# Competitiveness indicators assessment of the textile organizations from Serbia

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# ABSTRACT – REZUMAT

#### Competitiveness indicators assessment of the textile organizations from Serbia

An assessment of the indicators contributing to the success of the textile organizations doing business in Serbia from the point of view of their specificities in relation to the other industrial sectors is the subject matter of the research study presented in this paper. The original premise says that there are numerous factors that determine the competitiveness of textile organizations, all those factors have a different influence on the results of those organizations' business activities. The study is aimed at singling out and assessing the factors significant for the adaptation of the existing concept of the business operations undertaken by Serbian textile organizations through continuous changes in the textile and clothes global market. Namely, once the Textile Agreement made between the member states of the World Trade Organization ceased to be in force, trading textile products between the member states became completely liberalized, which led to the competition within the world frameworks becoming much more severe. In order to respond to said changes, there is a need for textile organizations to engage qualified personnel with competencies, knowledge and skills (know-how), who is simultaneously able to respond to all the challenges they are faced within the conditions of accelerated changes in the numerous indicators that determine their competitiveness. The obtained results are indicative of the fact that the following are the key factors for their business success: design functions through the continuous improvement of employees' knowledge, investment in relationship marketing and the development of domestic brands, together with the procurement of modern technological solutions and equipment. In the subject-matter research study, the following methods were used, namely: hypothetical-deductive, analytical-deductive and comparative, historical and statistical-descriptive, as well as comparative statistics methods (chi<sup>2</sup>-test, ANOVA).

Keywords: knowledge, technological solution, brand, design function, marketing

### Evaluarea indicatorilor de competitivitate a organizațiilor textile din Serbia

O evaluare a indicatorilor care contribuie la succesul organizatiilor textile care desfăsoară afaceri în Serbia din punctul de vedere al specificului acestora în raport cu celelalte sectoare industriale este subiectul studiului de cercetare prezentat în această lucrare. Premisa originală spune că există numeroși factori care determină competitivitatea organizatiilor textile, toti acesti factori au o influentă diferită asupra rezultatelor activitătilor de afaceri ale acestor organizații. Studiul urmărește să evidențieze și să evalueze factorii importanți pentru adaptarea conceptului existent al afacerilor întreprinse de organizatiile textile sârbe prin schimbări continue pe piata globală a textilelor și îmbrăcămintei. Și anume, odată cu încetarea Acordului privind textilele încheiat între statele membre ale Organizației Mondiale a Comerțului, comerțul cu produse textile între statele membre s-a liberalizat în totalitate, ceea ce a dus la o concurență și mai mare la nivel mondial. Pentru a răspunde acestor schimbări, este nevoie ca organizatiile textile să angajeze personal calificat, cu competențe, cunoștințe și abilități (know-how), care să poată răspunde simultan tuturor provocărilor cu care se confruntă, în conditiile schimbărilor accelerate în numeroșii indicatori care determină competitivitatea acestora. Rezultatele obtinute indică factorii cheie pentru succesul în afaceri: funcțiile de proiectare prin îmbunătățirea continuă a cunoștințelor angajaților, investițiile în marketing relațional și dezvoltarea mărcilor autohtone, împreună cu procurarea de soluții tehnologice și echipamente moderne. În studiul de cercetare tematică au fost utilizate următoarele metode si anume: ipotetico-deductivă, analitico-deductivă si comparativă, istorică si statistico-descriptivă, precum si metode statistice comparative (testul chi<sup>2</sup>, ANOVA).

Cuvinte-cheie: cunoștințe, soluție tehnologică, marcă, funcție de design, marketing

# INTRODUCTION

It is a fact that today, the growing competition has become a major challenge for the textile organizations doing business in Serbia [1], and the design and planning of manufacturing systems are an activity of great significance for their industrial competitiveness. The speed and diversity of the technological changes [2] being made in a business environment exert an influence on textile organizations in that they are required to pay more significant attention to studying it and defining the strategic variants that will enable them to create, maintain and develop competitive advantage [3] in international marketing.

In recent decades, the Serbian organizations doing business in the textile industry have trodden the path from having been engaged in the field of processing jobs to the business level in which they are more significantly focused on design and penetration into the international market. The success in foreign markets is a clear reflection of their systematic capability of not only producing competitive products but consistently improving their market position as well, simultaneously competing with rivals from other countries [4]. The question of the improvement of an organization's competitiveness is essentially the question of the improvement of employees' knowledge, i.e., the question of the application of modern management methods and techniques [5], where the quality management system concept [6] is central. That means that a more adequate use of knowledge is the most significant direction for the improvement of the competitiveness of domestic textile organizations.

Starting from the fact that the crucial specificity of textile organizations in relation to the other industrial sectors lies in the design function, the question of which concrete indicators determine their competitiveness is imposed as well, also taking into consideration the level and length of doing business in order for domestic exporters to become more competitive abroad. The study purposefully singled out and analysed the success factors that define the ambience in which the organization management process takes place: the improvement of employees' knowledge, investment in the development of domestic brands, the improvement of marketing relationships and the procurement of modern technological solutions and equipment.

How effective the design function will be, depends mostly on the organization's employees' knowledge [7]. Namely, each organization's competitiveness, the same working for textile organizations as well, is based on the main capabilities [8], as well as the employees who have those capabilities. The employed in a textile organization is a unique and irreplaceable resource, and they are the basis of its long-term success and a permanent source of its competitive advantage. All the more so, a textile designer is the most important figure providing a textile organization with the value, rarity and non-imitability of a textile product solution [9].

Permanent changes in market conditions, and all the more frequent changes in fashion trends, among other things, require employees' flexibility and creativeness, their readiness to learn [10] and improve, and their ability to quickly master new systems. A concrete Serbian textile organization can achieve the key advantage on the contemporary market through its creative segment - the design function. This is all the more so due to the fact that the textile product designing activity is an extremely "non-routine" activity, whereas it is extremely regulated and for the most part standardized in the technical implementation segment. In order for a goods mark of a domestic textile organization to become a brand, the consumer must be aware of its specific value, which distinguishes it from other products on the market. An organization's competitiveness, its recognizability in relation to the competition, the user's perception of the brand quality and brand satisfaction explicitly depend on the quality [11] of a domestic brand. What is extremely important to the domestic textile workers appearing on foreign markets is the fact that, first of all, they should direct marketing [12] efforts towards distributors in order to enable their product(s) to penetrate such foreign markets, while simultaneously finding it worth increasing marketing efforts towards end-users as well [13] in order for their product(s) to be accepted.

By improving its marketing relationships [14], the organization should build a marketing network with interested stakeholders, who will enable it to make changes in the competitiveness field. In order for an organization to build relationships with some of its partners' segments, it is necessary for it to understand their capabilities, resources, needs and goals. Modern technological solutions and pieces of equipment are included in all the value-creating activities conducted by an organization. Thanks to the influence technology exert on literally every single activity, it also exerts an influence on a textile organization's competitiveness.

# **RESEARCH METHODOLOGY**

The research was done as a cross-sectional study of an empirical character in the function of analysing the influence of the subject-matter indicators on the successfulness of the textile organizations doing business in Serbia. The bibliographical-speculative method was used before the base explicative method in the paper's theoretical framework setting procedure, and during the results, processing and interpretation, multiple comparisons and statistical test methods were used. A survey was conducted as the research technique in order to collect primary data and pieces of information.

The research study was carried out on a sample of 136 organizations, selected from the database of the Republic of Serbia's Business Registers Agency, of which 19% were micro-organizations, 28% were small organizations, 29% were medium-sized organizations, whereas large organizations accounted for 24%. When speaking about the inclusion of the organizations in relation to the business operation sector, the largest number of them were included from the textile industry sector (10.3%). The observed sample included the largest number of the organizations doing business on the international market (46%), only to be followed by those operating on the national market (25%), the organizations doing business on the regional market (17%), whereas those only doing business on the local market accounted for the smallest percent (12%). When making a selection of the enterprises to be included in the sample, the success of their business operations was the determining factor.

The purpose of the questionnaire was to collect pieces of information and analyse the indicators significant for the successfulness of the business operations of the organizations doing business in Serbia in the context of the elements needed for the development of their competitive capability. The questionnaire consisted of a few questions - the independent variables [15]: the size of the organization (a micro-organization up to 10 employees, a small organization from 11 to 50 employees, a medium-sized organization from 51 to 250 employees, and a big organization over 251 employees); the duration of the business of the organization; the activities of the organization; the sector of the business of the organization; the level (market) of the business of the organization (locally, nationally, regionally, internationally) and so on. The dependent variables in the questionnaire concerned: the grades for the key factors of the improvement of the business of the Serbian organizations (the business quality improvement, the improvement of the employees' knowledge and the technical-technological basis of business operations, the development of integrated management systems, the internationalization of business, etc.); the assessment of the elements for the development of the competitive capability of the Serbian organizations (the standardization of the quality of business operations, investments in marketing and in the development of domestic brands, the continuous improvement of all the employees' knowledge, the improvement of marketing relations, the procurement of modern technological solutions and equipment); and the assessment of the primary obstacles in the development of the competitiveness of Serbian textile enterprises (the inadequate use of contemporary management methods and techniques, the shortage of the resources, the outdated equipment and technologies, the inadequate application of the marketing concept, the business operations not based upon international standards, etc.). The envisaged options for the respondents to grade the analysed indicators were very significant, significant and not significant, and not significant. The respondents were given an option to grade some characteristics in the business operations (the level, the length) by assigning them the grades from 1 to 5, where 1 was the lowest grade, and 5 was the highest grade. The differences in the assessment of the effects in a sense of improving the successfulness of the business operations of those organizations by taking into consideration the

answers received from the respondents were processed by doing the ANOVA test and the nonparametric  $\chi 2$  test (the existence of a statistically significant difference for the values Sig≤0.05). The primary sources of information and knowledge were mainly used in the research segment presented in this paper.

# **RESULTS AND DISCUSSION**

The analysis of the factors significant for the improvement of the competitiveness of business doing as a strategic goal of each organization, and a textile organization as well, began with the evaluation of the elements singled out in advance, the accent is placed on the assessment of the continuous improvement of the employees' knowledge through the improvement of the design function, investment in marketing relationships and the development of domestic brands, as well as the procurement of modern technological solutions and equipment in relation to the other elements. Comparative statistics were used to analyse the independent variables in comparison with the dependent ones so as to determine the connections/relations and compare the included indicators. Based on the obtained results, it is possible to draw a conclusion that continuous improvement of the employees' knowledge and the procurement of modern technological solutions and equipment were singled out as significant factors (the percentage ranging from 83.1% to 86.0%). The respondents were given the following options - the indicators are strongly needed, the indicators are needed and are not needed, and the indicators are not needed - to grade the indicators.

The grades in the absolute and relative indicators of a concrete indicator necessary for the development of the competitive capability of the analysed organizations from within the textile sector are presented in table 1. According to the table [15], it is possible to see that the continuous improvement of the employees' knowledge, the procurement of modern technological solutions and equipment, as well as investment in marketing and the development of domestic

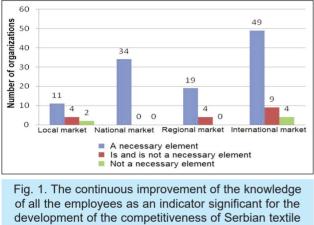
THE ASSESSMENT OF THE INDICATORS NECESSARY FOR THE DEVELOPMENT OF THE COMPETITIVE CAPABILITY OF THE SERBIAN TEXTILE ORGANIZATIONS						
The elements for the development of the competitive capability	Strongly needed		Needed and not needed		Not needed	
	Af	Rf	Af	Rf	Af	Rf
The continuous improvement of the knowledge of all the employees'	113	83.1	17	12.5	6	4.4
Investment in the development of domestic brands	100	73.5	28	20.6	8	5.9
The improvement of marketing relationships	82	60.3	50	36.8	4	2.9
The procurement of modern technological solutions and equipment	117	86.0	17	12.5	2	1.5
The application of management modern methods and techniques	81	59.6	47	34.6	8	5.9
Business doing quality standardization	114	83.8	18	13.2	4	2.9

Note: Af – absolute frequencies; Rf – relative frequencies (percentages).

Table 1

brands are graded as strongly needed indicators in the highest percentage.

Figure 1 shows the continuous improvement of the employees' knowledge as observed through the prism of the design function as an element significant for raising the level of the success of Serbian textile organizations on the contemporary market, as assessed by the managers of the same that do business at a different level (local, national, regional and international). The improvement of the employees' knowledge is the foundation of the competitiveness of textile organizations. How successful the design function will be, depends mostly on the knowledge the organization's employees have. All the more so for the reason of the fact that a textile designer is a key figure ensuring the value, rarity and non-imitability of a textile product solution for a textile organization.



development of the competitiveness of Serbian textile indicators

Table 2 presents the existence of differences in the grades for the continuous improvement of the knowledge of all the employees by the managers of the organizations operating at a different level. The outcomes reveal that Sig.=0.033<0.05, so it is possible to conclude that the differences at the level of the business operations of an organization do importantly influence the grade for the importance of the continuous improvement of all the employees for the improvement of the competitiveness of Serbian textile organizations.

			Table 2
THE SIGNIFICANCE OF THE CONTINUOUS IMPROVEMENT OF ALL THE EMPLOYEES FOR THE DEVELOPMENT OF THE COMPETITIVENESS OF SERBIAN TEXTILE ORGANIZATIONS			
Indicator	Value	df	Sig.
Pearson chi square (χ2 Xi square)	13.714	6	0.033

Figure 2 shows the differences in the grades for investment in the development of domestic brands as an element needed for the development of the competitiveness of Serbian textile organizations. In a market game intensified by globalization, a brand helps a textile organization to survive thanks to the built loyalty and safety created by the brand.

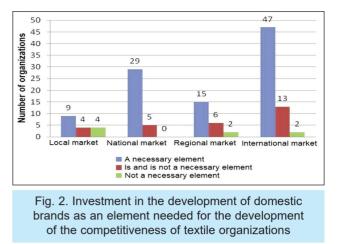
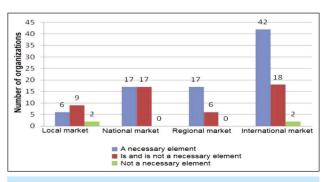
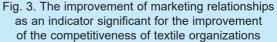


Table 3 shows the significance of the difference in the grades of the textile organizations doing business at a different level with respect to the importance of investment in the development of domestic brands for the development of their competitiveness. It can be seen that Sig.=0.021<0.05, so it can be concluded that the level of the business operations of an organization has a significant role with respect to the grades.

			Table 3		
THE IMPORTANCE OF INVESTMENT IN THE DEVELOPMENT OF DOMESTIC BRANDS FOR THE DEVELOPMENT OF THE COMPETITIVENESS OF SERBIAN TEXTILE ORGANIZATIONS					
Indicator	Value	df	Sig.		
Pearson chi square (χ2 Xi square)	14.918	6	0.021		

Figure 3 shows the significance of the improvement of marketing relationships and activities as an indicator significant for the improvement of the success of textile organizations as assessed by the managers of those organizations doing business at a different level. Table 4 accounts for the differences in the grades for the improvement of marketing relationships as an





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element significant for the development of the competitiveness of Serbian textile organizations. The results show that Sig.=0.026<0.05, which means that the level of the business operations of the textile organizations significantly influences the differences in the grades for the assessment of marketing relationships as a significant element for the improvement of the competitiveness of the same.

			Table 4
THE IMPROVEMENT OF MARKETING RELATIONSHIPS AS AN INDICATOR SIGNIFICANT FOR THE IMPROVEMENT OF THE COMPETITIVENESS OF TEXTILE ORGANIZATIONS			
Indicator	Value	df	Sig.
Pearson chi square (χ2 Xi square)	14.383	6	0.026

Figure 4 shows the importance of the procurement of modern technological solutions and equipment as an indicator significant for the improvement of the competitiveness of Serbian textile organizations as assessed by the managers of those organizations doing business at a different level.

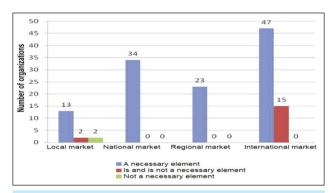


Fig. 4. The significance of the procurement of modern technological solutions and equipment as an element significant for the development of the competitiveness of the textile organizations in Serbia

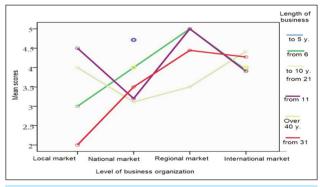
Table 5 shows the difference in the grades for the significance of the procurement of modern technological solutions and equipment by the organizations doing business at a different level. The results show that Sig.=0.000<0.05, so it can be concluded that there is a significant difference in the grades for the significance of the procurement of modern technological solutions and equipment as an element important for

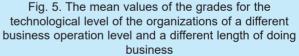
Table 5				
THE PROCUREMENT OF MODERN TECHNOLOGICAL SOLUTIONS AND EQUIPMENT AS AN ELEMENT SIGNIFICANT FOR THE IMPROVEMENT OF THE COMPETITIVENESS OF SERBIAN TEXTILE ORGANIZATIONS				
Indicator	Value	df	Sig.	
Pearson chi square (χ2 Xi square)	30.142	6	0.000	

the development of the competitiveness of Serbian textile organizations as assessed by the managers of the same, which do business at a different level. It is possible to note that the level of the business operations of those textile organizations significantly influences the grades.

Furthermore, a two-factor analysis was conducted to determine that the length of the business operations and the level of the business operations have an influence on the differences in the characteristics of the business operations of the textile organizations as a precondition for their competitiveness. The obtained mean values of the grades of the technological level of the textile organizations doing business for a different period of time and being at a different business operation level (doing business on different markets) enabled us to see that the best graded was the technological level with the organizations doing business at a regional level in a period from six to ten years and at a regional level in a period from 21 to 30 years (the mean 5.00, the std. deviation 0.000).

Figure 5 shows the mean values of the grades for the technological level of the organizations doing business for a different period of time and being at a different business operation level (doing business on different markets). Here, it is possible to see that the best graded was the technological level with the organizations doing business at a regional level in a period from six to ten years and at a regional level in a period from 21 to 30 years.





The influence of the interaction between the length of the business operations of the organization and the business operation level is given in table 6. In the column "Business Operation Level/Length of Doing Business", Sig=0.000, which is less than 0.05, so it can be concluded that there are differences in the grades for the technological level of the organizations which are at a different business operation level and of a different length of doing business. The influence of the interaction between the business operation level and the length of doing business is statistically significant. After the analysis of the joint influence, an analysis of separate influences was carried out.

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Namely, in the column "Sig.", the value for the business operation level is 0.001, which is less than 0.05, so it is concluded that the level of the business operations of an organization has a significant influence on the grades for the technological level of the organization. Also, the Sig. for the length of doing business is less than 0.05 (the same being 0.006), which also significantly influences the differences in the assessment of the level of the technological level of the organization. It is concluded that the business operation level and the length of doing business play an important role with respect to the differences in the technological level of the organizations.

Table 6					
THE INFLUENCE OF THE INTERACTION BETWEEN THE VARIABLES "THE BUSINESS OPERATION LEVEL" AND "THE LENGTH OF DOING BUSINESS" ON THE GRADE FOR THE TECHNOLOGICAL LEVEL OF THE ORGANIZATIONS					
Variables	Df	Mean Square	F	Sig.	
Business operation level	3	4.229	6.265	0.001	
The length of doing business	5	2.306	3.417	0.006	
Business operation level/The length of doing business	10	2.531	3.749	0.000	

# CONCLUSION

In the conducted research study, the sample consisted of the textile organizations of different sizes, levels and lengths of doing business, while the inclusion of the organizations as per the size was simultaneously proportional. The focal point of the research study was on the concrete factors of the competitiveness of a textile organization which should primarily be influenced through adequate measures so that Serbian exporters can become more competitive abroad. Apart from the other indicators, the continuous improvement of employees' knowledge, investment in marketing relationships and the development of domestic brands, as well as the procurement of modern technological solutions and equipment, are singled out.

The improvement of employees' knowledge is the basis for the competitiveness of textile organizations.

How successful the design function will be, depends mostly on their knowledge. The outcomes show that Sig.=0.033<0.05, so it can be concluded that the differences in the level of the business operations of an organization do importantly influence the grade for the importance of the continuous improvement of all employees for the purpose of improving the competitiveness of textile organizations.

In market competition, investment in the development of a domestic brand significantly helps a textile organization to survive thanks to the built loyalty and safety created by a brand. The results show that Sig.=0.021<0.05, so it is concluded that the business operation level of an organization has a significant role with respect to grades.

The improvement of marketing relationships and activities as an indicator significant for raising the level of the success of textile organizations by the managers of the organizations doing business at a different level was assessed as very important. The results show that Sig.=0.026<0.05, which means that the level of the business operations of textile organizations significantly influences the differences in the grades for the improvement of marketing relationships as a significant element for the improvement of the competitiveness of the same.

Furthermore, the results show that there is a significant difference in the grades for the importance of the procurement of modern technological solutions and equipment as an element important for the development of the competitiveness of Serbian textile organizations, where Sig.=0.000<0.05, which refers us to the conclusion that the level of the business operations of textile organizations significantly influences the obtained grades. At the same time, the individual influences of the business operation level and the length of doing business differ from one another. There is an especially significant difference in the technological level of the organizations doing business on the national and regional markets and the organizations doing business on the national and international markets.

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