Labour Market Analysis

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Abstract. The paper analyses employment issues in the Southern Urals. The problem of detecting the most promising occupations in terms of employment is handled. Special job posting sites for the period of two years have been studied to solve the task set. Market demand has been analysed. ABC analysis for the number of job vacancies have been performed. On-fire occupations have been detected. The best paid occupations have also been identified. Demand dynamics of the labour market, as well as the proposed salary trend are given. The number of vacancies in the spheres with high salary level has been analysed. Comparative analysis results of the labour market in 2017 and 2018 are studied. An attempt to connect the demand for certain training programmes of higher educational institutions with the demand in the labour market has been made.

1. Introduction
When planning and organizing training activity any higher educational institution is always concerned about employment of future graduates. Higher educational institutions need to analyse and forecast labour market behaviour continuously so that young specialists will not just fill employment market, but are actually demanded in the regional economy.

2. Relevance
Such analysis is crucial for South Ural State University being one of the largest universities in terms of the number of students. The Southern Urals is an industrial region rich in natural resources, extensive infrastructure and high scientific potential. Nevertheless, employment is quite a burning issue here.

3. Task setting
The following tasks were set by us: to study the labour market of the Southern Urals in its dynamics and to identify those professions that are in most demand and are well paid. Job posting sites such as chelyabinsk.zarplata.ru, 74.ru/text/job_marke have been studied to solve the tasks set. Statistical information has been canvassed for the number of job ads in various occupations and the proposed salary.

4. Theory
Unfortunately, market economy is subject to such negative phenomena as depressions and unemployment. In the view of Kondratieff long waves we are now at the lowest point of the recession wave meaning decrease in the demand. All this has negative impact on the labour market. If we study official statistics of Chelyabinskstat [15], we will see the following picture (Table 1).
Table 1. Employment Dynamics.

| Period      | Manpower, thousand people | Employed, thousand people | Unemployed, thousand people | Level of recorded unemployment, % |
|-------------|---------------------------|---------------------------|----------------------------|----------------------------------|
| Jan 2018    | 1877.1                    | 1766.3                    | 110.8                      | 1.4                              |
| Nov 2018    | 1872.7                    | 1769.0                    | 103.7                      | 1.1                              |
| Dec 2018    | 1871.6                    | 1768.3                    | 103.3                      | 1.2                              |
| Jan 2019    | 1872.4                    | 1770.8                    | 101.6                      | 1.2                              |
| Feb 2019    | 1872.4                    | 1772.7                    | 100.2                      | 1.4                              |

As Table 1 shows, the level of unemployment remains at almost the same level. Labour market is still facing difficulties [5, 17, 3, 18, 4, 8]. 2.25 candidates are accounted for 1 vacancy [7]. Average salary level has dropped a little [14, 12].

After that labour market changes of 2017 and the beginning of 2018 have been examined. The findings are given in Table 2.

Table 2. Employment Dynamics.

| Year | Number of unemployed |
|------|----------------------|
| 2017 |                      |
| January | 132.7 thousand people |
| February | 132.3 thousand people |
| March | 132.7 thousand people |
| April | 131.7 thousand people |
| May | 130.2 thousand people |
| June | 127.8 thousand people |
| July | 125.4 thousand people |
| August | 122.9 thousand people |
| September | 120.5 thousand people |
| October | 118.1 thousand people |
| November | 115.6 thousand people |
| December | 113.0 thousand people |
| 2018 | Number of unemployed |
| January | 110.8 thousand people |
| February | 109.2 thousand people |
| March | 108.1 thousand people |
| April | 107.6 thousand people |
| May | 106.8 thousand people |

As the Table shows unemployment was growing at the beginning in 2017, that was replaced by stable reduction to 2018 and further in 2018.

To study Chelyabinsk labour market Chelyabinsk.zarplata.ru [10] and Work in Chelyabinsk [19] websites were examined. Table 2 shows research results of 2017. All occupations have been ranked in regard to the number of vacancies. ABC analysis for the number of job vacancies have been performed. Further on those occupations are highlighted which are in the highest demand and have the largest average salary. Group A consists of the occupations from 1 through 13, these are the occupations at the highest demand. Group B is from 14 to 22, these occupations are characterised by average demand. And, finally, Group C consists of those occupations that have quite low demand. Occupations with the highest salary have been depicted among Group A and partially among Group B. These occupations are presented in Table 3.
The occupations with the highest demand and the largest salary comprise the following: sales, wholesale, merchandising; industry, transport, auto business; medicine and pharmacy; logistics, warehousing, purchasing; construction, real estate; IT (information technologies) and internet; top management; marketing, advertisement, PR. Similar picture was trended before [16, 1, 9, 20, 11, 6, 2]. IT and internet are considered to be one of the most promising occupations [13]

We will try to analyse thoroughly the selected occupations. It is quite evident with the wholesale, this occupation is in high demand, that explains strong interest of prospective students to management training programmes. We will try to understand occupations in industry. What does it mean? Engineers are in the highest demand and have the largest salary. Milling machine operators, electrical technicians, automated preproduction line operators, electricians, CNC (computerised and numerically controlled) machine operators, mechanical specialists, mechanical technicians, painters, lathe operators, etc. are in demand among tradesman. Welding engineers, process engineers, design engineers, process engineer and programmer, shop foreman, process technician, electrical engineer, etc. are in demand among engineering.

Table 3. Demand on Chelyabinsk Labour Market, 2017.

| No. | Occupation                                    | Number of vacancies | Percentage of vacancies | Accrued percent | Average salary |
|-----|-----------------------------------------------|---------------------|-------------------------|-----------------|----------------|
| 1   | Sales, wholesale, merchandising               | 971                 | 12.31                   | 12.31           | 42 117         |
| 2   | Industry                                      | 771                 | 9.78                    | 22.08           | 30 986         |
| 3   | Retail                                        | 638                 | 8.09                    | 30.17           | 24 784         |
| 4   | Transport, auto business                      | 633                 | 8.02                    | 38.20           | 41 399         |
| 5   | Accounting, finance, banks                    | 458                 | 5.80                    | 44.00           | 30 150         |
| 6   | Restaurants, cafes, catering                  | 439                 | 5.56                    | 49.57           | 23 156         |
| 7   | Tradesmen                                     | 416                 | 5.27                    | 54.84           | 26 533         |
| 8   | Medicine and pharmacy                         | 365                 | 4.62                    | 59.47           | 32 034         |
| 9   | Logistics, warehousing, purchasing            | 346                 | 4.38                    | 63.86           | 32 034         |
| 10  | Construction, real estate                     | 343                 | 4.34                    | 68.21           | 43 900         |
| 11  | IT and internet                               | 271                 | 3.43                    | 71.64           | 43 900         |
| 12  | Office staff, administrative supply           | 258                 | 3.27                    | 74.92           | 21 593         |
| 13  | Top management                                | 256                 | 3.24                    | 78.16           | 49 308         |
| 14  | Work for the youth                            | 222                 | 2.81                    | 80.98           | 28 246         |
| 15  | Sport, beauty, health                         | 180                 | 2.28                    | 83.26           | 28 136         |
| 16  | Marketing, advertisement, PR                  | 179                 | 2.26                    | 85.53           | 34 060         |
| 17  | Services                                      | 158                 | 2.00                    | 87.53           | 24 740         |
| 18  | Education, science, languages                 | 155                 | 1.96                    | 89.50           | 19 113         |
| 19  | Security, safety                              | 146                 | 1.85                    | 91.35           | 23 797         |
| 20  | Law                                           | 116                 | 1.47                    | 92.82           | 29 303         |
| 21  | Installation and maintenance                  | 97                  | 1.22                    | 94.05           | 31 280         |
| 22  | HR, OHS                                       | 95                  | 1.20                    | 95.25           | 27 097         |
23 Design, art, entertainment 81 1.027 96.28 25 956
24 Tourism, hotel business 67 0.84 97.13 33 076
25 FEC, power industry, raw material excavation 60 0.76 97.89 38 358
26 Printing, publishing, mass media 50 0.63 98.52 27 869
27 Public services, non-profit organizations 41 0.51 99.04 23 125
28 Insurance 26 0.32 99.37 40 790
29 Home assistance 16 0.20 99.58 28 972
30 Telecommunication and data transmission 16 0.20 99.78 29 556
31 Agriculture 14 0.17 99.96 18 804
32 Other 3 0.04 100 7887 100

Basing on the analysis made we can conclude that the highest demand in Chelyabinsk labour market in 2017 was for such spheres as management, engineering, logistics, IT specialists, marketing specialists, i.e. those fields for which South Ural State University teaches the majority of Bachelors. We will also note that SUSU trains Bachelors, specialists and Masters for all popular occupations except medicine and pharmacy.

Similar data have been collected for 2018. Table 4 shows the average salary dependency of the proposed jobs on the occupation, as well as ABC analysis for the number of vacancies in various occupation fields. Figure 1 demonstrates the graph of the number of vacancies in the occupation spheres with high salary. According to Figure 1 it is possible to make a conclusion that transport and auto business with their high average salaries show a big number of vacancies but the same cannot be said about other occupations.

Table 4. Demand on Chelyabinsk Labour Market, 2018.

| Occupation                        | Average salary | Number of vacancies | Share of the total number of vacancies | Accrued share | Group |
|-----------------------------------|----------------|---------------------|----------------------------------------|---------------|-------|
| Industry                          | 32452          | 1199                | 12.88                                  | 12.88         |       |
| Tradesmen                         | 29126          | 841                 | 9.04                                   | 21.92         |       |
| Sales, wholesale, merchandising   | 42631          | 827                 | 8.89                                   | 30.81         |       |
| Retail                            | 26072          | 730                 | 7.84                                   | 38.65         |       |
| Transport, auto business          | 45659          | 670                 | 7.20                                   | 45.85         | A     |
| Work for the youth Restaurants, cafes, catering | 31912          | 559                 | 6.01                                   | 51.86         |       |
| Construction, real estate         | 25939          | 544                 | 5.85                                   | 57.70         |       |
| Accounting, finance,              | 41369          | 516                 | 5.54                                   | 63.25         |       |
| Public services, non-profit       | 29422          | 488                 | 5.24                                   | 68.49         |       |
| Category                        | Employees | Hours | %   | %   |
|--------------------------------|-----------|-------|-----|-----|
| Banks                          | 32391     | 480   | 5.16| 73.65|
| Logistics                      | 29328     | 324   | 3.48| 77.13|
| Medicine and pharmacy          | 24162     | 318   | 3.42| 80.55|
| IT and internet                | 46357     | 259   | 2.78| 83.33|
| Services                       | 19413     | 191   | 2.05| 85.39|
| Top management, managers       | 42175     | 186   | 1.99| 87.38|
| Security, safety               | 27543     | 173   | 1.86| 89.24|
| Marketing, advertisement, PR   | 34335     | 142   | 1.53| 90.77|
| Education                      | 23587     | 137   | 1.47| 92.24|
| HR, OHS                         | 30262     | 94    | 1.01| 93.25|
| Installation and maintenance   | 34775     | 85    | 0.91| 94.17|
| Sport, beauty, health, FEC, power industry, raw material excavation | 35989 | 82 | 0.88 | 95.05 |
| Law                            | 36869     | 80    | 0.86| 95.91|
| Telecommunication and data transmission | 31131 | 78 | 0.84 | 96.74 |
| Design, art, entertainment     | 35329     | 70    | 0.75| 97.50|
| Tourism, hotel business        | 30549     | 68    | 0.73| 98.23|
| Insurance                      | 34213     | 47    | 0.50| 98.73|
| Printing, publishing, mass media | 39659 | 30 | 0.32 | 99.05 |
| Public services, non-profit organizations | 26511 | 26 | 0.28 | 99.33 |
| Home assistance                | 22725     | 25    | 0.27| 99.60|
| Agriculture                    | 28544     | 18    | 0.19| 99.79|
| Other                          | 32861     | 17    | 0.18| 99.98|
| Total                          | 1038290   | 9306  | 100 | 100 |
Comparative analysis results for the labour market in 2017 and in 2018 are shown in Table 5. Some changes in the occupations with the largest salaries and the greatest number of vacancies are observed.

Table 5. Comparative analysis results, 2018.

| Indicator                        | 2017  | 2018  |
|----------------------------------|-------|-------|
| Average salary                   | 30779 | 32446 |
| The largest salary in the        |       |       |
| following occupations            |       |       |
| 1. Top management                |       | 1. IT and internet |
| 2. Construction                  |       | 2. Transport, auto business |
| 3. IT and internet               |       | 3. Sales, wholesale, merchandising |
| 4. Sales, wholesale, merchandising|       | 4. Top management, managers |
| 5. Transport, auto business      |       | 5. Construction, real estate |
| 6. Insurance                     |       | 6. Insurance |
| 7. FES                           |       | 7. FES |
| The largest number of            |       |       |
| vacancies among highly-          |       |       |
| paid occupations                 |       |       |
| Group A                          |       |       |
| 1. Sales, wholesale, merchandising|       | 1. Sales, wholesale, merchandising – Group A |
| 2. Transport, auto business –    |       | 2. Transport, auto business – Group A |
| Group A                          |       | 3. Construction, real estate – Group A |
| 3. Construction, real estate –   |       | 4. IT and internet – Group B |
| Group A                          |       |       |
| 4. IT and internet – Group A     |       |       |
| 5. Top management – Group A      |       |       |

5. Practical Relevance

Practical relevance is revealed through the detection of the most promising occupations for the Southern Urals in terms of employment. These are: IT and internet, transport, auto business, wholesale, merchandising, construction, real estate. Salary structure changes for the occupation fields are observed.
6. Conclusion

Thus, the following conclusions can be drawn:

1. Average salary has slightly increased

2. Salary structure for occupation fields has changed, salary has increased in IT and internet, transport and auto business, sales, wholesale and merchandising. Salary has decreased in Top management, construction and real estate.

3. IT and internet, top management have moved from Group A to Group B in terms of the number of vacancies. Number of vacancies has decreased.

4. Transport and auto business with large average salaries show big number of vacancies at the same time.

7. References

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