Ion Danut I. JUGANARU
Kamer Ainur M. AIVAZ
Mariana C. JUGANARU
Ovidius University of Constanta

FACTORIAL CORRESPONDENCES ANALYSIS – A TOOL IN TOURISM MOTIVATION RESEARCH

Empirical study

Keywords
Tourism
Destination
Factorial correspondences analysis
Trip purpose

JEL Classification
C10, C38, L83, M21, J63, Z33

Abstract

This study aims at analyzing the distribution of tourist flows in 2014, from 25 European countries, on three main categories of trip purposes, and assumes that there are differences or similarities between the tourists' countries of residence and their trip purposes.

"Purpose" is a multidimensional concept used in marketing research, most often for understanding consumer behavior, and for identifying market segments or customer target groups, reunited in terms of similar characteristics. Being aware that the decision of choice/ purchase is based on purposes, their knowledge proves useful in designing strategies to increase the satisfaction level provided to the customer.

The statistical method used in this paper is the factorial correspondences analysis. In our opinion, the identification, by this method, of the existence of differences or similarities between the tourists' countries of residence and their trip purposes can represent a useful step in studying the tourism market and the choice/ reformulation of strategies.

1. Introduction

Qualitative marketing research aims at finding responses to the questions "why" or "how?" do certain phenomena and processes of consumer behavior manifest (Florescu, C., Malcomete, P.; Pop, Al. N.,2003), (Teodorescu, N., 2000). It is believed that purpose and motivation are concepts wherewith one can explain the manifestation rationale of some market aspects of consumer behavior. Prof. Datculescu believes that "purpose is the driving force behind any behavior" (Datculescu, P., 2006). In marketing theory, by purpose we understand all the reasons and grounds underlying the individuals' needs. Purpose and motivation actually form the grounds that trigger certain reactions and behavioral manifestations in terms of choice and/ or consumption of certain goods and services (Teodorescu, N., 2000).

The identification and understanding of purposes cannot be considered the only explanation regarding consumer behavior associated processes. Meanwhile, it is estimated that purposes should be regarded as the result of several factors of very diverse nature, which emphasize the fact that the identification of purposes is a difficult but important step in marketing research. In this context, consumer behavior can be addressed as a result of the combination of personal nature factors, such as attitudes, motives, personality traits and lifestyle, together with external situational (or market) factors. Among the latter, for the purpose of this study, in order to reveal the specificities of tourist activity, the promotion and influences among people are extremely important (Teodorescu, N., 2000,). We can refer to a common perspective of the specialists in marketing research and psycho-sociology on the existence of six classes or types of purposes:

(1) the membership purpose, expressing the wish to be associated with/ in the presence of certain persons;

(2) the purpose of acquisition, referring to the concern to acquire or accumulate goods/ services;

(3) the purpose of prestige, reflecting the desire to be perceived as being important to others;

(4) the purpose of power, expressing the desire to influence, determine or control other persons;

(5) the purpose of altruism, referring to the desire to help others;

(6) the curiosity purpose, perceived as the desire to know and explore the individual's living environment (Teodorescu, N., 2000,).

According to other opinions, purposes are classified as fundamental and selective. Fundamental purposes correlate with the satisfaction of needs, while selective purposes refer to the understanding of the choice of products and/ or brands, the latter being considered important for the promotion activity. Other specialist perspectives divide purposes in rational and emotional purposes. It is estimated that rational purposes explain consumer rationality and emotional purposes correlate with consumers' psychological needs. The psychological satisfaction becomes an increasingly important component in understanding consumer behavior.

Moreover, the concern related to the identification of purposes involves both identifying their nature and measuring their intensity. In marketing research, three methods can be used in order to measure the intensity of purposes, namely: by reasoning, by interview and by projective methods. Psychoanalysis tends to become an increasingly important method in motivational analysis. Furthermore, psychoanalysis specialists provide a wide range of symbols that can be widely used in promotional creation.

All categories of purposes mentioned above are present and manifest themselves in tourists' behavior. At the same time, we need to remember that every tourist has a plurality of purposes, combined differently, from one period to another, depending on many factors. Besides these features, we should add that the emotional reasons prevail in the tourist's choice (from which he/she expects to get maximum physiological and psychological satisfaction). This should be harnessed in the efforts to attract flows of tourists or to establish a tourist offer for every target segment of tourists.

According to Eurostat estimates (Eurostat - Data Explorer), in 2014, there were 1,042,713,719 persons traveling for personal touristic purposes (trips, personal purpose), to all world countries; these were residents from 25 EU member states, for which there were available statistical data for the respective year. Deducting the number of trips from the Slovak Republic, for which there is no information available under Eurostat data, for 2014, we compared the figures for this indicator, for 2014, with those from the previous year (2013). The result of this comparison indicates an increase in the total number of tourist trips done by EU residents by around 1.47%, but with very different situations from one country to another. Thus, the largest increases in the number of trips were recorded in Estonia (+ 34.1%), Greece (+ 15.7%), Latvia (+ 9.8%) and Luxembourg (+ 9.7%), while the most significant decreases were registered in Croatia (-13.7%), Germany (- 4.8%) and Bulgaria (-4.4%). The largest increase in this indicator, in absolute terms, was recorded in France (+2,301,495 trips), followed by Hungary (+1,256,722 trips), while the most significant decrease was registered in Germany (-10,037,778 trips), followed by Spain (-2,597,797 trips) and Finland (- 1,280,381 trips). As far as Romania is concerned, the recorded decrease was -4.1%, i.e. -322,360 trips.

2. Concepts, definitions and measurement indicators of international tourist traffic

In this paper, we processed Eurostat data (Eurostat Data Explorer) on the indicator "Number of trips by purpose". In our analysis, we included the 25 EU countries for which there were available data, for 2014, including the residents' trips from these countries, aged 15 years and over, whose trips lasted at least one day (a minimum of one night), with destinations in all countries.

The concepts and definitions used in our paper are according to the specifications described in the *Methodological manual for tourism statistics* (Eurostat Data Explorer).

3. Some definitions

The definitions used are those from the methodological framework of IRTS 2008- (International Recommendations for Tourism Statistics (Eurostat Data Explorer).

Thus, "tourism refers to the activity of visitors" and "is a subset of travel". Traveler is the person who moves between different locations, for any reason and any duration. Visitor is the traveler moving towards a main destination, besides its usual environment, for less than one year, for any other motivation (business, leisure or other personal purpose) other than to be remunerated/ employed in the destination country or place. Travel can occur within a country or region (domestic travel) or involve more than one country (international travel). In relation to a country and a measurement at the border, an inbound traveler is an arriving non-resident whereas an outbound traveler is a resident who is leaving the country.

Trips taken by visitors are tourism trips. A domestic or an outbound tourism trip refers to the travel of a visitor from the time of leaving his/her usual residence until he/she returns: it thus refers to a round-trip. "Outbound tourism" means residents of a country travelling in another country.

By tourism, we understand the visitors' activities, who travel to another destination, outside their usual environment, for less than one year, for various reasons, including business, leisure or other professional purposes, other than to be employed by a resident entity in the place visited.

Duration of the trip should usually be expressed in terms of nights. If there is no overnight, then the visitor is an excursionist; when there is an overnight stay, then he/she is a tourist.

According to the methodology used by Eurostat, participation in tourism for personal purposes means the number of residents, aged 15 or over, having made at least 1 trip of at least 1 overnight stay.

The main **destination** (place, country) should be separated from other destinations. The main destination is related to the main trip purpose and, therefore, the main destination should be defined as the place that the visitor considers as the main destination (Eurostat Data Explorer)..

4. Research methodology

Factorial Correspondences Analysis is a descriptive method of multivariate analysis that characterizes the nonnumeric (categorical) connections between two variables. In our study, these two variables (categories) are country of residence and trip purpose.

The method aims at describing the statistical connection (of the associations) between two nonnumeric (categorical) variables and highlighting the similarities or differences between statistical units. The method also allows the identification of the variables "responsible" of these proximities or oppositions of units, using a factorial axes system that, based on a large data set, focus the initial information in an easy to read graphical representation (Everitt, B., Dunn, G., 2001).

The method involves the following steps:

• Calculating the category profiles of the first variable (in our study we refer to the relative frequencies of the category "country of residence"), which shows the distribution of the categories of the other variable ("trip purpose") among the categories of the first variable. This step also includes calculating the category shares of the first variable and the marginal proportions of categories, which indicates their share in total units observed. The same process applies to the second variable.

• Calculating the distances between points, respectively the distances between categories of variables, represented in the same metric area.

• Looking for a multidimensional area that adjusts best the points and the distances between them.

One of the FCA objectives is to analyze the connections between the two variables, i.e. the associations between "the country of residence" and "trip purpose". Two variables are independent if, for each value x_i, and y_j, the distribution of the statistical units, for the values of variables X and Y, is performed in the same proportion. Testing the hypothesis of independence or dependence between the variables considered involves the formulation of the following statistical hypotheses:

• The null hypothesis, H_0, which admits that there is an independence between the variables considered (there are no connections between statistical variables);

• The alternative hypothesis, $H_{1,}$, which admits that the variables are dependent (there are connections between statistical variables) (Spircu, L., 2005).

The graphical representation of the row and column profiles is carried out in an Euclidean space of reduced dimensions, providing a perceptual map, where the categories with similar distributions occupy close positions, and different types of distributions are placed in distant positions. This shows that the proximity of the two row profiles (column profiles) indicates an association between them. The interpretation of proximity is made cautiously because the proximity of the points

represented by them does not always show significant connections. Categories are represented as points in a low dimensional space, and the factorial axes are ordered (ranked) in a descending order, according to their contribution (importance) in explaining the total variance of the cloud of points obtained (Spircu, L., Calciu, M., Spircu, T., 1994).

5. Data, Results and Comments

In order to conduct the factorial correspondences analysis for the indicator "number of trips", according to the main trip purpose (personal purpose), for 25 European countries, in 2014, we included in our analysis two nonnumeric variables, i.e. "country of residence" and "trip purpose". It is noteworthy that the analysis was performed only for personal trips, using 3 categories of purposes, i.e. "Holidays, leisure and recreation", "Visits to friends and relatives" and "Other (e.g. pilgrimage, health treatment)". After data processing, by FAC, we obtained the statistical indicators calculated for the row-points and the column-points, and the graphical representation of these points in the system of factorial axes (Pintilescu, C., 2007). Table 1 shows the distribution of the number of trips according to the main trip purpose, depending on the country of residence, in 2014.

The data presented in Table 1 reveal that the highest values of the indicator "number of trips", for personal trips (column active margin), were recorded by the tourists coming from France (205,903,787), Germany (197,188,861) and Spain (118,949,657), while the lowest values were registered by the tourists coming from Malta (436,331), Luxembourg (1,540,940) and Cyprus (2,270,230), which is normal, considering the correlation with the population size of each of these countries. Of the 25 analyzed countries, it is noticed that Romania ranks 10th, with a number of 16,855,253 trips, at considerable distance from Bulgaria (the 20th place), with only 3,578,596 trips.

The interpretation of the values in the columns that represent the three categories of analyzed purposes reveals the following aspects:

• For the trip purpose "Holidays, leisure and recreation", the highest values of the indicator "number of trips" were registered by the tourists residing in Germany (112,612,934), France (90,382,994) and Spain (69,097,326), while the lowest values were registered by the tourists residing in Malta (388,663), Luxembourg (1,071,892), Estonia (1,532,514), Lithuania (1,562,942) and Cyprus (1,602,795). Romania, with 6,459,699 trips, ranked 10th, i.e. in the first half of the ranking.

• For the trip purpose "Visits to friends and relatives", the highest values were recorded by tourists residing in France (102,336,950), Germany (76,914,580) and Spain (42,023,987), while the lowest values were registered by the tourists residing in Malta (30,598), Luxembourg (395,460) and Cyprus (485,906). Romania, with 9,921,628 trips, ranked 10th.

• For the trip purpose "Other (e.g. pilgrimage, health treatment)", the highest values were recorded by the tourists residing in France (13,183,843), Spain (7,828,344) and Germany (7,661,347), while the lowest values were recorded by the tourists residing in Malta (17,070), Estonia (35,806) and Luxembourg (73,588). Romania, with 473,926 trips, ranked 13th.

A further analysis can be achieved based on the data contained in Table No. 2, which presents the distribution of the share of the number of trips made by the tourists coming from every European Union country, according to the feature "trip purpose", in total number of trips recorded by each country.

The shares in this table are calculated as the ratio between the number of tourist trips, by trip purpose, recorded by each country of residence (values are found on each row in Table 1) and the total number of trips registered by each country for all categories of purposes (column Active Margin of Table 1). These values indicate the share of each category of purposes mentioned by the tourists from the countries analyzed, done privately, for destinations outside their country of residence (row profile). In other words, these values show the importance paid by the tourists from every country, to every category of purposes, in choosing the purposes for their personal trips abroad.

The values presented on the last row (Mass) of Table 2 indicate the general ranking of the 25 analyzed countries, by the trip purposes, for all the tourists coming from these countries. It is revealed that, the first position, in the top of trip purposes, is held by the trips performed for "Holidays, leisure and recreation", with a share of 53.7%; the second position belongs to "Visits to friends and relatives", with a share of 41.4%. The third position, far away from the first two places, belongs to the trips performed for "Other purposes (e.g. pilgrimage, health treatment)", with a share of 4.9%. If we select only the first three countries, depending on the number of trips (shown in Table 1), the distribution of the share of the personal trip purposes is as follows (see Table 2):

- France, the first country in terms of the total number of trips made for personal purposes (205,903,787, see Table 1), has the following structure: 43.9% of all trips were motivated by "Holidays, leisure and recreation"; 49 7% were motivated by "Visits to friends and relatives", and 6.4% were motivated by "Other (e.g. pilgrimage, health treatment)".
- Germany, the second country in terms of the number of trips (197,188,861), has the following

structure: 57.1% were motivated by "Holidays, leisure and recreation"; 39% were motivated by "Visits to friends and relatives", and 3.9% were motivated by "Other (e.g. pilgrimage, health treatment)".
- Spain, the third country in terms of the number of trips (118,949,657), has the following structure: 58.1% were motivated by "Holidays, leisure and recreation", 35.3% were motivated by "Visits to friends and relatives", and 6.6% were motivated by "Other (e.g. pilgrimage, health treatment)".
It is noteworthy that most countries retain the overall hierarchy of trip purposes (the last row of Table 2). Moreover, the distance between the values that express the share (or importance) of each category of trip purpose is relatively large and different from one country to another. As exceptions, we can mention that, in some countries, such as Denmark Estonia, France, Latvia, Lithuania, Poland, Portugal and Romania, the main trip purpose is "Visits to friends and relatives" and second position is held by the purpose "Holidays, leisure and recreation". For this segment of countries, it may be noticed that the shares recorded for each country, in terms of the trip purposes situated on the first two positions, are relatively close. The cause of this situation may be different from one country to another. As far as Romania is concerned, we believe that the explanation of the large number of Romanians' tourist trips abroad, with the purpose "Visits to friends and relatives", is related to the existence of about 3 million Romanians working in different European countries, especially Spain, Italy, France etc. and their relatives, mainly parents, children, and other members of their families, visit them in many situations, in order to take care of the children of the Romanians working in these countries. Also, a growing number of young Romanians study abroad and their parents often go to visit them in the countries where they study.
Moreover, the analysis of the data from Table 2, from each row, reveals the ranking of the trip purposes of the tourists from each analyzed country and, on this basis, we can establish the country's profile in terms of the purposes underlying the choice for personal trips. A statistical association between two countries (two row profiles) shows a similar distribution (a similar structure) in the share of each category of trip purpose, in each country.
Thus, by analyzing the data in Table 2, we noticed that certain countries show values similar to the share of each category of trip purpose and, on this basis, it can be considered that those countries show similar distributions. This grouping of countries actually reveals a segmentation, which represents a useful step in the analysis of the tourism market. We appreciate that the tourists within each segment show similarities in terms of the choice of their trip purpose or of the importance given to each type of trip purpose (because, as already mentioned, it registers values equal or close to these shares). Knowledge of the already mentioned aspects can be useful in marketing, for example, in the composition/ structure of the tourist offer and promotion activity, corresponding to the desires/ expectations of the tourists from each of these segments.
In the reverse situation, where distributions are different and structures are not similar, the points (countries) will be situated far away from each other. An example of countries (data from Table 2) showing differences in the share of the number of trips by the trip purpose "Holidays, leisure and recreation" is represented by Belgium (86.3%) and Romania (38, 3%). For the purpose "Visits to friends and relatives", the example is given by the difference between Romania (58.9%) and Malta (7%); for the purpose "Other (e.g. pilgrimage, health treatment)", we underline the difference between Croatia (16.4%) and Denmark (0.03%).
The shares in Table 3 are calculated as the ratio between the number of trips by trip purpose, registered in the country of residence (values presented each row in Table 1) and the total number of trips recorded for each category of purpose (row Active Margin, in Table 1). Based on the data presented in the last column (Mass) of Table 3, we can establish a hierarchy of countries, depending on the value of the share of trips based on private purposes. It is noteworthy that the tourists residing in France (23.6%), Germany (22.6%) and Spain (13.6%) made most trips for personal purposes, while the tourists residing in Luxembourg (0.2), Cyprus (0.3), Bulgaria (0.4), Estonia (0.4), and Lithuania (0.4) made fewer trips for personal purposes.
At the same time, analyzing the data from each column, which represents the trip purpose, we can consider that each value reflects the attraction exerted by each category of trip purpose made by the tourists from each country. The values from Table 3, which shows the distribution of the shares of the trips made by the tourists from each country, in each of the three analyzed categories of trip purposes, reveal the following:
- the trip purpose "Holidays, leisure and recreation" attracts, on the first three positions, the tourists from Germany (24.4%), France (19.5%) and Spain (14.7%);
- the trip purpose "Visits to friends and relatives" attracts, on the first three positions, the tourists from France (28.3%), Germany (21.3%) and Spain (11.6%) (it is noteworthy that the top three countries from the trip purpose presented above also hold the first three positions for this second trip purpose, but in a different order, for the first two positions);
- the trip purpose "Other (e.g. pilgrimage, health treatment)" attracts, on the first three positions, the

tourists from Germany (24.4%), Poland (11.1%) and Spain (10.1%) (this time, it is noteworthy that France is no longer among the first three countries). We also believe that the data in this table are useful for another type of tourist market segmentation. This time, the segmentation criterion is represented by the attraction of each category of trip purpose exerted on tourists, depending on their country of residence. Thus, the attraction of the trip purpose "Holidays, leisure and recreation" shows similar values and the following segments can be formed: one of the tourists coming from Italy (6.4%) and the Netherlands (6.2%); another segment consists of tourists from Czech Republic (3,8%) and Finland (3.5%). Another segment consists of the tourists from Austria (2.9%) and Denmark (2.8%); another segment is made of the tourists from Romania (1.4%), Ireland (1.3%) and Portugal (1.3%). Among the segments that present the lowest shares we mention the segment of tourists from Latvia (0.4%) and Bulgaria (0.4%), and another segment made of the tourists from Luxembourg (0.2%), Cyprus (0.3%), Lithuania (0.3%) and Malta (0.1%).

It can be said that the trip purpose "Visits to friends and relatives" exerts a greater attraction on the segment of the tourists residing in France (28.3%), Germany (21.3%) and Spain (11.6%). Another segment includes Poland (6.4%), Denmark (4.7%), Italy (4.3%), Finland (3.9%), Czech Republic (3.6%), Netherlands (3%); another segment includes Romania (2.7%), Hungary (2.2%), Portugal (1.8%), Austria (1.1%), Ireland (0.9%), Croatia (0.7%), Latvia (0.6%), Estonia (0.5%), Lithuania (0.5%). The lowest attraction is exerted on the segment of the tourists residing in Belgium (0.4%), Bulgaria (0.4%), Greece (0.4%), Slovenia (0.2%), Cyprus (0.1%), Luxembourg (0.1%) and Malta (0%).

As far as the trip purpose "Other (e.g. pilgrimage, health treatment)" is concerned, it can be said that it exerts a greater attraction on the segment of the tourists residing in France (31%), Spain (18.4%), Germany (18%). It exerts the lowest attraction on the segment of the tourists residing in Bulgaria (0.5%), Belgium (0.4%), Cyprus (0.4%), the Netherlands (0.2%), Denmark (0.2%), Luxembourg (0.2%), Slovenia (0.2%), Estonia (0.1%), Malta (0%).

Commenting on the data presented above, it can be said that the trip purpose "Holidays, leisure and recreation" exerts a greater attraction on the segment of the tourists residing in Italy and the Netherlands. Moreover, it exerts the lowest attraction on the segment of the tourists residing in Luxembourg, Cyprus and Lithuania. On the one hand, the trip purpose "Visits to friends and relatives" exerts the greatest attraction on the segment of the tourists residing in France and Germany and the lowest attraction is exerted on the segment of the tourists residing in Slovenia, Cyprus, Luxembourg and Malta. On the other hand, the trip purpose "Other (e.g. pilgrimage, health treatment)" exerts the highest attraction on the segment of the tourists residing in France, Spain and Germany, and the lowest attraction is performed on the segment of the tourists residing in the Netherlands, Denmark Luxembourg, Slovenia, Estonia, Malta.

A similar distribution (close structures) indicates a statistical association between two or more column-profiles (respectively, trip purposes). (Spircu, L., 2005) Given, on the one hand, that this analysis included only 3 trip purposes (see Table 2), and, on the other hand, the large number of analyzed countries (25), it is quite difficult to identify similar distributions in terms of trip purposes, in order to assess the strength of their association.

In order to apply the factorial correspondences analysis, it is necessary to test the hypothesis of independence between the studied variables: country of residence and trip purpose. Testing this hypothesis is based on the calculated statistics value χ^2 and requires the formulation of the following statistical hypotheses:

• The null hypothesis, H_0: the hypothesis of the independence of variables (there are no connections between the country of residence and the trip purpose);

• Alternative hypothesis, H_1: the hypothesis of the dependence of variables (there are connections between the country of residence and the trip purpose) (Field, A., 2009).

The very high calculated value of the test statistics presented in Table 4, Column Chi Square (44,655,264.509) χ^2 and sig = 0.000 <0.05 indicates that the hypothesis H_0 is rejected. Thus, with a probability of 95%, we can ensure that, in terms of the number of trips, there are connections between the variables considered, namely between the country of residence and the trip purpose.

The connections between these variables will be described by the results achieved following the application of the factorial correspondences analysis for the row-profiles and the column-profiles.

In factorial analysis, the main objective is to search the axis that highlights the greatest differences between statistical units, according to the recorded variables. The maximum value of the inertia (spreading) of the point cloud explained this axis is achieved by the first factorial axis. Basically, the units with the greatest scattering (spreading) are grouped on this axis. Each factorial axis is ranked in descending order, according to the dispersions of the individuals' projections on these axes (Pintilescu, C., 2007).

The eigenvalues are the variance explained by each factorial axis and the eigenvectors associated with these values define the factorial axes. The highest

eigenvalue (column Inertia) shows the variance of the first factorial axis, and the sum of eigenvalues measures the total inertia of the cloud of points.
For the output shown in Table 4, the highest eigenvalue (column Inertia) is 0.039. The sum of eigenvalues is 0.051 (total variance). The inertia (variance) explained by each factorial axis is shown in column *Proportion of Inertia.* The first factorial axis explains 76.7% of the total variance. The choice of the number of factorial axes is performed in the AFC, according to Benzécri's criterion: we choose those factorial axes that explain at least 70% of the total variance. In this situation, we need a single factorial axis (Benzecri, J. P., 1992).
For each category of variables (country of residence and trip purpose), we calculate the coordinates on the factorial axes and the contributions of points to the inertia of an axis.

A. AFC results on the variable "country of residence" (*Overview Row Points* output)

The coordinates of the two factorial axes (column *Score in Dimension*) show the position of the points in the area represented by the axes.
By analyzing the contributions of the points on the factorial axes in Table 5 (column *Contribution of Point to Inertia of Dimension*), we emphasized the countries among which there are differences regarding the number of trips in terms of trip purposes, namely: France Denmark, Romania and Poland, on the one hand and, on the other hand, Bulgaria, Italy, Netherlands, Austria. These points will be located in different quadrants (see Figure.1)
The contribution of a point to the explained inertia of a factorial axis (Column *Contribution of Point to Inertia of Dimension*) shows the contribution of the category (tourists' country of residence) to the dispersion of the factorial axis. The points with high contribution on a factorial axis (those with a contribution higher than 1/m = 1/25 = 0.04) are those points that contribute to that axis (column *Contribution Of Point to Inertia of Dimension*, Table 5). These are called explanatory points of the formation of the respective axis and they exert the greatest influence in defining the profile (structure) of the trip purpose or the profile of the country of residence (Everitt, B., Dunn, G., 2001).
Thus, the first factorial axis, which we have included in our analysis, in accordance with Benzecri's criterion, is explained in a proportion of 23.3% by France, 16.3% by the Netherlands, 15% by Belgium, 9.3% by Austria, 6% by Poland, 5.6% by Italy, 4.7% by Romania and 4.2% by Denmark. The AFC method allowed us to identify these countries as the most distinguished in the group of the 25 countries analyzed in terms of trip structure, expressed in "nights by purpose".
At the same time, the AFC method helped us, on the one hand, to reveal that there are countries similar in terms of structure, based on the tourists' trip purpose, and, on the other hand, to observe the countries among which there are large differences.
Refining the information by Benzecri's criterion, we could say that the greatest differences occur between: France, on the one hand, and Belgium and the Netherlands, on the other hand;
Moreover, the greatest similarities are observed between France, Denmark, Poland and Romania and between Belgium, the Netherlands, Italy and Austria.

B. The AFC results on the variable "trip purpose" (Overview Column Points output)

By analyzing the coordinates of the points on factorial axes, we highlighted the purpose categories among which there are the greatest differences (Spircu, L., 2005).
Based on the results obtained and presented in Table 6 (column *Contribution Of Point to Inertia of Dimension* 1) we found that the greatest differences in terms of destination countries are recorded among the resident tourists who travel driven by the purposes "Holidays, leisure and recreation" and "Visits to friends and relatives".
After analyzing the associations between the results for the row points and the column points, we can state that the tourists residing in Belgium, the Netherlands, Italy and Austria traveled driven especially by the purpose "Holidays, leisure and recreation", and were less attracted by the purpose "Visits to friends and relatives". In contrast, the tourists residing in France, Denmark, Poland and Romania were driven by the main trip purpose "Visits to friends and relatives", but were less attracted by the purpose "Holidays, leisure and recreation".

6. Conclusions

In our study, we aimed, on the one hand, to reveal, under a theoretical approach, that purpose and motivation are addressed as multidimensional concepts, used for understanding consumer behavior, knowing that the decision of choice/ purchase is based on purposes.
On the other hand, we have conducted our research by the AFC method, on the indicator "number of trips" made according to the main trip purpose (personal purpose) for 25 European countries, in 2014. In this research, we included the analysis of two nonnumeric variables, i.e. "country of residence" and "trip purpose". The AFC method allowed us to check (with a probability of 95%) that, in terms of the number of trips, there is a connection between the variables considered, namely between the country of residence and the trip purpose.
The results of this research include:
- we have determined the importance given by the tourists from each country to every category of purpose in choosing the trips abroad made with personal purposes;

-this aspect allowed us to rank the trip purposes of the tourists from each analyzed country. Furthermore, we conducted a first segmentation of countries, according to the criterion "hierarchy of the trip purposes on each analyzed country". Thus, we have identified several segments of countries showing strong similarities in terms of the hierarchy of trip purposes. We believe that the countries from each segment have a similar motivational profile;
- we have conducted another tourist market segmentation; this time, the segmentation criterion was represented by the attraction exerted by each category of trip purposes on tourists, depending on their country of residence. We identified, on the one hand, the segments of countries (or segments of tourists residing in different countries) that are most attracted by each of the three categories of trip purposes and, on the other hand, the segments of countries that are the least attracted by each category of trip purposes;
- we identified the countries that are distinguished in the group of the 25 countries analyzed in terms of trip structure, by the trip purpose, expressed in "nights by purpose";
- we noticed that there are similar countries in terms of structure, based on the tourists' trip purpose; however, we noticed that there are large differences between some countries.

If we refer only to Romania's situation, our research revealed the following aspects:
- it ranks 10th (out of the 25 analyzed countries), in the ranking by the number of trips, in 2014 (recording 16,855,253 trips);
- it ranks 10th (in terms of the number of trips), as far as the trip purpose "Holidays, leisure and recreation" is concerned. It also ranks 10th in terms of the trip purpose "Visits to friends and relatives"; it ranks 13th in terms of the trip purpose "Other (e.g. pilgrimage, health treatment)";
- the ranking of the Romanian tourists' trip purposes is different compared to the ranking of most of the analyzed countries. The first position is held by the purpose "Visits to friends and relatives" (with a share of 58.9%, in the top choices), the second position is held by "Holidays, leisure and recreation" (with a share of 38.3%) and third position belongs to the purpose "Other (e.g. pilgrimage, health treatment)" (with a share of 2.8%). We have also formulated several possible explanations for the fact that most Romanians travel abroad driven by the purpose "Visits to friends and relatives".

Knowledge of the preferences (as the main purposes for traveling abroad) of the tourists from different countries is particularly useful in guiding the efforts to promote tourism offers in each destination country. For example, if a certain country intends, especially, to promote its tourism offers for the purpose "Holidays, leisure and recreation", then the tourism promotion efforts should be directed towards those target markets represented by the countries where a large number of potential tourists have such trip purposes. In contrast, if a country's touristic offer includes destinations with "health tourism" packages, the priority, as target markets, for attracting tourists, will be those countries where a significant number of residents had, in recent years, such purposes.

Regarding Romania, we believe that the efforts to promote abroad its tourist supply should focus primarily on attracting more foreign tourists who come to our country driven by the trip purpose "Holidays, leisure and recreation". We should capitalize better the tourist potential of the Romanian coast (where, in recent years, the share of foreign tourists was modest, less than 10% of the total arrivals of tourists), of the Delta, of mountain resorts, of rural destinations etc. On the other hand, we believe that, given the Romanian special tourism potential, as far as the natural treatment factors are concerned, and the fact that, in recent years, there have been made significant investments in modernizing several treatment resorts and in building new ones, an effort to promote Romania's tourism should be channeled into promoting these destinations on those European markets with tourists driven by the purpose "health treatment".

References

[1] Benzecri, J. P., 1992, *Correspondence Analysis Handbook*. New-York.
[2] Datculescu, P., 2006 - *Cercetarea de marketing. Cum patrunzi in mintea consumatorului, cum masori si cum analizezi informatia*. Editura Brandbuilders Grup, Bucuresti,
[3] Everitt, B., Dunn, G., 2001, *Applied Multivariate Data Analysis*. Arnold, London.
[4] Field, A., 2009, *Discovering Statistics Using SPSS*. Sage Publications Ltd., London.
[5] Florescu, C., Malcomete, P.; Pop, Al. N.(coord.),2003, *Marketing - Dictionar Explicativ*, Editura Economica, Bucuresti,
[6] Pintilescu, C., 2007, *Analiză statistică multivariate.* [Multivariate analysis]. Editura Universităţii Alexandru Ioan Cuza, Iaşi.
[7] Spircu, L., 2005, *Analiza datelor-Aplicaţii economice* [Economic Data Analysis Applications]. Editura ASE, Bucureşti.
[8] Spircu, L., Calciu, M., Spircu, T., 1994, *Analiza datelor de marketing* [Analyzing marketing], Editura All, Bucureşti.
[9] Teodorescu, N., 2000, *Comportamentul consumatorului: cercetare calitativă și cercetare motivațională*, Editura ASE, București
[10] Eurostat - Data Explorer, http://appsso.eurostat.ec.europa.eu /nui/submitViewTableAction.do

[11]http://appsso.eurostat.ec.europa.eu /nui/submitViewTableAction.do
[12] http://ec.europa.eu/eurostat/documents/3859598/5925845/KS-GQ-13-007-EN.PDF
[13] http://unstats.un.org/unsd/trade/IRTS/IRTS%202008%20unedited.pdf, New York/Madrid, 2008, Series M, No.83/Rev.1
[14] http://ec.europa.eu/eurostat/cache/metadata/en/tour_dem_esms.htm

Table no. 1 Correspondence Table for the number of trips, by their main purpose, for the main EU emitting countries, in 2014

Country	Purpose			
	Holidays, leisure and recreation	Visits to friends and relatives	Other (e.g. pilgrimage, health treatment)	Active Margin
Belgium	10411570	1490912	164526	12067008
Bulgaria	2060717	1315538	202341	3578596
Czech Republic	17850044	12956258	635733	31442035
Denmark	12942489	17172350	96969	30211808
Germany	112612934	76914580	7661347	197188861
Estonia	1532514	1717646	35806	3285966
Ireland	6057380	3335124	1438259	10830763
Greece	4003642	1537104	430969	5971715
Spain	69097326	42023987	7828344	118949657
France	90382994	102336950	13183843	205903787
Croatia	2952779	2604106	1092938	6649823
Italy	29894267	15527253	1459709	46881229
Cyprus	1602795	485906	181529	2270230
Latvia	1862369	2157011	350360	4369740
Lithuania	1562942	1666466	511062	3740470
Luxembourg	1071892	395460	73588	1540940
Hungary	8139252	8005210	415579	16560041
Malta	388663	30598	17070	436331
Netherlands	29049859	10993162	157441	40200462
Austria	13664322	4118055	558419	18340796
Poland	20162229	23329599	3109293	46601121
Portugal	5880508	6592357	730371	13203236
Romania	6459699	9921628	473926	16855253
Slovenia	3115025	835154	94656	4044835
Finland	16378037	14241570	1651274	32270881
Active Margin	469136248	361703984	42555352	873395584

**source: Elaborated using SPSS programme*

Table no. 2 Row profile table for trip purpose, by the country of residence (Row Profiles output)

country	Purpose			
	Holidays, leisure and recreation	Visits to friends and relatives	Other (e.g. pilgrimage, health treatment)	Active Margin
Belgium	.863	.124	.014	1.000
Bulgaria	.576	.368	.057	1.000
Czech Republic	.568	.412	.020	1.000
Denmark	.428	.568	.003	1.000
Germany	.571	.390	.039	1.000
Estonia	.466	.523	.011	1.000
Ireland	.559	.308	.133	1.000
Greece	.670	.257	.072	1.000
Spain	.581	.353	.066	1.000
France	.439	.497	.064	1.000
Croatia	.444	.392	.164	1.000
Italy	.638	.331	.031	1.000
Cyprus	.706	.214	.080	1.000
Latvia	.426	.494	.080	1.000
Lithuania	.418	.446	.137	1.000
Luxembourg	.696	.257	.048	1.000
Hungary	.491	.483	.025	1.000
Malta	.891	.070	.039	1.000
Netherlands	.723	.273	.004	1.000
Austria	.745	.225	.030	1.000
Poland	.433	.501	.067	1.000
Portugal	.445	.499	.055	1.000

Romania	.383	.589	.028	1.000
Slovenia	.770	.206	.023	1.000
Finland	.508	.441	.051	1.000
Mass	.537	.414	.049	

**source: Elaborated using SPSS programm*

Table no. 3 Column profiles table for the share of the trips registered per country of residence, by trip purpose (Column Profiles output)

Column Profiles

country	Purpose			
	Holidays, leisure and recreation	Visits to friends and relatives	Other (e.g. pilgrimage, health treatment)	Mass
Belgium	.022	.004	.004	.014
Bulgaria	.004	.004	.005	.004
Czech Republic	.038	.036	.015	.036
Denmark	.028	.047	.002	.035
Germany	.240	.213	.180	.226
Estonia	.003	.005	.001	.004
Ireland	.013	.009	.034	.012
Greece	.009	.004	.010	.007
Spain	.147	.116	.184	.136
France	.193	.283	.310	.236
Croatia	.006	.007	.026	.008
Italy	.064	.043	.034	.054
Cyprus	.003	.001	.004	.003
Latvia	.004	.006	.008	.005
Lithuania	.003	.005	.012	.004
Luxembourg	.002	.001	.002	.002
Hungary	.017	.022	.010	.019
Malta	.001	.000	.000	.000
Netherlands	.062	.030	.004	.046
Austria	.029	.011	.013	.021
Poland	.043	.064	.073	.053
Portugal	.013	.018	.017	.015
Romania	.014	.027	.011	.019
Slovenia	.007	.002	.002	.005
Finland	.035	.039	.039	.037
Active Margin	1.000	1.000	1.000	

**source: Elaborated using SPSS programme*

Table no.4 The value of statistics χ^2, the eigenvalues and the inertia explained by each factorial axis (Summary output)

Summary

Dimension	Singular Value	Inertia	Chi Square	Sig.	Proportion of Inertia		Confidence Singular Value	
					Accounted for	Cumulative	Standard Deviation	Correlation 2
1	.198	.039			.767	.767	.000	.010
2	.109	.012			.233	1.000	.000	
Total		.051	44655264.509	.000[a]	1.000	1.000		

a. 48 degrees of freedom

**source: Elaborated using SPSS programme*

Table no. 5 AFC results on the variable "country of residence of the foreign tourists arriving in Romania)

Overview Row Points[a]

country	Mass	Score in Dimension		Inertia	Contribution				
		1	2		Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		
					1	2	1	2	Total
Belgium	.014	-1.468	.003	.006	.150	.000	1.000	.000	1.000
Bulgaria	.004	-.174	-.173	.000	.001	.001	.646	.354	1.000
Czech Republic	.036	-.139	.366	.001	.004	.044	.207	.793	1.000
Denmark	.035	.488	.828	.004	.042	.217	.386	.614	1.000
Germany	.226	-.153	.090	.001	.027	.017	.839	.161	1.000
Estonia	.004	.317	.658	.000	.002	.015	.296	.704	1.000
Ireland	.012	-.096	-1.253	.002	.001	.178	.011	.989	1.000
Greece	.007	-.599	-.547	.001	.012	.019	.685	.315	1.000
Spain	.136	-.196	-.316	.003	.026	.124	.412	.588	1.000
France	.236	.443	-.070	.009	.233	.010	.987	.013	1.000
Croatia	.008	.424	-1.532	.002	.007	.164	.122	.878	1.000
Italy	.054	-.453	.099	.002	.056	.005	.974	.026	1.000
Cyprus	.003	-.759	-.715	.000	.008	.012	.672	.328	1.000
Latvia	.005	.501	-.284	.000	.006	.004	.850	.150	1.000
Lithuania	.004	.541	-1.089	.001	.006	.047	.309	.691	1.000
Luxembourg	.002	-.714	-.232	.000	.005	.001	.945	.055	1.000
Hungary	.019	.204	.413	.001	.004	.030	.307	.693	1.000
Malta	.000	-1.592	-.409	.000	.006	.001	.965	.035	1.000
Netherlands	.046	-.837	.362	.007	.163	.055	.907	.093	1.000
Austria	.021	-.937	-.058	.004	.093	.001	.998	.002	1.000
Poland	.053	.471	-.099	.002	.060	.005	.976	.024	1.000
Portugal	.015	.413	.047	.001	.013	.000	.993	.007	1.000
Romania	.019	.692	.537	.002	.047	.051	.750	.250	1.000
Slovenia	.005	-1.050	.006	.001	.026	.000	1.000	.000	1.000
Finland	.037	.133	.011	.000	.003	.000	.997	.003	1.000
Active Total	1.000			.051	1.000	1.000			

**source: Elaborated using SPSS programme*

Table no. 6 AFC results on the variable "trip purpose"

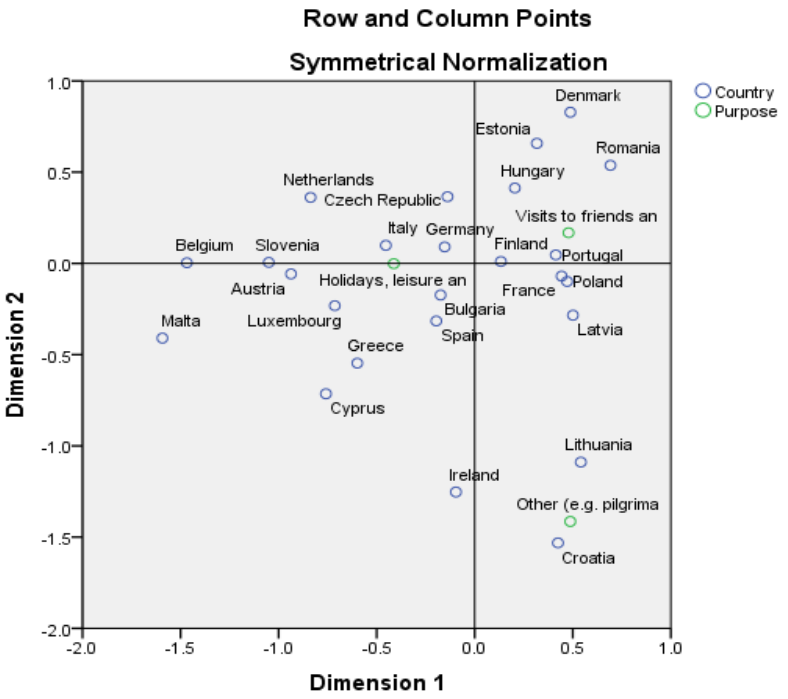
Overview Column Points[a]

Purpose	Mass	Score in Dimension		Inertia	Contribution				
		1	2		Of Point to Inertia of Dimension		Of Dimension to Inertia of Point		
					1	2	1	2	Total
Holidays, leisure and recreation	.537	-.413	-.001	.018	.463	.000	1.000	.000	1.000
Visits to friends and relatives	.414	.478	.168	.020	.479	.107	.936	.064	1.000
Other (e.g. pilgrimage, health treatment)	.049	.487	-1.415	.013	.058	.893	.177	.823	1.000
Active Total	1.000			.051	1.000	1.000			

a. Symmetrical normalization

**source: Elaborated using SPSS programme*

Figure no. 1


Row and Column Points
Symmetrical Normalization
Country
Purpose
Denmark
Estonia
Romania
Hungary
Netherlands
Czech Republic
Visits to friends an
Italy
Germany
Finland
Portugal
Belgium
Slovenia
Austria
Holidays, leisure an
France
Poland
Bulgaria
Malta
Luxembourg
Spain
Latvia
Greece
Cyprus
Lithuania
Ireland
Other (e.g. pilgrima
Croatia
Dimension 2
Dimension 1
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.0
-1.5
-1.0
-0.5
0.0
0.5
1.0