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# EMPIRICAL TESTING OF HOFSTEDE'S MEASURES OF NATIONAL CULTURE AND THEIR IMPACT ON LEADERSHIP IN FOUR COUNTRIES

Empirijsko testiranje Hofstedeovih merila nacionalnih kultura i njihovog uticaja na liderstvo u četiri zemlje

## Abstract

This paper presents the results of empirical investigation of the validity of Hofstede's measurements of national culture in Serbia, France, the Netherlands, and Denmark. In one multinational company the employees have taken part in the questionnaire the purpose of which was to investigate whether the relative relations between positions of the observed national cultures stayed the same when compared according to each of the four national culture dimensions as Hofstede had originally described. In addition, it has been also explored whether a national culture could, through its power distance dimension, be a relevant factor in the choice of leadership style in organizations. The results of the research have demonstrated that the positions of four national cultures and their relative relations have remained the same as Hofstede outlined them through his indexes in three out of four dimensions. The research has also shown that in the national cultures with high power distance, the employees prefer Likert's autocratic leadership styles (exploitative and benevolent), whereas in the cultures with low power distance they tend to choose democratic leadership styles (consultative and participative).

**Key words:** *national culture, cross-cultural research, leadership, Serbia, France, the Netherlands, Denmark*

## Sažetak

U radu se prezentiraju rezultati empirijske provere validnosti Hofstedeovih merila nacionalne kulture u Srbiji, Francuskoj, Holandiji i Danskoj. Anketiranjem zaposlenih u jednoj multinacionalnoj kompaniji proveravano je da li su pozicije i relativni odnosi njihovih nacionalnih kultura u tim zemljama, po svakoj od četiri dimenzije koje je identifikovao Hofstede, onakvi kakvima ih je on opisao. Uz to, proveravano je da li je nacionalna kultura preko svoje dimenzije distance moći relevantan faktor izbor stila vođstva u organizacijama. Rezultati istraživanja su pokazali da su pozicije četiri nacionalne kulture i njihov relativni odnos, po tri od četiri dimenzije, onakvi kakvim ih je Hofstede opisao kroz svoje indekse. Istraživanje je takođe pokazalo da u nacionalnim kulturama sa visokom distancom moći zaposleni preferiraju Likertove autokratske stilove vođstva (eksploativni i benevolentni), dok u kulturama sa niskom distancom moći biraju demokratske stilove vođstva (konsultativni i participativni).

**Ključne reči:** *nacionalna kultura, interkulturno istraživanje, liderstvo, Srbija, Francuska, Holandija, Danska*

## Introduction

The process of globalization has weakened the borders and intensified the flow of goods, information, and people between the states and nations. Thereby, globalization has highlighted the cultural differences between various nations and has made them visible, and thus it has initiated interest in national culture and its influence on the spheres of business and management. Research studies on this impact have gradually led to the creation of a completely new field of interest – cross-cultural management. The object of research studies in this field is differences between national cultures and the very impact that specific values of national cultures have on organization and company management.

Cross-cultural research studies in management were based in the 1970s, when the Dutch researcher *Geert Hofstede* conducted an extensive research on the national cultures. The results of his research were published in 1980 in his book *Culture's Consequences* (the second edition of this book was published in 2001 and it included the synthesis of all the research studies that were performed on the basis of the results from 1980). Although there were earlier writings about national cultures [11], they were mostly anthropological in character and did not have such valuable implications for management. Therefore, Hofstede is considered to be the pioneer in the cross-cultural research of management as well as its most famous author. Hofstede had actually performed an exploratory empirical research based on the sample of 115,000 employees in the branches of IBM multinational corporation in 40 countries around the world. The purpose of the research was to identify the dimensions in which national cultures differ, which also had the significant implications for business and management. The exploratory character of the research implied that Hofstede did not test the validity of the already given dimensions of national cultures, but that he identified these dimensions in the research itself.

Hofstede's research has been, and still is, the most fundamental research in cross-cultural research studies. Whenever a study is conducted on how a national culture affects motivation, leadership style, organizational structure or conflict resolution style, it always starts with

the dimensions of national cultures that were identified, defined and explained by Hofstede. One of the reasons for this is certainly the fact that Hofstede managed not only to describe the differences between the national cultures in their qualitative sense, but also to quantify them. Namely, he identified four main dimensions by which national cultures differ, and afterwards he determined the index for every dimension of national culture for each country that took part in his research. The index showed a country's position on the continuum between the two extreme poles of the cultural dimensions. Certainly, it is very suitable for every further research on the national culture's impact on management to have a quantified position of the national culture in each of the identified dimensions, and this is precisely what made Hofstede's research so popular worldwide. Serbia is lucky that Hofstede's research included the former Socialist Federal Republic of Yugoslavia, and this was only due to the fact that Yugoslavia was the only country of that time's Eastern Bloc where IBM had its branch. A very fortunate circumstance was also that IBM had its employees in Ljubljana, Zagreb, and Belgrade, and this enabled Hofstede to, after Yugoslavia fell apart, stratify the sample and calculate the indexes of the dimensions of the national cultures of Slovenia, Croatia, and Serbia [8].

After *Geert Hofstede* published his work, the research studies of national cultures mostly followed two directions. One group of authors strived to identify a different set of dimensions on the basis of which national cultures differ ([4], [16], [18], [19] as well as the group of authors gathered around the *GLOBE project* [10]). The other research direction in the sphere of intercultural management included the research studies based on the impact of individual dimensions of national culture on the individual components of management and organizations [1], [2], [3], [5], [10], [20].

Despite a huge popularity and influence, Hofstede's research failed to avoid many critiques. The most numerous were methodological in character: starting from the fact that the research was conducted in only one company due to which the organizational culture of the company affected the results, the fact that the sample was one-sided and the whole survey left out many Third World countries

as well as many communist countries, to the fact that there was a significant correlation between some of the dimensions which implied that they were not independent [19]. However, despite the criticisms, another factor occasionally occurs and questions the validity of using Hofstede's dimensions of national cultures in the cross-cultural research: time. In fact, the following question often arises: since national cultures change over time, are Hofstede's indexes of national cultures still valid and can they be used to study the influence of national culture on management? While some argue that due to changes within national cultures, Hofstede's indexes may at best be used with precaution, others claim that the changes in national cultures, if there are any, happen so slowly that the 40 years that have passed since Hofstede's study do not make a sufficient time-frame for any significant deviations in his indexes to occur.

The aim of this paper is to empirically test the position of national cultures of the four countries by using each of the Hofstede's dimensions of national culture, to determine the differences between the cultures and to determine whether the differences correspond to those that Hofstede had already found. Another purpose of this paper is to test Hofstede's assumption that national culture is an important factor when choosing the leadership style in organizations. In order to achieve these two goals, we will first present the dimensions of national cultures that Hofstede defined as well as the indexes of the national cultures of Serbia, France, the Netherlands, and Denmark which describe each country's position according to the Hofstede's dimensions. Afterwards, we will present the methodology of the empirical research that was conducted in the four countries which will be necessary for the presentation of the results of the research. In the following paragraphs we will discuss the obtained results, draw conclusions and underline the implications as well as the limitations of the research.

### The theoretical framework

*Hofstede* [8, p. 25] defined national culture as "... *mental programming: the pattern of thoughts, feelings and actions which every individual adopts in childhood and applies*

*throughout the entire lifetime.*" In order to deal with national culture's influence on organization and management, its substantial components that distinguish one culture from another must be identified. Those components are the dimensions of national cultures, which form the basic assumptions and values that constitute the culture's substance, define its specific nature and distinguish it from others. Hofstede's understanding of dimensions of national cultures is based on the ideas provided by *Kluckhohn* and *Strodtbeck* [11]. In their view, the basic assumptions and values that comprise dimensions of national cultures are, in fact, the answers to fundamental questions that every society faces.

Building on these ideas, *Hofstede* identified and described four fundamental dimensions, according to which national cultures worldwide can be differentiated [7], [6]. Society resolves the questions of authority and social inequality by accepting a premise about power distance. The question of individual-collective relation is resolved by locating the national culture at a specific position on a continuum between two extremes: individualism-collectivism. Social implications of male and female find their reflection in the dimension of national culture called masculinity-femininity. Finally, the manner in which a society reacts to uncertainties, changes, differences and conflicts is determined by the level of its uncertainty avoidance, as a dimension of national culture.

Power distance indicates the level in which society accepts the fact that power found in institutions and organizations is distributed unequally [7], [6]. Power distance reveals the manner in which a society has solved the problem of distribution of power, varying between egalitarianism (low power distance) and high level of authoritarianism (high power distance). High power distance indicates that unequal distribution of power in a society and its organizations is considered normal, useful and natural, and as something that should not or could not be changed. Unequal distribution of power in society is considered the only possible and natural state of affairs and a prerequisite for a functional society and its organizations. Low power distance implies the belief that it is most appropriate and useful for the society that the power is distributed equally to all of its members.

Uncertainty avoidance indicates the level of endangerment felt by the members of a society in uncertain, unclear and variable conditions [7], [6]. Uncertainty avoidance signifies the manner in which society deals with fundamental issues of changes, uncertainty and the unknown. In national cultures with low uncertainty avoidance, the level of tolerance to uncertainty, changes, risks, and ambiguity is relatively high. Differences are accepted and people’s curiosity, along with their willingness to try something new, is relatively high. National cultures with high uncertainty avoidance do not like changes, new things, differences, risks, and uncertainties. These cultures value stability, order, familiarity, repetition, and simplicity.

Individualism-collectivism answers the fundamental question that every society must deal with: the individual-collective relation. The crucial difference between individualism and collectivism concerns placing of the responsibility for one’s own destiny. Individualism considers every individual responsible for himself and his family. Conversely, collectivism – in a family, an organization and society in general alike – considers the collective responsible for its every individual. In collectivism, individuals believe they have the right to expect the collective to take care of them. In return, they owe complete loyalty to the collective and its leader. In individualism, an individual assumes himself responsible for his own destiny and does not see the collective as obliged to him. Individualist cultures base their identity on the individual, while collectivist cultures base theirs on the social system or the collective.

Masculinity-femininity dimension of national culture reveals society’s attitude toward doing and being. Cultures with prevailing value of masculinity appreciate action, accomplishment, results, determination, and aggressiveness. Since these values are often perceived as ‘masculine’, the cultures in which they dominate are called masculine

national cultures. These are the ‘doing cultures’ in which someone’s value is measured by his ability to earn money and his material prosperity. Feminine national cultures are those comprised of prevailing values such as relationships, quality of life, balance, and harmony. Since these values are often perceived as ‘feminine’, the cultures in which they dominate are called feminine national cultures. These cultures prefer harmonious relations and connections with natural and social environment.

All four countries that we have involved in our research were also included in Hofstede’s original research [7], [6] and hence we have the data on indexes of their national cultures for each of the four described dimensions. It is already noted that Yugoslavia was included in the original research and that Hofstede later on stratified the sample into three subsets which allowed him to calculate indexes for Slovenia, Croatia and Serbia [8]. Interestingly, though not surprisingly, the national cultures of these three new countries were very similar, with the only exception that refers to the fact that Slovenian culture is much more ‘feminine’ compared to Croatian and Serbian (masculinity index for Slovenia is 19, whereas indexes 40 and 43 refer to Croatia and Serbia respectively).

The comparison of national cultures of Serbia, France, Netherlands and Denmark, according to the results of Hofstede’s research, is presented in Table 1 that also contains the indexes of the national cultures of the four countries for each dimension.

With respect to power distance, we can clearly point out two groups of countries. Serbia and France have a high power distance when compared to the Netherlands and, in particularly, Denmark that have a low power distance. The situation is very similar when we speak about another dimension of national culture – uncertainty avoidance. Both Serbia and France have high uncertainty

**Table 1: The Hofstede’s indexes of four dimensions of national cultures: Serbia, France, the Netherlands and Denmark**

	Serbia	France	The Netherlands	Denmark
Power distance	86	68	38	18
Uncertainty avoidance	92	86	53	23
Individualism	25	71	80	74
Masculinity	43	43	14	16

Source: [17]

avoidance, while the Netherlands has a low to moderate, and Denmark has very low uncertainty avoidance. Serbia is the only country in our sample that has a collectivistic culture due to its low index of individualism. All the other three above mentioned countries have a highly expressed individualism in their national cultures. Ultimately, masculinity indexes follow the power distance pattern because both Serbia and France have medium to medium-high levels of feminine values, whereas the Netherlands and Denmark are noticeably feminine cultures.

When analyzing national cultures by taking each country as a whole, we can notice two tandems: Serbia and France on one end, and the Netherlands and Denmark on the other. Serbia and France are similar in three out of four dimensions of national cultures. These two countries only differ in the aspects of collectivism versus individualism. On the other hand, the Netherlands and Denmark are alike in all four dimensions, yet the Netherlands does not have such low values of power distance and uncertainty avoidance like Denmark does. The Netherlands and Denmark are different from France in all dimensions except for the degree of individualism, while Serbia differs from them in all four dimensions.

Bearing in mind that our research has had two purposes, we have formulated two research questions. The first question that has been investigated is whether the national cultures of the four countries included in the sample indeed follow the pattern revealed by Hofstede. Or, in other words, are the indexes of the four national cultures that Hofstede had determined still valid. Given the limitations of the sample, instrument and method of the research, we have been unable to precisely establish whether the indexes of the national cultures were correctly determined and whether their values corresponded to the current state of affairs. But, we have in fact managed to determine whether the pattern of the relative relations between the four chosen countries is still valid. In other words, we have not been able to determine if the power distance indexes are still 86, 68, 38 and 18 for Serbia, France, the Netherlands and Denmark respectively. However, what we could ascertain is whether Serbia has the highest and Denmark the lowest power distance, and whether Serbia and France have a significantly higher power distance in

comparison to the Netherlands and Denmark, as Hofstede claimed. This is very important, keeping in mind the aforementioned employing of the national cultures' indexes in cross-cultural research, as well as solving the dilemma whether the national cultures of the four countries have changed since Hofstede's research. We can obtain the answer to this question if we test the hypotheses about the relative relations between the dimensions of the national cultures from Hofstede's work. Thus, we have set up the following four hypotheses:

*H<sub>1</sub>: Serbian national culture has the highest power distance and it is followed by French, Dutch and Danish national cultures. Serbia and France have significantly higher power distance than the Netherlands and Denmark. The power distance in Dutch national culture is in the middle between Serbia and France from one end, and Denmark from the other.*

*H<sub>2</sub>: Serbian national culture has the highest uncertainty avoidance and it is followed by French, Dutch and Danish national cultures. Serbia and France have significantly higher uncertainty avoidance in their cultures compared to those in the Netherlands and Denmark. The uncertainty avoidance in the Netherlands is in the middle between the uncertainty avoidance in Serbia and France from one end, and Denmark from the other.*

*H<sub>3</sub>: Serbia has high level of collectivism in its national culture, while France, the Netherlands and Denmark have high level of individualism in their respective national cultures. The Netherlands has the highest level of individualism whereas France and Denmark have almost the same level of individualistic values.*

*H<sub>4</sub>: France and Serbia also have the equal moderate level of feminine values, while the Netherlands and Denmark have the equal high level of feminine values in their countries.*

The second scientific question that we have posed to ourselves is whether national culture is an important factor of the choice of leadership style and its effectiveness. To answer this question we have tested the relation of power distance and leadership style. Power distance, as previously mentioned, can be high or low, while the classification of the leadership styles is adopted from Likert [14], [13]. He has distinguished four styles of leadership: exploitative authoritative, benevolent authoritative,

consultative, and participative. Conditionally, these four styles can be grouped into two categories: authoritative (exploitative and benevolent) and democratic (consultative and participative). The criterion for the leadership style diversification is obvious: the degree in which the leader includes his followers in decision-making process. Hofstede [7] has argued that a high power distance in one national culture leads to a better acceptance and more frequent occurrence of the authoritative leadership styles in organizations within that national culture. The reason is more than obvious: a high power distance implies that the members of that national culture perceive the unequal power distribution both in society and its organizations as a natural, inevitable, and beneficial appearance. If so, then it is only natural that an individual or a small group at the top of the social hierarchy who have the power makes all the decisions, while others carry them out. This fact implies direct acceptance of authoritative leadership. Considering the differences in the level of power distance between the four national cultures which Hofstede defined (see Table 1) we can expect that authoritative leadership styles will be more effective, frequent, and accepted in Serbia and France than in the Netherlands and Denmark. Also, we can expect that authoritative leadership styles will be somewhat more accepted in the Netherlands than in Denmark, which has the lowest power distance in its national culture. Therefore, we can establish the fifth hypothesis:

*H<sub>5</sub>: Authoritative leadership styles will be significantly more present in Serbia and France than in the Netherlands and Denmark. Authoritative leadership styles will be a little more accepted in the Netherlands than in Denmark.*

### Methodology of the research

In order to test the established hypotheses, we have interviewed the employees of one multinational company's

branches in four countries: Serbia, France, the Netherlands, and Denmark. The corporation is one of the leading multinational companies in the field of technology, specifically in the domains of financial and retail services. The main activities of the company are related to providing services of both software and hardware maintenance to the leading clients from the banking and retail industries. The company is also known for the production of cash and teller machines, self-service kiosks, bar code scanners and check-out machines at airport terminals. The Company's headquarters are placed in the United States (Atlanta) and the employees (around 29,000) are localized in almost all European and Asian countries.

The very fact that the survey was conducted in only one company, although in different countries, presents a peculiar resemblance to the Hofstede's research because it was also performed within just one company (IBM). However, the sample's size is nowhere near to Hofstede's, which is a significant limitation of our study. In our research, we have surveyed 155 employees of a multinational company, where 40 employees came from three countries and 35 employees were from Serbia.

The sample structure corresponded to the structure of the employees in the four branches of the company (see Table 2). In those branches, the employees were mostly young people, predominantly male and mainly highly educated that also reflected in the sample. One third of the sample population was under 30, and only ten employees were over 45-year-old. Two thirds were men and one third were women. Finally, 90% of the surveyed employees had a Bachelor's or Master's degree.

The sub-sample from Serbia consisted of the employees from the branch office in Belgrade. In addition to the native Serbian language, it was mandatory for the employees to have a full proficiency (the so-called C1 level) in English and in another foreign language. Strict criteria during the human resources recruiting process had initially singled

**Table 2: The sample structure**

Country	Number of respondents	Average age		Sex		Education: the percentage of employees with Bachelor's and Master's degree
		20-30 yrs	30-45 yrs	Male	Female	
Serbia	35	35%	65%	57%	43%	100%
France	40	10%	90%	80%	20%	85%
The Netherlands	40	5%	95%	75%	25%	80%
Denmark	40	55%	45%	50%	50%	100%

out a group of young people who had spent a certain period of their lives abroad (on average, one academic year), mainly thanks to study programs at universities or student exchange programs. The French sub-sample included 40 employees from Paris. They were of French nationality (usually both parents were French) and they lived in Paris and the surrounding areas (Ile de France, with the exception of three team members from Reims, Alsace and Nantes). The Dutch sub-sample consisted of the employees living in Amsterdam and Brussels surroundings who were of similar age and education as the French team. The employees from Brussels (due to their Dutch origin) were included in the Dutch cultural cluster and the team consisted of a group of young people with high academic degrees (BA or MA) similar to those from the French team. Last but not least, the Danish team also consisted of young, university educated employees (male-female ratio was equally distributed) who lived in the peninsula called Vest Danmark and the capital city, Copenhagen.

For the purpose of the study, we used two questionnaires. One questionnaire had the purpose to measure the dimensions of the national cultures in the four countries, while the other was used to detect the leadership style preferences. The questionnaire that analyzed the positions of national cultures according to the Hofstede's four dimensions was formulated on the basis of the initial Hofstede's questionnaire [7], [6], but it was much shorter and significantly simplified comparing to the original questionnaire. Such an instrument had already been used in earlier research studies [9]. Our questionnaire consisted of 20 questions in total, divided into four groups. Each group contained five questions related to one of the four dimensions of national culture. The questions were formulated as statements that reflected a particular value of national culture. The respondents were explicitly asked to express their agreement or disagreement with each statement and to mark it on the five-point Likert scale: strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree [12]. The statements were articulated in such a manner to express high power distance, high uncertainty avoidance, collectivism, and feminine values. Therefore, a higher percentage of agreement with the statements reflected a higher power distance, uncertainty avoidance, collectivism,

and feminine values. The questionnaire that measured the respondents' leadership style preferences consisted of four separate brief descriptions of four leadership styles according to Likert's classification. The respondents were asked to choose one of the posed styles that they preferred the most. Both questionnaires were translated into all four languages: Serbian, Dutch, French, and Danish.

A statistical analysis of the obtained questionnaire results was done by a simple calculation of the frequency of the provided answers. Since the questionnaire which evaluated the national culture in four countries used Likert scale, the most adequate method for data processing was, of course, to calculate the frequencies of the provided answers, as well as the percentages in which positive (agreement) and negative (disagreement) answers appear. Since the questionnaire contained 20 questions (with 5 questions related to each of the four dimensions of the national culture), we calculated the average frequencies of the provided answers separately for each country by determining the percentage of agreement, disagreement and neutral outlooks that the employees provided. A higher percentage of respondents' positive answers or agreement shows that they value a certain dimension of national culture to a greater extent. For instance, if the respondents from a certain national culture express a higher level of agreement to the questions that measured power distance, it means that power distance is higher in that specific national culture. A similar method was applied for processing of the data from the questionnaire related to the preferred styles of leadership. Since the respondents stated their preference by selecting just one out of the four offered leadership styles, we could not apply the calculation of the average mark. Therefore, we also applied the calculation of the frequency of the obtained responses (for each of the four leadership styles) in each of the four countries' employee groups. In this way, we obtained the percentage, for each country separately, of the respondents who opted for each of the four leadership styles.

The statistical significance of the identified differences between national cultures, as well as between the preferred styles of leadership in them, is analyzed by means of ANOVA. Since ANOVA analysis uses parameters and measures the

difference in variances of two independent populations, but assumes that variances are homogenous, which is not the case in our study, so therefore, we used Welch's test. The differences between all four national cultures were tested separately for each of the four of their dimensions. The differences between preferred leadership styles in the four national cultures were tested in the same way.

### Results of the research and discussion

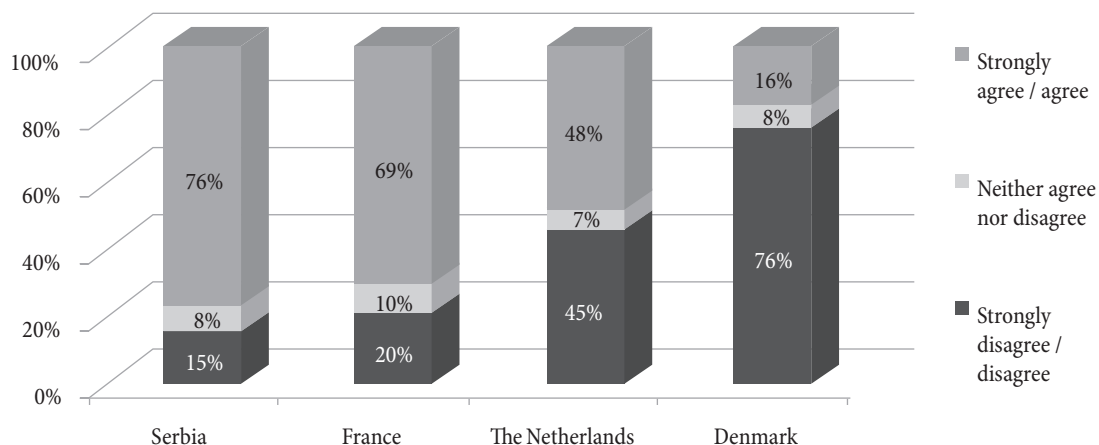
In this part of the study we will present the results we have obtained by surveying the employees in the multinational company in four aforementioned countries. The results will be presented by the dimensions of national culture in order to determine whether the established hypotheses on relative relations between the four national cultures according to Hofstede's dimensions are accurate or not. The hypotheses were tested by a simple comparison of the relative relations between the positions of the four observed national cultures in each of the dimensions emerged from Hofstede's indexes and the relative relations of the same cultures obtained in our research from the surveyed employees. Due to the specific form of the questionnaire used in our research, it was not possible to calculate the indexes of the four national cultures according to four dimensions as Hofstede had originally done. Therefore, the comparison of the relative position of each national culture with respect to other cultures in the sample was the only way to examine if Hofstede's indexes regarding

the character of the four observed national cultures are still valid. The Welch's test that we used confirmed that all the identified differences between national cultures are statistically significant, both with respect to their dimensions as well as with respect to the preferred leadership styles.

The relative relations between the positions of the four national cultures in the power distance dimension were described by the first hypothesis,  $H_1$ . In order to test the validity of this hypothesis, we have included the set of five questions in the questionnaire aimed at measuring the position of each country in the dimension of national culture. We have calculated the average percentage of agreement and disagreement with the statements given in the questionnaire which reflected a high power distance, and then we have merged the answers 'strongly agree' and 'agree' as well as the answers 'strongly disagree' and 'disagree' to obtain better visual and simplified results. The analysis of the obtained responses is provided in Figure 1.

The results of measuring power distance in four national cultures show the following: 1. Power distance is the highest in Serbian national culture and national culture of France, the Netherlands and finally Denmark follow respectively; 2. Power distance is significantly higher in the national cultures of Serbia and France than in the national cultures of the Netherlands and Denmark; 3. The values of power distance in Dutch national culture is somewhere in the middle between its values for Danish national culture at one end and its values for Serbian and French national cultures at the other end. These results

**Figure 1: Average agreeing and disagreeing with the statements that express high power distance obtained from the respondents from four national cultures**





practically confirm the validity of  $H_1$  which concerns the relative relations between the positions of the four national cultures in the power distance dimension. The correspondence between Hofstede’s initial results (expressed through indexes) and those obtained by measuring the power distance in the national cultures of the four countries is extremely high. Even the relative relation of the percentages of agreement with the statements in the questionnaire notably corresponds to the values of power distance indexes that Hofstede had calculated for the four countries (see Table 3).

**Table 3: The comparison of the percentage of agreement with the statements in the questionnaire regarding power distance dimension and Hofstede’s power distance indexes**

	Percentage of agreement with high power distance statements	Hofstede’s index of power distance
Serbia	76%	86
France	69%	68
The Netherlands	48%	38
Denmark	16%	18

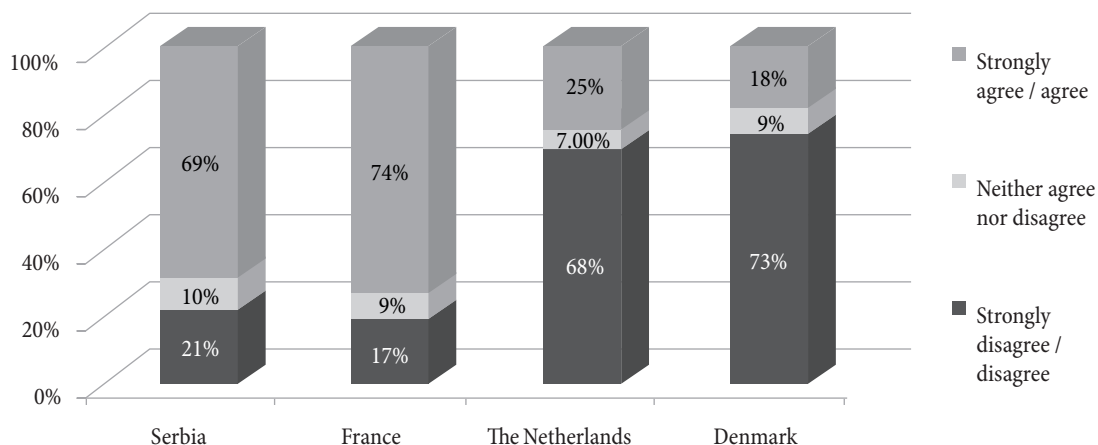
We can conclude that  $H_1$  is confirmed, which means that the relative relations concerning power distance dimension in the national cultures of the four observed countries are exactly the same as Hofstede had presented them in his indexes.

The relative relations between the positions of the four national cultures in the uncertainty avoidance dimension are presented in the hypothesis  $H_2$ . In order to test the

validity of this hypothesis, we have included a set of five questions in the survey which measured the position of each country in that dimension of national culture. Afterwards, we have calculated the average agreement or disagreement of the respondents with the given statements that expressed high uncertainty avoidance and, like in the previous example, we have also merged the answers (‘strongly agree/agree’, ‘strongly disagree/disagree’ and ‘neither agree nor disagree’) for better illustrative and simplified view of overall results. The analysis of the provided answers is presented in Figure 2.

The results of measuring uncertainty avoidance in the four countries show the following: 1. Uncertainty avoidance is the highest in French national culture, and Serbian, Dutch and finally Danish national cultures follow respectively; 2. Uncertainty avoidance is significantly higher in the national cultures of Serbia and France, compared to those in the Netherlands and Denmark; 3. The values of uncertainty avoidance in Dutch national culture lie somewhere between its values for Danish national culture at one end, and its values for Serbian and French national cultures at the other end. These results explicitly confirm the validity of the hypothesis  $H_2$  which refers to the relative relations between the positions of the four national cultures in the uncertainty avoidance dimension. But unlike the power distance dimension, the correspondence between the Hofstede’s indexes and the results that we obtained is somewhat smaller in this case, and we have also pointed out the certain deviations that are presented in Table 4.

**Figure 2: Average agreeing and disagreeing with the statements that express high uncertainty avoidance obtained from the respondents**



**Table 4: The comparison of the percentage of the respondents' agreement with the statements in the questionnaire regarding high uncertainty avoidance and Hofstede's indexes of high uncertainty avoidance in four countries**

	Percentage of agreement with high uncertainty avoidance statements	Hofstede's index of uncertainty avoidance
Serbia	69%	92
France	74%	86
The Netherlands	25%	53
Denmark	18%	23

Table 4 shows that the highest uncertainty avoidance is observed in French national culture and that Serbian national culture immediately follows, while when observing Hofstede's indexes we can observe exactly the opposite to be the case. Nevertheless, the differences are too small, both in the provided indexes as well as in the percentages of our research, so we cannot claim that a real discrepancy actually exists. Also, although Dutch national culture has the same ranking both in our study and Hofstede's indexes (third place by uncertainty avoidance value), in our research it is much closer to Danish culture than to French and Serbian cultures than it is presented in Hofstede's indexes. In addition, the relative pattern of relations in the uncertainty avoidance dimension remained the same as in Hofstede's research. Keeping in mind all the above, we can conclude that the hypothesis  $H_2$  is confirmed, which means that the relative relations regarding the levels of uncertainty avoidance in the four

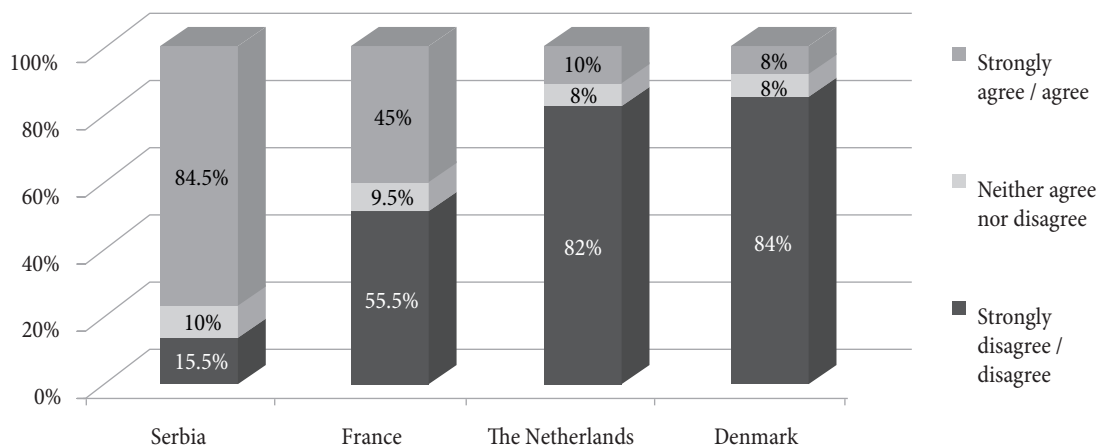
national cultures remained in most part the same as Hofstede had presented in his indexes.

The relative relations between the positions of the four national cultures in the individualism-collectivism dimension are described in the hypothesis  $H_3$ . Following the previous examples, we have again used the set of five questions in order to measure the position of the four countries in this dimension of national culture. We have afterwards calculated the average agreeing and disagreeing of the respondents with the statements from the questionnaire, and we have also merged the answers ('strongly disagree/disagree', 'neither agree nor disagree' and 'strongly agree/agree'). The analysis of the provided answers is illustrated in Figure 3.

The results of measuring the collectivism-individualism dimension in the four national cultures show the following: 1. Serbia has a high level of collectivism in its national culture, while France, the Netherlands and Denmark have a high level of individualism in their respective cultures; 2. The highest level of individualism is present in the national culture of Denmark; 3. Denmark and the Netherlands have similar levels of individualism in their national cultures, while France has somewhat lower level of individualism and lies between Serbia at one end, and Denmark and Netherlands at the other end.

In the manner of uncertainty avoidance, we have confirmed the original pattern of relative relations between the four national cultures as Hofstede had described by his indexes, although with certain discrepancies, as shown in the Table 5.

**Figure 3: Average agreeing and disagreeing with the statements that express the collectivism obtained from the respondents**



**Table 5: The comparison of the percentages of the respondents' agreement with the statements in the questionnaire that expresses a high level of individualism and Hofstede's indexes of the mentioned dimension**

	Percentage of agreement with individualism	Hofstede's index of individualism
Serbia	15.5%	25
France	55.5%	71
The Netherlands	82%	80
Danmark	84%	74

Table 5 clearly shows that the highest level of individualism, according to our research, belongs to the Danish and not the Dutch national culture, as it can be concluded by Hofstede's indexes. Nevertheless, the difference between these two national cultures is very small. Second, according to our research, the level of individualism in the French national culture is not as high as Hofstede had elaborated in his indexes, and it is significantly lower compared to those observed in the Dutch and Danish national cultures. Yet, the relative pattern of relations in the individualism-collectivism dimension is the same as Hofstede's. Therefore, we can conclude that the hypothesis  $H_3$  is confirmed, which means that the relative relations between the national cultures' positions in the individualism-collectivism dimension are in most part the same as Hofstede had presented them in his indexes.

The relative relations between the positions of the four national cultures in the masculinity-femininity dimension

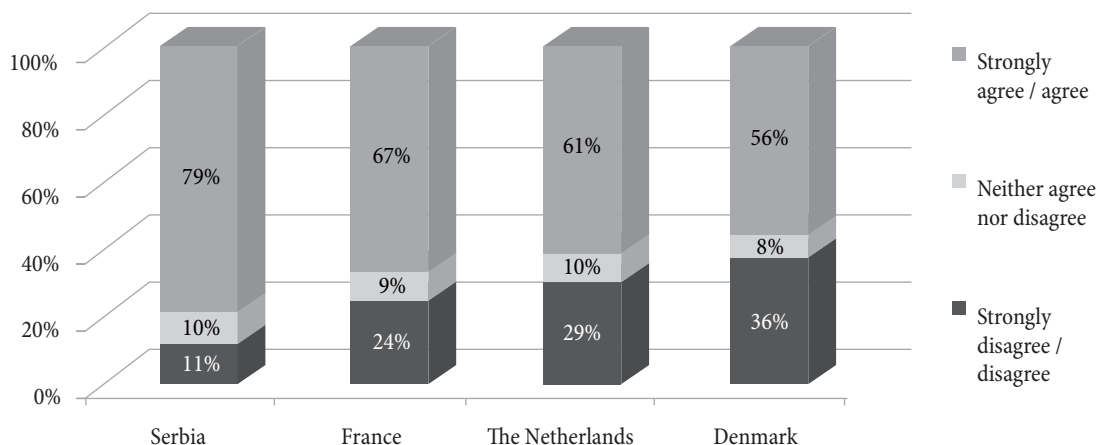
are described in the hypothesis  $H_4$ . In order to test this hypothesis, we have inserted a set of five questions in our questionnaire aimed at measuring the position of each of the four countries in this dimension of national culture. We have calculated the average agreeing and disagreeing of the respondents with the statements that reflected an intensive presence of the feminine values, and we have then again merged the answers ('strongly disagree/disagree', 'neither agree nor disagree' and 'strongly disagree/disagree') in order to provide a simplified illustration of the given data. The analysis of the obtained answers is presented in Figure 4.

The results of our research show that feminine values predominate in all of the four observed cultures. Serbian national culture has the highest presence of feminine values and, ergo, the lowest presence of masculine values. It is followed by France, the Netherlands and Denmark respectively. In addition, the level of feminine values in Serbian national culture is significantly higher than the

**Table 6: The comparison of the percentages of the respondents' agreement with the statements that expressed masculine values and Hofstede's masculine values indexes**

	Percentage of agreement with masculine values	Hofstede's index of masculinity
Serbia	11%	43
France	24%	43
The Netherlands	29%	14
Denmark	36%	16

**Figure 4: Average agreeing and disagreeing with the statements from the questionnaire that express feminine values obtained from the respondents**



level of presence of feminine values in the remaining three national cultures.

Unlike the other three dimensions of national culture, the basic pattern of relative relations between the positions of the four national cultures in femininity-masculinity dimension (as Hofstede had described in his indexes) was not confirmed, as it is presented in Table 6.

Unlike the three previously analyzed dimensions, the results that we obtained for the masculinity-femininity dimension for the four national cultures are appreciably different than Hofstede's results and indexes. Indeed, the results show that all four countries have national cultures with prevailing feminine values, which correlates with Hofstede's findings. However, according to the masculinity index values that Hofstede had identified, the Netherlands and Denmark are significantly more feminine cultures than France and Serbia. Contrary to this, our research shows that Serbia and France have more feminine cultures than the Netherlands and Denmark. In addition, the Serbian national culture has higher femininity values than French culture, even though Hofstede had aligned them in this dimension. Finally, our research shows that the Dutch culture is more feminine than Danish culture, which is contrary to Hofstede's indexes. We can conclude that hypothesis  $H_4$  is only partially confirmed: all four observed national cultures are feminine cultures, while their relative relations in the femininity-masculinity dimension are completely different in our research than in Hofstede's indexes. Therefore, we can conclude that that hypothesis  $H_4$  is only partially verified.

In the attempt to identify the possible causes of the deviation of our results from Hofstede's results with respect to femininity-masculinity dimension, we can point out a few possible reasons. First of all, it is possible that the results were different due to the various methodology tools: sample, questionnaire, etc. Also, we cannot also exclude the possibility that the set of questions concerning the femininity-masculinity dimension were wrongly or inadequately formulated in our research, so the dimension itself might therefore not have been measured appropriately. Second, it is possible that this dimension of national culture has undergone some changes in all four countries and, if that is the case, we would need to identify the root cause

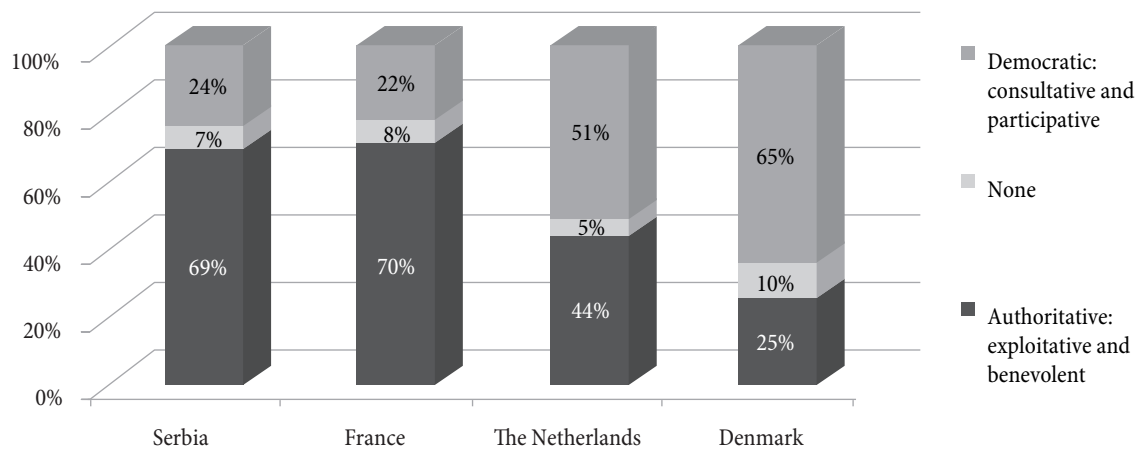
of it and investigate how changes happened in only one and not all four dimensions of national culture.

The second objective of this study was to answer the question whether a national culture can be regarded as explanatory factor of leadership. Or, in other words, do leadership styles systematically differ from one culture to another? The hypothesis  $H_5$  refers to the relation between the degree of power distance and the preferred style of leadership in a national culture. Power distance was measured in all four national cultures in the previously described manner, while leadership style was measured by means of [13], [12]. The results indicate that national culture is an important factor of leadership style effectiveness, and that power distance directly affects the choice of leadership style.

In the view of the fact that Likert questionnaire measures the respondents' preferences among four potential leadership styles, it is vital to determine which leadership style is preferred in each of the four observed national cultures, and also whether these potential differences are systematical or random in their nature. If we want to simplify some more and, at the same time, also sharpen the picture of the preferred leadership styles in the four observed countries, we can merge the authoritative styles (exploitative and benevolent) on the one hand, and the democratic styles (consultative and participative) on the other. The result of the combined answers is provided in the Figure 5.

The results show that in the countries with high power distance (such as Serbia and France in our study) the preferred leadership styles are authoritative, whereas in the countries with low power distance, like the Netherlands and Denmark, the preferred leadership styles are democratic. A very high percentage (about 70%) of the respondents from Serbia and France would gladly cooperate with the leader who practices one of the two authoritative styles. In addition, the difference between Serbia and France lies in the fact that Serbia shows a greater tendency towards exploitative, authoritative style, while in France the benevolent authoritative leadership style is preferred. Oppositely, two thirds of the Danes and one half of the Dutch prefer some of the democratic leadership styles. In addition, the Danish national culture which has the lowest

Figure 5: The preferred leadership styles in four observed countries



power distance value also has the highest percentage of the respondents who had chosen the participative leadership style as the most democratic one. These results therefore confirm Hofstede's assumption, as well as our hypothesis  $H_5$  which imply that power distance affects the preferred leadership style.

### Conclusions, implications and limitations

The study conducted in the branches of a multinational company in Serbia, France, the Netherlands and Denmark aimed to determine whether Hofstede's measures of national culture dimensions are still valid. Due to the mentioned limitations in methodology, sample size, instrument, and applied statistical methods, the aim of the study was not to explicitly test the accuracy Hofstede's indexes, but to enlighten the general position of the four observed countries in national culture dimensions and their mutual relations. The study also sought to determine if national culture, through power distance dimension (like Hofstede assumed), is the prevailing determinant for the leadership style. In order for the study's goals and questions to be clear, we have formulated five scientific hypotheses, and we have further tested their validity.

The study results have indicated that the position of the four observed national cultures (Serbia, France, the Netherlands and Denmark) is precisely the same in three out of four dimensions as Hofstede had described in his research [7]. Furthermore, the differences between national cultures and the relative relations between

their positions in three dimensions of national culture correspond to Hofstede's results. The only deviation from Hofstede's results is concentrated around the masculinity-femininity dimension. Lastly, we conclude that three out of four established hypotheses about the relative relations between the positions of the four observed countries in national culture dimensions are confirmed, whereby Hofstede's research is also verified.

The second purpose of the study aimed to verify if power distance as one of the national culture dimensions determines, as Hofstede [7] argued, the preferences of the members of an organization regarding leadership style. Our results confirm the fifth hypothesis which claimed that the degree of power distance is a determinant when choosing leadership style. Namely, we have determined that national cultures with high power distance, like Serbia and France, favor one of the two authoritative leadership styles. On the other hand, countries with low power distance, such as the Netherlands and Denmark, prefer one of the forms of democratic leadership styles. This confirms Hofstede's premises about the impact of power distance on leadership style.

The key implication of our study is that Hofstede's national culture indexes are still a reliable tool for measuring the positions of countries in national culture dimensions (except perhaps for the masculinity-femininity dimension) and they can be applied in the cross-cultural research in management. That was at least the case with our four observed countries: Serbia, France, the Netherlands, and Denmark. The implication of this study

is also that we should continue to explore the influences of the national cultures on various spheres of management (such as leadership) because there is a good basis to do so. Likewise, our study has certain implications for the convergence-divergence debate which is very popular and present in the academic world [15]. Namely, the results of our study confirm neither convergence nor divergence, but the *status quo* of the national cultures' values in the four observed countries. All four national cultures that we have included in our research have not changed their positions since Hofstede's research, with perhaps the only exception of masculinity-femininity dimension. And this is especially interesting in the case of Serbian national culture. Since Serbia has undergone a serious process of transition in the past 15 years, it could have been expected that certain changes may have occurred in its national culture. According to the followers of the convergence hypothesis, these potential changes should lead the Serbian national culture in the direction of the cultural values of Western Europe. In that case, we would expect that Serbian national culture today has lower values of power distance, uncertainty avoidance, collectivism, and feminine values. Obviously, this has not happened yet. Therefore, this confirms another Hofstede's premise: national cultures change very slowly and the process of their transformation may be possible only in the long time spectrum, much longer than 15 years.

The study's limitations that we have previously presented are crucial, and they actually point out the necessary precautions with respect to generalization of its results. The limitations emerge, above all, from methodology of our research: the sample was too small for any serious measurements and comparisons. Even though Hofstede's original research was also small in terms of respondents group's size in each individual country, still Hofstede had included much more countries in his research. Another limitation that we have encountered is related to the research instrument. We have not used the original Hofstede's questionnaire. Instead we have applied a questionnaire that was developed by one of the authors and that was already used for cultural values research. The questionnaire has not yet been tested for reliability, hence we cannot be completely sure whether it really measures the target variables. Finally, the applied

statistical methodology was by far simpler when compared to the one used by Hofstede.

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