ADJUSTING STUDENTS' COMPETENCES TO THE NEEDS OF MODERN BUSINESS SERVICES SECTOR[*]

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Abstract The modern services sector is one of the fastest growing sectors of the Polish economy. Business service centres have developed in the biggest cities. However, we may observe a growing interest in the development of high-tech industries in medium-sized towns. With increasing polarisation of space, it is a challenge to moderate disproportions (in various areas) between large urban centres and smaller towns of regional and subregional importance. It is a key element to ensure the social cohesion of a country and its sustainable spatial development. Medium-sized towns are "less tangible" in conducted studies. The potential of medium-sized towns toattract modern business services (MBS) depends on such factors as availability of qualified workforce, collaboration of investors/entrepreneurs, academic educational offer adjusted to the needs of the labour market, and moderated with government and EU documents and programmes. This study addresses the issue of the development of personnel for the business services sector (BPO, SSC, IT, B&R) which constitute a large developmental potential for the economy and ensures employment prospects for university (SUNSH) graduates as part of a project increasing competences in persons attending education at the university level, matching the needs of the economy, the labour market and the society. The aim of the article is to establish the specificity and assess the level of competences well as indicate key competences and the group of sensitive competence for the needs of the MBS based on empirical research conducted as part of the grant on "Competences of employees of tomorrow in business service sector" financed by the National Centre for Research and Development. The results of the study of competences allowed us to measure: knowledge, skills and attitudes so as to diagnose

strengths in the competence profile and to indicate areas requiring improvement. In the context of polarisation, we presented the mechanism of managing competences in a trio of: business-science-government/local government, leading to the adjustment of the competence of university graduates to the needs of the MBS sector.

Keywords: MBS competence; competence management; business service sector; sustainable spatial development

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JEL Classifications: I21, I23, L84, H52, Q56,

1. Introduction

The modern services sector has been developing really dynamically in Poland for over ten years. According to the latest report of the Association of Business Service Sector Leaders (ABSL) in Q1 2019 there were 1,400 Polish and foreign BPO, SSC/GBS, IT, R&D service centres employing in total 307,000 persons (of which 80%, i.e. 247,000 in the foreign centres, and 20%, i.e. 60,000 persons in the Polish centres); there are 10% more of these centres as compared to last year (ABSL, 2019). Each year dozens of new service centres, mostly foreign ones, open in Poland. Therefore, this country is a leader in modern business services in Eastern and Central Europe and one of the most recognizable locations for offshore/nearshore service investments in the world (ABSL, 2019). Business service centres have developed in 11 agglomerations in Poland (Katowice, Bydgoszcz, Kraków, Lublin, Łódź, Poznań, Rzeszów, Szczecin, Tricity, Warsaw and Wrocław agglomerations). It was observed that the dominance of agglomerations over other centres remains overwhelming in the scope of fast-developing knowledge-intensive operations (Gillespie, Richardson, and Cornford, 2001; Stryjakiewicz, 2014; Śleszyński, 2018). Medium-sized towns are "less tangible" as according to EPSON report there is not enough systematic research going on in this field (EPSON, 2006). Prospects for growth of high-tech industries in medium-sized towns have been crucial in the late industrial and post industrial era (ABSL, 2019; Richardson, Marshall, 1996; Richardson, Belt, 2001). The development process is spatially unsustainable and polarisation follows, that means oppositions are formed (e.g. more developed vs. less developed regions), which results in the growth spilling over from the key regions to the less developed ones (Zajdel, 2011; Korenik, Pięta, Soczewka, 2004; Gorzelak 2000; Grzeszczak, 1997; Friedman 1973; Hirshman, 1958; Myrdal, 1957; Grycuk, 2017; Petrenko et al., 2019; Amraoui et al., 2019; Bublienė et al., 2019; El Idrissi et al., 2020).

The factor which creates dynamism in the development of industries is the simultaneous activity of entities in the trio formed by business, science and government/local government. Government documents (including the Sustainable Development Strategy for Poland) emphasise the development of medium-sized towns. The policy of local governments is also highlighted in the documents concerning development strategies for towns and is one of the criteria of attractiveness of a given location for modern serviced sector. Shaping attitudes supporting the sustainable development at every level of education plays an important role (Jakubiak, Cholewa-Wiktor, Sitko-Lutek, 2019; Volchik, Maslyukova, 2019). The main function of academic education in the local development is attracting human capital (good high school graduates) and "production" of university graduates who show high qualifications and competence (Faggian, McCann, 2006).The university development strategy, aimed at collaboration with the business sector, contributes to the adjustment of students' competences to the needs of the labour market and increasing graduates' (and students') employment opportunities in various sectors of the economy (Wójcik-Augustyniak, 2017). Moreover, the need to match supply and demand in the labour market with the support of structural funds (the ESF - the European Social Fund) is a requirement for EU member states in line with the *Agenda for New skills for Jobs* included in *the Europe 2020 Strategy* (the European Commission, 2010). The recommendation of the European Parliament regarding key competences for lifelong learning defines **competences**, as the combination of: *knowledge, skills and attitudes* appropriate for the situation; and **key competences** necessary for personal fulfilment and development, active citizenship, social

inclusion and employment (2006/962/EC). The European Parliament and the Council set out eight **key competences** (equally important because they may contribute to a successful life in a knowledge society):
1. communication in the mother tongue,
2. communication in foreign languages,
3. mathematical competence and competence in science and technology,
4. digital competence,
5. ability to learn,
6. social and civic competences,
7. sense of initiative and entrepreneurship,
8. cultural awareness and expression.

Projects aimed at universities, which are co-funded with the EU funds and institutions being a platform for an effective dialogue between the science and business spheres, turn out to be helpful. One of them is the National Centre for Research and Development (NCRD) established in 2007 as an executive agency of the Ministry of Science and Higher Education to execute tasks in the area of science policy, science and technology policy and innovativeness policy of the state. Since 2011 the NCRD has performed the function of the Intermediary Institution in Operational Programmes (in the EU 2014-2020 perspective) Knowledge Education Development and Intelligent Development. The structural policy of the EU also refers to the European Regional Development Fund (ERDF) which is aimed at the strengthening of economic cohesion of the Union by reducing disparities between regions.

2. Demand for competences in the modern business services sector

In line with the definition - applied by the ABSL (ABSL, 2017) and the Polish Investment and Trade Agency (Polish Information and Foreign Trade Agency, 2016) - modern business services include:
— Business Process Outsourcing (BPO) ,
— Information Technology Outsourcing (IT/ITO) ,
— Shared Services Centre (SSC) ,
— Research & Development (R&D) .

Entities providing modern business services are referred to as service centres (Grucyk, 2016). Reports on modern business services sector are published successively, prepared mostly by the Association of Business Service Leaders, and are commissioned by the Ministry of Development and Investment for example (ABSL, 2019). There are also publications of reports on research regarding key competences for increasing employability of students and graduates in various labour markets in Poland (NCRD, 2014). Moreover, since 2009 the Polish Agency for Enterprise Development (PARP) has been preparing the Study of Human Capital whose aim is to broaden the knowledge of the needs for qualifications and professions in industries (PARP, 2017).

In order to recognise the needs of the modern business services sector in the scope of competences expected from employees, ABSL conducted *a survey* among the members of the HR Club. It is a platform for collaboration, operating as one of the ABSL initiatives and gathering human resource managers in its member companies. *364 persons* from the HR Club distribution list responded to the survey. The participants were asked to indicate *a group of competences required in the labour market* and *those posing the biggest challenge* to companies from the MBS sector. Fig. 1 shows the demand for competences in the modern business services sector. The x-axis uses the scale from 1 to 5 for the competence importance level, whereas the y-axis uses the scale from 1 to 4 for the level of difficulty to acquire each competence (ABSL, 2019).
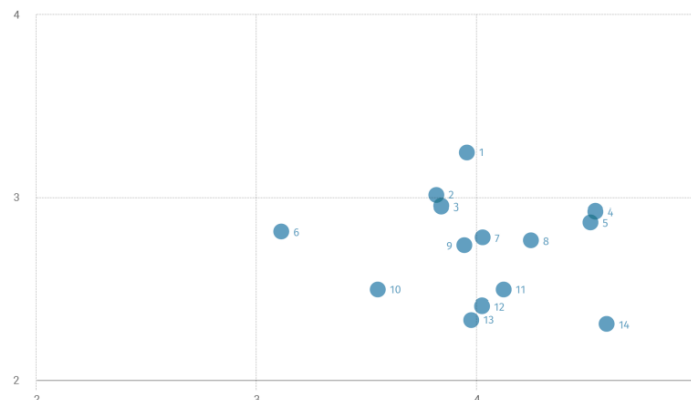
Fig. 1. Competences required in business service centres.
Source: Potencjał miast średnich w Polsce dla lokalizacji inwestycji BPO/SSC/IT/R&D. Analiza, ocena i rekomendacje/The potential of Polish medium-sized towns to attract BPO/SSC/IT/R&D. The analysis, assessment and recommendations (ABSL, 2019).

For the needs of this article, it was assumed that these required competences, which ranked highest in the assessment of the human resource managers are competence at the level 4 and 5 and they are the **group of sensitive competences** for the needs of the modern business service sector. The sensitive competences are very important (4) or necessary (5) and they affect the correct operations of entities in the modern services sector. The sensitive competences are: ability to work in a team (14), knowledge of foreign languages (4), ability to solve problems (5), ability to collaborate in an international environment (8), ability to communicate verbally (11), communicative writing skills (12), understanding of the topic that is the subject matter of the work (7). At the same time we may assume that the **key competences** are these that ranked as important (levels 3 to 4) based on the opinions of the human resource managers and their acquisition may contribute to a successful life in a knowledge society. The key competences include: organisational skills (13), leadership skills (1), cognitive skills (9), emotional intelligence (3), entrepreneurial skills and creativity (2), presentation skills (10), negotiation skills (6). To conclude the study of competence in modern business services, it may be observed that *soft competences* are in demand.

3. The Operational Programme Knowledge Education Development as a support for development of workforce for the modern business services sector

In 2017 the National Centre for Research and Development announced a call for projects supporting the development of workforce for the business services sector as part of Measure 3.1. Competences in higher education, III Priority Axis Higher education for the economy and development for 2014-2020. The call for proposals was from 8 May to 29 July. In the regulations for the call for proposals no. POWR.03.01.00-IP.08.00-BPO/17 (aimed at the execution of the objectives of the Operational Programme Knowledge Education Development), the target was **creating favourable conditions for business services to be based in smaller towns with the potential for development in this scope** and meeting the access criteria (Table 1). *The specific objective of OP KED* was supporting the development of workforce for the business service sector (BPO, SSC, IT) which constitute a large development potential for the economy and the employability of university graduates as part of increasing competence in persons attending education at the university level, matching the needs of the economy, the labour market and the society (NCRD, 2017).

Table 1. Selected access criteria under call for proposals no. POWR.03.01.00-IP.08.00-BPO/17

The access criterion	The wording of the criterion
Criterion 1:	The applicant may be a public or non public higher education institution hosting at least 100 students in full-time programmes The criterion does not rule out the option of including part-time students in the project.
Criterion 3:	By the date of signing the agreement with the NCRD to finance the project, the applicant had been obliged to sign an agreement with at least one entrepreneur conducting business activity in Poland in the business services sector (BPO, SSC, IT) or with an entity conducting or intending to conduct business processes as SSC or by subcontracting them to external entities in Poland. The entrepreneur had to be included in completion of all support components indicated in access criterion no.5.
Criterion 4:	The applicant had to ensure that at least 30% of university graduates who were covered by the support in the project took up employment with an employer operating in the business services sector within 6 months of their graduation. Employment is defined as concluding an employment contract for the period of minimum 3 months on at least half time basis. The application of the criterion obliged the provider to carry out activities aimed at the employment efficiency of project participants.
Criterion 5:	The applicant was obliged to anticipate activities relating to industries specified in the above mentioned access criterion no.3 which assumes enforcement of all the components listed below: — programmes for development of students' competences required from job candidates (based on the latest market research) by employers indicated in access criterion no.3, — inclusion of employers in the preparation of curricula and their implementation, — implementation of high quality internship programs for at least 30% of students educated in a given year covered with the activities under the project.
Criterion 6:	The scope of tasks and activities envisaged for realisation by the applicant in the project was intended to lead to the acquisition of at least two (including a compulsory linguistic competence) out of the following competences and qualifications in line with the needs of employers from the above mentioned sector: — vocational ones, — linguistic ones, — communicative ones, including ability to work in a team, interpersonal - in the scope of entrepreneurship, — digital ones, including information searching, — analytical ones, **including problem-solving skills.**
Criterion 8:	Project time span was at least 12 months and could not exceed 42 months.
Criterion 11:	In the scope of the obligatory element of competence development, the project had to cover no fewer than 3 elements (envisaged for Measure 3.1 in the Detailed Description of the Priority Axis Operational Programme Knowledge Education Development) solely out of the options listed below: — certified trainings (which end in obtaining qualifications and are recognised in the sector) leading to acquiring qualifications and/or workshops developing competences, — additionalclasses run in collaboration with employers, — additional practical tasks for students carried out on project basis, including project team work, — study visits at employers, — students' participation in activities resulting from the collaboration of the university with employers, increasing employers' involvement in the implementation of the curricula (e.g. additional classes organised with employers), aimed at better preparation ofgraduates **to enter the labour market.**
Criterion 13:	It was established that internship pay and pay for internship supervisors on the part of the employer could not exceed the maximum level (rates were calculated based on the notice of the President of the Central Statistical Office of 18 July 2016). Due to that reason the costs of these activities incurred as part of the project should be limited to reasonably set levels: — for student's monthly internship pay: 18.50 zloty gross per hour of internship task, — for a refund of a monthly pay for a supervisor on the part of the employer: 28.25 zloty gross per hour of interns' supervision, where the full rate is applicable for performingactivities related to supervision over at least 10 interns fulfilling their internship duties.In other cases the amount of pay is calculated proportionately to the number of interns.

Source: Author on the basis of "Regulamin konkursu POWR.03.01.00-IP.08.00-BPO/17"/ "Regulations for call for proposals POWR.03.01.00-IP.08.00-BPO/17" (NCRD, 2017)

The allocation planned for the call for proposals POWR.03.01.00-IP.08.00-BPO/17 was PLN 100,000,000 with the maximum acceptable level of co-funding of the project of 97% (PLN 97,000,000), due to 3% own

contribution of the university (NCRD, 2017). The above mentioned allocation in the call for proposals allowed meeting the assumed ratios.

Table 2. Ratios under the call for proposals no. POWR.03.01.00-IP.08.00-BPO/17.

Result ratios	— amounting to 50% the percentage of university graduates covered with the ESF support who continued education or took up employment within 6 months of completing their education; — amounting to 30% percentage of university graduates covered with the ESF support who within 6 months of completing their education took up employment with an employer operating in BPO, SSC or IT sector; — 3,000persons who improved their competences by benefiting from university activities supported with the ESF.
Product ratios	— 2,500 persons who were covered with the ESF support in order to increase their competences in the areas of key importance for the economy and development of the country; — 2,000 students who participated in internships supported with the ESF funds; — 680 persons covered with the ESF support under educational programs of general academic or practical profile, adjusted to the needs of the economy, the labour market and the society.

Source: Author on the basis of "Regulamin konkursu POWR.03.01.00-IP.08.00-BPO/17"/ "Regulations for call for proposals POWR.03.01.00-IP.08.00-BPO/17" (NCRD, 2017)

15 projects submitted by higher educations institutions were approved and one project submitted by a state vocational higher education institution; it was also decided that projects may be subsidised with the amount of PLN 17,660,083.11 (i.e. 18.2% of the projected allocation) (ABSL, 2019). One of the winning projects, which was ranked third in the final ranking list, was the project of Siedlce University of Natural Sciences and Humanities (SUNSH) titled "Competences of employees of tomorrow in the business services sector", which is discussed later in this article.

4. About the project "Competences of employees of tomorrow in the business services sector"

In November 2017 SUNSH signed an agreement with the NCRD regarding the project "Competences of employees of tomorrow in the business services sector". Number and name of the Priority Axis: III. Higher education for the economy and development. Number and name of the Measure: 3.1. Competences in higher education. Subsidy received from the European Union: PLN 1,009,319.08, and the value of the project is: PLN 1,197,578.40. The project was run from 02.11.2017 to 31.08.2019. By the time of signing the agreement SUNSH had concluded an agreement with "Sokołów Logistyka" sp. z o.o. (access criterion 3). The project was aimed at 100 students of the two final semesters of full-time bachelor's studies being educated in the Faculty of Economic and Legal Sciences. There were two recruitment rounds, of which:

— I recruitment round - 50 persons (20 logistics students and 30 management students),
— II recruitment round - 50 persons (30 logistics students and 20 management students).

The project was intended to ensure support appropriate to diagnosed needs of individual participants in specific fields of study and educational effects, and the focus in the programme was on the areas in which students lacked behind. Actions taken made it possible for every person to participate effectively in the project and to acquire competences without distinction on the grounds of their sex, age, disability or the field of study. The need to develop competences was diagnosed in own research conducted in Siedlce University of Natural Sciences and Humanities (before the start of the project) and was identified in the documents: „Analiza kwalifikacji i kompetencji kluczowych dla zwiększenia szans absolwentów na rynku pracy ("The analysis of key qualifications and competences to increase graduates' opportunities in the labour market")(NCRD, 2014), „Bilans Kapitału Ludzkiego" (The Study of Human Capital") (PARP, 2015)".

Own research allowed to show barriers and needs regarding competence improvement. The data showed that students mostly expected to be supported in the acquisition of *practical skills*, which may be acquired during trainings/workshops increasing their value in the labour market. They were interested in *study visits* so they could learn the employer's requirements. They pointed out at the need to acquire *skills to put knowledge to practical use*. At the same time, the research results proved that the majority of students are not fully aware of

the role of competence acquisition, which conditions a better start in the modern labour market. Project activities were intended to meet the expressed needs and eliminate the barriers: *the economic one* (high cost of trainings and low level of wealth), *the organisational one* (low accessibility of trainings in the local market), or *the social one* (overcoming students' unwillingness to get further training).

The aim of the project was the acquisition of competences necessary in the labour market by 90 logistics and management students at SUNSH in years 2017-2019. The desired objective was met by means of activities increasing competences of students educated in the Faculty of Economic and Legal Sciences in SUNSH. The results of the study were intended to prove that in line with access criterion 5 (and they provedthat in the reports included in the project documentation) that persons covered with the support acquired new competences or perfected competences by attending (Table 3):

— competence improvement program (covering: A – certified trainings, B – workshops in English for Special Purposes, C – additional practical tasks carried out in the form of a project, D – study visits at employers),
— high quality internship programs (E – internships in business service sector entrepreneurs).

Table 3. Benefits associated with participating in the project "Competences of employees of tomorrow in the business services sector".

Form of support in line with Criterion 11	Field of study: Logistics	Field of study: Management
A. Trainings (the student received Vocational Competence Certificate).	1. Integrated ERP II systems supporting management processes in a modern enterprise. 2. Systems for presenting information in business. 3. Sales techniques. 4. Logistic and forwarding laboratory.	1. Standards in computerised accounting with the application of Comarch ERP Optima. 2. Sales techniques. 3. Outsourcing and offshoring in business processes. 4. Recruitment process outsourcing.
B. Workshops in English for Special Purposes (students received a certificate issued by the Foreign Language Centre of SUNSH).	1. English for Logistics.	1. English for Management.
C. Practical tasks carried out in the form of a project (students received a certificate issued by SUNSH).	1. Projects for an enterprise from the business services sector . 2. Designing logistic processes in transport. 3. Supply chain management.	1. Projects for an enterprise from the business services sector. 2. Human resources and payroll service. 3. Audiovisual realisation.
D. Study visits at employers.	11 visits were made in enterprises operating in the business services sector.	
E. Internships at entrepreneurs (students received intern scholarship).	90 agreements were signed with enterprises from the business services sector.	

Source: Author based on the application for project financing.

It was the intention of the project to educate, as part of the above mentioned forms of support, in the following competences which are in line with the needs of employers (access criterion 6) from the business services sector:

— vocational ones - important to increase industry-specific knowledge and the ability to put it to practical use,
— linguistic ones - necessary so as to communicate in English,
— communicative ones, including the ability to teamwork - crucial to build a relationship with colleagues,
— analytical ones, including problem solving skills - the ability to analyse available information,
— digital ones - necessary for the development of the digital society.

The acquired competences were confirmed in the study of competence before and after taking part in the project. The effort translated into the employment of 35% of the participants, in line with the result ratio and criterion 4. The activities planned in the project were intended to give students support in form of additional competences which meet the needs of the labour market (and these forms of activity were different from the courses offered in

the standard curriculum for the above mentioned fields of study). In this manner the project was intended to contribute to achieving the detailed objective of the OP KED which envisages *increasing competences of persons participating in education at the university level which meet the needs of the economy, the labour market and the society*.

5. Methodology employed to study competences in the project

The main objective of this article is to *define the specificity and to assess competence levels as well as to determine key competences and groups of sensitive competences for the needs of modern business services (MBS).*The analysis of the level of competence will be carried out in relation to the specialisations project participants took during their studies. So as to achieve the set objectives we will solve the main problem and the detailed problems. The main problem is as follows: *Does the process of developing MBS competences lead to building key competences and the groups of sensitive competences?* The main problem will be solved based on the analysis of the following detailed problems:
1. What are the key MBS competences for logistics?
2. What are the key competences for management?
3. Do competences which ranked highest comprise the group of MBS sensitive soft competences?

Receiving the answers to the above mentioned questions will let us diagnose the level of competence acquisition in the process of their development in the business services sector.

The results of the study will allow us to verify *the main hypothesis* which is: **The process of developing competences leads to building key competences and sensitive competences for the needs of the modern business service sector (MBS)** and the following *detailed research hypotheses*:
— **H1:** Digital, analytical and vocational competences are the key competences for logistics specialist in the modern business services sector.
— **H2:** The key competences for management in the modern business service sector are digital, linguistic and vocational competences.
— **H3:** The sensitive competence group are soft skills which ranked highest in the opinion of the employees of the modern business services sector.

For the needs of the empirical study we assumed that the **key competences** are those which were ranked as important (level 3 to 4), which showed the biggest increase and maycontribute to the successful life in a knowledge society, whereas competences from level 4 to level 5 comprise **the group of sensitive competences** for the needs of the modern business services sector. The sensitive competences are very important or necessary and they condition effective operations of entities in the modern services sector.

As part of the project, the study of competence was prepared - competence questionnaires/tests *at the start (for each participant) and at the end (at the end of the participation in the project)*, reports from questionnaire analysis were prepared. The competency test is a method which diagnoses competences by measuring knowledge, skills and attitudes, aimed at the diagnosis **of strengths of the competence profile and the competence gaps** (areas requiring development). The study of MBS competences consisted of five sections allowing the assessment of the level of competence of the respondents in the scope of: analytical competences (AC), digital competences (DC), linguistic competences (LC), communication competences (CC) and vocational competences (VC). The feature of competences is their *measurability* that is why the levels for each competence were established. Respondents differed in terms of the competence level that is why *a five-grade scale* was applied showing: the importance of the levels in the form of numbers (1 to 5) which at the same time illustrated *the scale of competence development*.The participants were asked to express the opinion of their competence level before and after the support. To measure competence the following were used:
— the diagnostic survey - *an auditorium questionnaire* which consisted in gathering respondents in one place (SUNSH) during a meeting. The role of the interviewer was to hand out questionnaires and give

explanatory instructions on how to complete them. The interviewer controlled the course of the research and then collected the questionnaires from the respondents (Szyjewski, Szyjewski, 2017);
this method allowed us to analyse competences (those of logistics and management students) and the number of persons who adjusted their competences (vocational. linguistic, communicative, analytical and digital ones) to the needs of the MBS sector.

— *scaling* - we studied opinions of the participants who carried out *self-assessment* of their competences in the scale from 1 to 5(where 5 is a very good level of competence, 4 – a good level, 3 an average level, 2 – a poor level, 1 - a bad level). The measurement of this scale included distinguishing quality characteristics in the reference population (professional group) (Stachak, 2006);

it allowed us to present the grade/level of competence held in the case when a respondent was a prospective/future employee and when they were already employed in the modern business services sector (when they had acquired competences required by employers);

— statistical methods - *the arithmetic mean* synthetically characterised the competences of project participants and enabled the assessment of their average level based on the competence study - test;

this method allowed us to indicate the key competences and the group of sensitive competences, including the soft ones, and the average values from the levels reached are presented in the next section of the article (Tables 4-5).

6. The analysis of author's own research

100 participants of the project "Competences of employees of tomorrow in the business services sector" attending logistics and management courses took part in the study which was conducted from 2017 to 2019. In the isolated group, women constituted the majority of the population studied. It is an important fact that the persons participating in the study were not employed at the moment of joining the project. The study of competences allowed us to assess the level of competence (graded from 1 to 5) in the scope of the following: analytical competences (AC), digital competences (DC), linguistic competences (LC), communication competences (CC) and vocational competences (VC). The results of the study will be presented separately for logistics and management students.

6.1. Key competences for logistics students
Based on the conducted study we assessed 63 competences of logistics students both in the first edition (2017/2018) and in the second edition of the project (2018/2019). As a result of the calculation, averaged summary grades were obtained (Fig. 2-3). The study measured: 11 analytical competences (AC), 8 digital competences (DC), 5 linguistics competences (LC), 9 communicative competences (CC) and 30 vocational competences (VC). The summary results are presented in Fig. 2-4 and the detailed account in Table 4.

While analysing the logistics students' level of competence in the 1st edition (Fig.2), it was observed that at the moment of joining the project they had a very low level of all competences – ranging from 2.2 (a poor level of digital competences), a poor level of: analytical competences (2.5), linguistic competences (2.6), vocational competences (2.7) to 2.9 (communicative competences). The study conducted at the end of the project, after the logistics students acquired (during their internship and development program) competences required by employers, proved that the competence level increased significantly, to the satisfactory or good level. The logistics students reached level 4 and above for vocational and communication competences. They also developed the competence level approaching the good level (4.0) with reference to analytical (3.9), digital (3.8) and vocational (3.7) competences.
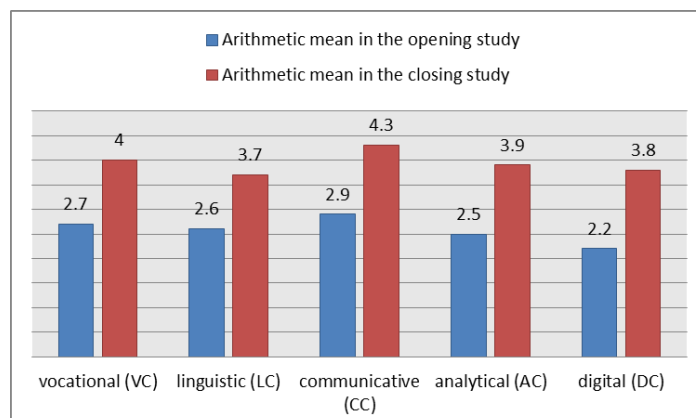
Fig. 2. Averaged level of logistics students' competences (1st edition).
Source: own elaboration

Information included in Fig.3 shows that participants of the 2nd edition of the project for logistics also presented a very poor level of competence. We estimated as follows: the lowest level in digital competences (1.9), similarly for linguistic competences (2.1), vocational competences (2.2) and communicative competences (2.3). Detailed results of the opening study prove that participation in the project contributed significantly to the development of competence levels in logistics students. The levels increased as follows: to 4.7 for communicative competences, 4.6 for vocational and analytical competences, whereas digital competences reached the level of 4.4 and linguistic ones the level of 4.3.
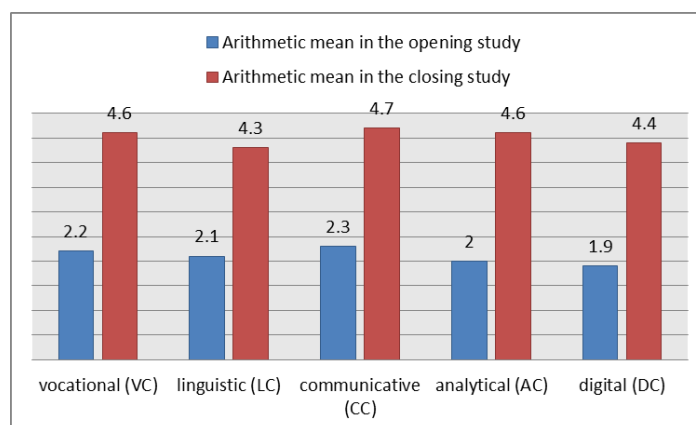

Fig. 3. Averaged level of logistics students' competences (2nd edition).
Source: own elaboration

Estimating the growth of competences in logistics students in the 2nd edition of the project (Fig.4), it was proven that the participants showed a significant increase in digital competences (DC) of 132%, also in analytical competences (AC) of 130% and of 109% in vocational competences required in the modern business services sector. Also, there was an increase in linguistic competences (LC) of 105% and communicative ones (CC) of 104%. The project contributed to the increase of logistics students' competences also in the 1st edition because digital competences (DC) increased by 73%, the analytical ones (AC) by 56%, and the communicative competences (CC) as well as the vocational ones (VC) increased by nearly 50%.
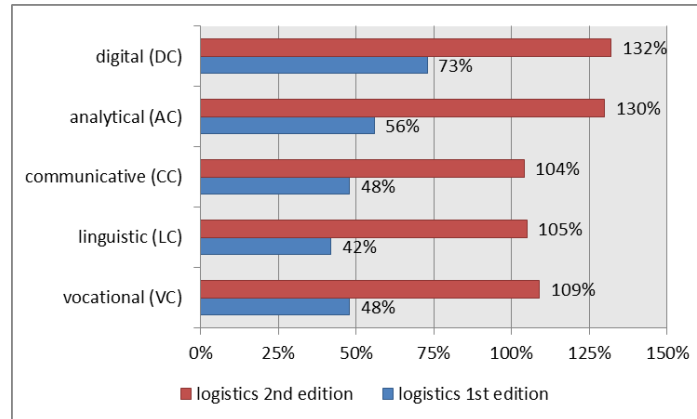
Fig. 4. Progress in logistics students' competences (1st and 2nd edition)
Source: own elaboration

In the course of conducted empirical research it was proven that in the modern business services sector **the key competences for logistics specialists** include *digital competences (Σ 204%)*, *analytical (Σ 186%)* and *vocational competences (Σ 157%)* which reflects the total increase in competences (Fig.4). **Hypothesis 1** was **confirmed**.

The first research problem was the following question: *what are the key MBS competences for logistics students?* To solve this research problem we will present the opinions of project participants on the level of competences in which the greatest progress was observed in both editions of the project.

As the summary shows (Table 4), all assessments of digital competences range from 2.65 to 3.4, with five of them rated on average above level 3 (none of the DC reached level 4 or above). In the opinion of logistics students the *key digital competences* (DC) are:

1. DC 2 - ability to search for necessary information in the real work environment using IT skills (3.4);
2. DC 4 - the ability to make business presentations (3.4);
3. DC 7 - the ability to analyse data using IT tools, ability to make business presentation/ prepare quotations, make data bases for businesses (3.25);
4. DC 8 - the ability to operate specialist software used to perform tasks in the internship position in the entity from the business services sector (3.05);
5. DC 5 - the ability to create data bases for enterprises (3.0).

The following seven competences, which ranked on average between 3 and 4.0, were pointed out as *the key analytical competences*:

1. AC 10 - the ability to analyse available information (3.85);
2. AC 11 - the ability to notice processes taking place in an organisation (3.5);
3. AC 8 - the ability to analyse data, data bases for businesses in connection with the implementation of projects for business services sector (3.35);
4. CA 1 - the ability to recognise and analyse main problems regarding the functioning of supply chains (3.3);
5. CA 5 - analytical knowledge and skills regarding business management processes (3.25);
6. AC 7 - the ability to operate specialist software used to perform tasks in the internship position in the entity from the business services sector (3.2);
7. AC 9 - the ability to analyse data, data bases for businesses in connection with the implementation of projects for business services sector (3.05);

Information included in Table 4 shows the assessment of vocational competences ranging from 2.9 to 4.3. Vocational competences (excluding VC 1 and VC 21) were assessed at levels from 3 to 4, which may prove the fact that these are the k*ey vocational competences* in the MBS pointed out by logistics students.

Table 4. the study of logistics students' competences (1st and 2nd edition)

Item no.	DIGITAL COMPETENCES	The opening study	The closing study	Average
DC 1	Skills regarding using ERP II software	2.0	3.6	2.8
DC 2	Ability to search for necessary information in the real work environment using IT skills	2.8	4.0	3.4
DC 3	Ability to use IT tools in the ERP II system	1.8	3.6	2.7
DC 4	Ability to make business presentations	2.8	4.0	3.4
DC 5	Ability to create data bases for enterprises	2.2	3.8	3.0
DC 6	Ability to plan and organise logistic processes in business entities using EPLedu software	1.6	3.7	2.65
DC 7	Ability to analyse data using IT tools, ability to make business presentation/ prepare quotations, make data bases for businesses	2.5	4.0	3.25
DC 8	Ability to operate specialist software used to perform tasks in the internship position in the entity from the business services sector	2.3	3.8	3.05
	ANALYTICAL COMPETENCES			
AC 1	Ability to recognise and analyse main problems regarding the functioning of supply chains	2.8	3.8	3.3
AC 2	Ability to solve problems arising while performing tasks entrusted in EPLedu software	1.7	3.5	2.6
AC 3	Ability to operate the EPLedu specialist software	1.5	3.5	2.5
AC 4	Analytical skills regarding the EPLedu functionality: input of business details, data regarding warehouses, fleet (optimising transport routes), product catalogues and the logistic process	1.7	3.8	2.75
AC 5	Analytical knowledge and skills regarding business management processes	2.4	4.1	3.25
AC 6	Ability to work in a group	3.7	4.4	4.05
AC 7	Ability to operate specialist software used to perform tasks in the internship position in the entity from the business services sector	2.4	4.0	3.2
AC 8	Ability to analyse data, data bases for businesses in connection with the implementation of projects for business services sector	2.6	4.1	3.35
AC 9	Ability to solve a problem in an innovative manner and to offer a suggestion on its practical implementation in executing projects in modern business services sector	2.3	3.8	3.05
AC 10	Ability to analyse available information	3.5	4.2	3.85
AC 11	Ability to notice processes taking place in an organisation	2.8	4.2	3.5
	VOCATIONAL COMPETENCES			
VC 1	Knowledge of ERP II class software	1.9	3.7	2.8
VC 2	Knowledge of quality management in the business sector	2.4	3.8	3.1
VC 3	Knowledge of product and warehouse management	2.7	4.0	3.35
VC 4	Ability to prepare enquiries and sales agreements	2.3	3.9	3.1
VC 5	Ability to prepare purchasing agreements and returns from suppliers	2.3	3.8	3.05
VC 6	Ability to work on projects for an enterprise in line with the accepted scope of responsibility	2.4	3.6	3.0
VC 7	Knowledge of cooperation between entities in the business services sector	2.4	3.7	3.05
VC 8	Problem-solving skills	3.0	4.1	3.55
VC 9	Knowledge of sales	2.9	4.1	3.5
VC 10	Knowledge of verbal and non-verbal communication in the sales process	3.1	4.3	3.7
VC 11	Ability to communicate effectively with a client	3.0	3.9	3.3
VC 12	Sales representative skills	2.4	3.8	3.1
VC 13	Knowledge of logistic processes planning and execution in businesses	2.4	3.7	3.05
VC 14	Knowledge of logistic solution implementation in businesses from business services sector	2.2	3.8	3.0
VC 15	Knowledge of overall logistics costs	2.8	3.6	3.2
VC 16	Ability to implement logistics solutions in businesses from the business services sector	2.3	4.0	3.15
VC 17	Knowledge of main problems in the functioning and development of supply chains	2.8	3.9	3.35
VC 18	Knowledge of competitiveness, cooperation and dominance in supply chains	2.5	4.0	3.25
VC 19	Knowledge of operation decisions in the functioning of supply chains	2.6	3.9	3.25
VC 20	Ability to select instruments to fix and develop supply chains	2.1	4.0	3.05
VC 21	Knowledge of the rules of keeping internal product catalogues	2.2	3.6	2.9

VC 22	Knowledge of the role of stock availability in an effective execution of the transportation process	2.5	3.7	3.1
VC 23	Knowledge of operations of businesses in the business services sector	2.3	3.9	3.1
VC 24	Ability to plan work	3.4	4.5	3.95
VC 25	Ability to organise own work	3.5	4.8	4.15
VC 26	Ability to effectively perform entrusted tasks	3.7	4.7	4.2
VC 27	Team-working skills	3.8	4.8	4.3
VC 28	Level of responsibility for entrusted tasks	3.8	4.4	4.1
VC 29	Ability to set and perform priority tasks	3.3	4.3	3.8
VC 30	Knowledge of processes, procedures, tools, methods and techniques used in managing businesses in the business services sector	2.4	3.9	3.15
	COMMUNICATIVE COMPETENCES			
CC 1	Ability to communicate effectively with a Client, to use effectively verbal and non-verbal means of communication in the sales process	2.8	4.1	3.45
CC 2	Ability to ask questions and test Client's needs to control the conversation, to listen actively	2.9	4.3	3.6
CC 3	Communication skills to work within a new sales model and neurolinguistic programming skills	2.3	4.1	3.2
CC 4	Self-presentation, savoir-vivre and image building skills used in the work of a sales representative	2.9	4.4	3.65
CC 5	Ability to conduct negotiations according to the rules and various cultural factors	2.8	4.0	3.4
CC 6	Ability to prepare letters, documents, analysis and business presentations Communication skills in teamwork	2.4	4.1	3.25
CC 7	Ability to communicate with the superior	3.3	4.5	3.9
CC 8	Ability to communicate with a client	3.4	4.5	3.95
CC 9	Ability to resolve conflicts	3.4	4.5	3.95
	LINGUISTIC COMPETENCES			
LC 1	Knowledge of English	3.0	3.9	3.45
LC 2	Knowledge of English specialist terminology for logistics	2.7	3.7	3.2
LC 3	Ability to build correct English language structures with reference to logistics terminology	2.5	3.6	3.05
LC 4	Ability to communicate freely and fluently in English using logistics terminology	2.4	3.5	2.95
LC 5KJ5	Language skills for work (in an internship position) in an organisation from the business services sector	2.2	3.6	2.9

Source: own elaboration

The Study of competences conducted among logistics students allowed us to point out competence gaps - areas requiring development (the average of below 3) in the group of the following ten competences:

1. LC 4 - the ability to communicate freely and fluently in English using logistics terminology (2.95);
2. LC 21 - knowledge of the rules of keeping internal product catalogues (2.9);
3. LC 5 - language skills for work (in an internship position) in an organisation from the business services sector (2.9);
4. DC 1 - ability to operate the ERP II system (2.8);
5. VC 1 - knowledge of ERP II class software (2.8);
6. AC 4 - analytical skills regarding the EPLedu functionality: input of business details, data regarding warehouses, fleet (optimising transport routes), product catalogues and the logistic process (2.75);
7. DC 3 - the ability to use IT tools in the ERP II system (2.7);
8. DC 6 - the ability to plan and organise logistic processes in business entities using EPLedu software (2.65);
9. AC 2 - the ability to solve problems arising while performing tasks entrusted in EPLedu software (2.6);
10. AC 3 - the ability to operate the EPLedu specialist software (2.5);

6.2. Key competences for management

In the scope of assessment of competences of management students participating in the 1st edition (2017/2018) and the 2nd edition of the project (2018/2019) the level of 62 competences was estimated, including: 11 analytical competences (AC), 7 digital competences (DC), 5 linguistics competences (LC), 9 communicative competences (CC) and 30 vocational competences (VC). The summary results are presented in Fig. 5-7 and the detailed account in Table 5.

The persons joining the management project (Fig. 5) demonstrated disturbingly low levels of linguistic competences - 1.9, of digital competences - 2.0, of the vocational ones - 2.5, of the analytical ones 2.6 and of communicative competences - 2.9. Participation in the project allowed the competences to develop to achieve a good level i.e. 4.1 for digital competences and to increase vocational, analytical and communicative competences to the level of 4.5.
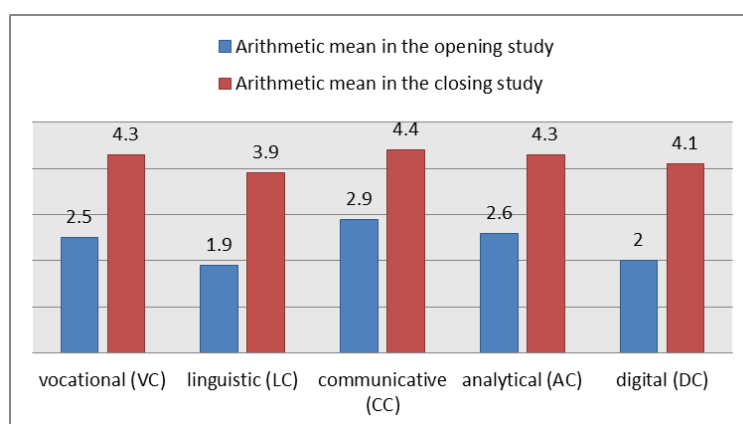

Fig. 5 Averaged level of management competences (1st edition).
Source: own elaboration

Competences of management project participants in the 2nd edition of the project (Fig. 6) also showed poor and extremely low levels from 1.8 for digital and linguistic competences, 2 - poor level (for vocational and analytical competences) and 2.1 for communicative competences. Despite the negative opening result, at the end of the project we observed a satisfactory, or good competence level for vocational, communicative, analytical and digital competences. The level of linguistic competenceswas close to a good level (3.8).
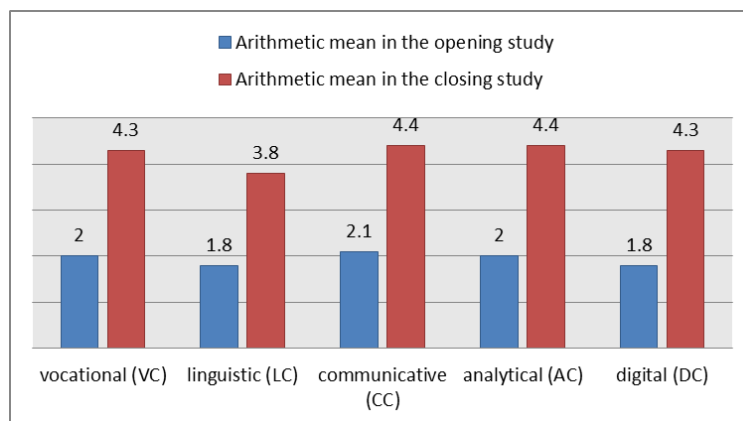

Fig. 6. Averaged level of management competences (2nd edition).
Source: own elaboration

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Based on the obtained summary results (Fig. 7) it may be concluded that the project contributed to a significant increase of competences in management students', which is confirmed by an over 100% increase in the digital competences (DC) and linguistic competences (LC) as well as an over 70% increase in vocational competences and a 65% increase in analytical competences in the 1st edition of the project. The results of the assessment prove that in the 2nd edition all respondents confirmed an over 100% increase in their digital competences (DC), analytical competences (AC) and the vocational ones (VC).
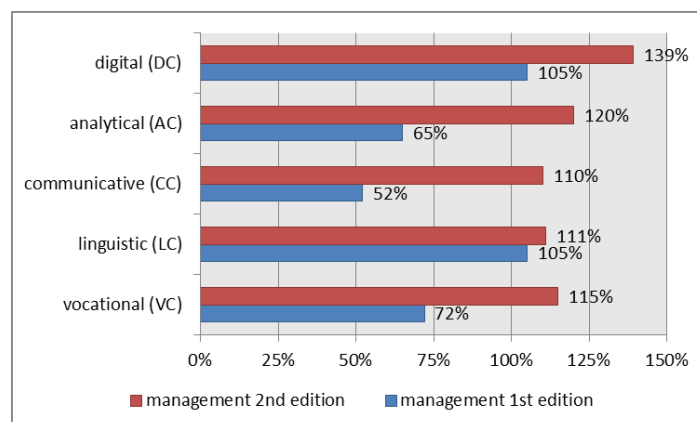

Fig. 7. Progress in management students' competences (1st and 2nd edition)
Source: own elaboration

In the course of conducted empirical research it was proven that in the modern business services sector **the key competences for management students** include *digital competences (Σ 244%)*, *linguistic (Σ 226%)* and *vocational competences (Σ 187%),* which reflects the total increase in competences (Fig.7). **Hypothesis 2** was **confirmed**.

The second research problem was the following question: *What are the key competences for management?* To solve this research problem we will present the opinions of the project participants on the level of competences in which the greatest progress was observed in both editions of the project.
The distribution of results in Table 5 allows us to make a conclusion that the respondents (management students) pointed out five competences (apart from VC 3 and VC 4) assessed as the *key digital competences* (DC) and these are:

1. DC 6 - the ability to analyse data using IT tools, ability to make business presentation/ prepare quotations, make data bases for businesses (3.35);
2. DC 5 - the ability to use multimedia, i.e. produce and post-produce multimedia content (commercials, promotional videos, animations) for marketing, promotional and advertising purposes (3.3);
3. DC 7 - the ability to operate specialist software used to perform tasks in the internship position in the entity from the business services sector (3.15);
4. DC 1 - the ability to support an enterprise which applies full accounting using Comarch ERP Optima software (3.1);
5. DC 2 - the ability to support an enterprise which applies revenue and expense ledger (simplified accounting) using Comarch ERP Optima software (3.0);

The key vocational competences (in the opinion of management students) are 19 competences, i.e. these which were graded between 3 and 4 (apart from VC 3, VC 4, VC 9, VC 10, VC 13 and VC 19).
Table 5 presents *linguistic competences* in which an increase was reported in the opinion of management students - working in the service sector.

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Table 5. The study of management students' competences (1st and 2nd edition)

Item no.	DIGITAL COMPETENCES	The opening study	The closing study	Average
DC 1	Ability to support an enterprise which applies full accounting using Comarch ERP Optima software (3.1);	2.0	4.2	3.1
DC 2	Ability to support an enterprise which applies revenue and expense ledger (simplified accounting) using Comarch ERP Optima software (3.0);	1.9	4.1	3.0
DC 3	The level of skills of preparing a VAT-7, VAT-EU tax forms as well as the annual tax returns and of sending various types of forms (to the e-form system) in Comarch ERP Optima programme	1.8	4.0	2.9
DC 4	The level of skills of calculating PIT-36, PIT-36L advance payments in Comarch ERP Optima programme	1.6	3.9	2.75
DC 5	The ability to use multimedia, i.e. produce and post-produce multimedia content (commercials, promotional videos, animations) for marketing, promotional and advertising purposes	2.2	4.4	3.3
DC 6	Ability to analyse data using IT tools, ability to make business presentation/ prepare quotations, make data bases for businesses	2.4	4.3	3.35
DC 7	Ability to operate specialist software used to perform tasks in the internship position in the entity from the business services sector	2.2	4.1	3.15
	ANALYTICAL COMPETENCES			
AC 1	Analytical skills regarding recruitment methods, tools and processes used by business in BPO	2.2	4.2	3.2
AC 2	Ability to maintain personnel registers and personal employee files	2.5	4.4	3.45
AC 3	Ability to maintain trainings records	2.4	4.3	3.35
AC 4	Ability to calculate pay and prepare payroll including various pay components	2.3	4.3	3.3
AC 5	Analytical knowledge and skills regarding business management processes	2.3	4.3	3.3
AC 6	Ability to work in a group	3.7	4.4	4.05
AC 7	Ability to operate specialist software used to perform tasks in the internship position in the entity from the business services sector	2.4	4.5	3.45
AC 8	Ability to analyse data, data bases for businesses in connection with the implementation of projects for business services sector	2.2	4.1	3.15
AC 9	Ability to solve a problem in an innovative manner and to offer a suggestion on its practical implementation in executing projects in modern business services sector	2.5	4.0	3.25
AC 10	Ability to analyse available information	3.3	4.3	3.8
AC 11	Ability to notice processes taking place in an organisation	2.6	4.3	3.45
	VOCATIONAL COMPETENCES			
VC 1	Knowledge and practical skills of creating cash registers using Comarch ERP Optima	2.2	4.2	3.2
VC 2	Knowledge and practical skills of creating bank accounts using Comarch ERP Optima	2.2	3.8	3.0
VC 3	Ability to analyse payments and financial situation using Comarch ERP Optima	1.9	3.8	2.85
VC 4	Ability to analyse settlements/ offsets of documents regarding business partners and employees using various methods in Comarch ERP Optima	2.0	3.7	2.82
VC 5	Knowledge of sales	2.9	4.6	3.75
VC 6	Knowledge of verbal and non-verbal communication in the sales process	3.2	4.6	3.9
VC 7	Ability to communicate effectively with a client	3.3	4.4	3.85
VC 8	Sales representative skills	2.5	4.1	3.3
VC 9	Knowledge of outsourcing management processes	1.8	4.1	2.95
VC 10	Knowledge of reasons for offshoring	1.7	4.2	2.95
VC 11	Knowledge of decision-making processes regarding the choice of investment location	2.5	4.4	4.7
VC 12	Knowledge of partnership building based on the stakeholders theory	2.0	4.1	3.05
VC 13	Knowledge of Capability Maturity Model (CMM)	1.2	3.6	2.4
VC 14	Knowledge of outsourcing in recruitment processes	1.7	4.3	3.0
VC 15	Ability to prepare business presentations, quotations, data bases for businesses in connection with the implementation of projects for business services sector	2.4	4.3	3.35
VC 16	Knowledge of HR and payroll support for a business entity	2.2	4.2	3.2
VC 17	Ability to use HR/payroll methods and tools for businesses Personnel records Payroll	2.2	4.3	3.25

	Supervision over trainings records			
VC 18	Skills relating to preparation of personnel and payroll reports for the management and external Clients	1.9	4.2	3.05
VC 19	Knowledge and skills relating to production and post-production of video content as part of multimedia projects for businesses	1.9	4.0	2.95
VC 20	Ability to work on projects for an enterprise in line with the accepted scope of responsibility	2.4	4.1	3.25
VC 21	Knowledge of cooperation between entities in the business services sector	2.3	4.1	3.2
VC 22	Problem-solving skills	3.2	4.4	3.8
VC 23	Knowledge of operations of businesses in the business services sector	2.2	4.4	3.3
VC 24	Ability to plan work	3.5	4.4	3.95
VC 25	Ability to organise own work	3.5	4.7	4.1
VC 26	Ability to effectively perform entrusted tasks	3.5	4.7	4.1
VC 27	Team-working skills	3.7	4.6	4.15
VC 28	Level of responsibility for entrusted tasks	3.9	4.6	4.25
VC 29	Ability to set and perform priority tasks	3.3	4.6	3.95
VC 30	Knowledge of processes, procedures, tools, methods and techniques used in managing businesses in the business services sector	2.4	4.1	3.25
	COMMUNICATIVE COMPETENCES			
CC 1	Ability to communicate effectively with a Client, to use effectively verbal and non-verbal means of communication in the sales process	3.0	4.4	3.7
CC 2	Ability to ask questions and test Client's needs Ability to control the conversation, to listen actively	3.0	4.4	3.7
CC 3	Communication skills to work within a new sales model and neurolinguistic programming skills	2.0	3.9	2.95
CC 4	Self-presentation, savoir-vivre and image building skills used in the work of a sales representative	3.0	4.6	3.8
CC 5	Ability to conduct negotiations according to the rules and various cultural factors	2.6	4.3	3.45
CC 6	Ability to prepare letters, documents, analysis and business presentations Communication skills in teamwork	2.8	4.3	3.55
CC 7	Ability to communicate with the superior	3.4	4.5	3.95
CC 8	Ability to communicate with a client	3.2	4.4	3.8
CC 9	Ability to resolve conflicts	3.3	4.4	3.85
	LINGUISTIC COMPETENCES			
LC 1	Knowledge of English	2.5	3.9	3.2
LC 2	Knowledge of English specialist terminology for management	1.8	3.8	2.8
LC 3	Ability to build correct English language structures with reference to management terminology	1.7	3.8	2.75
LC 4	Ability to communicate freely and fluently in English using management terminology	1.6	3.8	2.7
LC 5	Language skills for work (in an internship position) in an organisation from the business services sector	2.0	3.9	2.95

Source: own elaboration

The conducted study of competences (among management students) allowed us to point out competence gaps - areas requiring development (the average of below 3) in the group of the following thirteen competences:

1. VC 9 - knowledge of outsourcing management processes (2.95);
2. VC 10 - knowledge of reasons for offshoring (2.95);
3. CC 3 - communication skills to work within a new sales model and neurolinguistic programming skills (2.95);
4. VC 19 - knowledge and skills relating to production and post-production of video content as part of multimedia projects for businesses (2.95);
5. LC 5 - language skills for work (in an internship position) in an organisation from the business services sector (2.95);
6. DC 3 - skills of preparing a VAT-7, VAT-EU tax forms as well as the annual tax returns and of sending various types of forms (to the e-form system) in Comarch ERP Optima programme (2.95);
7. VC 3 - the ability to analyse payments and financial situation using Comarch ERP Optima (2.85);

8. VC 4 - the ability to analyse settlements/ offsets of documents regarding business partners and employees using various methods in Comarch ERP Optima (2.82);
9. LC 2 - knowledge of English specialist terminology for management (2.8);
10. DC 4 - skills of calculating PIT-36, PIT-36L advance payments in Comarch ERP Optima programme (2.75);
11. LC 3 - the ability to build correct English language structures with reference to management terminology (2.75);
12. LC 4 - the ability to communicate freely and fluently in English using logistics terminology (2.95);
13. VC 13 - knowledge of Capability Maturity Model (CMM) (2.4);

6.3. Sensitive competences for the needs of modern business services sector

The third research problem was the following question: *Do competences which ranked highest comprise the group of MBS sensitive soft competences?* To solve this problem, after **establishing** the diagnosis in the study of competence (based on Table 4 and 5) we will indicate strengths of the competence profile (Table 6). It is the **group of sensitive competences** (in the opinion of logistics and management students), which is represented in the competence profile (Fig. 8) with a line indicating a good competence level, i.e. ranking above 4.0.

Table 6. Sensitive competences of logistics and management project participants

| Item no.	According to logistics project participants	According to management project participants	Average rating
1.	-	VC 11 - knowledge of decision-making processes regarding the choice of investment location (4.7);	4.7
2.	VC 27 - team-working skills (4.3);	VC 27 - team-working skills (4.15);	4.225 (~4.23)
3.	VC 28 - the level of responsibility for entrusted tasks (4.1);	VC 28 - the level of responsibility for entrusted tasks (4.25);	4.175 (~4.18)
4.	VC 26 - the ability to effectively perform entrusted tasks (4.2);	VC 26 - the ability to effectively perform entrusted tasks (4.1);	4.15
5.	VC 25 - the ability to organise own work (4.15);	VC 25 - the ability to organise own work (4.1);	4.125 (~4.13)
6.	AC 6 - the ability to work in a group (4.05);	AC 6 - the ability to work in a group (4.05);	4.05

Source: own elaboration
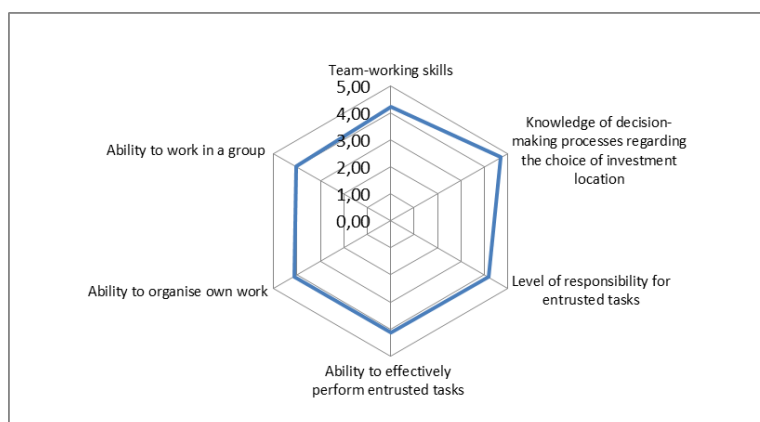
Fig. 8. The profile of sensitive competences in the modern business services sector
Source: own elaboration

Based on the obtained results (in logistics and management) it was proven that **soft skills**, which *ranked highest in the opinion of employees of the modern business services sector, constitute***thesensitive group of competences**. **Hypothesis 3** was **confirmed**.

Conclusions of the analysis

In the face of sustainable spatial development and the challenges of space polarisation (agglomerations vs. medium-sized towns) developing MBS competences becomes a prerequisite to stay competitive and it creates opportunities for employees' development in businesses in the fast developing industry (BPO, SSC, IT, R&D).

Managing competences in the trio of business-science-government/local government takes place at the community level (the structural policy of the EU), at the national level (the system of higher education), at the organisational level (demand for competences for given sectors/developing competences in a flexible manner so as to match the needs) but also on the individual level of an employee who should ensure continuous development. The MBS competences are knowledge, skills and attitudes which condition, shape and develop organisations in the modern business services sector.

These are key and sensitive competences, including soft skills, which are characteristic for the desired and employed human capital, and which also find their way from the areas of key importance to the less important ones.

The research results confirmed that the key and sensitive competences are the most required in the business services sector, and the mechanism of adjusting competences to the needs of service centres is presented in Fig.9.
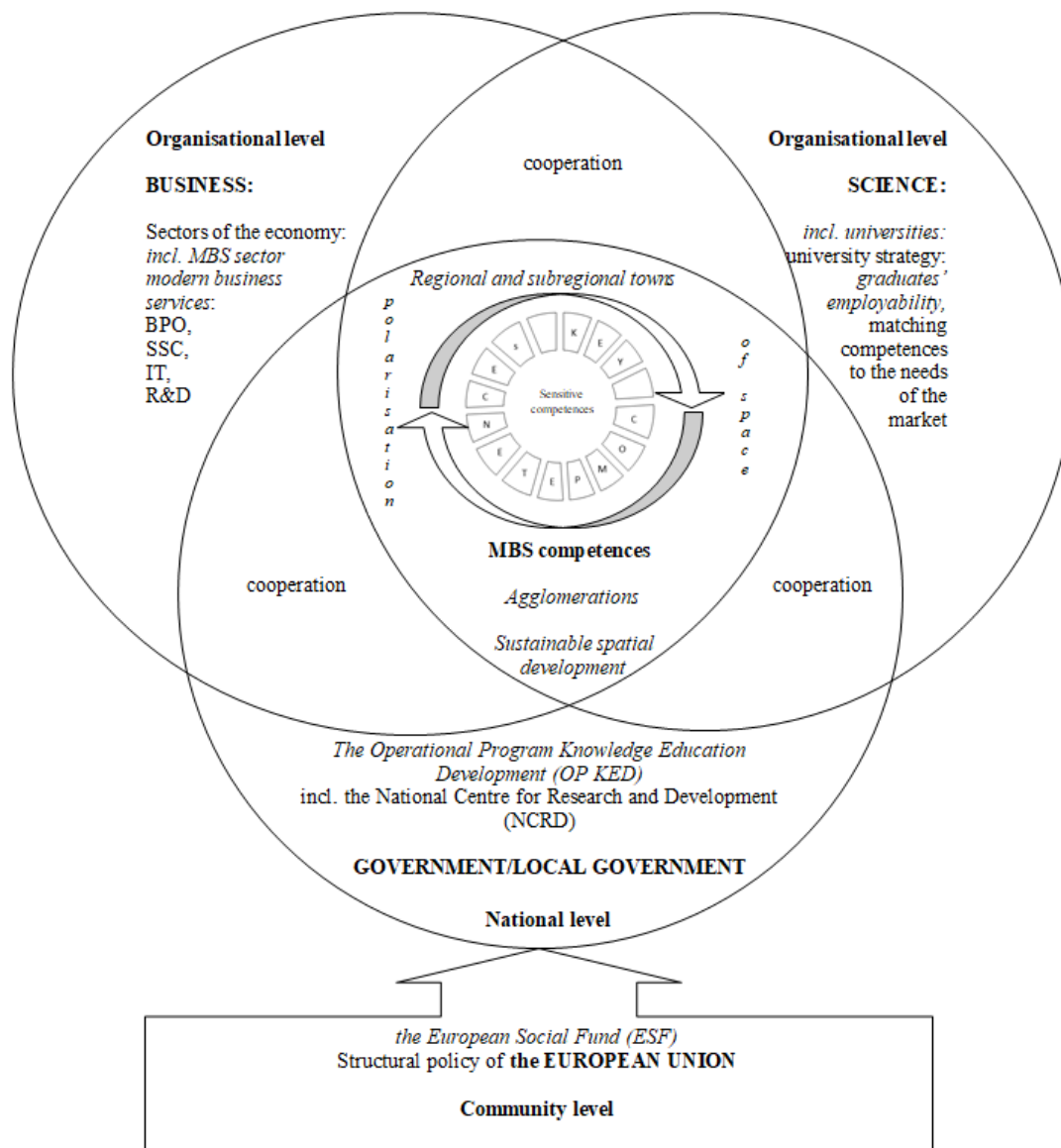
Fig. 9. The mechanism of adjusting students' competence to the needs of modern business services sector
(in the context of sustainable spatial development and space polarization)
Source: own elaboration

Based on the analysis of the obtained own research results, the discussion of competence specificity and determination of the key competences as well as groups of sensitive competences for the needs of modern business services we may conclude that the main objective of the article was achieved.

The main problem which was to determine whether the process of developing MBS competences leads to building key competences and the groups of sensitive competences was resolved. Moreover, the detailed problems were also resolved by pointing out the key competences and sensitive competences for the needs of modern business services. We diagnosed the level of competence acquisition in the process of their development in students participating in management and logistics projects. We also pointed out competence gaps - the areas which require development.

In the course of research it was proven that in the opinion of logistics students digital, analytical and vocational competences are of key importance in the modern business services sector. Whereas digital, linguistic and vocational competences are the key competences for management in the modern business service sector. It was proven that the group of sensitive competences may be these which were ranked highest by employees. All detailed hypotheses were verified positively, as a result we may state that the main hypothesis was confirmed, i.e. **the process of developing competences leads to building key competences and sensitive competences for the needs of modern business services (MBS)**.

Defined by the National Centre for Research and Development in the call for proposals POWR.03.01.00-IP.08.00-BPO/17, access criteria and result ratios were achieved in the project "Competences of the employees of tomorrow in the business services sector", including ratios regarding the employment of the participants – university graduates. As a result of the implementation of the project, 35% persons covered with the support of ESF (SUNSH graduates) took up work within 6 months of completing their education (in the 1st edition of the project). The results for the 2nd edition of the project are still being monitored. With reference to the achieved employment and cooperation results documented with appropriate agreements (between SUNSH and entities from the business service sector) it should be stated that the project has a practical application and its product is MBS competences (the key and sensitive ones, including soft skills) which are most required in the service sector: BPO, SSC, IT, R&D.

In conclusion, the project implemented by SUNSH contributed to achieving the detailed objective of the OP KED which envisages *increasing competences of persons participating in education at the university level which meet the needs of the economy, the labour market and the society*. It was confirmed by comparison of the competence level of prospective employees (students) at the start of the project with the level of employees (interns) at the end of the project, when they acquired competences which are in demand. The research result showed the convergence of competences acquired by the project participants with the expectations of employers in the business services sector. Comparing competences which are in demand in the modern business services sector with those acquired by the project participants during the project, it may be argued that the latter match the needs of the economy and the analysed market in a medium-sized town. Accordingly, the study shows that the project "Competences of the employees of tomorrow in the modern business services sector" contributed to the attainment of the set objective - logistics and management students developed significantly their key and sensitive competences for the needs of the MBS. The project contributed to matching the participants' competences to the needs of the modern business services sector and led to the employment of the graduates of the university in a medium-sized town (in line with the Sustainable Development Strategy for Poland).

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