,807 |
| Change compared to the previous year (%) | - | +40.05 | -44.84 | +55.78 | +59.16 |
| Change compared to 2018 (%) | - | +40.05 | -22.75 | +20.35 | +91.54 |

Source: adapted by the author based on EUROSTAT data

Similar to the first indicator analyzed, the distribution by NUTS1 AND NUTS2 regions was also uneven (Table 5).

The most attractive macro-region was M1 and the least attractive M4, as shown by the data in Table 5. Thus, at NUTS1 level, the highest shares of overnight stays, generally above 41%, were for M1. The latter was followed by M3 with values between 25.27%-35.29% and M2 with values between 17.11%-24.01%. M4, in last position, was generally lower than M2 by more than 10%. The cumulative values of M1 and M3 at the top of the ranking ranged from 68.89% (in 2021) to 76.49% (in 2018).

Also, seen in dynamics, unlike the first indicator analyzed, the percentages contained in Table 5 show some fluctuation across all NUTS1 regions. It should also be noted that, while M1 and M4 showed the smallest fluctuations (between -1.8% and +1.07% for M1 and between -0.07% and +0.47% for M4), the other two showed the largest fluctuations (between -4.34% and +5.92% for M2 and between -7.46% and 5.86% for M3).

Analyzing the data for the whole period, it is found that, in the case of NUTS1, the highest values are reached by M1 (43.62%, in 2021), and in the case of NUTS2, by the Bucharest-Ilfov region (31.14%, in 2018). The lowest percentages are reported for M4 (6.4%, in 2018) and the South-West Oltenia region (1.4%, in 2019).

At NUTS2 level, there were two regions that stood out from the rest, namely Center and Bucharest-Ilfov, in terms of the values recorded. There were, however, some differences in the evolution. If we can say that the Centre Region has been relatively constant in terms of the recorded

values, the same cannot be said for the Bucharest-Ilfov Region. The latter initially had a share of 31.14% in total overnight stays and then reached just over 25% in 2022. The Bucharest-Ilfov Region led the NUTS2 regions ranking, surpassing the Center Region only in 2018 and 2019. As of 2019, the Center region manages to reduce the gap with Bucharest-Ilfov to -0.55%. In the next three years, however, the situation changes. The Center region managed to overtake Bucharest-Ilfov by 10.22% in 2020, 11.61% in 2021 and 2.72% in 2022.

A certain stability of the indicator is also observed in the North-West, South-West and West regions.

**Table 5.Total number of overnight stays through accommodation services offered by collaborative platforms, by NUTS1 & NUTS2, Romania - total tourist (2018-2022) - %**

| NUTS1 / NUTS2 | 2018 | 2019 | Δ2019-2018 | 2020 | Δ2020-2019 | 2021 | Δ2021-2020 | 2022 | Δ2012-2021 |
|---|---|---|---|---|---|---|---|---|---|
| **M1** | **41.2** | **41.89** | **0.69** | **42.96** | **1.07** | **43.62** | **0.66** | **41.82** | **-1.8** |
| NV | 12.46 | 13.06 | 0.6 | 12.67 | -0.39 | 12.98 | 0.31 | 13.3 | 0.32 |
| C | 28.74 | 28.83 | 0.09 | 30.29 | 1.46 | 30.64 | 0.35 | 28.51 | -2.13 |
| **M2** | **17.11** | **17.72** | **0.61** | **23.64** | **5.92** | **24.01** | **0.37** | **19.67** | **-4.34** |
| NE | 3.03 | 3.46 | 0.43 | 3.94 | 0.48 | 4.51 | 0.57 | 4.92 | 0.41 |
| SE | 14.08 | 14.26 | 0.18 | 19.7 | 5.44 | 19.5 | -0.2 | 14.74 | -4.76 |
| **M3** | **35.29** | **33.7** | **-1.59** | **26.24** | **-7.46** | **25.27** | **-0.97** | **31.13** | **5.86** |
| S | 4.15 | 4.32 | 0.17 | 6.17 | 1.85 | 6.24 | 0.07 | 5.34 | -0.9 |
| BI | 31.14 | 29.38 | -1.76 | 20.07 | -9.31 | 19.03 | -1.04 | 25.79 | 6.76 |
| **M4** | **6.4** | **6.69** | **0.29** | **7.16** | **0.47** | **7.09** | **-0.07** | **7.39** | **0.3** |
| SW | 1.42 | 1.4 | -0.02 | 2 | 0.6 | 1.78 | -0.22 | 1.83 | 0.05 |
| W | 4.97 | 5.29 | 0.32 | 5.15 | -0.14 | 5.31 | 0.16 | 5.55 | 0.24 |

Source: own calculations based on EUROSTAT data

At NUTS2 level, the evolution of the indicator is shown in Figure 4. It should also be noted that here too, the same regional poles identified for the first indicator analyzed are maintained, namely the Center and South-West Oltenia regions.

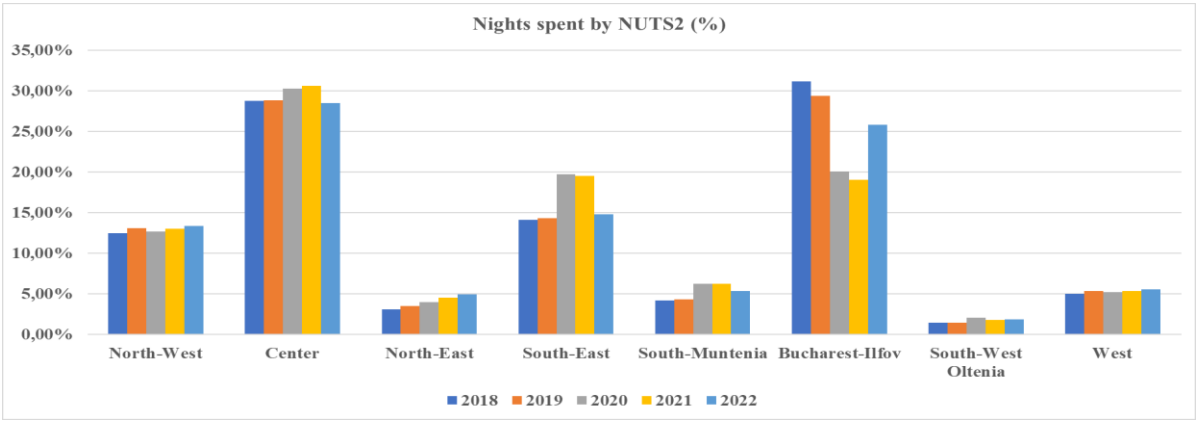



**Figure 4. Nights spent, by NUTS2, Romania (2018-2022) - %**

Source: own calculations based on EUROSTAT data

According to the GINI index (Table 6), there was a strong concentration in the NUTS3 regions (the index having values very close to the maximum value) and a weak concentration in the NUTS1 regions. The NUTS3 situation is explained by the wide range of values of the number of overnight stays as well as their uneven distribution. Some counties had very low values of the indicator, while other counties had very high values in some years of more than 1 million overnight stays. Thus, in 2022, only 11 counties managed to record over 100,000 overnight stays. The municipality of Bucharest stood out from the rest of the counties with 1,351,729 overnight stays. It

was followed in descending order by Brașov (1,007,622), Constanța (774,683), Cluj (452,876), Sibiu (359,126), Prahova (238,920) and Bihor (210,346). According to EUROSTAT data, the capital city managed to outperform all other counties in 2018, 2019 and 2022.

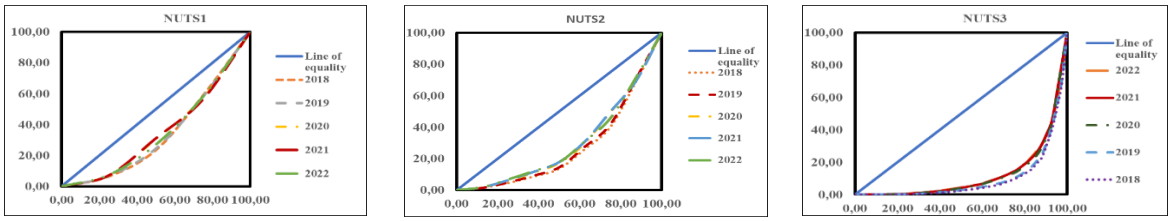
In terms of dynamics, the GINI concentration index has generally followed a downward trend for each level of territorial unit hierarchy (NUTS1, NUTS2, NUTS3). The exception was the year 2022, which saw an insignificant increase in the coefficient, which meant a slight increase in the degree of concentration of accommodation services offered by collaborative platforms.

**Table 6. GINI Concentration Index by NUTS1, NUTS2, NUTS3 regions, Romania – nights spent, total tourist (2018-2022)**

| GINI Concentration Index for regions | Years | | | | |
|---|---|---|---|---|---|
| | 2018 | 2019 | 2020 | 2021 | 2022 |
| NUTS1 | 0.30650 | 0.30396 | 0.27502 | 0.27713 | 0.28691 |
| NUTS2 | 0.46732 | 0.45045 | 0.41095 | 0.40612 | 0.40884 |
| NUTS3 | 0.84905 | 0.83860 | 0.80507 | 0.79678 | 0.79766 |

Source: own calculations based on EUROSTAT data

The evolution of the degree of concentration by NUTS1, NUTS2, NUTS3 regions can also be followed with the help of the GINI concentration curves in Figure 5(a, b, c). The curves are further away from the line of perfect equality in the case of NUTS3 and less so in the case of NUTS1.

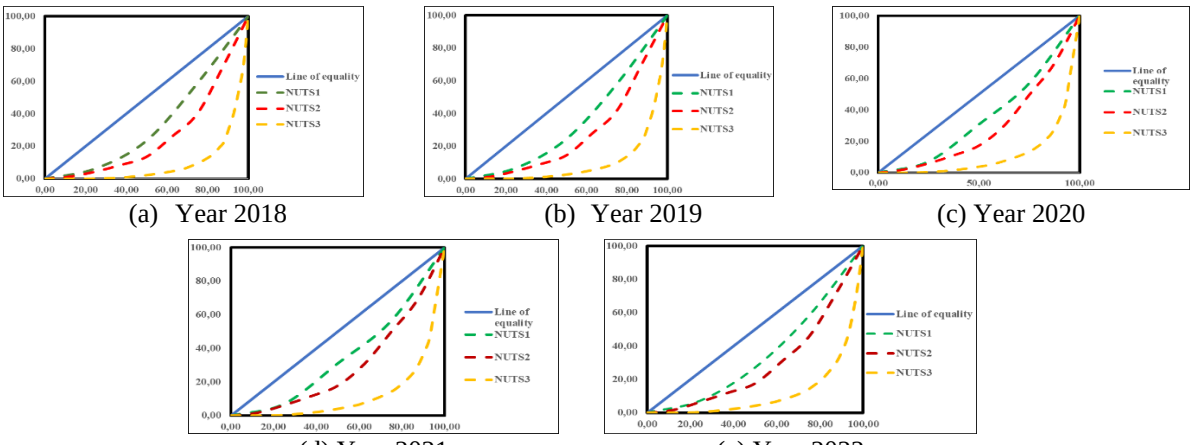



(a) (b) (c)

**Figure 5. GINIConcentration Curve** – N**ights spent, by NUTS1 (a), NUTS2 (b), NUTS3 (c) regions – Romania (2018-2022)**

Source: own calculations based on EUROSTAT data

Figure 6(a-e) shows, separately by year, the evolution of the concentration curves for the three hierarchical levels. According to these and the data in Table 6, the lowest concentration area for NUTS1 is in the year 2020, while for NUTS2 and NUTS3 it is in the year 2021.




(a) Year 2018 (b) Year 2019 (c) Year 2020

(d) Year 2021 (e) Year 2022

**Figure 6. GINIConcentration Curve - Nights spent, by NUTS1, NUTS2, NUTS3 regions – Romania (2018-2022)**

Source: own calculations based on EUROSTAT data

## 5. Conclusions

As in the traditional economy, there are also certain inter-regional disparities in the collaborative economy from a tourism perspective. Many of these are attributed to geographical, economic, social and political factors. All of these factors can make or break a region into a magnet for potential visitors. At first glance, disparities can also be discerned from the statistical data being processed. However, the level of concentration by territorial hierarchical levels is shown by the Gini concentration index. Its evolution actually signals changes in inter-regional disparities.

According to calculations made for Romania, the greatest inter-regional disparities exist at NUTS3 level (counties) for the number of overnight stays/total tourists and at NUTS2 level for the number of stays. The explanations are given by several influencing factors, which are economic, social and geographical. In this respect, there are regions that are more attractive than others, which leads to these inter-regional disparities. Surprisingly, the Bucharest-Ilfov region (the most economically developed region in Romania) does not manage to keep the first position in the ranking for any of the two indicators analyzed. From this point of view, it is the Center region that outperforms it.

The regional poles identified for both indicators were M1 and M4 for the NUTS1 level, and the Center and South-West Oltenia regions for the NUTS2 level. According to EUROSTAT data, for NUTS3, the regional poles were: Bucharest municipality (with the most overnight stays) and Botoșani, Călărași, Giurgiu and Vaslui counties - with the fewest overnight stays (in 2018); Bucharest municipality-Botoșani county (in 2019), Brașov-Teleorman counties (in 2020), Brașov-Giurgiu counties (in 2021) and Bucharest municipality-Teleorman county (in 2022).

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