

**Igor Kovačević**

University of Belgrade  
Faculty of Economics  
Department for Business Economics and  
Management

**Aleksandra Anić**

University of Belgrade  
Faculty of Economics  
Department for Statistics and  
Mathematics

**Maja Ribić**

University of Belgrade  
Faculty of Economics  
Department for Accounting and Business  
Finance

**Aleksandra Đorđević Zorić**

University of Belgrade  
Faculty of Economics  
Department for International Economic  
Relations

## ECONOMIC IMPACT OF THE CREATIVE INDUSTRY AND THE EXAMPLE OF SERBIA\*

Ekonomski doprinos kreativne industrije i primer Srbije

### Abstract

The creative industry plays an important role in the economic development of countries. Its role has been the topic of various studies, confirming not just the importance, but also the specifics of its operations and characteristics. Creative industry in Serbia is an important part of the economy. This paper creates additional value in terms of understanding its economic impact and shows that this sector in Serbia demonstrated evident growth in the analysed period, with the average increment rate of the number of entities being 6.2% when observing the narrow classification and 7.8% when observing the broad one. Having in mind the structure of the sector in Serbia, 73.8-77% of its participants are entrepreneurs, and 92-93% of the companies are micro firms. In addition to this, most of the creative industry firms are registered in the capital city. In the observed period, GVA of the creative industry's private sector increased by 64.9% in terms of the narrow classification, with average annual growth rate of 18.1%. The share of GVA in GDP of the creative industry when taking into account the broad classification is higher compared to certain traditional industries in Serbia, such as construction, and somewhat lower than the share the agriculture. This paper also analyses the employment structure in this sector and its impact on overall employment.

**Keywords:** *creative industry, creative economy, economic impact.*

### Sažetak

Kreativna industrija ima značajnu ulogu u ekonomskom razvoju zemalja. Njen značaj je bio predmet različitih istraživanja koja su potvrdila ne samo važnost ovog sektora, već i specifičnosti njegovog funkcionisanja i karakteristike. Kreativna industrija ima važnu ulogu i u ekonomiji Srbije. Ovaj rad kreira dodatnu vrednost u razumevanju ekonomskog uticaja i pokazuje da ovaj sektor u Srbiji beleži jasne stope rasta u analiziranom periodu, sa prosečnom stopom prirasta broja preduzeća od 6,2% po užem, i 7,8% po širem obuhvatu. Sa aspekta strukture sektora u Srbiji, 73,8-77% čine preduzetnici, dok 92-93% kompanija spada u mikro preduzeća. Takođe, najveći broj firmi je registrovan u Beogradu. U posmatranom periodu, BDV privatnog sektora kreativne industrije prema užoj definiciji porastao je za 64,9%, sa prosečnom godišnjom stopom rasta od 18,1%. Učešće BDV-a kreativne industrije prema široj definiciji u BDP-u veće je od udela nekih tradicionalnih industrija, kao što je građevinarstvo, i nešto ispod učešća poljoprivrede. Rad analizira i strukturu zaposlenosti u ovom sektoru i njegov doprinos zaposlenosti.

**Ključne reči:** *kreativna industrija, kreativna ekonomija, ekonomski uticaj.*

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## Understanding and the definition of creative industry

The first instances of using the term creative industry in Europe were recorded at the end of the last century, when conversations about knowledge workers as the foundation of post-industrial economy started [18, p. 3]. Since then, various definitions and explanations of creative industry have been put forward. Most of them place special emphasis on personal and company's talents and skills to create knowledge [13]. "Creative industries are those activities based on creativity, individual talent and skill, and that have the potential to create jobs and wealth through the generation and exploitation of intellectual property" [3, p. 4]. Numerous products that are based on creative content (i.e., the film industry, applied arts, design, IT and so forth) are increasingly more important to the global economy, having in mind the positive effect of the creative industry sector on various macroeconomic indicators, such as employment, GDP and others [21, p. 6], [7, p. 19], [4, p. 4], [5], as well as on total economic competitiveness [10, p. 3] and intensifying entrepreneurship [9, p. 16]. In addition to the economic impact, it is important to note that creative industries are also seen as post-industrial urban economy that adds value to the development of cities [27, p. 1] through processes such as gentrification and redefinition of the characteristics of consumption and lifestyle [20, p. 4], [8, p. 4].

In the literature and professional practice, four models for defining and classifying creative industries can be identified [24], [25], [26], [2], [23], [12]: DMCS model, WIPO copyright model, symbolic texts model and concentric circles model. DCMS model does not differentiate the involved industries in any manner, while the other models do make a distinction between major and the supporting industries.

Creative industries in Serbia and the influence they have on the local economy have been topics of various studies in the previous years, some of which were pioneer steps in understanding this valuable sector from the economic point of view, but also as a part of social development [11], [15]. At the same time, one of the first tangible pieces of data that helped understand the creative sector in Serbia

and made it more visible in the eyes of the decision-makers and public stakeholders resulted from the World Bank's technical assistance support project to the Government of Serbia [16], and it used the "narrow" DCMS definitional approach [25] and the additional "broad" approach, as the variation of WIPO [22], when defining the scope of creative industries.

In order to have a permanent understanding of the creative industries in Serbia, and to secure continued scientific research over the sector, this paper follows the proposed approaches of using the "narrow" and the "broad" classification of the involved industries. However, this paper is based on a different methodology of calculating GVA and contribution to GDP, different analysis of the structure of the sector and different analysis of the employment structure and the sector's contribution to overall employment, compared to the methodology employed by Mikić, Radulović and Savić in their paper [16], which showed that this sector contributed with 3.7% to the total GDP of Serbia, and with 3.3% to the total number of employees.

In comparison to Mikić et al., who "determine the GVA based at current prices by using income approach" [16, p. 205], this paper implements a different methodology based on the SORS and SNA, defining consistency as a priority, since any deviation from the official SNA methodology (comparable with ESA) would provide artificial results. Also, the results of Mikić et al. are based "on the financial records for the entities registered under a business code that is not covered by our classification, but are nevertheless operating and providing services in the creative industries" [16, p. 204], while this paper takes into account only those entities that are officially registered within the determined classification. In addition, based on the data acquired for 2018 and, partially, 2019, this paper covered additional periods of research that were not covered in any previous studies. Due to the difference in methodology, there are obvious differences in the results, as well. However, the most important conclusion is that the research into the positive influence of creative industries on the national economy in Serbia conducted by Mikić et al. provided excellent results that this paper further proved and upgraded by implementing a different methodology.

## Gross value added of the creative industries in Serbia

Gross value added (GVA) is a macroeconomic aggregate that stands for the difference between total value of production (output) and total value of intermediate consumption. Intermediate consumption includes costs of inputs, production and non-production services, but excludes wages of employees and amortization. According to the production approach, gross domestic product (GDP) is calculated as GVA plus taxes on products minus subsidies on products. We use the methodological guidelines of the European system of accounts 2010 (ESA 2010) in order to translate financial accounting principles into national account concepts. Main data sources are balance sheets, income statements, cash flow statements, statements of changes in equity and statistical reports. Statistical reports are the most important data source. Table 1 presents EDP<sup>1</sup> categories used to calculate production and intermediate consumption.

Since the methodological note “Methodology of calculating gross domestic product, sources and methods” [18] is not sufficiently detailed, a personal consultation interview with the System of national accounts’ (SNA) team from the Statistical Office of Republic of Serbia

(SORS) was carried out.<sup>2</sup> The above-presented calculations include the nonfinancial incorporated businesses (i.e., private companies). It is not possible to calculate GVA for a particular public company or for all the public companies in a particular activity sector. GVA can be calculated only for the entire government institutional sector. Therefore, we followed SORS’ guidelines and did not calculate GVA for public companies. Methodological consistency is a priority, since deviation from the official SNA methodology (comparable with ESA) would provide artificial results.

When calculating macroeconomic aggregates for entrepreneurs and self-employed persons, researchers and statisticians face numerous problems that make it impossible to accurately calculate the basic aggregates. The reasons are the high frequency of establishing and closing down entrepreneurial businesses, instability in terms of core business and employment, as well as the high level of shadow economy. In addition to this, entrepreneurs and self-employed persons usually have a low response rate in surveys, and the quality of data on entrepreneurs and the self-employed is very low. An additional problem is the fact that personal property and business property of an entrepreneur are not separated. Besides all of these problems, the biggest limitation is probably the lack of

**Table 1: EDP categories needed to calculate gross value added at company level**

| EDP code | Name of position   | Sign |
|----------|--|------|
| 1002     | Income from sales of merchandise   | +    |
| 1009     | Income from sales of products and services rendered  | +    |
| 1020     | Income from own use of products, services and merchandise  | +    |
| 1021     | Increase in value of finished goods, work in progress and services in progress                   | +    |
| 1022     | Decrease in value of finished goods, work in progress and services in progress                   | -    |
| 1017     | Other operating income   | +    |
| 1019     | Costs of merchandise sold  | -    |
| 9078     | Land rental fees income  | -    |
|          | Production =1002+1009+1020+1021-1022+1017-1019-9078  |      |
| 1023     | Costs of materials   | +    |
| 1024     | Costs of fuel and energy   | +    |
| 1026     | Costs of production services   | +    |
| 1029     | Non-production costs   | +    |
| 9056     | Costs of remunerations according to contracts (gross)  | +    |
| 9057     | Costs of remunerations to the manager, members of the Management Board and the Supervisory Board | +    |
| 9065     | Tax costs  | -    |
| 9066     | Contribution costs   | -    |
| 9060     | Land lease costs   | -    |
|          | Intermediate consumption =1023+1024+1026+1029+9056+9057-9065-9066-9060                           |      |

Source: Authors’ presentation based on RZS’ (2018) and SORS’ consultations.

1 Electronic data processing.

2 The authors are thankful for SORS’ help.

double-entry bookkeeping and detailed financial reporting obligations. The SORS estimates GVA for entrepreneurs through a combination of different methods and with numerous adjustments. The calculation of these values, however, is only available at the double-digit level of activity.

Based on the interview with the SNA team, the only way to calculate GVA for entrepreneurs at the four-digit level of activity, which is in this case necessary, is by applying the following approximation:

- GVA for entrepreneurs at the double-digit level of activity is divided by the sum of the number of entrepreneurs and the number of persons employed by entrepreneurs in the specified activity. Therefore, we calculated GVA per employee for entrepreneurs at the double-digit level for each activity. We calculated the value of GVA for entrepreneurs at the four-digit level of activity by multiplying this ratio with the sum of the number of entrepreneurs and the number of employees of entrepreneurs in each activity at the four-digit level. Although this approximation is rather general, this is the only method that can be applied based on the available data.

Table 2 presents GVA of the creative industry in the 2014-2017 period. GVA includes GVA of private companies and entrepreneurs (public companies excluded, as explained above). GVA of the creative industry's private sector as a percentage of total GVA amounted to approximately 2%

according to the narrow definition and to 6% according to the broad definition.

GVA of the creative industry's private sector (narrow definition) increased by 64.9%, whereas according to the broad definition, the increase was 24.1% in 2017 compared to 2014. Average growth rate in the 2014-2017 period was 18.1% for the narrow definition, and 7.5% for the broad definition.

IT, software and computer services have the highest share, and this share increased significantly in the analysed period. The share amounted to around 50% in 2014 and to more than 60% in 2017. Significant shares have also been observed for the following groups: Advertising and marketing; Industrial, graphical and fashion design; and Publishing. Contrary to IT, software and computer services, their share dropped in 2017 compared to their respective share in 2014. The share of Advertising and marketing amounted to 12.8%, Industrial, graphical and fashion design amounted to 11.8%, and Publishing amounted to 9.6% in 2017.

Table 3 compares GVA of the creative industry's private sector as a share of GDP with the respective share of GVA of the selected industries. According to the broad definition, the GVA share of the creative industry's private sector is higher than the share of construction, lower than the share of agriculture and significantly lower than the share of manufacturing and trade.

**Table 2: GVA of the creative industry's private sector, 2014-2017**

| Year | GVA narrow definition in RSD | GVA broad definition in RSD | GVA total, current prices in mil. RSD | GVA narrow % GVA total | GVA broad % GVA total |
|------|------------------------------|-----------------------------|---------------------------------------|------------------------|-----------------------|
| 2014 | 50,632,461,271               | 179,594,799,725             | 4,160,548.5                           | 1.45                   | 5.14                  |
| 2015 | 63,129,162,565               | 192,646,657,335             | 4,312,038.1                           | 1.76                   | 5.36                  |
| 2016 | 74,208,081,558               | 209,646,103,704             | 4,521,264.7                           | 1.98                   | 5.59                  |
| 2017 | 83,472,858,749               | 222,942,310,133             | 4,754,368.4                           | 2.12                   | 5.65                  |

Note: It is not possible to calculate GVA for 2018. The data for private companies are provided jointly for 2018 and a part of 2019 (until 22nd November 2019). SORS data for entrepreneurs are available for 2018. GVA data are revised data.

Source: Authors' calculations based on BRA's data and SORS' data for total GVA.

**Table 3: GVA of the creative industry's private sector and of the selected industries, % GDP, 2014-2017**

| Year | GVA narrow | GVA broad | Agriculture | Manufacturing | Construction | Trade |
|------|------------|-----------|-------------|---------------|--------------|-------|
| 2014 | 1.22       | 4.3       | 7.1         | 15.0          | 3.2          | 11.0  |
| 2015 | 1.46       | 4.5       | 6.7         | 14.7          | 3.7          | 11.1  |
| 2016 | 1.64       | 4.6       | 6.8         | 14.7          | 3.9          | 11.1  |
| 2017 | 1.76       | 4.7       | 6.0         | 15.1          | 4.1          | 11.4  |

Note: GVA is expressed in current prices and revised data. NACE Rev 2. Classification is used: Agriculture, forestry and fishing (A), Manufacturing (C), Construction (F) and Wholesale and retail trade: repair of motor vehicles and motorcycles (G).

Source: Authors' calculations based on BRA's data for the creative industry and SORS's data for GVA.

According to the broad definition, operating income of the creative industry amounted to RSD 690,131,386 in 2018 and 2019<sup>3</sup>. Average growth rate was 8.5% in the 2014-2017 period. The largest growth was recorded in Computer gaming (132.6%) and Retail of computers, computer peripherals and software in specialised shops (123%)<sup>4</sup>. According to the narrow definition, operating income of the creative industry amounted to RSD 258,684,011 in 2018 and 2019, and the average growth rate was 14% (2014-2017). The largest average growth was recorded in Computer gaming (132.6%) and Libraries and archives industry (58.5%).

### Structure of the creative industry sector in Serbia

We can illustrate the size of the creative industry sector through the number of registered economic entities<sup>5</sup> engaged in activities that belong to this sector. According to the broad definition, in 2018, the total number of economic entities was 70,792. Out of that number, 18,452 were private companies (about 12.6 percent of the total number of private companies in Serbia), 52,249 were entrepreneurs (around 19.1 percent of all entrepreneurs in Serbia), and 91 were public (state) companies (16.2 percent of all public companies in Serbia). According to the narrow definition, the CI sector consisted of 45,136 registered economic entities, out of which 10,368 were private companies, 34,718 entrepreneurs and 50 public companies.

In order to get an impression of the development of this sector during the observed period (2014-2018), the following tables show the number of registered economic entities, according to the broad and narrow definition, per abovementioned groups (private companies, entrepreneurs and public companies).

The number of economic entities in the CI sector shows a growth trend. The average annual increment rate

**Table 4: Number of registered economic entities according to the broad definition**

|      | Private companies | Entrepreneurs | Public companies | Total  |
|------|-------------------|---------------|------------------|--------|
| 2014 | 14,489            | 30,576        | 107              | 45,172 |
| 2015 | 15,427            | 34,523        | 133              | 50,083 |
| 2016 | 16,402            | 39,911        | 107              | 56,420 |
| 2017 | 17,432            | 45,422        | 103              | 62,957 |
| 2018 | 18,452            | 52,249        | 91               | 70,792 |

Source: Authors' calculations based on BRA's data.

**Table 5: Number of registered economic entities according to the narrow definition**

|      | Private companies | Entrepreneurs | Public companies | Total  |
|------|-------------------|---------------|------------------|--------|
| 2014 | 7,923             | 18,422        | 80               | 26,425 |
| 2015 | 8,484             | 21,302        | 83               | 29,869 |
| 2016 | 9,064             | 25,314        | 60               | 34,438 |
| 2017 | 9,709             | 29,407        | 56               | 39,172 |
| 2018 | 10,368            | 34,718        | 50               | 45,136 |

Source: Authors' calculations based on BRA's data.

of economic entities from the broadly defined CI sector in the period from 2014 to 2018 was 6.2 percent, with the increment rate increasing from year to year. During the observed five-year period, the increment rate increased by more than 5 percentage points. According to the narrow definition, the average increment rate for this sector in the same period was 7.8 percent. Similar to the broad definition, this rate increased every year, and over a five-year period it has increased by close to 7 percentage points.

If we look at the broad definition of the sector, 73.8% of the total number of economic entities are entrepreneurs, whereas according to the narrow definition of the sector, the share of entrepreneurs in the total number of economic entities is 77%.

If we look at the newly founded economic entities according to the broad definition, the average growth rate of newly founded companies (both private and public) in the observed five-year period was 5.6%, while the average growth rate of newly founded entrepreneurs was 24%. When we look at the narrow definition, the average growth rate of companies in this period was 8.1%, whereas this rate for entrepreneurs was 27%.

The largest number of both companies and entrepreneurs in this period, both according to the narrow and broad definition, respectively, was founded in Computer programming activities. If we look at the activities from

3 Data for 2018 and 2019 were jointly provided by BRA. Data for 2019 cover the period before 22<sup>nd</sup> November 2019.

4 The difference between the growth of these two activities and the average growth is significant because in certain activities the growth rate was negative (according to both definitions) in the 2014-2017 period.

5 Economic entities include private companies, entrepreneurs and public companies.

the broad definition, the next one in terms of the number of founded companies and entrepreneurs are Engineering activities and related technical consultancy.

The largest number of private companies and entrepreneurs are registered in the Belgrade region. According to the narrow definition, the number of private companies increased in 2018 compared to 2014 by 1,682, i.e., by 33.4%. In the region of Vojvodina, the number of private companies increased by 460, i.e., by 29%. The number of entrepreneurs in the Belgrade region increased by 7,111, i.e., by 87.4% in 2018 compared to 2014, while in Vojvodina the number of entrepreneurs in the observed period increased by 3,045, i.e., by 92.4%. According to the broad definition, the number of private companies in the Belgrade region increased by almost 2,500, while the number of entrepreneurs increased by about 9,000 in 2018 compared to 2014. In the region of Vojvodina, the number of private companies according to the broad definition increased by almost 800, whereas the number of entrepreneurs increased by about 5,000 in 2018 compared to 2014. Compared to the Belgrade region and Vojvodina, the number of private companies is much smaller in the region of Šumadija and Western Serbia and in the region of Southern and Eastern Serbia. According to the narrow definition, the average number of private companies in the Belgrade region in the 2014-2018 period was almost 6,000, while the average number in the region

of Šumadija and Western Serbia was approximately 750, and in the region of Southern and Eastern Serbia it was less than 700. In addition to this, the average number of entrepreneurs in the Belgrade region was about 11,000 (narrow definition), while in the region of Southern and Eastern Serbia it was approximately 3,000. We see that the concentration of private companies and entrepreneurs is the highest in the Belgrade region, followed by the region of Vojvodina, while it is the lowest in the region of Southern and Eastern Serbia.

### Impact of the creative industry on employment in Serbia

We needed the data on the number of employees on four-digit level by NACE Rev 2. Classification in order to analyse employment in the creative industry. Research on registered employment is based on a combination of Central Register of Compulsory Social Insurance (CRCSI) and Statistical Business Register data. The term employee comprises persons who have formal legal employment contracts, i.e., who entered into employment with an employer for a definite or indefinite period of time, and persons who work on the basis of a contract on performing temporary or occasional jobs, persons performing occupations/activities independently or who are founders of enterprises or unincorporated enterprises, as well as

**Table 6: Activities with the largest number of newly founded companies and entrepreneurs according to the broad definition in the 2014-2018 period**

| Activity   | Number of companies | Activity   | Number of entrepreneurs |
|--|---------------------|--|-------------------------|
| Computer programming activities                          | 1,148               | Computer programming activities                          | 8,716                   |
| Engineering activities and related technical consultancy | 598                 | Engineering activities and related technical consultancy | 2,564                   |
| Advertising agencies' activities                         | 500                 | Computer consultancy activities                          | 1,484                   |
| Technical testing and analysis                           | 449                 | Specialised design activities                            | 1,449                   |

Source: Authors' calculations based on BRA's data.

**Table 7: Activities with the largest number of newly founded companies and entrepreneurs according to the narrow definition in the 2014-2018 period**

| Activity   | Number of companies | Activity   | Number of entrepreneurs |
|--|---------------------|--|-------------------------|
| Computer programming activities                                      | 1,148               | Computer programming activities                                      | 8,716                   |
| Advertising agencies' activities                                     | 500                 | Computer consultancy activities                                      | 1,484                   |
| Computer consultancy activities                                      | 312                 | Specialised design activities  | 1,449                   |
| Motion picture, video and television programme production activities | 207                 | Motion picture, video and television programme production activities | 1,180                   |

Source: Authors' calculations based on BRA's data.

persons performing agricultural activities but are in the records of CRCSI.

**Table 8: Geographical distribution of economic entities in the creative industry sector**

| NARROW DEFINITION                  | 2014  | 2015  | 2016   | 2017   | 2018   |
|------------------------------------|-------|-------|--------|--------|--------|
| <b>BELGRADE REGION</b>             |       |       |        |        |        |
| Private companies                  | 5,037 | 5,397 | 5,767  | 6,248  | 6,719  |
| Public companies                   | 2     | 11    | 11     | 13     | 13     |
| Entrepreneurs                      | 8,133 | 9,503 | 11,298 | 13,114 | 15,244 |
| <b>VOJVODINA</b>                   |       |       |        |        |        |
| Private companies                  | 1,585 | 1,707 | 1,843  | 1,944  | 2,045  |
| Public companies                   | 31    | 29    | 21     | 18     | 15     |
| Entrepreneurs                      | 4,493 | 5,130 | 6,156  | 7,021  | 8,326  |
| <b>ŠUMADIJA AND WESTERN SERBIA</b> |       |       |        |        |        |
| Private companies                  | 665   | 718   | 746    | 775    | 820    |
| Public companies                   | 27    | 22    | 12     | 11     | 10     |
| Entrepreneurs                      | 3,296 | 3,784 | 4,426  | 5,237  | 6,341  |
| <b>SOUTHERN AND EASTERN SERBIA</b> |       |       |        |        |        |
| Private companies                  | 604   | 629   | 674    | 707    | 748    |
| Public companies                   | 19    | 20    | 15     | 13     | 11     |
| Entrepreneurs                      | 2,440 | 2,825 | 3,363  | 3,950  | 4,716  |

| BROAD DEFINITION                   | 2014   | 2015   | 2016   | 2017   | 2018   |
|------------------------------------|--------|--------|--------|--------|--------|
| <b>BELGRADE REGION</b>             |        |        |        |        |        |
| Private companies                  | 8,346  | 8,902  | 9,466  | 10,145 | 10,804 |
| Public companies                   | 10     | 31     | 30     | 31     | 28     |
| Entrepreneurs                      | 12,528 | 14,324 | 16,640 | 19,009 | 21,677 |
| <b>VOJVODINA</b>                   |        |        |        |        |        |
| Private companies                  | 3,076  | 3,265  | 3,481  | 3,668  | 3,865  |
| Public companies                   | 40     | 41     | 33     | 30     | 25     |
| Entrepreneurs                      | 7,667  | 8,622  | 9,937  | 11,133 | 12,823 |
| <b>ŠUMADIJA AND WESTERN SERBIA</b> |        |        |        |        |        |
| Private companies                  | 1,682  | 1,793  | 1,892  | 1,977  | 2,062  |
| Public companies                   | 30     | 31     | 21     | 23     | 21     |
| Entrepreneurs                      | 6,121  | 6,795  | 7,762  | 8,900  | 10,337 |
| <b>SOUTHERN AND EASTERN SERBIA</b> |        |        |        |        |        |
| Private companies                  | 1,319  | 1,397  | 1,491  | 1,568  | 1,646  |
| Public companies                   | 24     | 27     | 20     | 16     | 14     |
| Entrepreneurs                      | 4,137  | 4,648  | 5,424  | 6,219  | 7,239  |

Note: Data are as of 31st December, excluding the entities deleted during the year.

Source: Authors' calculations based on BRA's data.

**Table 9: Employment in the creative industry, numbers and share, 2016-2018**

|   | 2016             | 2017             | 2018             |
|---|------------------|------------------|------------------|
| <b>Number of employees in the creative industry</b> |                  |                  |                  |
| Narrow definition                                   | 63,322           | 67,254           | 72,112           |
| Broad definition                                    | 113,431          | 119,101          | 127,357          |
| <i>Total</i>  | <i>1,920,679</i> | <i>1,977,358</i> | <i>2,052,546</i> |
| <b>Share in total employment</b>                    |                  |                  |                  |
| Narrow definition                                   | 3.3%             | 3.4%             | 3.5%             |
| Broad definition                                    | 5.9%             | 6.0%             | 6.2%             |

Note: Total number of employees comprises employees of legal entities (companies, enterprises, cooperatives, institutions and other organisations), persons individually running businesses, entrepreneurs and their employees.

Source: Authors' calculations based on SORS' data.

It is not possible to obtain precise and consistent information on employment at the four-digit level. Therefore, the Statistical Office of the Republic of Serbia (SORS) offered approximation data that were used to calculate employment in the creative industry.<sup>6</sup>

The number of employees in the creative industry was just above 63 thousand in 2016 and 72 thousand in 2018, according to the narrow definition. When using the broad definition, the number of employees was approximately 113 thousand in 2016 and 127 thousand in 2018. The share in total employment in the 2016-2018 period was 3.3%-3.5% according to the narrow definition and 5.9%-6.2% according to the broad one.

The highest share of employees is aged 30-34, which is 18% according to the narrow definition and 17% according to the broad one. Employees aged 15-24 and 65+ (i.e., the youngest and the oldest group) make up for the lowest share in creative industry employment. Employees aged 25-45 have the highest share in creative industry employment according to both of the definitions. The share of employees aged 25-40 is almost 50%, whereas the share of those aged 25-45 is more than 60%. The structure is similar according to both of the definitions.

Gender distribution shows that the share of male employees is higher than that of female ones according to both of the definitions. The share of males amounted to 60% according to the broad definition. When applying the narrow definition, the share of males amounted to 55%, whereas the share of females amounted to 45%.

Distribution of employees according to their education level is incomplete, due to lack of data. The information on the level of education in 2016 was missing for 48.2% of employees according to the narrow definition and for 48.5% according to the broad definition. The share of missing

<sup>6</sup> Data are presented by major activity of the business subject instead of by activity of the business unit. Due to this difference between data provided and data by the registered employment methodology, the data used in the analysis are not directly comparable with official registered employment data. It is not possible to obtain data by activity of local units which reflect the cross-section of activity and personal characteristics of employees. The activity of local units is obtained by research into the local units, meaning that the number of employees by CRCSI is distributed by "pure" activity according to the structures obtained from local units' research data. Annual average of the number of employees is stock average for 12 months. Slight differences for totals at different levels of aggregation are possible due to averaging and rounding. Detailed CRCSI data are available as of 2016.

data was lower in 2018 than in 2016, but nevertheless high. The missing data share in 2018 was 38.1% according to the narrow definition and 42% according to the broad definition. Therefore, the analysis according to the education level is provided only for those employees for whom we managed to obtain data on their level of education.

The share of employees with high education is more than 50% according to the narrow definition, and somewhat lower when applying the broad definition (47.5%, 48.8% and 49.2% in 2016, 2017 and 2018, respectively). The share of employees with a low education level is around 8%. The share of secondary education amounts to 40% according to the narrow definition and to slightly more than 40% according to the broad definition. The share of highly educated employees is high according to both of the definitions.

Analysis of employment by individual characteristics is approximate, since there is no possibility to obtain precise data on individual characteristics of employees and activity (see footnote number 7). We summarize the main conclusions. In 2018, the creative industry made up for 3.5% and 6.2% of total employment according to the narrow and broad definition, respectively. The share slightly increased during the 2016-2018 period. According to the age categories, the highest share of employees was recorded in the age category 30-34. The distribution according to the age intervals is as expected, since the medium age group (25-45) has the highest share, and the lowest shares are taken up by the youth (15-25) and elderly (65+). The share of male employees is higher than that of female ones and the males' share is higher according to

the broad definition. Due to the significant lack of data on education levels, education level analysis should be taken with caution and only as an approximation. The highest share of missing data was observed for the broad definition in 2016, i.e., 48.5%. The share of employees with tertiary education was around 50%, whereas low education level had a share of 8%. The share of employees with tertiary education is slightly higher according to the narrow definition than according to the broad one.

## Conclusion

The creative industry sector in Serbia demonstrated clear growth in the analysed period. The average increment rate of the sector (by the number of economic entities) in the 2014-2018 period was at the level of 6.2% for the narrow, and 7.8% for the broad classification approach. Having in mind the structure of the sector in Serbia, 73.8-77% of the participants are entrepreneurs, while 92-93% are micro firms, and this confirms the previous findings that self-employed entrepreneurs, micro and small companies constitute the biggest portion of the creative industry sector [6], [19], since they are the major drivers of innovation and creative content [27]. In addition to this, most of the creative industry firms are registered in Belgrade, the capital city, which recorded the highest growth, which again is in line with previous findings that creative industries tend to be located in the major urban areas of each country [14], [1]. In the observed period, GVA of the private sector in creative industry according to the narrow definition increased by 64.9%, with average annual growth rate of

**Table 10: Creative industry employment structure by education level, numbers and share, 2016-2018**

|        |      | Number of employees |        |        |        | Share |        |       |        |
|--------|------|---------------------|--------|--------|--------|-------|--------|-------|--------|
|        |      | Low                 | Medium | High   | Total  | Low   | Medium | High  | Total  |
| Narrow | 2016 | 2,509               | 13,320 | 16,930 | 32,759 | 7.7%  | 40.7%  | 51.7% | 100.0% |
|        | 2017 | 3,004               | 15,137 | 20,747 | 38,888 | 7.7%  | 38.9%  | 53.4% | 100.0% |
|        | 2018 | 3,468               | 17,043 | 24,041 | 44,552 | 7.8%  | 38.3%  | 54.0% | 100.0% |
| Broad  | 2016 | 4,573               | 26,013 | 27,665 | 58,251 | 7.9%  | 44.7%  | 47.5% | 100.0% |
|        | 2017 | 5,435               | 29,833 | 33,650 | 68,918 | 7.9%  | 43.3%  | 48.8% | 100.0% |
|        | 2018 | 6,436               | 33,988 | 39,210 | 79,634 | 8.1%  | 42.7%  | 49.2% | 100.0% |

Notes: Total is the total number of employees for whom we obtained data on their level of education, not the total number of employees in the creative industry. Low education level: without education, primary education and low secondary education (1-2 years); medium education level: higher secondary education (3-4 years) and post-secondary non-tertiary education; high education level: tertiary education (short-cycle tertiary education, bachelor's or equivalent, master's or equivalent and doctoral or equivalent).

Source: Authors' calculations based on SORS' data.



18.1%. The GVA share in GDP was higher than that of some traditional industries in Serbia, such as construction, and somewhat lower than the share of agriculture. Operating income of the sector reached an average annual growth rate of 8.5% according to the broad definition, and 14% according to the narrow one, with the highest growth in the Video gaming industry (132.6%). Employees aged 25-40 years make up for almost 50% of all employees in the sector. According to the narrow approach, there is almost an equilibrium among male and female workers (55%:45%), and a highly positive finding is that the largest portion is made up of highly educated employees.

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**Igor Kovačević**

is Assistant Professor at the Faculty of Economics, University of Belgrade. He teaches courses in business economics and management (Marketing in Tourism and Management of Tourism Enterprises) and a course in economic policy and development (Tourism Economics). His academic and professional interests are primarily related to tourism marketing and management, with special emphasis on the meetings industry (MICE) and business travel, as well as on the creative industries.



**Aleksandra Anić**

is Assistant Professor at the University of Belgrade, Faculty of Economics, at the Department for Statistics and Mathematics, and also works as researcher at the Foundation for the Advancement of Economics. She teaches Economic Statistics and Introduction to Econometrics. She was engaged as researcher in many projects dealing with different topics, such as labour market, inequality, social policy, nonbanking financial institutions, film and the creative industry. Aleksandra is member of the Editorial Board of the Quarterly Monitor. She uses many macroeconomic and microeconomic techniques in her research.



**Maja Ribić**

is Teaching Assistant at the Faculty of Economics, University of Belgrade, where she teaches Financial Accounting. At present, she is also a PhD candidate at the same Faculty. She enrolled her PhD studies in Business Management in 2018, and her area of interest is fair value accounting.



**Aleksandra Đorđević Zorić**

is Teaching Assistant at the Faculty of Economics, University of Belgrade. She received her MSc degree from the Faculty of Economics, University of Belgrade and she is currently a PhD candidate (study programme: Economics) at the same Faculty. Her areas of interest and research are international finance, international economic relations of Serbia, international economics, exchange rates, and foreign direct investments. She has participated in a number of research projects, domestic and international conferences and published several papers in scientific journals.