Kraków

BUSINESS SERVICES SECTOR IN KRAKÓW

ABSL

Report prepared for the City of Kraków
by the Association of Business Service Leaders (ABSL)

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PROF.
JACEK MAJCHROWSKI

Mayor of Kraków

A city that offers a sustainable answer to the different needs of science, business and residents presents a tremendous opportunity for all kinds of businesses. Kraków is exactly such a city, a place that has been supporting the growth of companies and businesses for many years.

We are well aware of the importance of professional business services to the local economy. The dynamic growth of such services in Kraków is based on innovation and advanced technologies, but the most important factor is the availability of qualified personnel – our city's biggest asset. Highly qualified and competent residents who study in Kraków and gain experience by working at global organizations – this is one of the major strengths that cause businesses and investors to come to the capital of Małopolska. Other reasons to choose Kraków as the place to live and work include convenient location and modern infrastructure.

In Kraków, we listen to the voice of the residents, making consistent efforts to improve their quality of life. The combination of centuries-old culture and tradition with new technologies and opportunities offered by a modern city helps us work together to build a new metropolis – the Kraków of the future.

KATARZYNA WYSOCKA

Head of the Department for Entrepreneurship & Innovation,
Kraków City Office

In Kraków, we try to meet the expectations of the investors and assist them through a specialised unit – the Investors and Innovative Economy Support Centre. The Centre provides broadly defined assistance for domestic and international investors. The experts of the Centre set up meetings with investors to present the economic potential of the City and invite HR companies, real estate agencies and educational establishments to prepare a comprehensive offer and answer the needs of any investor.

The Centre also assists with project development procedures and any issues that may arise during the successive stages of the projects. The investors are supported by dedicated consultants, who help them at every stage of the project development process and then monitor the functioning of the project or the company in Kraków and provide any necessary information about the various aspects of doing business in the city.

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PREFACE

This report presents the results of an analysis of Kraków as a location for investments and a place for business services centers. The report has been prepared based on the following:

- ABSL database on business services centers in Poland,
- ABSL report: "Business Services Sector in Poland 2021",
- survey conducted by ABSL in September 2021, dedicated to the sector in Kraków,
- foresight study, involving the key stakeholders of the sector in Kraków, conducted in October 2021.
- ABSL report "Investment Potential of Polish Cities. Location benchmark of the business services sector".

The individual subsections of the report present information concerning the following:

- development of the City,
- development of the business services sector in Kraków and its metropolitan area,
- location of centers in the City,
- assessment of the position of Kraków in the subjective and objective ranking of ABSL. A comparison of the two rankings shows the comparative advantages, identifying potential areas for improvement,
- innovation of centers in the City,
- cooperation of the centers of the sector with intermediate bodies within the regional system of innovation in the metropolitan area of Kraków.

INDEX OF ACRONYMS USED IN THE REPORT

AGH	University of Science and Technology (*Akademia Górniczo-Hutnicza*)
AI	Artificial Intelligence
CAGR	Compound Annual Growth Rate
CEE	Central and Eastern Europe
CoE	Center of Excellence
CX	Customer experience
BPO	Business Process Outsourcing
EMEA	Europe, Middle East, and Africa
ESG	Environmental, Social and Corporate Governance
F&A	Finance and Accounting
FTE	Full Time Equivalent
GBS	Global Business Services
ITO	IT Outsourcing
KIBS	Knowledge-Intensive Business Services
M&A	Mergers & Acquisitions
RPA	Robotic Process Automation
R&D	Research & Development
SSC	Shared Services Center
UEK	Cracow University of Economics (*Uniwersytet Ekonomiczny w Krakowie*)
UJ	Jagiellonian University (*Uniwersytet Jagielloński*)

2

KEY FIGURES CONCERNING THE DEVELOPMENT OF KRAKÓW

FIGURE 2.1
KEY FIGURES ON THE DEVELOPMENT OF KRAKÓW

780,000
Population (31 XII 2020)

227,800
Average headcount in the enterprise sector

3.2%
Unemployment rate (August 2021)

16,200
Registered unemployed persons

7,121.45 PLN
Average gross monthly salary (August 2021)

157,483
Registered entities (August 2021)

2,385
Population per 1 km^2

5,962
Dwellings completed (January–August 2021)

1.57 million
Office space (sq m)

103,800
Office space under construction (sq m)

23
Number of local universities

130,000
Number of students

Perspektywy 2021 ranking of universities (places in the Top15)

1. Jagiellonian University in Kraków

5. AGH University of Science and Technology in Kraków

Source: ABSL own study

3.

DEVELOPMENT OF THE BUSINESS SERVICES SECTOR IN KRAKÓW

FIGURE 3.1
KEY INFORMATION ON THE BUSINESS SERVICES SECTOR IN KRAKÓW

82,600

Number of employees of BPO, SSC/GBS, IT, and R&D centers[1] in Kraków (Q3 2021). Amounts 23.1% of overall employment in the business services sector in Poland.

61%

Employment growth at business services centers in Kraków in 2016–2021 (31,400 people, of which 26,900 thousand are employed by foreign centers).

257

Number of BPO, SSC/GBS, IT, and R&D centers in Kraków (Q3 2021). 205 centers are owned by international companies (80% of the overall number).

79

Number of services centers established in Kraków since the beginning of 2016. These investments have created almost 8,900 new jobs.

29

Number of countries with head offices of companies that own business services centers in Kraków. Among international companies, the largest number of centers is owned by companies from the USA, United Kingdom, France, Germany, Switzerland, the Netherlands and Sweden (64% of the overall number of centers).

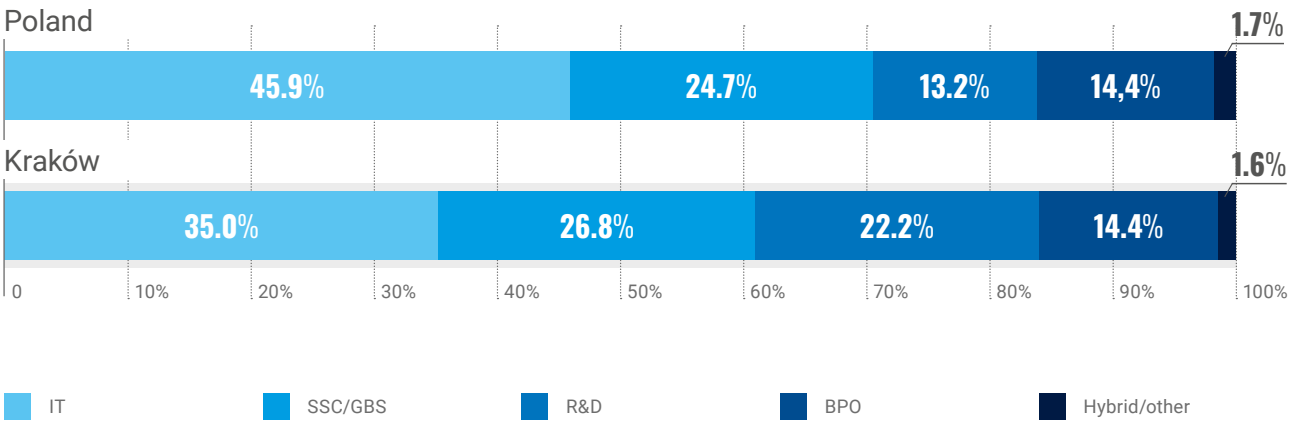
Source: ABSL own study based on the business services center database

[1] BPO – Business Process Outsourcing, SSC/GBS – Shared Services Center/Global Business Services, IT – Information Technology, R&D – Research & Development

3.1. NUMBER OF CENTERS

Kraków has 257 BPO, SSC/GBS, IT, and R&D centers (Q3 2021). In comparison with the overall situation in Poland, the sector in Kraków has a higher share of R&D and SSC/GBS centers and a smaller share of IT centers.

FIGURE 3.2
BREAKDOWN OF THE NUMBER OF CENTERS BY TYPE (2021, %)



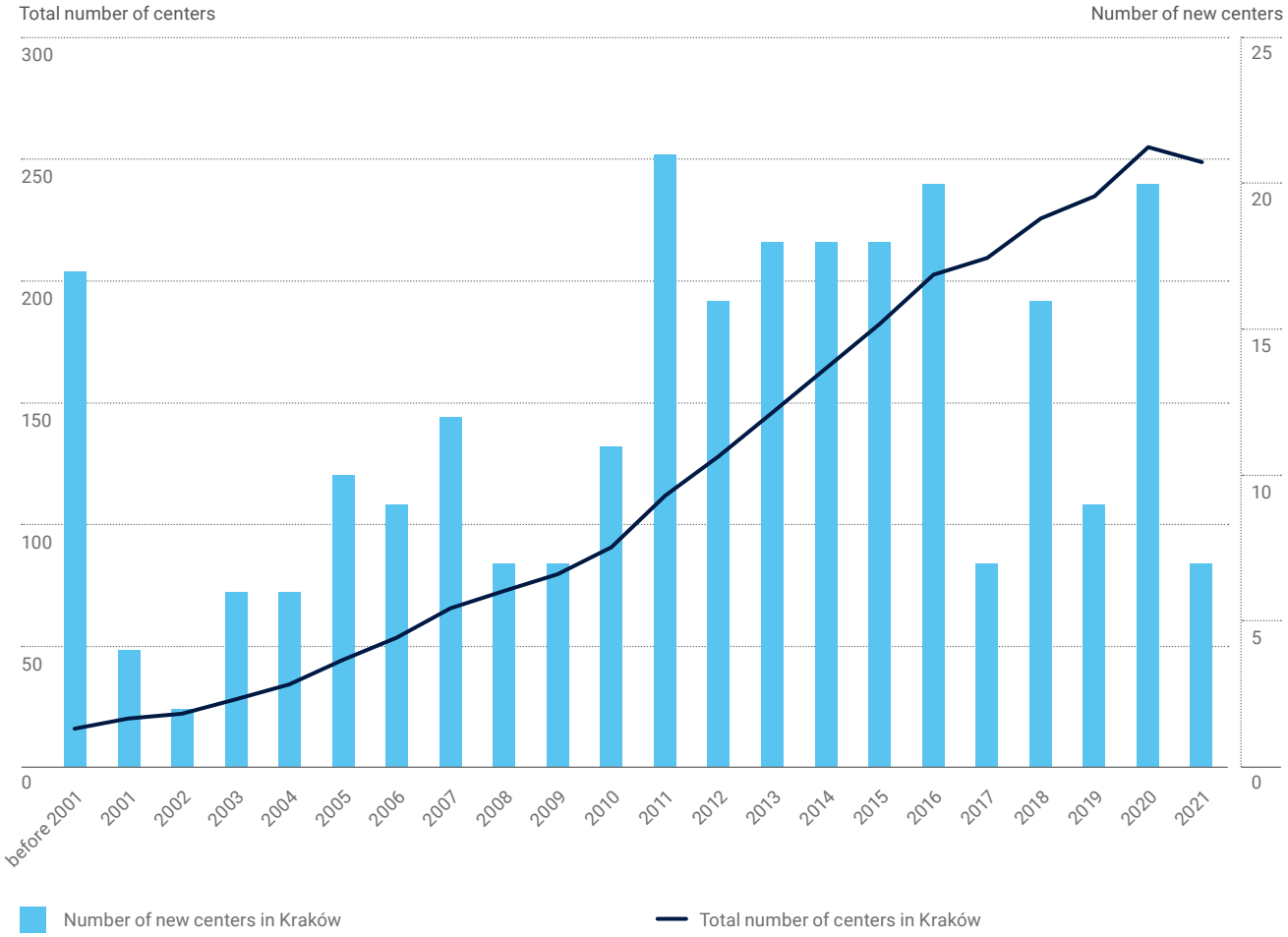
Source: ABSL own study based on the business services center database

TABLE 3.1
NUMBER OF CENTERS IN KRAKÓW BY TYPE IN 2021 (BY OWNERSHIP)

	IT	SSC/GBS	R&D	BPO	Total including hybrid centers
Kraków, total	90	69	57	37	257
Kraków, foreign ownership	53	66	49	33	205
Poland	762	410	220	240	1,661

Source: ABSL own study based on the business services center database

FIGURE 3.3
NUMBER OF NEW CENTERS IN KRAKÓW



Source: ABSL own study based on the business services center database

Since Poland's accession to the EU, the number of KIBS centers in Kraków has increased sevenfold. The largest number of centers was formed in 2011–2016. The number of new market entries has decreased with the emergence of the COVID-19 pandemic. Considering the scale of the pandemic and the related shock, the sector has shown great resilience despite the insignificant decrease in the number of centers in 2021. Consolidation processes are underway in the sector. Also, centers in Kraków have a higher headcount than in other locations.

Kraków is the location of one-fourth of the R&D centers in Poland, approx. 17.0% of SSC/GBS centers and 15.0% of BPO centers. The vast majority of business centers in Kraków are owned by international companies (80%). The highest share of domestic centers can be observed in the IT sector, and the share of international companies is the highest among BPO centers.

3.2. EMPLOYMENT IN THE SECTOR

Kraków is the largest location in Poland in terms of business services centers. The share in national headcount in the KIBS sector is 23.1% (40% of employment in Tier 1 cities).

In Q3 2021, the centers functioning in Kraków employed 82,600 people (approximately 4,500 more people than in 2020). Most jobs (88%) in the sector in Kraków were created at centers owned by international companies (with the overall rate for Poland being 81.5%).

In 2016–2021, headcount at the centers in Kraków increased by 61.2%. The growth rate was smaller than the overall rate for Poland (67.2%), and – out of all Tier 1 and Tier 2 cities – it was lower only in Wrocław.

In the analyzed period, headcount at the centers in Kraków increased by 31,400, which makes up more than 1/5 of the growth of employment in the sector in Poland. The accumulated job growth in the sector (CAGR) in 2016–2021 for Kraków was 10%. It should be emphasized that other Tier 1 and Tier 2 cities had a higher rate of employment growth in 2016–2021 than Kraków, except for Wrocław (8.9%).

Out of the 257 centers in Kraków, 40 are so-called first centers in Poland. They employ 36,500 people (42% of the overall headcount in 2021). The 41 largest centers, each of which employs at least 500 people, make up 73% of overall employment.

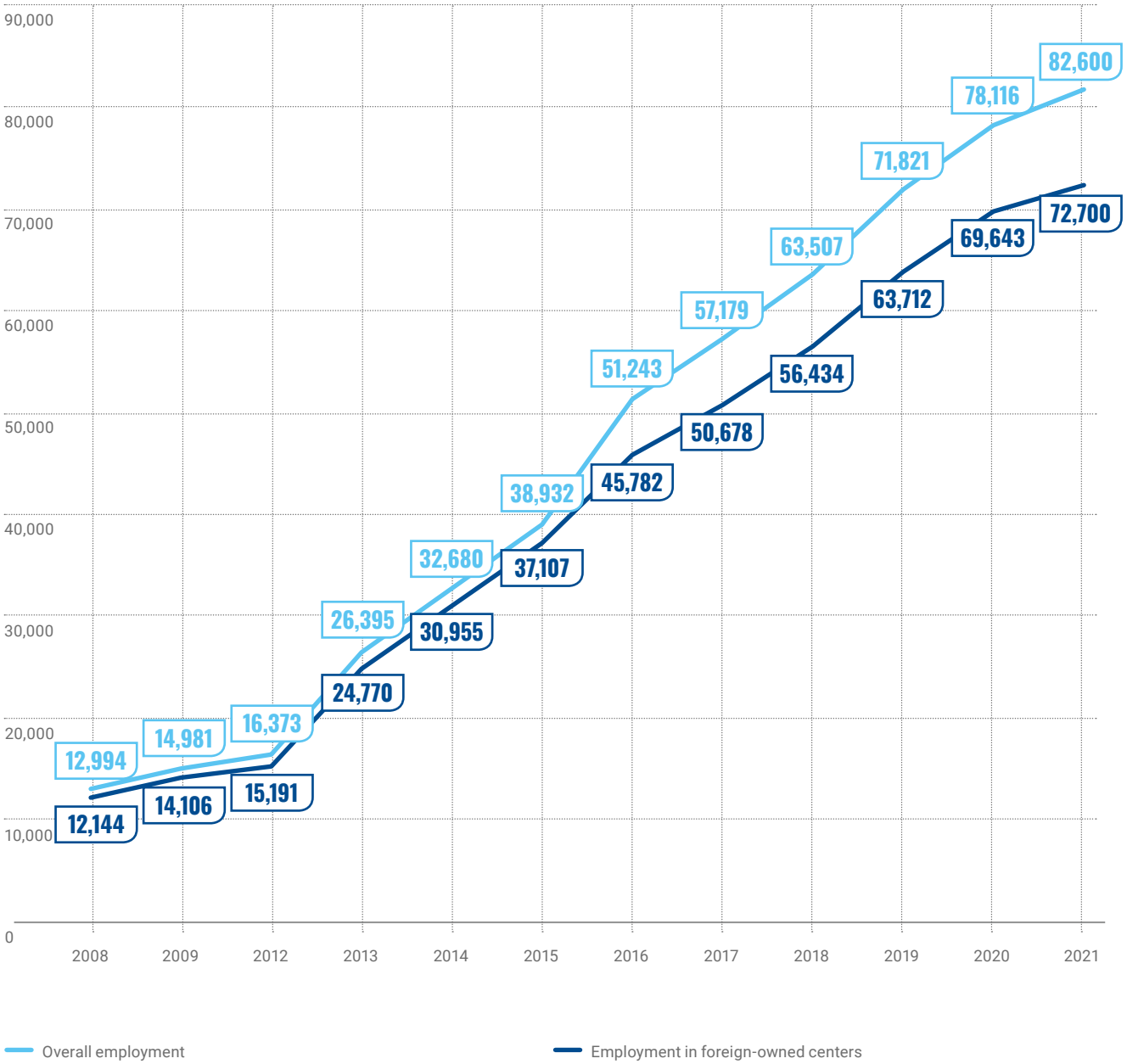
Centers owned by US investors employ more than one-third (35.2%) of employees in Kraków. Further positions are occupied by companies from the UK (16.3%), Poland (11.4%), Switzerland (8.5%), France (7.2%), and the Netherlands (6.5%).

The highest share of headcount in Kraków is that of SSC/GBS centers (47.6%), followed by IT centers (20%) and BPO centers (17.4%). In comparison with the employment structure in the sector in Poland, Kraków is characterized, in particular, by a higher share (by 11.3 percentage points) of SSC/GBS centers and a smaller share (by 11 percentage points) of IT centers.

The average headcount at centers in Kraków is approximately 318 (the median is 90[2]), and it is the highest among all the main locations of the sector in Poland. The average employment rate is higher at centers owned by international investors (352) than at Polish centers (181). This confirms the general rule that international companies are larger, usually more productive, and more internationalized.

[2] The median for Poland is 80.

FIGURE 3.4
EMPLOYMENT AT CENTERS IN KRAKÓW IN 2008–2021



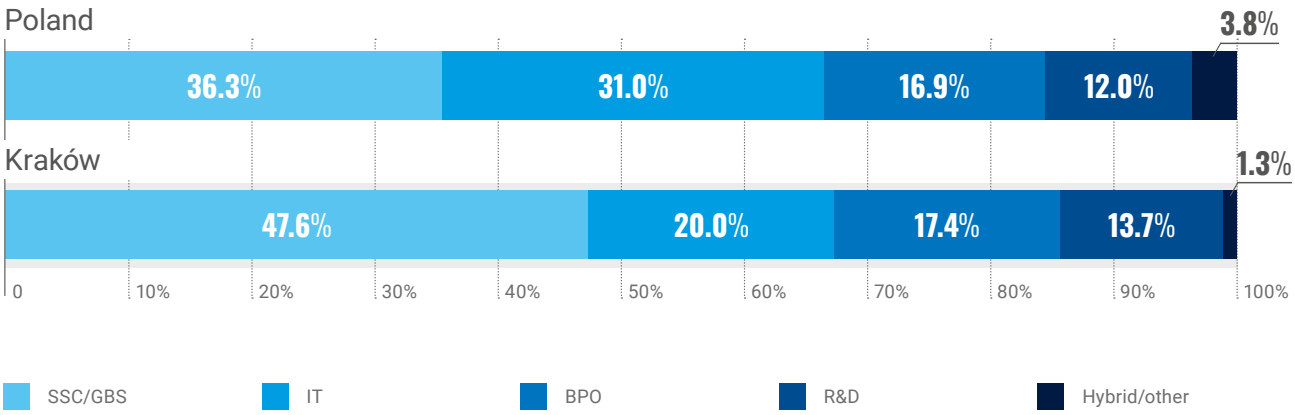
Source: ABSL own study based on the business services center database

TABLE 3.2
AVERAGE EMPLOYMENT (ARITHMETIC AVERAGE) AT CENTERS BROKEN DOWN BY LOCATION (NUMBER OF PEOPLE)

	Kraków	Poland
Polish centers	181	122
International centers	352	261
Overall number of centers	318	215

Source: ABSL own study based on the business services center database

FIGURE 3.5
EMPLOYMENT STRUCTURE BY TYPE OF CENTER (2021, %)



Source: ABSL own study based on the business services center database

In comparison with other countries in the region, the KIBS sector in Poland has a significant and growing share of foreigners in employment. The overall rate for Poland is 13.7%. In Kraków, this rate is the highest among all of the main locations, and it amounts to almost one-fifth (19.8%).

In the ABSL survey, the respondents indicated the five countries of origin of the largest number of foreigners working at the business center they represent. In Kraków, the most frequently employed foreigners included Ukrainians, Italians, Spaniards, Indians, and Russians. The employees of the centers in Kraków come from 33 countries of the world.

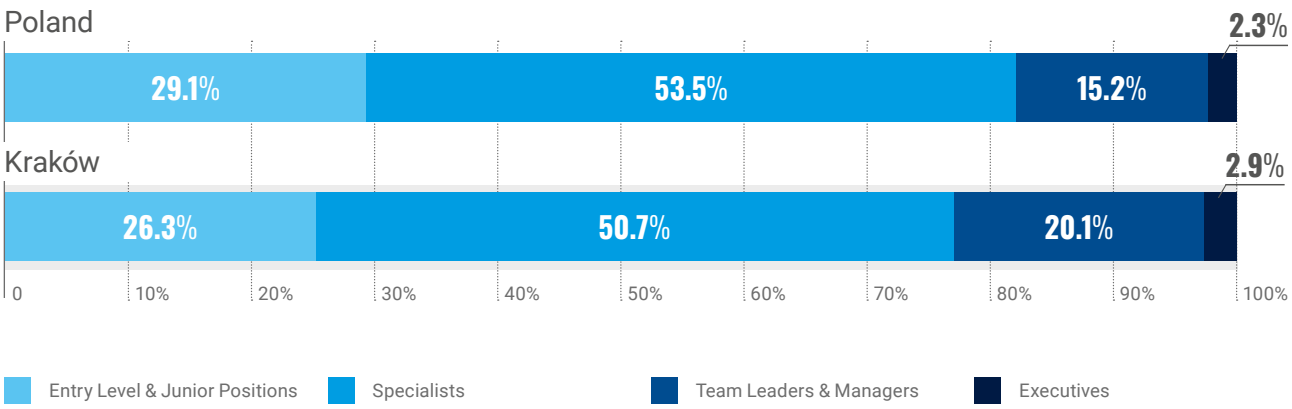
TABLE 3.3
EMPLOYMENT IN THE SECTOR IN KRAKÓW AND NUMBER OF CENTERS BY COUNTRY OF ORIGIN* (2021)

Country of origin	Headcount	Share in overall headcount	Number of centers	Share in the overall number of centers
	29,100	35.2	78	30.4
	13,500	16.3	35	13.6
	9,390	11.4	52	20.2
	7,038	8.5	10	3.9
	5,945	7.2	14	5.4
	5,355	6.5	8	3.1
	3,169	3.8	12	4.7
	2,300	2.8	7	2.7
	1,670	2.0	5	1.9
	1,105	1.3	5	1.9
	701	0.8	3	1.2
	680	0.8	2	0.8
	565	0.7	3	1.2
Other countries**	2,082	2.6	23	8.9

* Headquarters location.
** Denmark, Norway, South Korea, Brazil, RSA, Luxembourg, Austria, Canada, Slovakia, Japan, Australia, Israel, Italy, Czech Republic, Ukraine, Spain.

Source: ABSL own study based on the business services center database

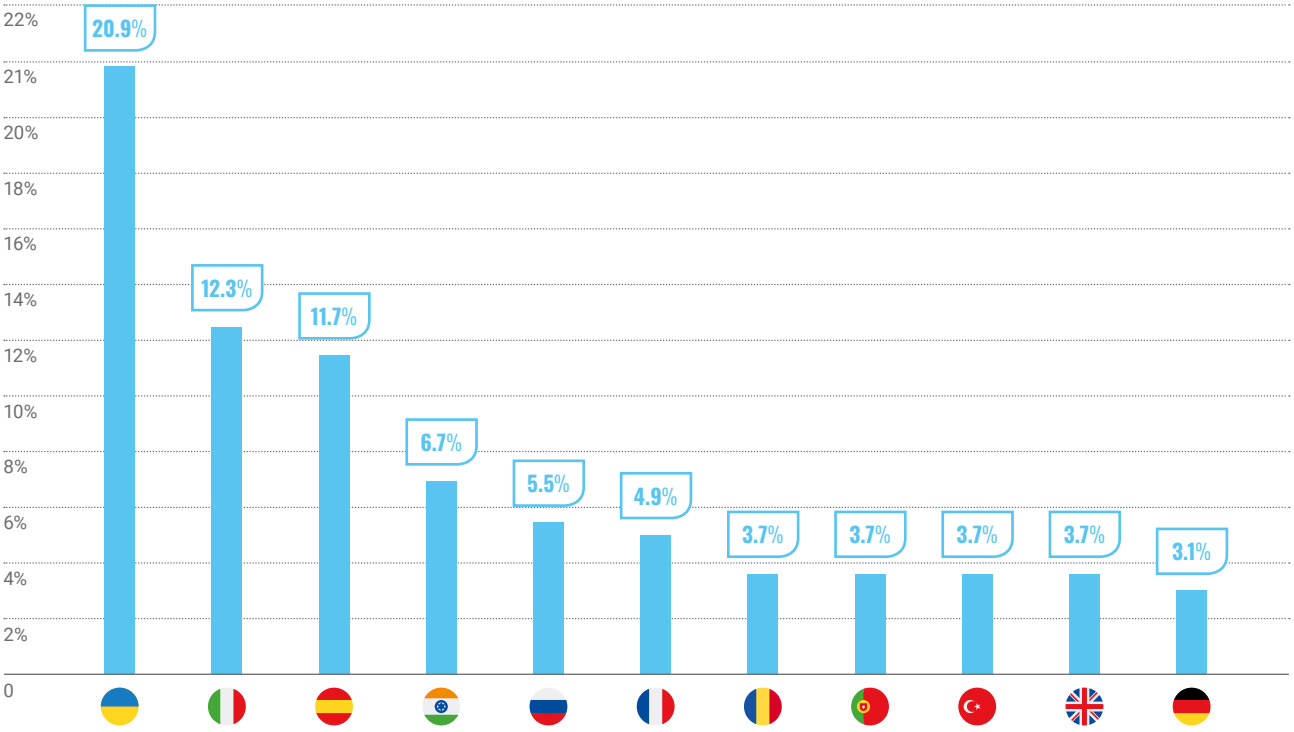
FIGURE 3.6
EMPLOYMENT STRUCTURE AT BUSINESS SERVICES CENTERS BROKEN DOWN BY JOB POSITION (AVERAGE SHARE IN EMPLOYMENT STRUCTURE IN %)



Source: ABSL own study based on the results of a survey addressed to business services centers. The results are weighted by total employment.

FIGURE 3.7

COUNTRIES MOST OFTEN INDICATED AS THE COUNTRY OF ORIGIN OF FOREIGNERS EMPLOYED IN BUSINESS SERVICES CENTERS IN KRAKÓW (% OF INDICATIONS)



Source: ABSL own study based on the results of a survey

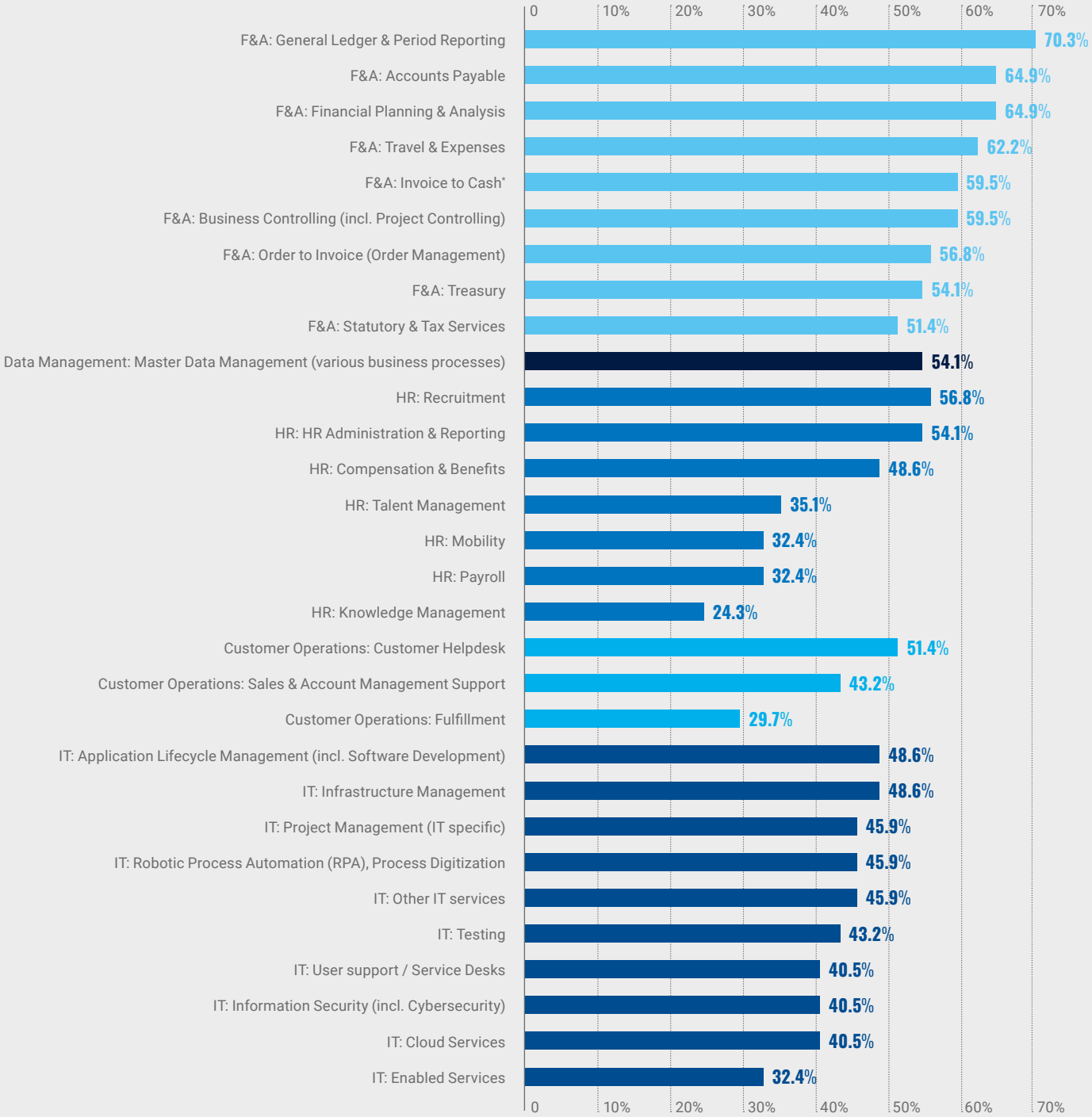
3.3. CATEGORIES OF SUPPORTED PROCESSES

The KIBS sector in Poland is undergoing quantitative and qualitative changes. The former manifests primarily in the growing number of centers and rising headcount. Qualitative changes include the transformation towards middle-office, i.e., the support of more advanced processes by the centers.

In terms of the share of knowledge-intensive processes, Kraków is the leading location in Poland.

FIGURE 3.8

CATEGORIES OF PROCESSES SUPPORTED BY BUSINESS SERVICES CENTERS IN KRAKÓW (PART I)
(% OF RESPONDENTS)

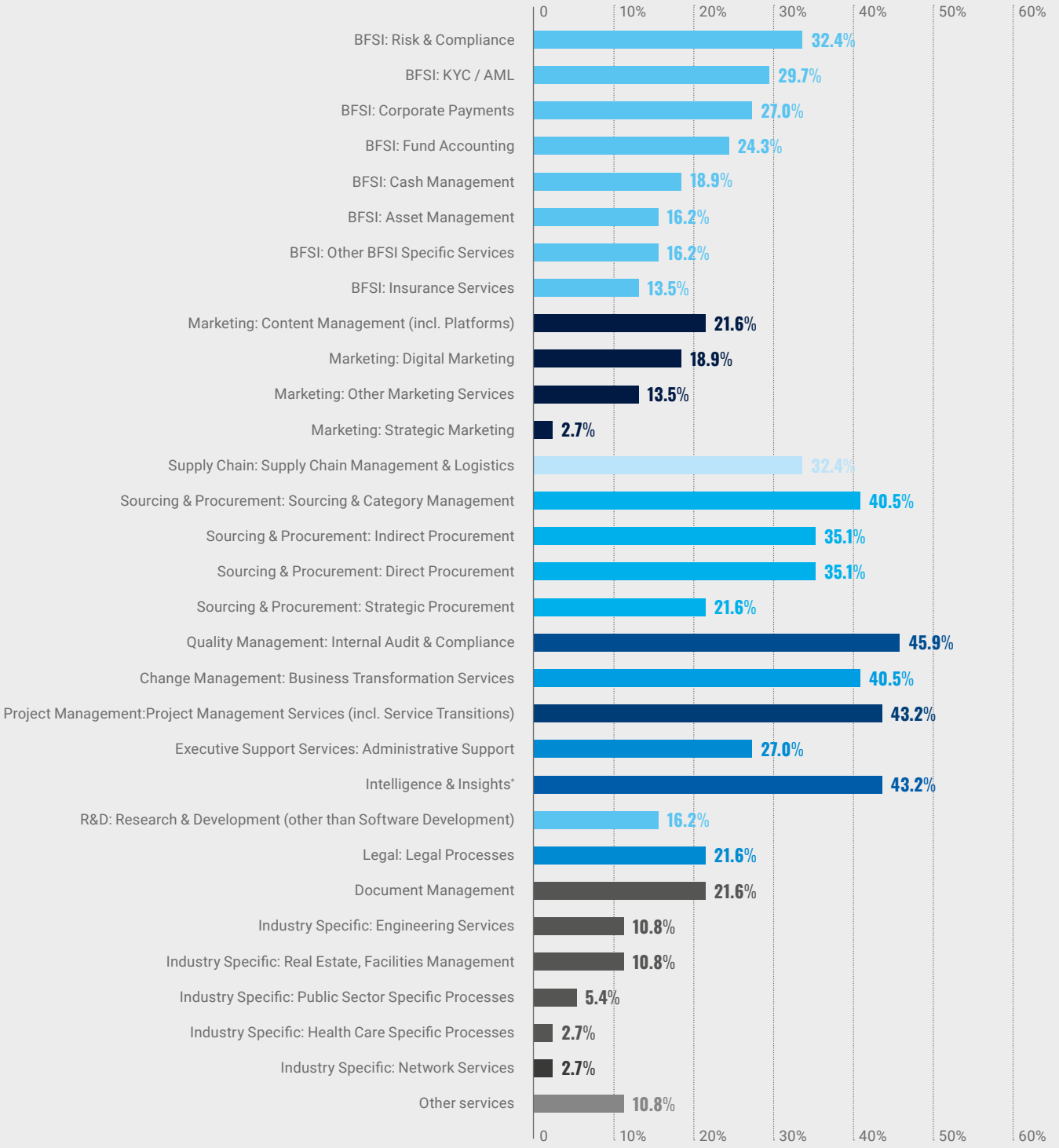


* incl. Cash Allocation, Cash Collection, Disputes Management

Source: ABSL own study based on the responses of investors who have business services centers in Kraków

FIGURE 3.9

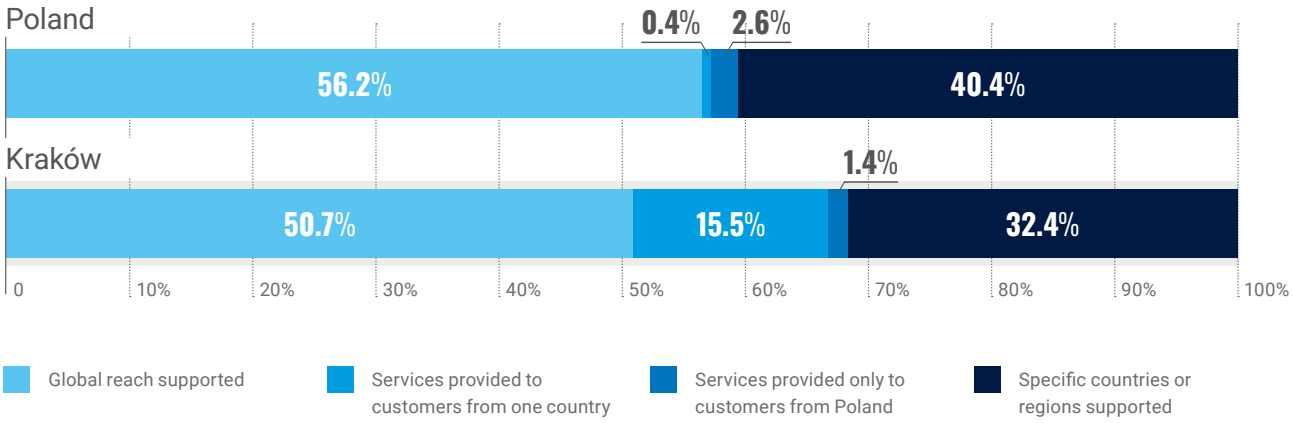
CATEGORIES OF PROCESSES SUPPORTED BY BUSINESS SERVICES CENTERS IN KRAKÓW (PART 2)
(% OF RESPONDENTS)



* Business Intelligence, Data Analytics, Complex Performance Reporting

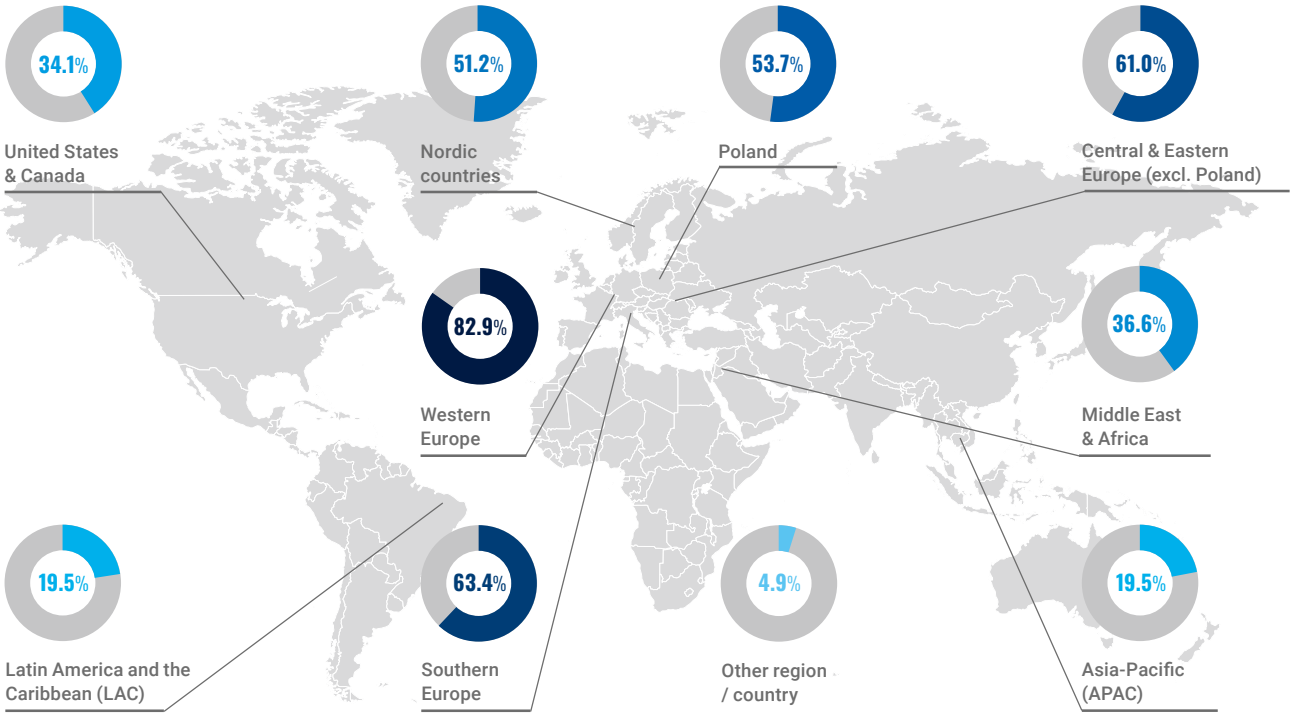
Source: ABSL own study based on the responses of investors who have business services centers in Kraków

FIGURE 3.10
GEOGRAPHIC SCOPE OF SERVICES DELIVERED BY THE CENTERS IN KRAKÓW AND IN POLAND



Source: ABSL own study based on the results of a survey

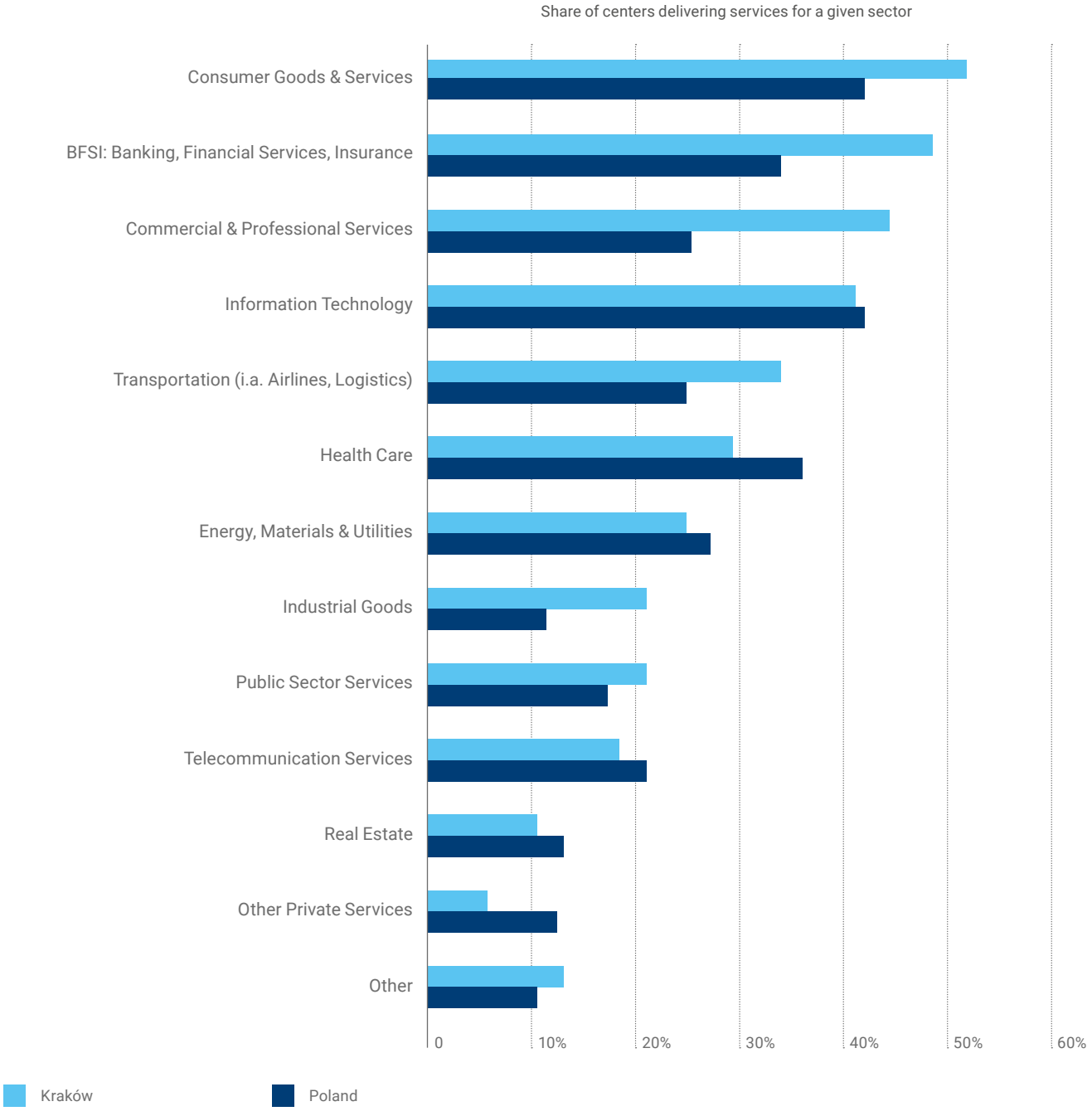
FIGURE 3.11
GEOGRAPHIC SCOPE OF SERVICES DELIVERED BY THE CENTERS IN KRAKÓW (% OF RESPONDENTS)



Source: ABSL own study based on the results of a survey

FIGURE 3.12

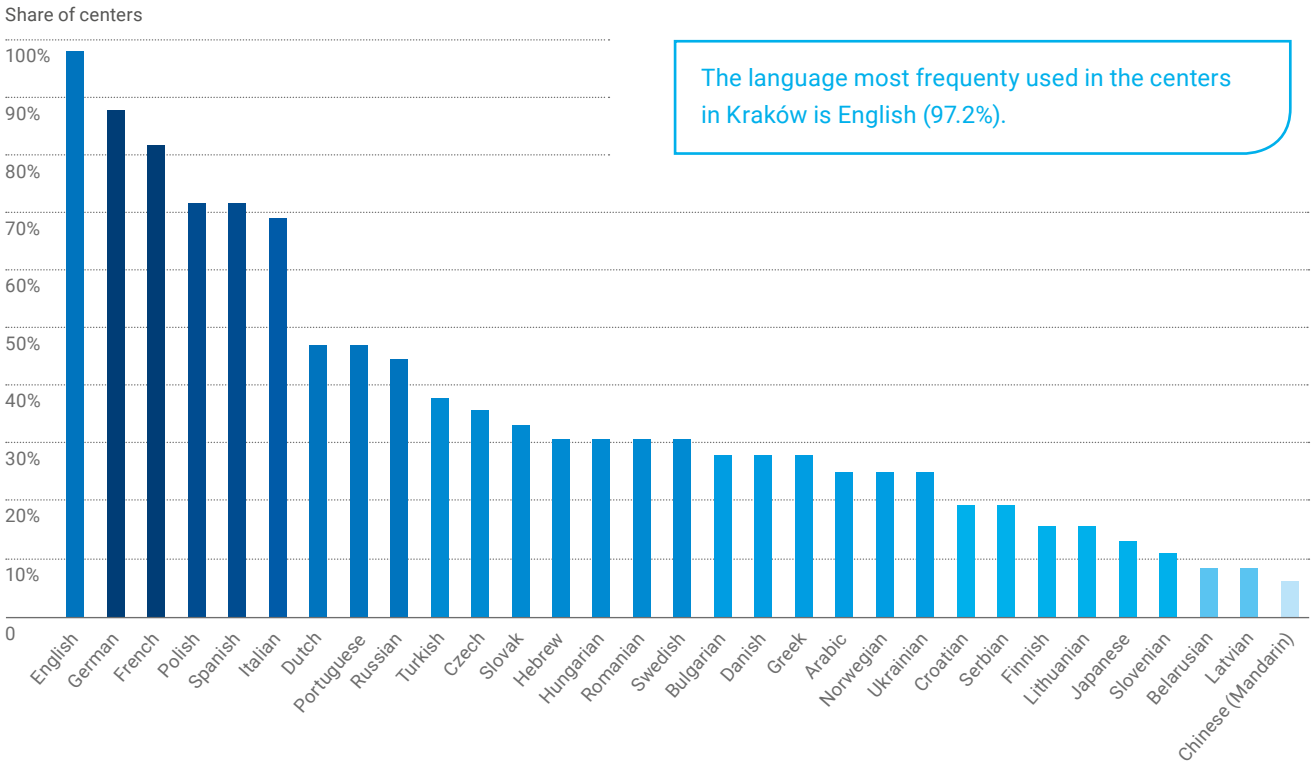
SECTOR STRUCTURE OF CLIENTS SUPPORTED BY CENTERS IN KRAKÓW BY INDUSTRY (% OF RESPONDENTS)



Source: ABSL own study based on the results of a survey

FIGURE 3.13

MOST IMPORTANT LANGUAGES USED AT CENTERS IN KRAKÓW FOR CUSTOMER SERVICE, BY POPULARITY (% OF INDICATIONS)



The language most frequenty used in the centers in Kraków is English (97.2%).

Source: ABSL own study based on the results of a survey addressed to business services centers. The results do not add up to 100.

TABLE 3.4

SELECTED INVESTORS BY HEADCOUNT AT BUSINESS SERVICES CENTERS IN KRAKÓW

Investor	Parent company headquarters location	Headcount at centers in Kraków
Capgemini		2000-5000
HSBC		2000-5000
State Street		2000-5000
Shell		2000-5000
UBS		2000-5000

Investor	Parent company headquarters location	Headcount at centers in Kraków
Comarch		2000-5000
Motorola Solutions		2000-5000
IBM		2000-5000
Aptiv		2000-5000
Cisco		2000-5000

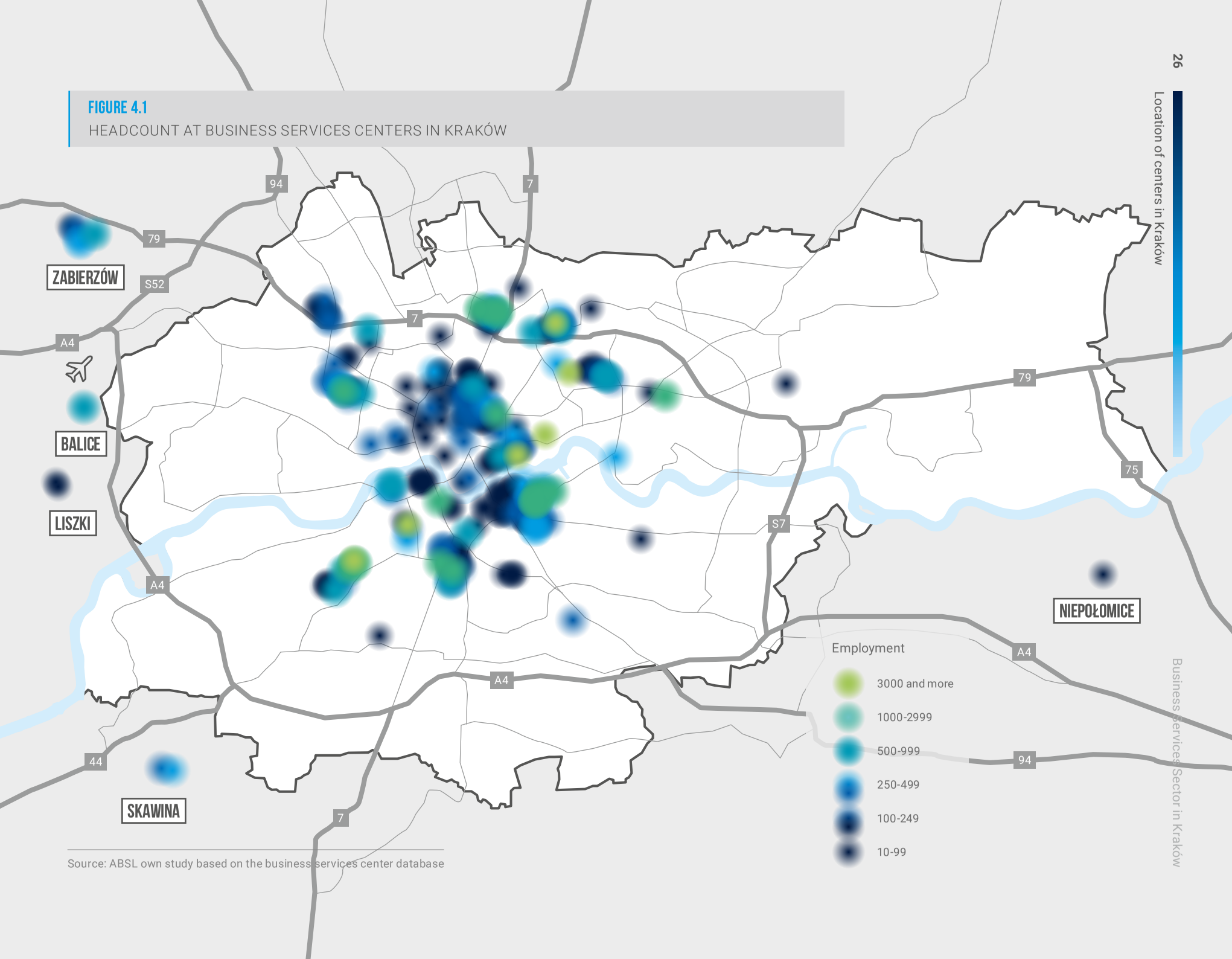
Source: ABSL own study based on the business services center database

4.

LOCATION OF CENTERS IN KRAKÓW

FIGURE 4.1

HEADCOUNT AT BUSINESS SERVICES CENTERS IN KRAKÓW



Source: ABSL own study based on the business services center database

5.

INNOVATION IN THE BUSINESS SERVICES SECTOR IN KRAKÓW

5.1. INNOVATION IN REGIONS AND CHARACTERISTICS OF KIBS

Regions matter for innovation and innovation matters for regions. Innovation is the key to growth both in the short and long run and a tool for addressing global challenges. Regions are increasingly seeking to promote their economic development through support for innovation. They define and implement strategies and policy instruments to build on their strengths and to introduce major changes in their development paths. In this context, the strength, efficiency, and size of the regional innovation system (RIS) is of key significance. The RIS consists of companies, intermediating organizations, and institutions, as well as regional authorities and their institutions in the triple helix approach.

Therefore, the innovative activity of business services sector centers is embedded in the broader system of institutions and organizations, as well as the links between them.

The core challenge for regional innovation policies is to ensure a favorable environment for entrepreneurship and business growth to create jobs. It applies to the Kraków Metropolitan Area and the Małopolska region, while looking from a broader perspective.

The emergence of KIBS is in itself a market innovation related to the development of new global business models and the emergence of global value chains.

As Strambach (2001) stated, the KIBS industry is one of the most dynamic service sector components in Europe and in most highly industrialized countries. The vigorous growth of the industry should not be perceived as a simple outsourcing phenomenon. It reflects deep changes in production and organizational structures and shows the increasing links and networks between economic activities.

KIBS hold a specific position in innovation systems according to Muller & Zenker (2001), playing a dual role: they act as an external knowledge source contributing to innovations in their clients' companies and simultaneously introducing internal innovations, they also provide mainly highly-qualified workplaces and contribute to economic performance, as well as the growth of their regions. Muller & Zenker (2001) indicated three standard features of KIBS: the knowledge intensity of the service provided by KIBS for their clients, their consulting function (problem-solving function) and the intensely interactive or client-related nature of the services offered. Czarnitzki & Spielkamp (2000) stressed the role of KIBS centers as "bridges for innovation" due to their roles of purchasers, providers and partners for their clients in manufacturing and services.

Wong & He (2005), in their comparative study of KIBS centers in comparison to manufacturing entities in Singapore, found that KIBS companies have a higher innovating ratio than manufacturing companies, but innovating manufacturing companies are more likely to carry out R&D. At the same time, KIBS companies show a higher human capital intensity, training, innovation, and R&D spending intensity than manufacturing companies despite the similarity of objectives behind innovative activities. On the other hand, KIBS companies are less likely to have overseas partners for innovation collaboration than manufacturing ones.

Proximity seems to help establish innovative and collaborative networks. Being embedded in a robust regional innovation system could prove to be significant in boosting the innovative performance of centers.

Interestingly, social capital proved to be essential for the successful provision by KIBS companies of innovation support to manufacturing clients.

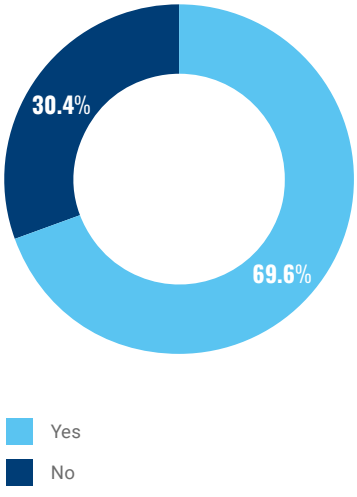
5.2. INNOVATION IN THE KRAKÓW METROPOLITAN AREA CENTERS

Approximately 70% of respondents from the Kraków Metropolitan Area have introduced innovations understood as integrated products or services during the three preceding years. For comparison, the share of the sector companies declaring the introduction of innovation(s) in the same period in Poland is equal to 72.9% (ABSL 2021 survey).

An essential element of analysis of the centers' innovation potential was the issue of the novelty nature in the scope of the introduced or modified services.

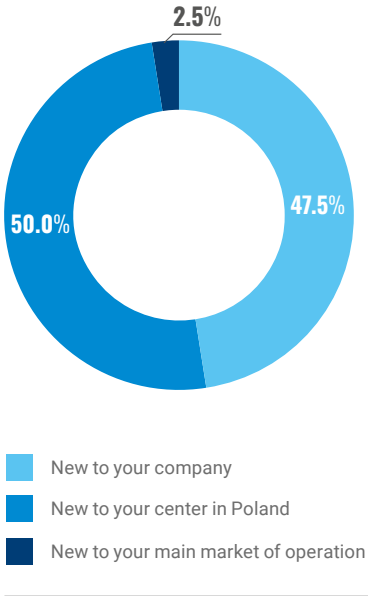
Only 2.5% or one in 40 new processes introduced during the last three years were new to the primary market of the center's operation. 47.5% of respondents declared the new process to be new to the company. Half of the respondents declared the process to be new to the company's center located in Poland only. More or less, it means that most significant innovations are introduced outside Poland either by other centers or headquarters of companies and/or in the main markets of corporations' operation.

FIGURE 5.1
HAVE YOU INTRODUCED INNOVATION(S) (INTEGRATED PRODUCTS/SERVICES) DURING THE THREE PRECEDING YEARS?



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

FIGURE 5.2
THE NEW PROCESSES INTRODUCED DURING THE LAST THREE YEARS

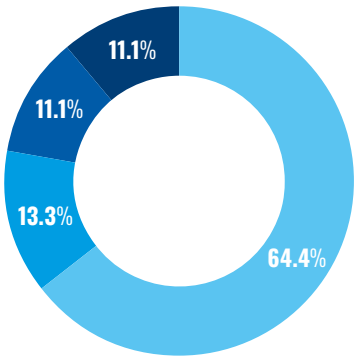


Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

Enterprises can generally be classified as innovators or non-innovators. Among innovators, we could distinguish ad hoc innovators that innovate from time to time and permanent innovators, as well as genuine creative companies introducing incremental and radical innovations nearly all the time. Among the ad-hoc innovators, we can further distinguish companies that behave strategically; and thus, can assume the role of a market leader and companies acting reactively that take on the role of followers. Based on the responses of managers of centers in the Kraków Metropolitan Area, the results are very optimistic. 64.4% of managers (close to 2/3 of all the respondents) declared to be permanent innovators, thus permanently introducing innovations of incremental radical nature. Only 11.1% of companies declared to be non-innovators over the last three years. The remaining 24.4% of centers declared to have introduced innovations in the previous three years on an ad hoc basis, while 13.3% declared to play the role of a market follower and 11.1% played the role of a leader.

38.9% of respondents declared that the principal aim of introducing innovations in their centers located in Poland is to enhance internal processes; 37.0% declared to create additional added value for their external customers. In comparison, only 24.1% declared to be cost-cutting. The declared aims do not differ significantly from the general aims from the overall survey in Poland.

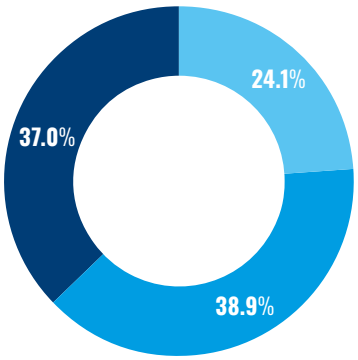
FIGURE 5.3
MINOR OR MAJOR CHANGES IN PRODUCT, PRODUCT RANGE, PROCESSES, OR ORGANIZATIONS OF BUSINESS INTRODUCED DURING THE LAST THREE YEARS



- We have been permanently introducing changes
- We have been introducing changes from time to time, but only after our major competitors (We played the role of a follower in our main market)
- We have been introducing changes from time to time, before our main competitors (We played the role of a leader in our main market)
- We have not introduced any changes

Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

FIGURE 5.4
THE PRINCIPAL AIM OF INTRODUCING INNOVATION

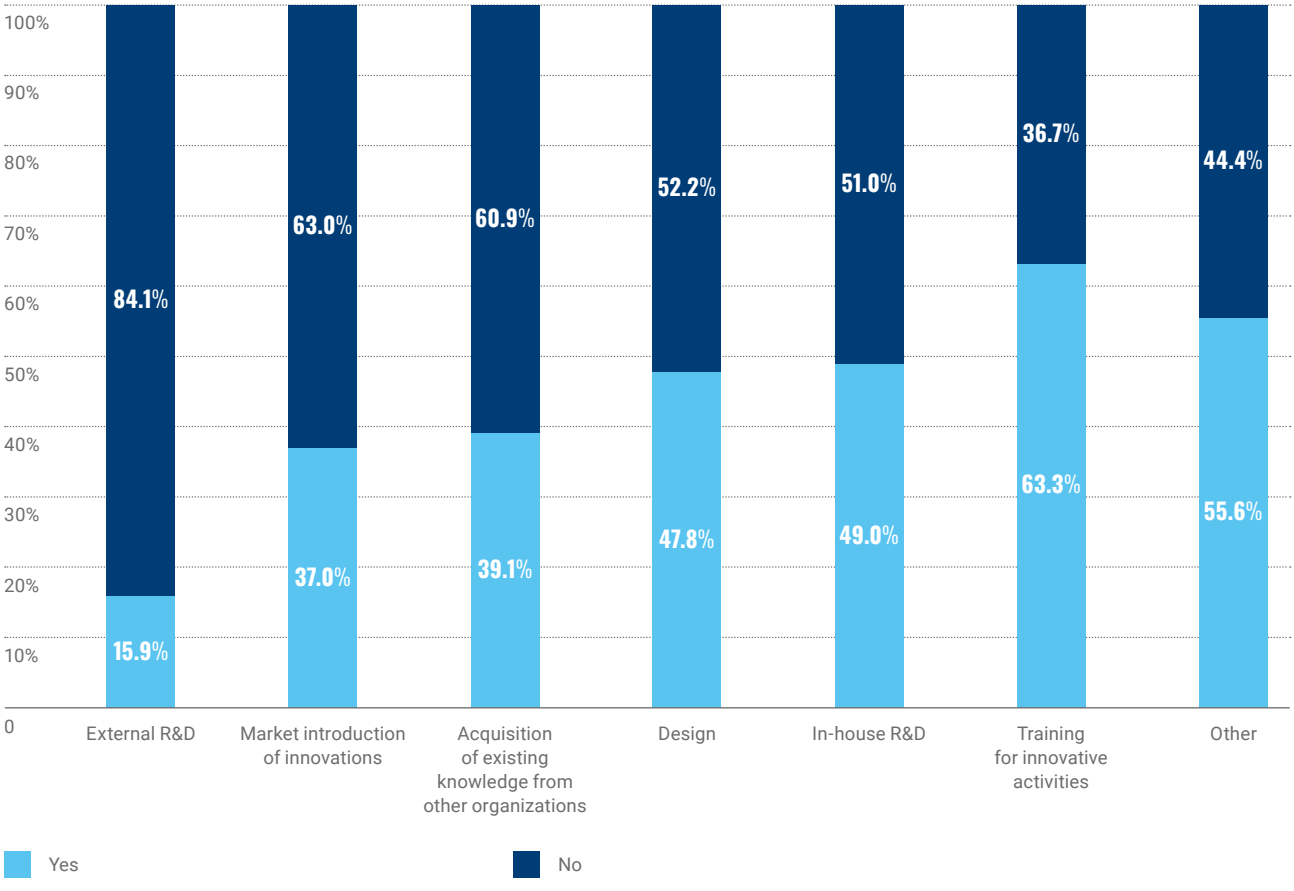


- Cost-cutting
- Enhancement of internal processes
- Creation of added value for external customers

Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

49% of companies carry out in-house R&D. Only 15.9% of companies outsource R&D to other centers, public or private research organizations. The willingness to cooperate with external partners is, therefore, significantly limited. 39.1% of companies declared that they have acquired existing knowledge from other organizations, including know-how, copyrighted works and non-patented or patented inventions over the last three years. Nearly 2/3 of companies declared that during the last three years they have organized training schemes for innovative activities in in-house or outsourcing terms. Approximately 1/3 of companies declared that they have introduced new or significantly improved services to the operation market during the last three years. Nearly 50% of respondents (47.8% exactly) declared to have introduced modifications in the significant product the design during the last three years. More than 50% of respondents declared to have performed in-house innovation-related activities or outsourced thereof during the last three years. In comparison to results of general ABSL 2021 survey, the respondents in Kraków show higher propensity for innovations in house, acquiring knowledge externally, introducing innovation in design or other forms of innovative activity.

FIGURE 5.5
ENGAGEMENT OF CENTERS IN TYPES OF INNOVATION ACTIVITIES OVER THE PERIOD 2018-2020



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

TEN INNOVATION TYPES BY DOBLIN

Configuration

- Profit model – How you make money,
- Network – Connections with others to create value,
- Structure – Alignment of talent and assets and process,
- Process – Organization of production,

Offering

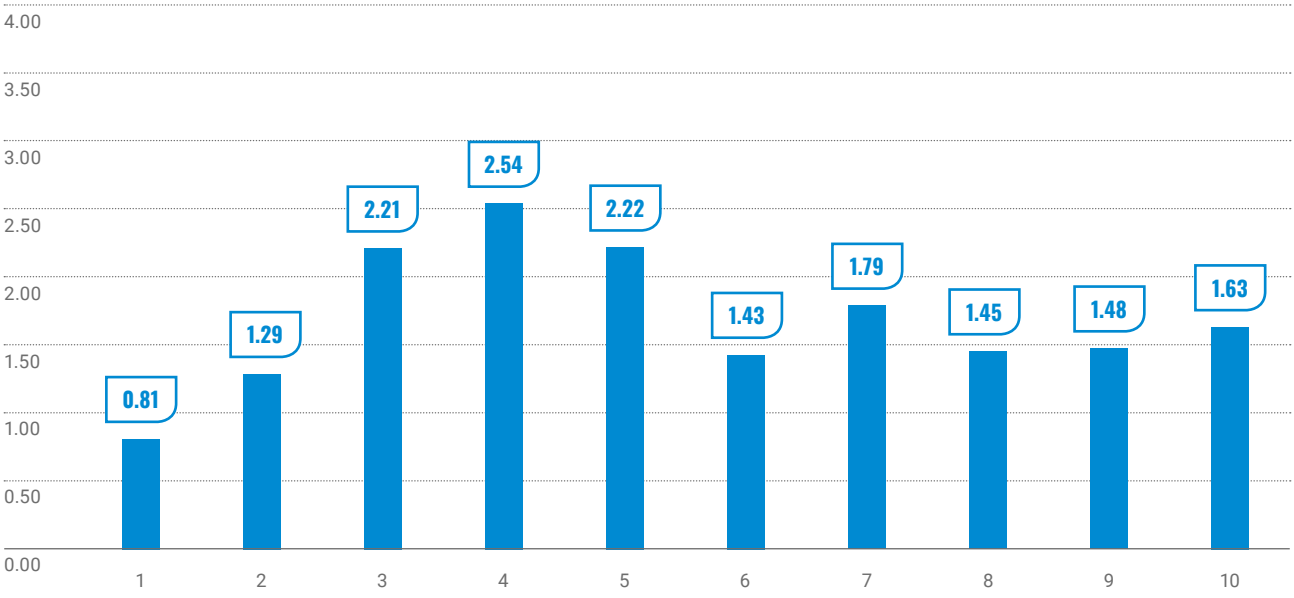
- Product Performance – Distinguishing features and functionality,
- Product System – Complementary products and services,

Experience

- Service – Support and enhancements surrounding your offerings,
- Channel – How your offerings are delivered to customers and users,
- Brand – Representation of offerings and business,
- Customer Engagement – Distinctive interactions you foster.

In the next part of the study, we have implemented the postulates of the Doblin ten types of innovation model. The respondents answered, whether they had introduced innovations in the following areas and described the nature of the innovations introduced during the last three years. We have applied the Likert scale. Based on the responses, we have calculated the mean intensity of invention in each of the designated ten areas. Process innovations followed by service performance innovations and structural innovations related to the organization of the company's central processes were the most frequently indicated. The least stated inventions related to the profit model, generating revenues and network innovations that create customer value, using external partners. We have to stress here that the propensity for cooperating with external partners is generally considered low in Poland, including the services sector, and is one of the significant challenges of the current innovation culture.

FIGURE 5.6
IN WHICH PARTS OF YOUR BUSINESS HAVE YOU INTRODUCED CHANGES DURING THE LAST 3 YEARS?



1 Profit model
2 Network
3 Structure
4 Process
5 Product / service performance
6 Product system
7 Services
8 Channel
9 Brand
10 Customer engagement

Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

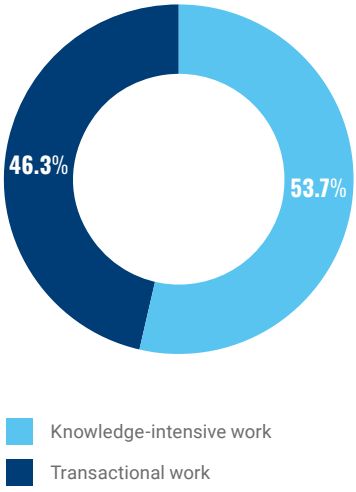
In the business services centers innovation can also be perceived through the structure of processes performed in proportion between transactional and knowledge-intensive ones. The higher share of knowledge-intensive processes performed by a given center points out its higher propensity for innovation.

Knowledge-intensive services usually have higher added value than traditional transactional processes and are considered more innovative. Among the respondents from the Kraków Metropolitan Area, 53.7% of operations performed in centers are declared to be knowledge-intensive. The remaining 46.3% are transactional processes; thus, the proportion favors more innovative higher value-added functions being performed.

Only 44.4% of respondents declared to have an automation center of excellence unit in Kraków.

FIGURE 5.7

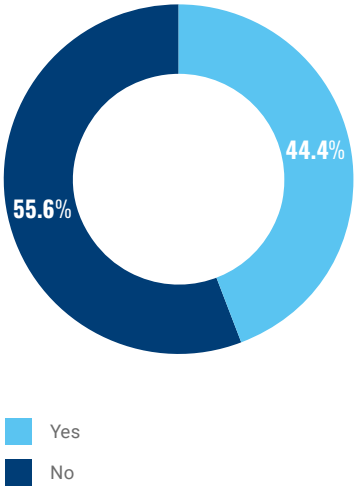
HOW WOULD YOU ESTIMATE THE TRANSACTIONAL / KNOWLEDGE-INTENSIVE WORK RATIO IN YOUR CENTER?



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

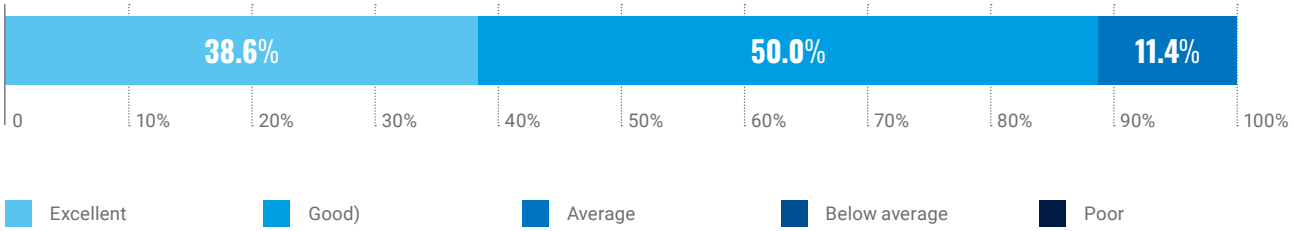
FIGURE 5.8

DO YOU CURRENTLY HAVE AN AUTOMATION CENTRE OF EXCELLENCE UNIT IN KRAKÓW?



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

FIGURE 5.9
HOW DO YOU ASSESS THE CREATIVITY / INNOVATIVENESS OF YOUR EMPLOYEES?



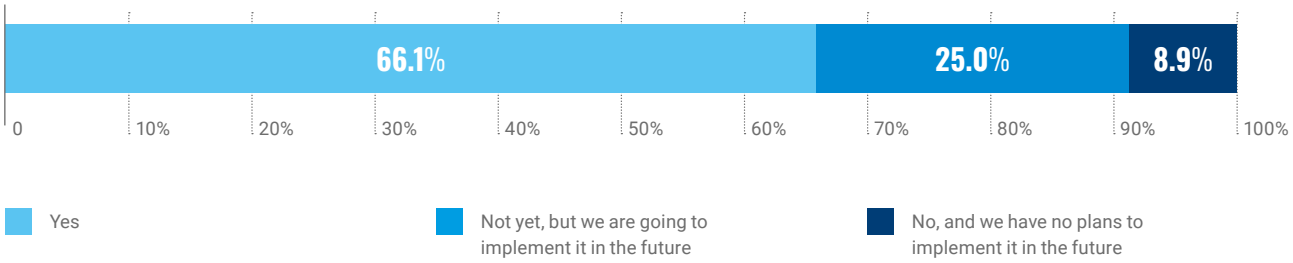
Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021.

5.3. INTELLIGENT PROCESS AUTOMATION

One of the critical aspects of innovation activities undertaken by centers in the knowledge-intensive business services sector is the introduction of intelligent process automation (IPA) solutions.

2/3 of companies responded that they already apply IPA in their daily operations. 25% stated that they do not do it yet, but will implement it in the foreseeable future. Only 8.9% declared that they are unlikely to introduce IPA in the future.

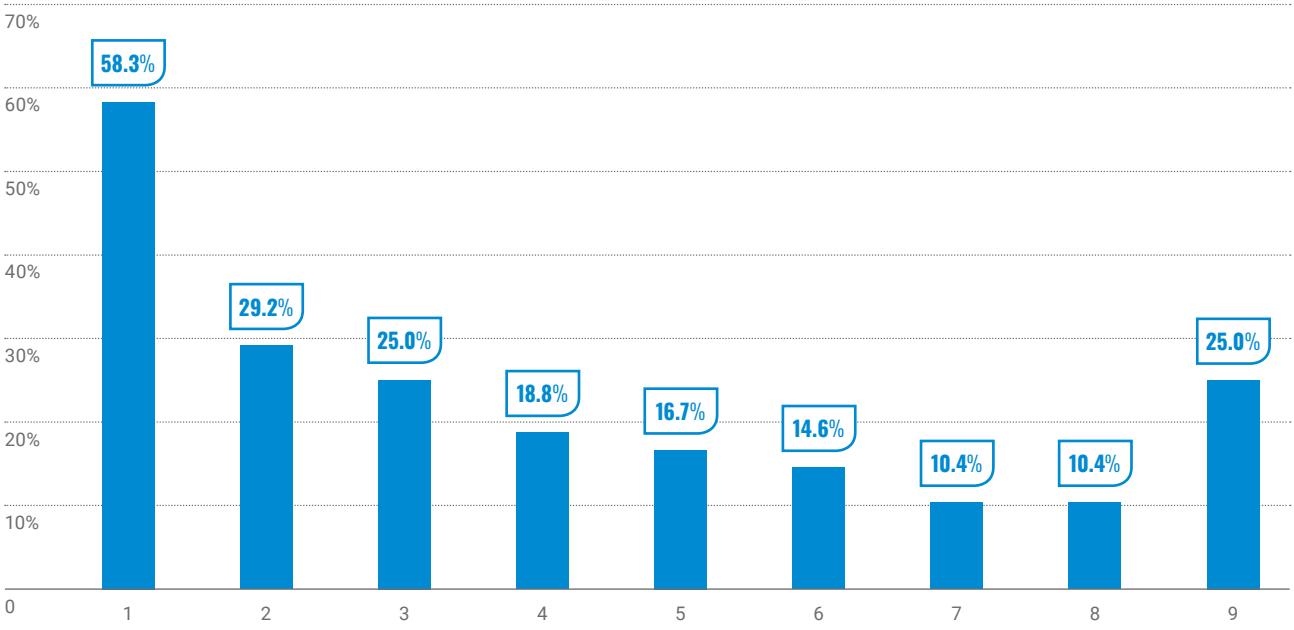
FIGURE 5.10
IS INTELLIGENT PROCESS AUTOMATION (E.G., ROBOTIC PROCESS AUTOMATION) PART OF YOUR OPERATIONS?



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

We have asked the respondents to indicate the top three barriers to implementing IPA solutions in the centers located in Kraków. The principal obstacles shown include: insufficient data quality (58.3%), lack of financial and time resources (29.2%) followed by lack of internal competencies in the application of IPA (25.0%). Among other non-listed barriers, the respondents enumerated infrastructural challenges, including complex IT infrastructure required and related high investment costs, high implementation costs vs. low FTE savings, lack of interest from key customers, or location of core global infrastructure outside Poland.

FIGURE 5.11
TOP 3 BARRIERS TO IMPLEMENTING IPA IN THE CENTERS



1 Insufficient data quality (e.g. no standardization, too little data, etc.)
2 Lack of financial and time resources
3 Lack of internal competence in application of IPA
4 Not possible to use customers' data due to contractual restrictions or general regulations
5 Lack of interest from customers
6 Lack of interest from parent company
7 Lack of external competences – i.e. Polish tech-firms specialised in IPA
8 Lack of ideas and skills to translate advanced data analysis into business case
9 Others (please specify)

Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

5.4. CENTERS' PLANS (ANSOFF MATRIX)

The Ansoff matrix is a strategic management tool used in the analysis and planning of company development strategies. It is also known as the product / market expansion matrix. Four strategies are identified, including:

Market penetration: consists in increasing the sale of existing products on an existing market

Market development: involves entering a new market using existing products

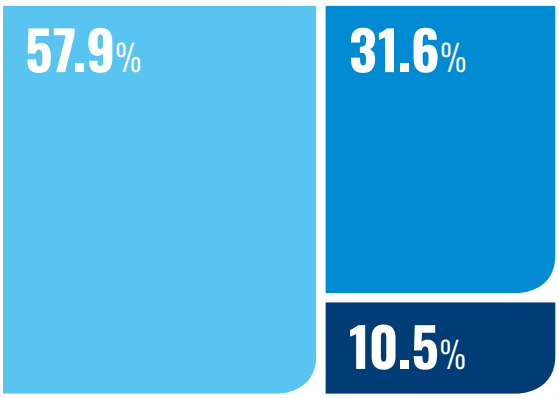
Product development: introduction of new products to an existing market

Diversification: entering a new market by introducing new products

Market penetration is the least risky of these strategies, while diversification is considered to be the most risky.

Using the Ansoff metrics approach, we have asked the respondents about their plans to expand the scope of activities over the next 12 months. 31.6% of respondents indicated market penetration, so they have no plans to change the geographic or product scope of performed activities. 57.9% of respondents indicated plans for product development, thus to add new or additional service offer in their present geographical markets they operate on, 10.5% of respondents declared the plans for market development, so extension of existing markets in geographical dimension without adjustment in the scope of the services offered. It is worth noting that none of the respondents declared the plans for the most challenging plan for development – diversification, which is simultaneous development of products offered and geographical markets targeted. It could be partially explained by the still ongoing COVID-19 pandemic and related high levels of uncertainty.

FIGURE 5.12
PLANS TO EXPAND THE SCOPE OF ACTIVITIES OVER THE NEXT 12 MONTHS

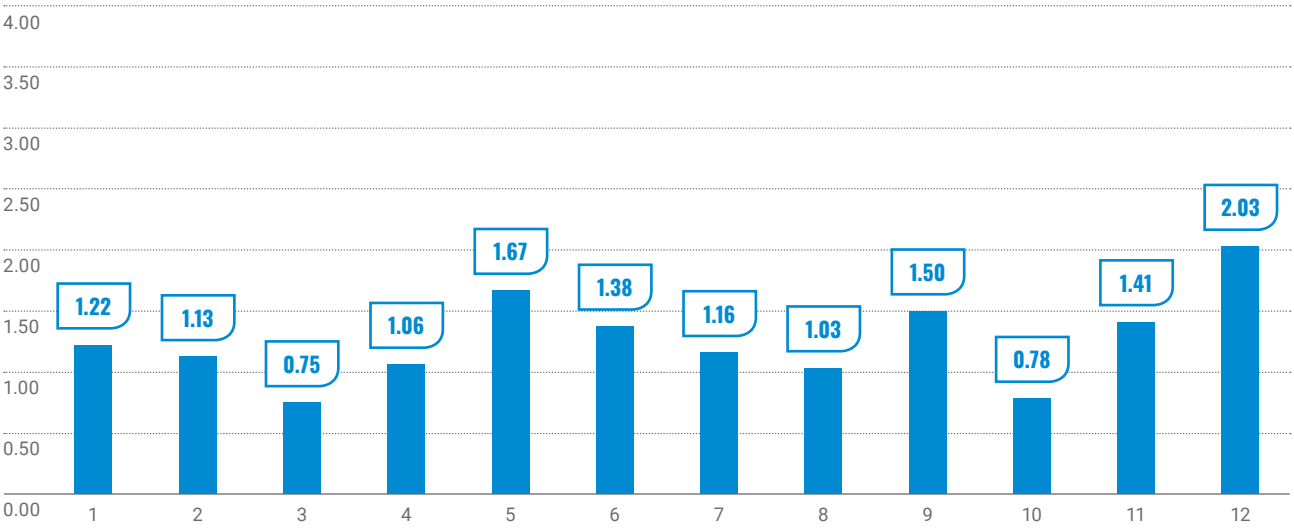


Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

5.5. BARRIERS TO INNOVATION

The top three reasons for the center not to perform innovation activities during the last three years indicated by the respondents were in order of significance: benefiting from innovation developed in other centers of corporation, lack of internal financing for innovation, and uncertain market demand for innovations.

FIGURE 5.13
IMPORTANCE OF REASONS FOR NOT PERFORMING INNOVATION ACTIVITIES DURING THE LAST THREE YEARS IN THE CENTERS

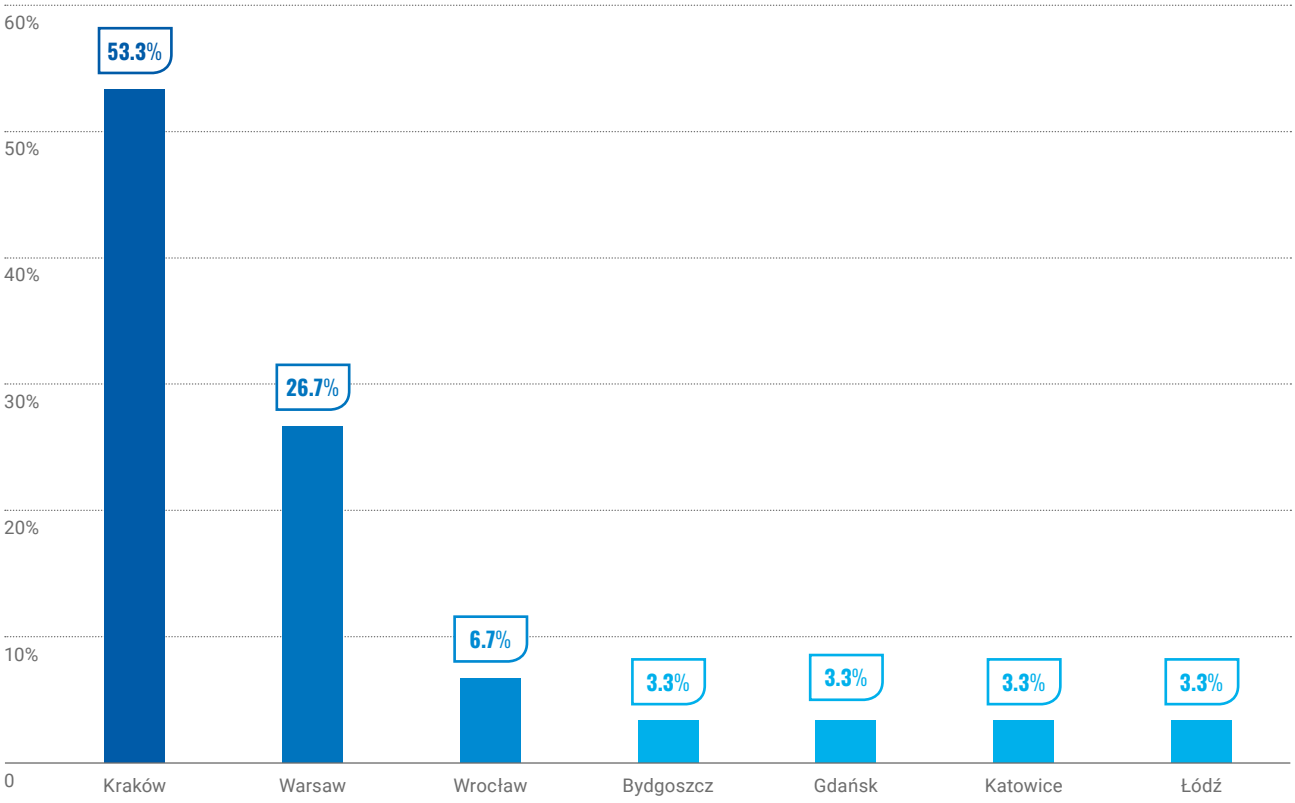


1 Low demand for innovations in your main market
2 No need to innovate due to innovations introduced previously
3 No need to innovate due to very little competition in your main market
4 Lack of good ideas for innovations
5 Lack of internal financing for innovation
6 Lack of skilled employees within your center(s)
7 Difficulties in obtaining government grants or subsidies for innovation
8 Lack of partners for collaboration
9 Uncertain market demand for new ideas for innovations
10 Too much competition in your market
11 Lack of possibilities to innovate due to the company's policy
12 We benefit from innovations developed in other units of our company

Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021. Mean values from responses based on a Likert scale

5.6. THE OVERALL PERCEPTION OF THE INNOVATION SYSTEM IN THE KRAKÓW METROPOLITAN AREA

FIGURE 5.14
WHICH CITY IN POLAND IS THE BEST LOCATION, STIMULATING INNOVATION IN YOUR BUSINESS?



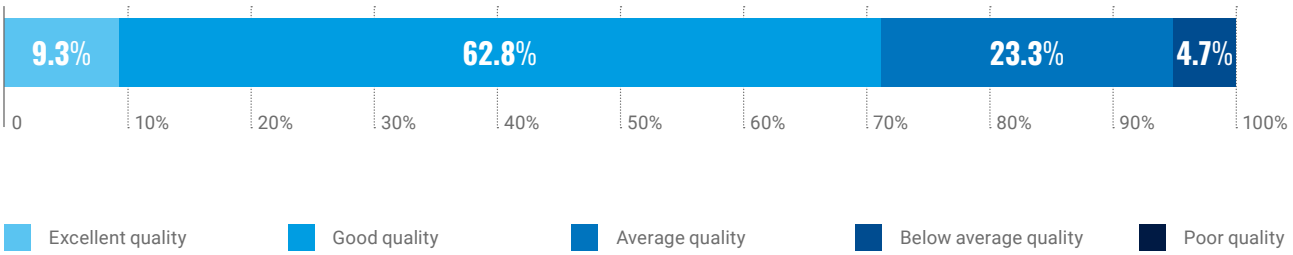
Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

Respondents perceive Kraków as the best location in Poland in terms of stimulating innovation in the business. Warsaw follows Kraków. Wrocław is indicated as the third city. The respondents also indicated other Tier 2 and Tier 3 cities in Poland, but assessed their significance as significantly lower.

Approximately 10.0% of respondents perceive the local culture of innovation in Kraków as of excellent quality. In comparison, nearly 2/3 (62.8%) of respondents perceive it to be good. 23.3% perceive it to be average, while 4.7% perceive it to be below average quality. None of the respondents declared it to be of poor quality. Generally speaking, the perception of the local culture of innovation is optimistic.

FIGURE 5.15

ASSESSMENT OF THE QUALITY OF THE LOCAL CULTURE OF INNOVATION IN KRAKÓW / KRAKÓW METROPOLITAN AREA

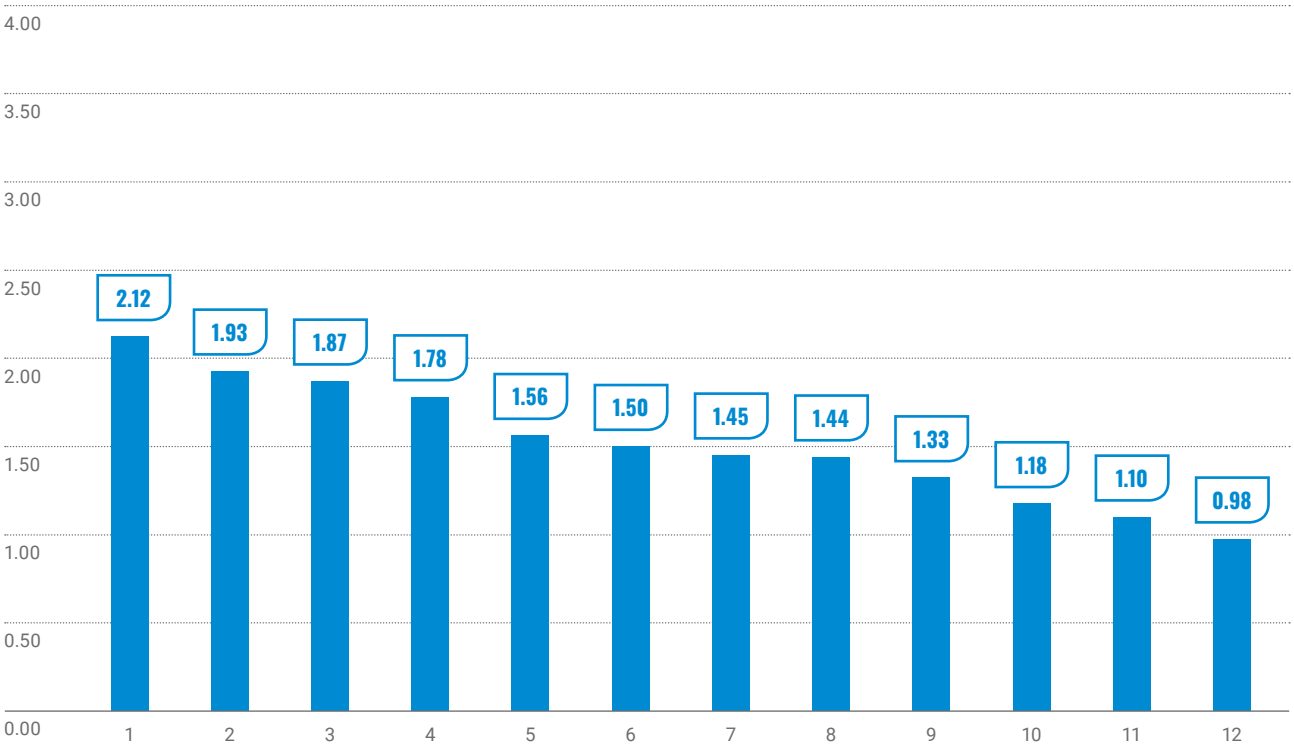


Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

Taking into account the postulates from the ABSL Strategic Foresight in the Business Services Sector of 2021 which stress that in the strategic horizon of 2031 we will move towards mid-office processes generating higher added value and encompassing both upscaling and upgrading, the position of Kraków among competing locations in Poland seems to be particularly strong. It potentially can only be surpassed by the offer of the capital city of Warsaw.

The most frequently indicated barrier to innovation in the regional Kraków metropolitan innovation system context is the lack of skilled employees within the center, followed by a lack of internal financing for innovation, uncertain market demand for new ideas for inventions, as well as the perception that the centers benefit from innovations developed in other units of the company.

FIGURE 5.16
IMPORTANCE OF BARRIERS TO INNOVATION IN KRAKÓW & KRAKÓW METROPOLITAN INNOVATION AREA



1 Lack of skilled employees within your center(s)
2 Lack of internal financing for innovation
3 Uncertain market demand for new ideas for innovations
4 We benefit from innovations developed in other units of our company
5 Lack of good ideas for innovations
6 Lack of partners for collaboration
7 Low demand for innovations in your main market
8 Too much competition in your market
9 Lack of possibilities to innovate due to the company's policy
10 Difficulties in obtaining government grants or subsidies for innovation
11 No need to innovate due to innovations introduced previously
12 No need to innovate due to very little competition in your main market

Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021. Mean values from responses based on a Likert scale

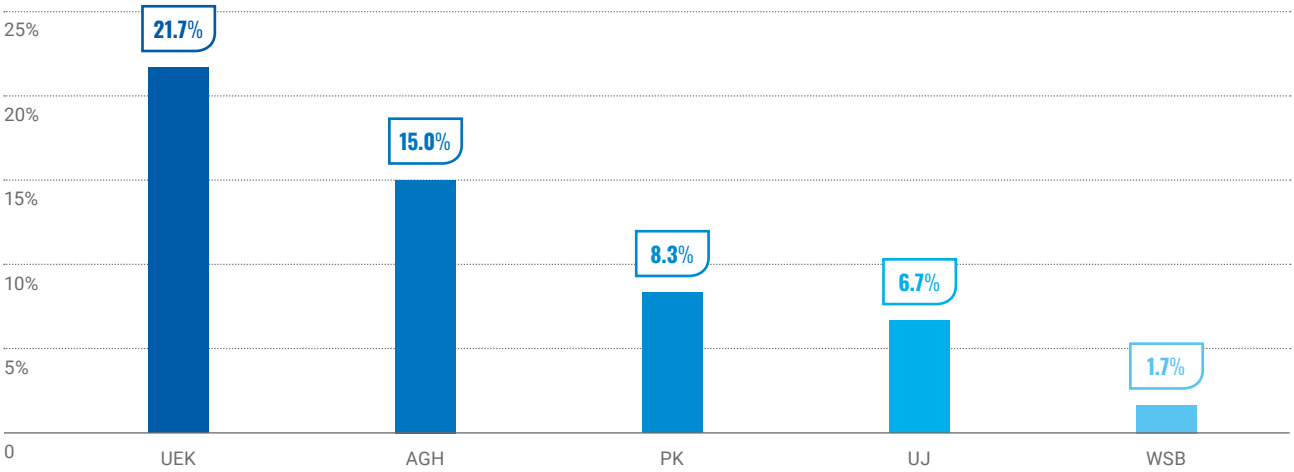
5.7. COOPERATION IN INNOVATION AND WITH SUPPORT INSTITUTIONS

5.7.1. COOPERATION WITH UNIVERSITIES AND R&D UNITS

59.6% of respondents declared that they had cooperated with university or R&D units located in the Kraków Metropolitan Area. 40.4% declared that they had not cooperated with this kind of institution, yet. Among the respondents who declared the prior cooperation with university or R&D units, the two most popular institutions are the Cracow University of Economics (UEK) and the University of Science and Technology (AGH). The respondents also pointed out the collaboration with PK, UJ, or WSB in Kraków.

As we can see, most respondents indicated the UEK; it is not surprising, considering the industry's nature and the university's corresponding profile.

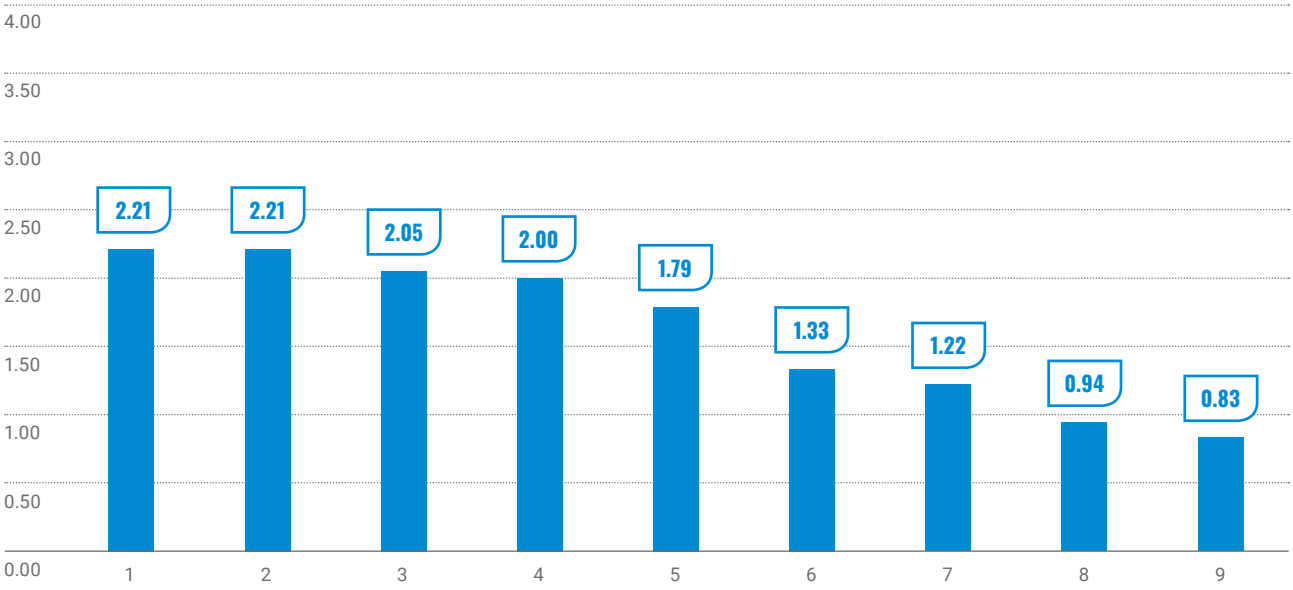
FIGURE 5.17
WHICH UNIVERSITY / R&D UNIT HAVE YOU COOPERATED WITH (% OF RESPONDENTS)?



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

The most frequently indicated barrier to cooperation with universities and R&D units in the Kraków Metropolitan Area is the mismatch between the needs of a center and support and offer, as well as the lack of adequate information about the support provided by the university or R&D units. Among the top scorers, you can also include administrative burdens related to incorporation of the universities in R&D units and the fuzziness of an offer, no joint or comprehensive offer of corporation. The least indicated one is the lack of possibilities due to the company's policy; thus, the central side's internal barriers can be considered limited.

FIGURE 5.18
THE MAIN BARRIERS TO COOPERATION WITH UNIVERSITIES/R&D UNITS IN KRAKÓW / KRAKÓW METROPOLITAN AREA



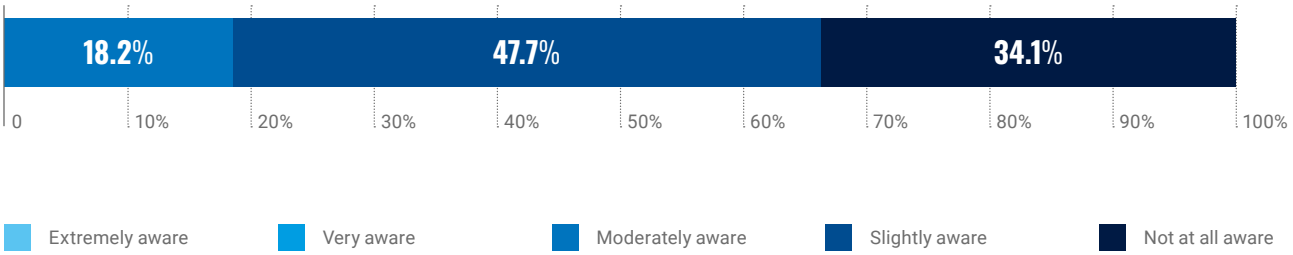
1 Lack of adequate information about support offer
2 Mismatch between my needs and support on offer
3 Administrative burdens
4 "Fuzzy" offer of the support institution (no joint, comprehensive offer)
5 Lack of awareness of the availability of institutions
6 Difficulties in obtaining government grants or subsidies for joint actions
7 Poor quality of services on offer
8 High overall costs of obtaining support
9 Lack of possibilities due to the company's policy

Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021. Mean values from responses based on a Likert scale

5.7.2. COOPERATION WITH TECHNOLOGY TRANSFER CENTERS

Awareness of technology transfer centers' support services offered to companies in the Kraków Metropolitan Area is generally low. 34.1% of respondents declared that they are not aware of the offer, 47.7% indicated they are slightly aware. The remaining 18.2% indicated that they are moderately aware of the offer. None of the respondents declared to be very aware or highly aware of the offer.

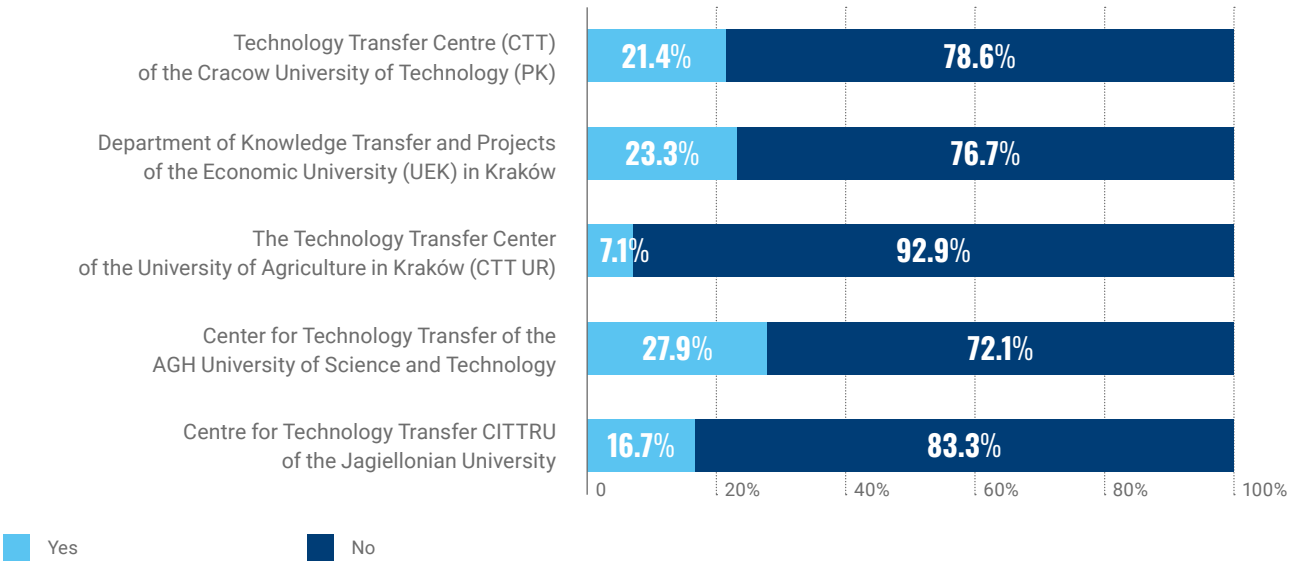
FIGURE 5.19
AWARENESS OF TECHNOLOGY TRANSFER CENTERS' SUPPORT SERVICES OFFERED TO COMPANIES IN THE KRAKÓW / KRAKÓW METROPOLITAN AREA



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

Among the specific technology transfer centers, the most known are the Center for Technology Transfer of the AGH University of Science and Technology in Kraków, Department of Knowledge Transfer and Projects of the Economic University (UEK) in Kraków and the Technology Transfer Centre (CTT) of the Cracow University of Technology (PK), known to more than one in five respondents. The least known is The Technology Transfer Center of the University of Agriculture in Krakow, known by only 7.1% of respondents.

FIGURE 5.20
AWARENESS OF THE EXISTENCE OF TECHNOLOGY TRANSFER CENTERS IN KRAKÓW / THE KRAKÓW METROPOLITAN AREA

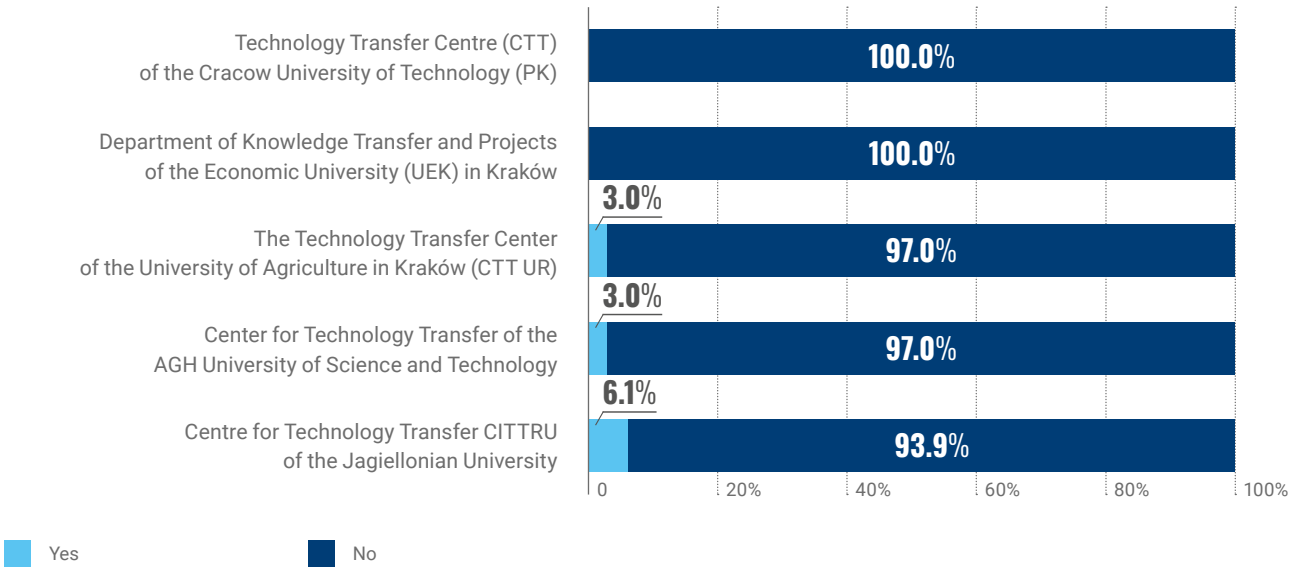


Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

Thirty of respondents had no cooperation experience with the specific technology centers. Any form of the cooperation was undertaken only by three out of five inquired technology centers.

The low cooperation with centers of technology transfer can be caused by the nature of processes carried out and services offered by the centers, the scope of their activities, primarily global, as well as the lack of awareness of the existence and scope of the services provided by the centers of technology transferred themselves. This communication gap must be filled in.

FIGURE 5.21
COOPERATION WITH TECHNOLOGY CENTER

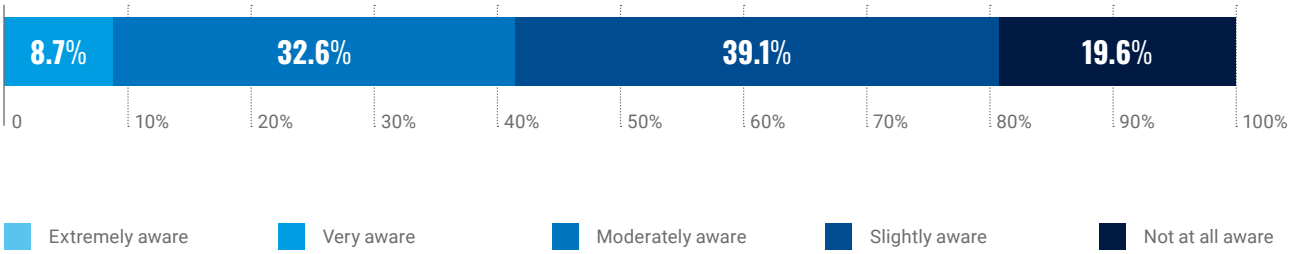


Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

5.7.3. COOPERATION WITH SUPPORT INSTITUTIONS

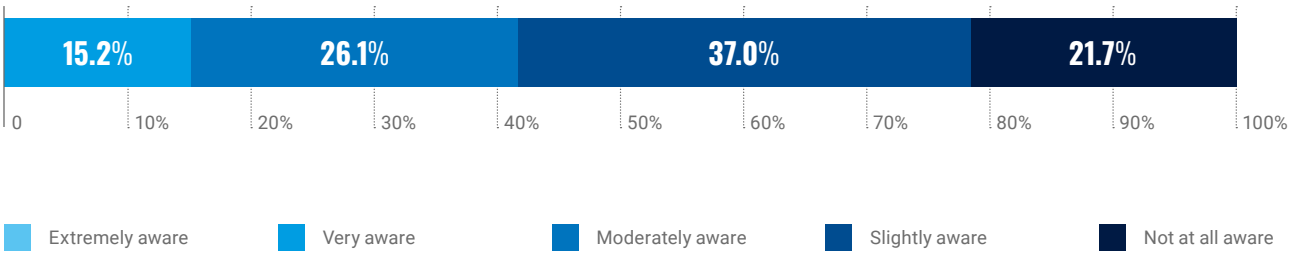
As regards cooperation with support institutions, we have identified a significant problem. The awareness levels by knowledge-intensive business services centers of support by the supporting solutions in the Kraków Metropolitan Area are generally low. As to the support in the investment process, only 8.7% of respondents declared to be very aware, whereas 32.6% moderately aware of the support mechanisms. On the other hand, if we focus on support in running the business, 15.2% of respondents are very aware of the offer, whereas 26.1% are moderately aware. In both cases, none of the respondents answered that they were very aware of the support mechanisms on offer. More or less, it means that most companies are either not at all aware or only slightly aware of the offer provided by the support organizations.

FIGURE 5.22
AWARENESS OF SUPPORT OFFERED BY INSTITUTIONS IN KRAKÓW / THE KRAKÓW METROPOLITAN AREA. SUPPORT IN THE INVESTMENT PROCESS



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

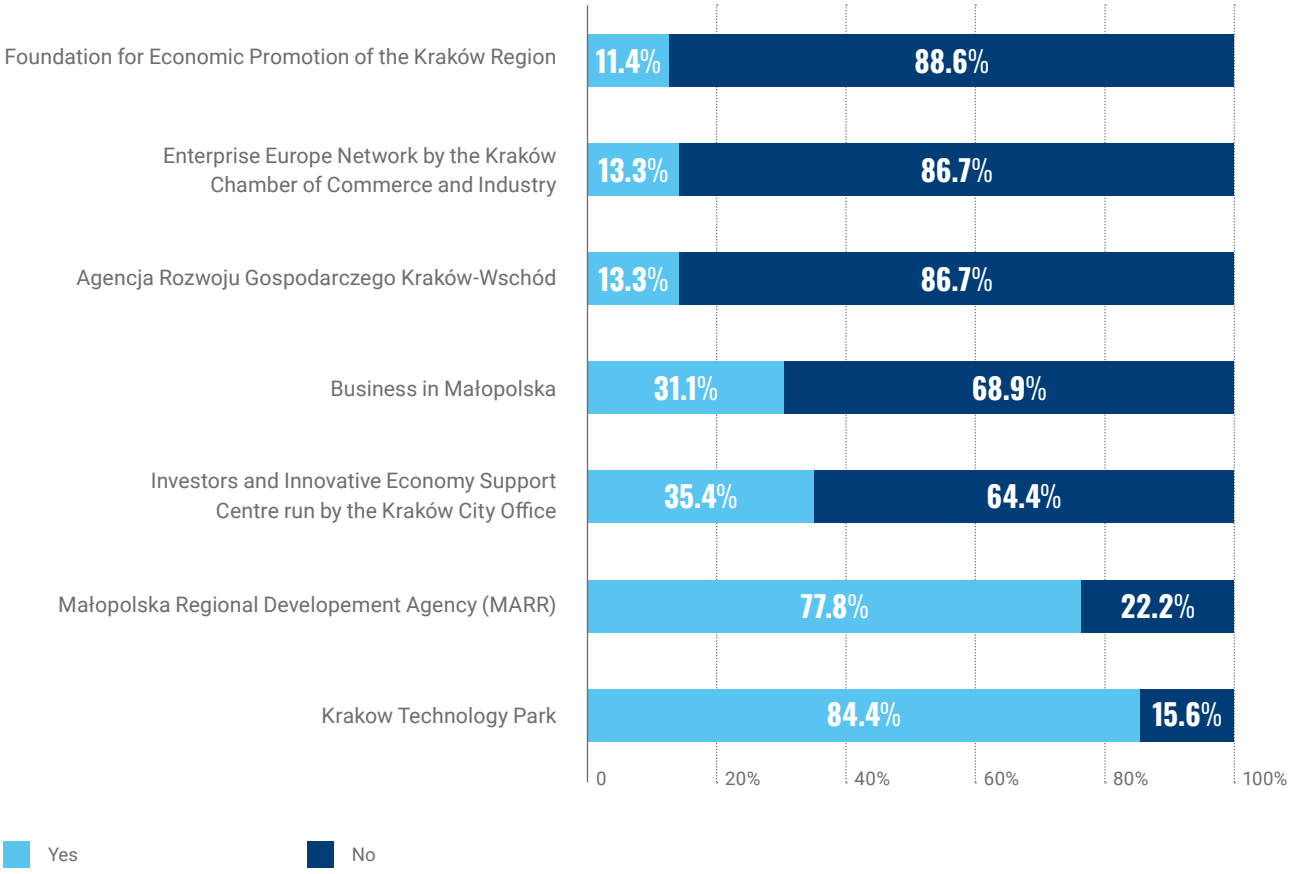
FIGURE 5.23
AWARENESS OF SUPPORT OFFERED BY INSTITUTIONS IN KRAKÓW / THE KRAKÓW METROPOLITAN AREA. SUPPORT FOR RUNNING A BUSINESS



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

The awareness of centers' managers on the existence of the support institutions in the Kraków Metropolitan Area depends on the institution. The best known are the Kraków Technology Park and Regional Development Agency, recognized by more than 3/4 of companies. An extensive marketing campaign on the existence of specific offers of supporting institutions should be implemented to help out in this situation.

FIGURE 5.24
AWARENESS OF THE EXISTENCE OF THE INSTITUTIONS IN KRAKÓW / THE KRAKÓW METROPOLITAN AREA

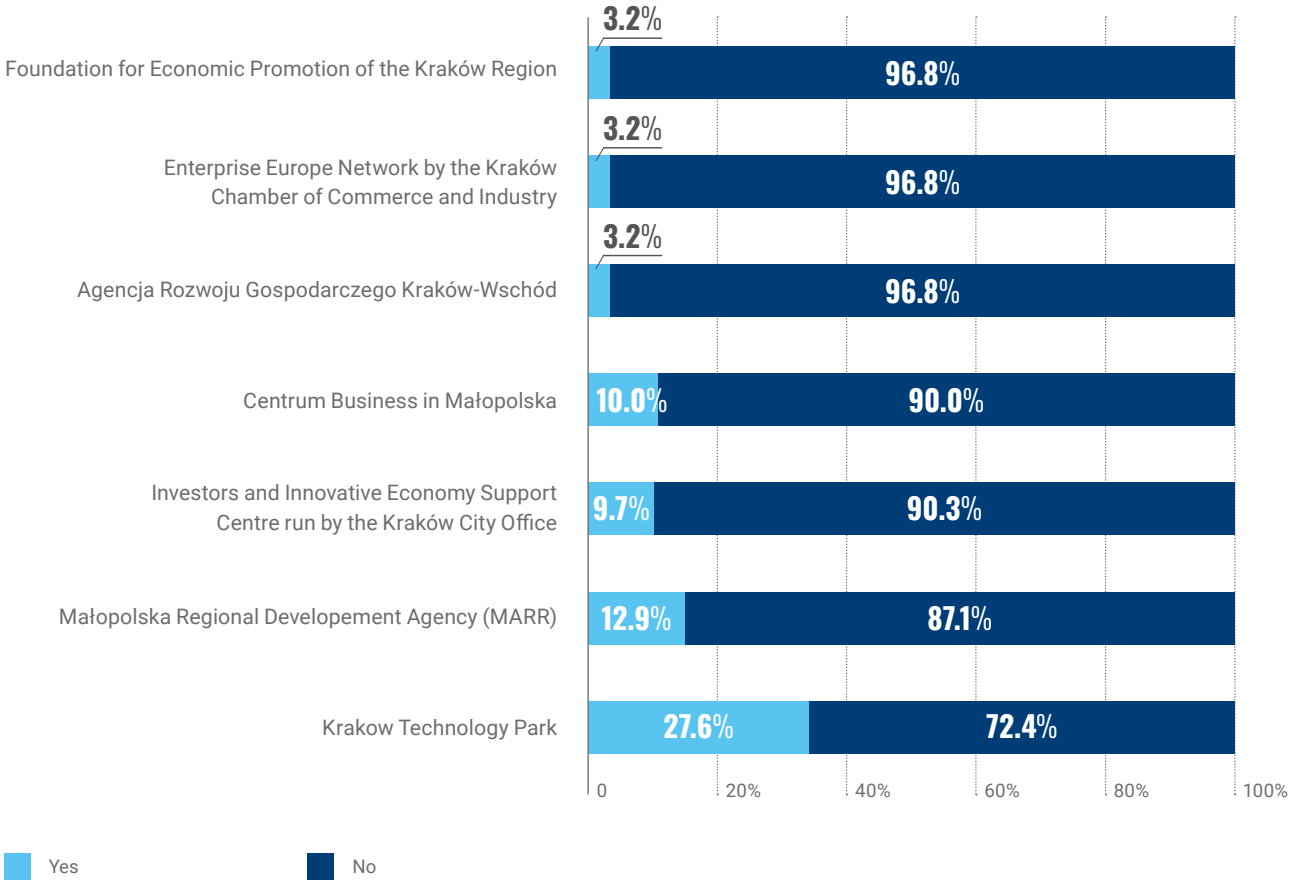


Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

The following chart demonstrates that awareness is mainly built through practical cooperation with particular institutions. Actual cooperation intensity is lower than the awareness of a unit's existence.

Close to 30% of centers cooperated with KPT, roughly 1 in 10 cooperated with the Business in Małopolska, Małopolska Regional Developement Agency (MARR) or Investors Support Center and Innovative Economy.

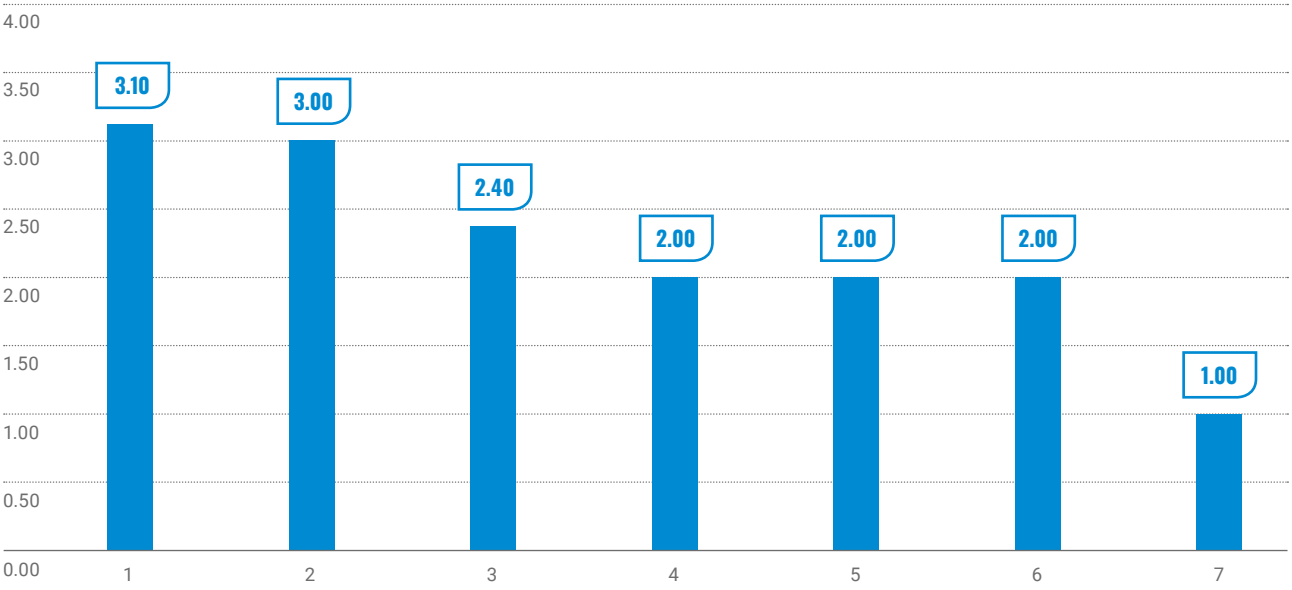
FIGURE 5.25
HAS YOUR CENTER BEEN COOPERATING WITH THE FOLLOWING SUPPORT UNITS ?



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

The managers of centers that have cooperated with specific institutions were asked to assess the level of satisfaction from the cooperation. The highest mean satisfaction levels were assigned to Kraków Technology Park and the Investors and Innovative Economy Centre run by the Kraków City Office.

FIGURE 5.26
SATISFACTION FROM THE COOPERATION WITH PARTICULAR INSTITUTIONS

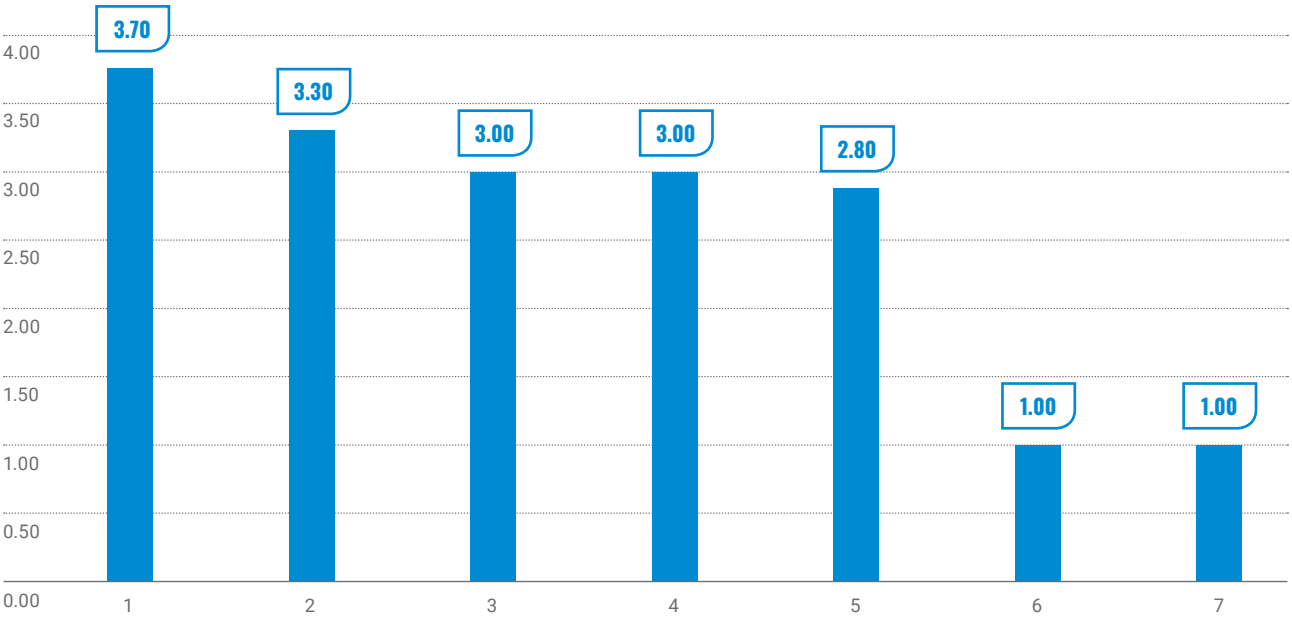


1 Krakow Technology Park
2 Investors and Innovative Economy Support Centre run by the Kraków City Office
3 Małopolska Regional Developement Agency (MARR)
4 Business in Małopolska
5 Agencja Rozwoju Gospodarczego Kraków-Wschód
6 Enterprise Europe Network by the Kraków Chamber of Commerce and Industry
7 Foundation for Economic Promotion of the Kraków Region

Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021. Mean values from responses based on a Likert scale

Apart from the satisfaction, the second aspect was assessing the quality of services offered among these centers that have cooperated with a given institution. The highest quality is assigned to the Business in Małopolska, and the center of Investors Support Center and Innovative Economy in the Kraków City Office.

FIGURE 5.27
ASSESSMENT OF THE QUALITY OF THE SERVICES OFFERED



1 Business in Małopolska
2 Investors and Innovative Economy Support Centre run by the Kraków City Office
3 Krakow Technology Park
4 Agencja Rozwoju Gospodarczego Kraków-Wschód
5 Małopolska Regional Developement Agency (MARR)
6 Enterprise Europe Network by the Kraków Chamber of Commerce and Industry
7 Foundation for Economic Promotion of the Kraków Region

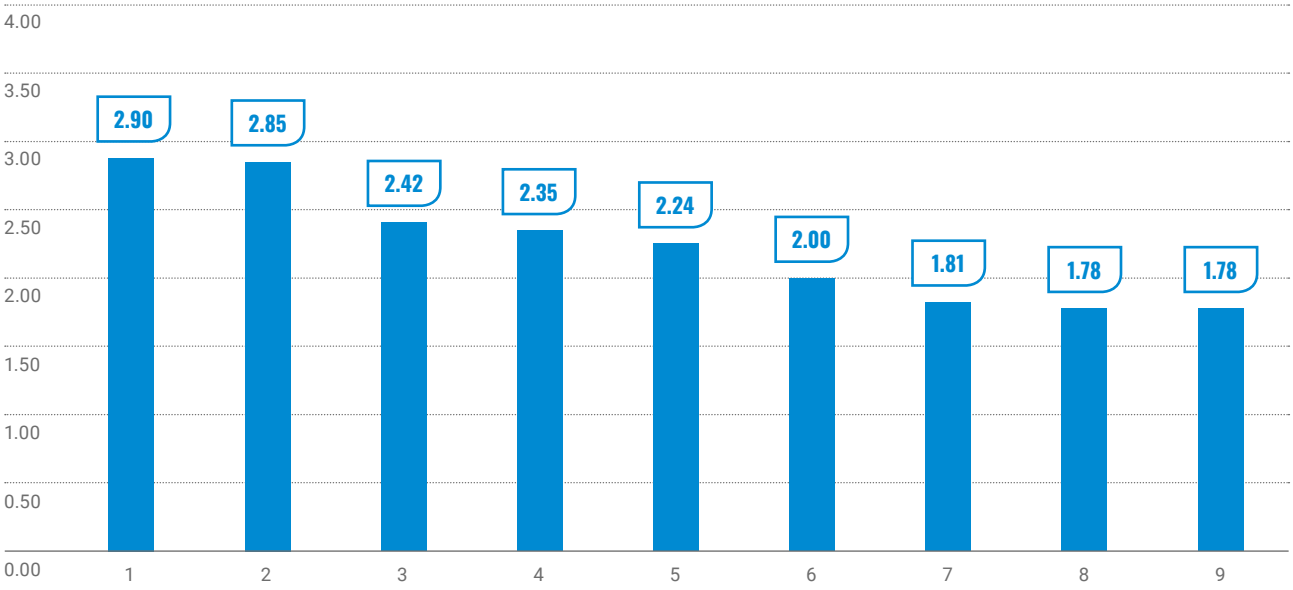
Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021. Mean values from responses based on a Likert scale

We have also investigated the most critical barriers to cooperation between centers located in the Kraków Metropolitan Area as well as local and regional support institutions. The answers indicate that the most significant obstacles include the lack of adequate information about support offers, the lack of awareness of the availability of institutions, a fuzzy offer of the support institutions (no joint comprehensive offer), and excessive administrative burdens.

The most significant barriers seem to be related to the problems to communication between the two kinds of organizations. It implies that more substantial effort should be made to fill in the existing gaps.

FIGURE 5.28

THE MAIN BARRIERS TO COOPERATION WITH THE SUPPORT INSTITUTIONS IN KRAKÓW / THE KRAKÓW METROPOLITAN AREA



1 Lack of adequate information about support offer
2 Lack of awareness of the availability of institutions
3 “Fuzzy" offer of the support institution (no joint, comprehensive offer)
4 Administrative burdens
5 Mismatch between my needs and support on offer
6 Difficulties in obtaining government grants or subsidies for joint actions
7 Lack of possibilities due to the company’s policy
8 Poor quality of services on offer
9 High overall costs of obtaining support

Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021. Mean values from responses based on a Likert scale

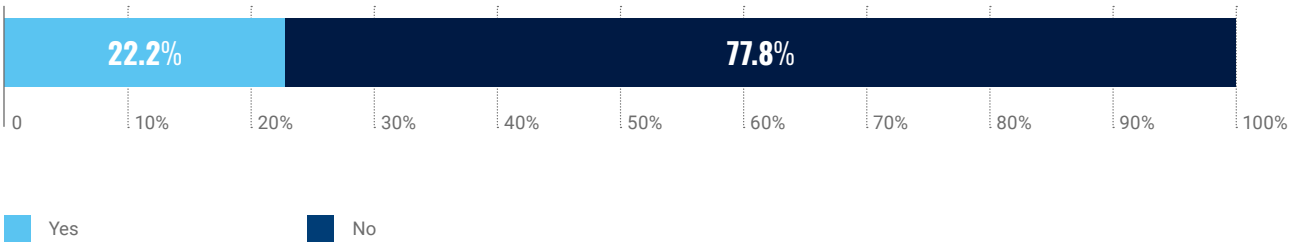
5.7.4. COOPERATION WITH START-UPS

Only one in five centers from the Kraków Metropolitan Area has cooperated with a start-up. Among companies that have prior experience in cooperation with start-ups, 18.2% of respondents were extremely satisfied, 27.3% of respondents were very satisfied, 36.4% were somewhat satisfied with the cooperation.

Some of the respondents described in more detail the form in which this cooperation was carried on. It encompassed, for instance, the exchange of knowledge, analysis of data, development of new tools, POC's (proof of concept) testing, projects related to the business, corporate social responsibility, or tech innovation. Some respondents declared the cooperation to be confidential in nature.

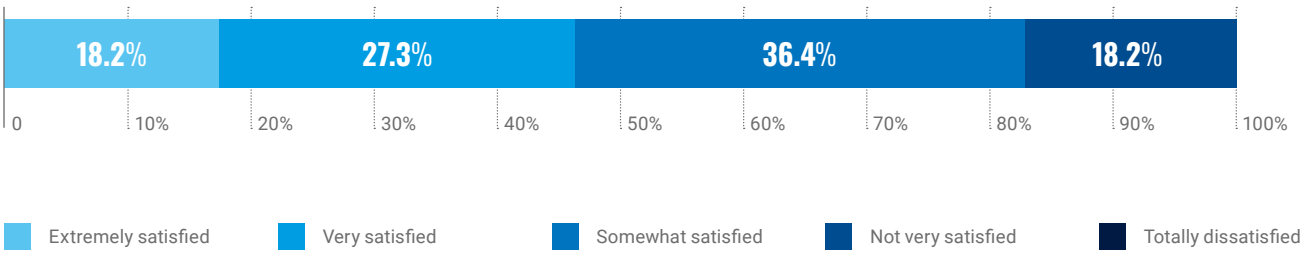
The managers were also asked to assess the main results of the cooperation with start-ups from the point of view of the centers. They indicated access to the talent pool, development of new features and new products in the portfolio, innovative ideas – out of the corporate box thinking, knowledge exchange (with no significant impact), and some more specific solutions.

FIGURE 5.29
HAVE YOUR CENTER COOPERATED WITH START-UPS IN KRAKÓW / THE KRAKÓW METROPOLITAN AREA?



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

FIGURE 5.30
SATISFACTION FROM THE COOPERATION WITH THE START-UPS



Source: ABSL survey of centers in the Kraków Metropolitan Area, 2021

6

POSITION OF KRAKÓW IN ABSL CITY RANKINGS

6.1. SUBJECTIVE RANKING VS. OBJECTIVE RANKING

ABSL reports prepared, in particular, based on surveys of shared services centers in Poland sent to their managers include an assessment of the individual cities in specific categories determining their attractiveness as a place to start and run a business.

Twelve assessed categories have been included in the subjective ranking of cities, which is consistent with the results published in the "Business Services Sector in Poland 2021" report. The individual locations were assessed by the managers using a five-point Likert scale. The average ratings were used to prepare partial rankings and a general ranking. The annual report only presents the first three places in the individual categories and a radar chart illustrating the assessment of the individual factors. In the case of companies with more than one center in Poland, the assessment concerned the three most important locations, where the centers employed the largest number of people. Overall, ratings received from the respondents concerned 16 cities. Similarly to previous years, since the analysis had to be carried out based on a sufficient number of comparable results, the final assessment concerned 7 cities for which the respondents provided the most ratings: Warsaw, Wrocław, Kraków, Poznań, Tri-City, Katowice, and GZM and Łódź. 299 ratings were obtained for the above-mentioned cities (including 46 for Kraków). The subjective ranking of assessments by managers of business services centers is therefore limited to Tier 1 and Tier 2 cities.

The answers given by the respondents had values according to the Likert scale:

+2 extremely satisfied,

+1 very satisfied,

0 somewhat satisfied,

1 not very satisfied,

-2 not at all satisfied.

Thus, the total variability of assessments ranged from -2 to +2.

The values of the rating for a specific location were calculated based on an arithmetic average, with the same weight given to the assessment of each manager. This means that the results were not weighted by the number of employees, which would favor the managers of the largest centers.

It was an ambition of ABSL to also prepare and present an objective ranking, based on publicly available data. This ranking would present a comprehensive perspective of the comparative advantages of the individual locations. The objective ranking included an assessment of 15 locations, including two agglomerations: Katowice and GZM, and Tri-City. This means that the scope of the assessment was broader than in the original subjective ranking, which only included the seven largest centers of Tiers 1 and 2. The analysis also concerned all locations of Tier 3 and selected locations of Tier 4 – Białystok, Kielce, Radom, and Tarnów. The classification of cities into Tiers is the same as in the ABSL Business Services Sector 2021. According to the classification, Kraków belongs to Tier 1.

Two rankings have therefore been prepared: (I) ABSL 2021 **subjective ranking** based on surveys; (II) **objective ranking** of cities based on a wide range of publicly available data. It should be emphasized that neither ranking is clearly superior to the other. The objective ranking is based on data, while the subjective ranking is based on the opinions of managers.

CLASSIFICATION OF CITIES ACCORDING TO ABSL

Tier 1	Kraków, Warsaw and Wrocław
Tier 2	Tri-City, Katowice and Metropolis GZM, Łódź, Poznań
Tier 3	Bydgoszcz, Lublin, Rzeszów, Szczecin
Tier 4	Białystok, Opole, Olsztyn, Radom, Kielce, Tarnów, Elbląg, Płock and other

6.2. POSITION OF KRAKÓW IN THE SUBJECTIVE RANKING

As indicated above, the assessment concerned 12 partial categories and an overall assessment of Kraków as a business environment. The overall assessment is the reference point to which the positions of Kraków in the partial categories should be compared.

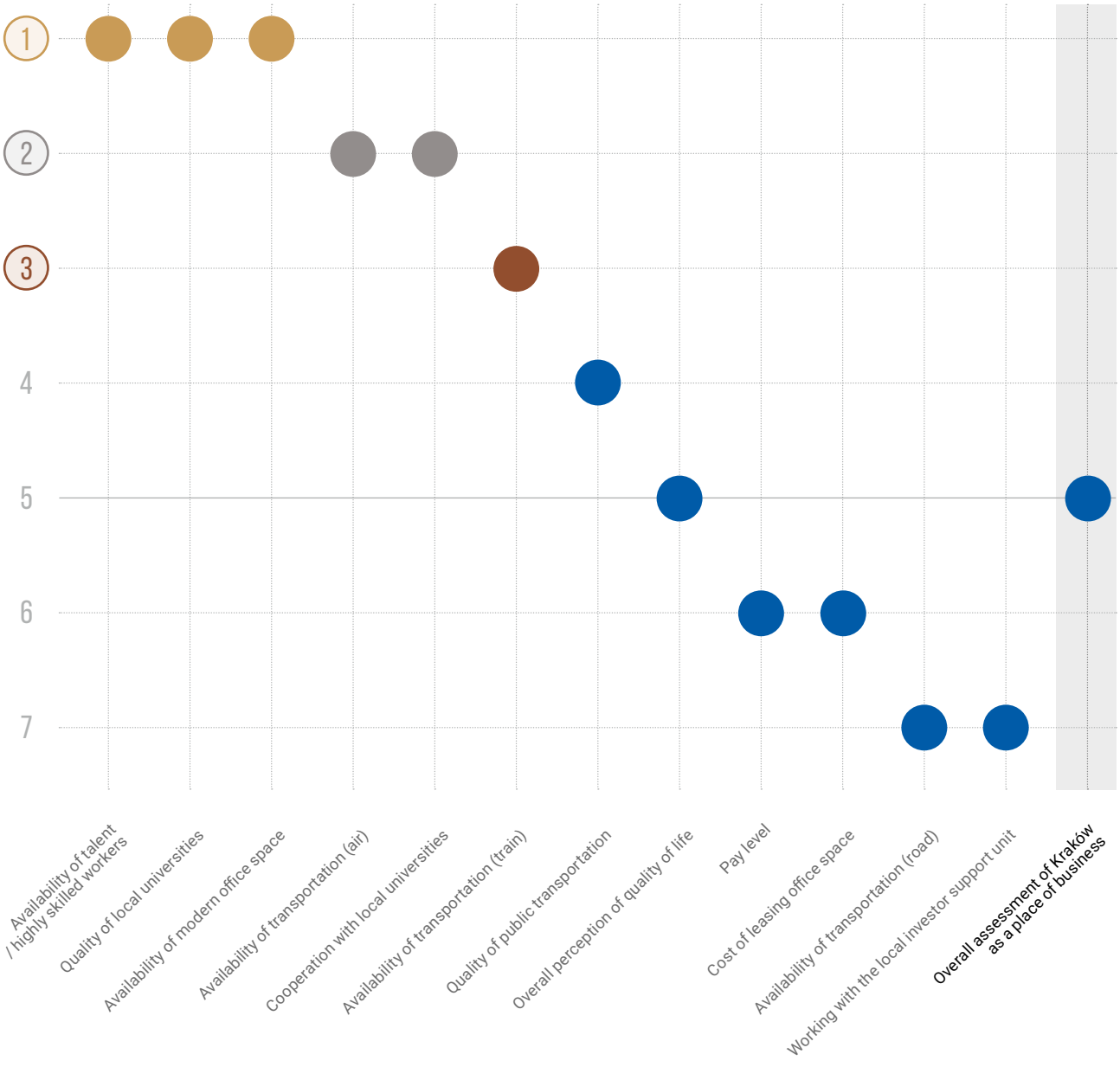
In the group of seven cities whose position was assessed, Kraków was ranked fifth in the **overall, subjective** assessment as a business environment.

Kraków was ranked first in three sub-categories (availability of talent / highly skilled workers, quality of local universities, and availability of modern office space). Kraków is ranked second in terms of available transportation (air) and cooperation with local universities and third in terms of available transportation (rail). The City ranked fourth in terms of the quality of public transportation.

In the above-mentioned categories, according to the result of the subjective ranking of managers, Kraków has comparative advantages relative to other cities.

In four categories (pay level, cost of leasing office space, availability of transportation (road), and working with the local investor support unit), the position of Kraków is lower than the overall, subjective assessment.

FIGURE 6.1
POSITION OF KRAKÓW IN THE INDIVIDUAL CATEGORIES OF THE SUBJECTIVE ABSL 2021 RANKING



Source: ABSL own study based on the survey sent to services centers, ABSL 2021 database. The line on the level of 5 refers to the overall assessment, used as the benchmark.

The radar chart presents an assessment of Kraków in the individual categories of the subjective ranking, compared with Tier 1 and Tier 2 cities and ratings for Poland in general.

FIGURE 6.2

SUBJECTIVE ASSESSMENTS OF MANAGERS IN THE INDIVIDUAL CATEGORIES OF THE ABSL 2021 RANKING. COMPARISON OF KRAKÓW WITH POLAND IN GENERAL AND WITH TIER 1 AND TIER 2 CITIES

Source: ABSL own study based on the survey sent to services centers, ABSL 2021 database

7.

COMPARISON OF THE POSITION OF KRAKÓW IN THE OBJECTIVE AND SUBJECTIVE RANKING

Multi-dimensional linear ordering analysis, based on Hellwig's economic development measure (Hellwig 1968), originating from taxonomy and linear ordering using the TOPSIS measure (Hwang & Yoon 1981), was used to construct the **objective** ranking. The categories included in the ranking have been determined based on a review of the theory of location and empirical studies concerning locations preferred by investors, and discussions among experts/professionals who assist the investors with choosing the places to conduct business in Poland and other countries.

The list of categories is consistent with the factors assessed by representatives of the business services sector in Poland in the annual ABSL survey. Weights were used in the objective ranking of cities to differentiate between the influence of the individual categories (and characteristics within the categories) on the final ranking. It was assumed that it was possible to determine the preferences of the so-called average investor. During the actual selection of locations, the preferences of the individual investors differ, just like opinions concerning the place they are already doing business in.

Figure 7.1 shows a comparison of the position of Kraków in the individual categories of the subjective and objective ranking. The lower the value, the higher the position (medal classification).

The line on the level of 2 refers to the overall assessment, used as the benchmark (the position of Kraków in the "Overall assessment of Kraków as a place of business" category in the objective ranking).

The subjective ranking, based on the results of a survey by center managers, included an assessment of 7 main Tier 1 and Tier 2 cities. The objective survey, in turn, included an assessment of 15 locations of all Tiers: 1, 2, 3, and 4.

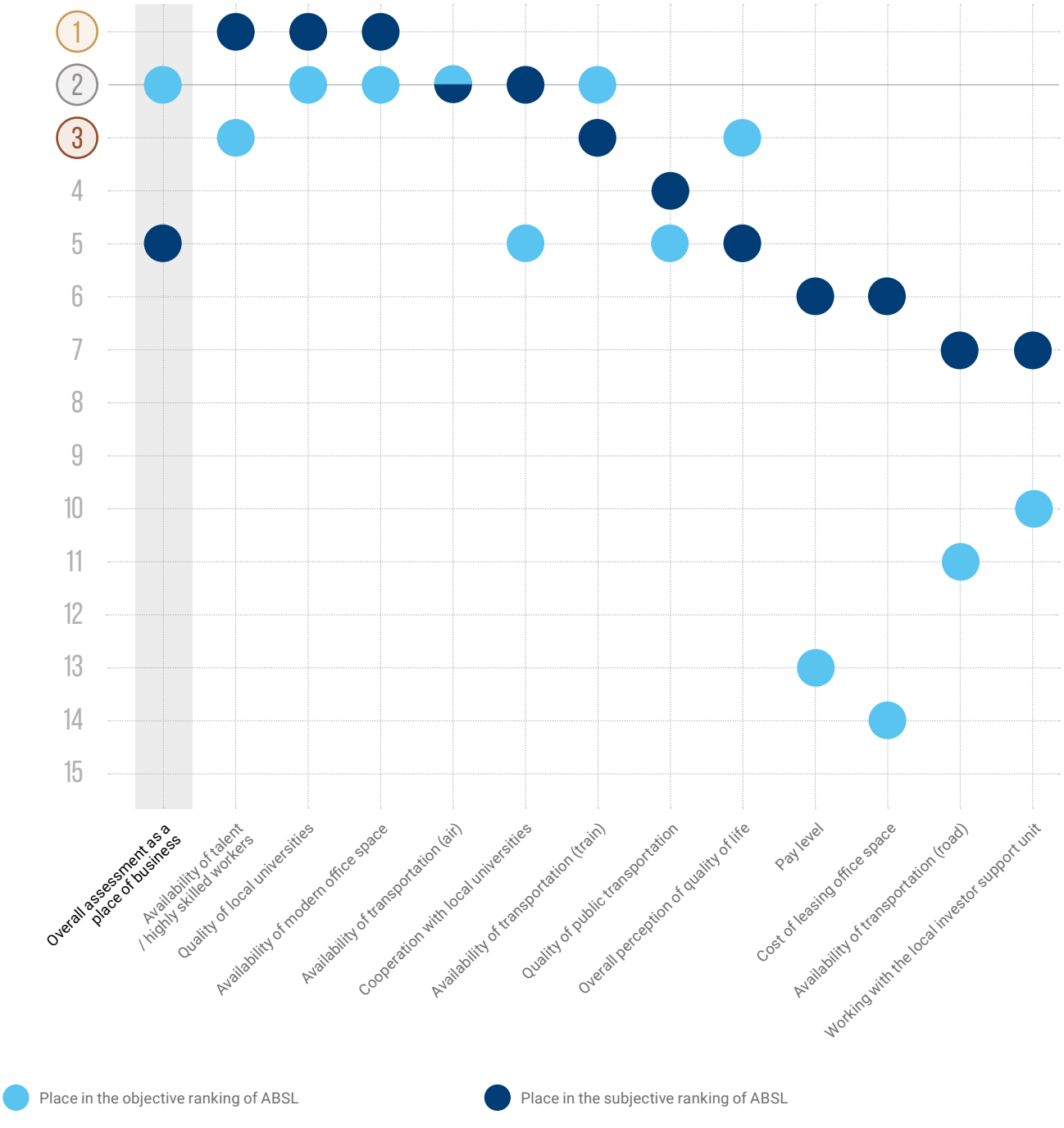
The identified differences between the assessments in the subjective ranking and in the objective ranking indicate possible areas of intervention, but such intervention will only be successful if the activities are coordinated on the level of the City (agglomeration) and on the regional and central level.

The differences between the objective and subjective ranking may suggest the following:

- different perception of the significance of the individual factors during the selection of the business location by the managers. For instance, the individual managers could have defined the weights assigned to the categories of the ranking in a different way,
- different understanding of the determinants of the choice of location for the centers,
- relying on the managers' subjective assessment of the individual parameters,
- consequences of the method and intensity of promotion of the individual locations.

FIGURE 7.1

COMPARISON OF THE POSITION OF KRAKÓW WITHIN THE INDIVIDUAL CATEGORIES IN THE SUBJECTIVE RANKING ACCORDING TO THE BUSINESS SERVICES SECTOR 2021 ANNUAL REPORT AND IN THE OBJECTIVE RANKING



Source: "Investment Potential of Polish Cities. Location benchmark of the business services sector", ABSL 2021, and a survey addressed to business services centers, ABSL 2021.

8

COMPARATIVE ADVANTAGES OF KRAKÓW

A comparative advantage is the ability to make a product at a relatively smaller cost or the ability to produce a relatively larger amount from a particular resource of production than the competitors. It is beneficial to specialize in production and export according to the logic of comparative advantages.

Kraków has the following comparative advantages relative to the average levels for Poland and other Tier 1 cities (Warsaw, Wrocław) that predispose it to occupy a key position in the sector:

- size of the City (metropolitan area of Kraków) measured by population,
- status of one of the two main academic centers in Poland[1],
- being the location of some of the central authorities, including the National Science Center (NCN),
- a very well-developed, mature office market that continues to grow (1.57 million sq m of office space, including new 21,400 sq m and 103,800 sq m under construction),
- very large number of headquarters of business services centers (257 centers),
- largest labor market and, consequently, talent pool in Poland with employees with experience in the sector (82,600 employees),
- still the highest location (specialization) quotient – 3.47,
- still significant number of foreign investments, confirming a strong signal effect,
- plans for new (foreign) investments in centers, strongly oriented towards R&D, whose products will be intended for the global markets,
- serving as one of the main transport hubs and, consequently, good domestic and international transport availability, including by road (A1 and A4 highways), rail (one of the main railway hubs, Central Rail Line, connections with high-speed trains, and direct international cultural connections) and air (John Paul II International Airport Kraków-Balice),
- one of the main cultural centers in Poland,
- high positions in the rankings of the quality of life and their various components,
- high assessment of innovative culture within the regional system of innovation,
- significant potential for competition regarding the support of knowledge-intensive processes, comparable with or higher than in Warsaw and significantly stronger than the other locations of centers in Poland.

The scale of impact of Kraków means that it can be one of the largest locations of the sector in Poland, right next to Warsaw, and also rank high in the broader context of Central and Eastern Europe, where it can successfully compete with Prague, Vienna, Budapest or Bucharest. The competitors of Kraków also include locations in Spain and Portugal: Lisbon, Madrid, and Barcelona.

[1] Public higher education establishments in Kraków include the Jagiellonian University, AGH University of Science and Technology in Cracow, Cracow University of Economics, Cracow University of Technology, Pedagogical University of Cracow, University of Agriculture in Cracow, University of Physical Education in Cracow, Academy of Fine Arts in Cracow, National Academy of Theatre Arts in Cracow. Non-public higher education establishments in Kraków, in turn, include Andrzej Frycz Modrzewski Cracow University, School of Management and Banking in Cracow, Jesuit University Ignatianum in Cracow, the Pontifical University of John Paul II in Cracow, Cracow University of Health Promotion, Tischner European University, College of Economics and Computer Science, University of Social Sciences, University of Public and Individual Safety "Apeiron", Józef Dietl Małopolska University in Cracow, Insurance University, WSB University, and Bogdan Jański Academy.

The centers in Kraków have the highest average headcount in comparison with the other main locations. Such centers may support the most advanced business processes for the largest customers, which require higher competencies and larger teams.

Kraków is the second-largest academic center in Poland (after Warsaw), which contributes to the available talent pool. The potential of Kraków is evidenced by the 23 universities and the second place in Poland (after Warsaw) in terms of the number of students (130.0 thousand) and graduates (32.9 thousand). The talent pool of the centers in Kraków is based on graduates and students in the fields of business and administration and engineering and technology.

In light of the trends expected in the 2031 strategic perspective (Strategic Foresight in the Business Services Sector), the depth, maturity, and size of the market in Kraków and its metropolitan area should enable this location to be an answer to the key trends in the KIBS sector: upskilling, upgrading, shift towards middle-office, and technological revolution (IPA, RPA, IA, hyper-personalization, etc.).

Relative to the average level for Poland, the centers in Kraków more often support knowledge-intensive processes. In terms of the share of knowledge-intensive processes, Kraków is the leading location in Poland. The centers in Kraków can support such processes thanks to the talent pool created and reinforced in Kraków during the many years of the functioning of the sector on the competitive, global market, which offers increasingly advanced competencies and skills.

The current position of Kraków can be accurately illustrated by the chart showing that the business services sector is still the most prominent local specialization, also in 2021 (the LQ in 2021 is 3.47), which indicates that the share of the sector in overall employment is 3.5 times higher than the average share for locations of the sector in Poland.

However, it should be emphasized that, similarly to Wrocław, Kraków is in the bottom right quarter of the chart, which indicates that its LQ is higher than the average for Poland (the average LQ for Poland is 1.0), but it has been decreasing in recent years (relative to the value from 5 years ago). This indicates a decrease in the specialization quotient and a faster increase of employment in other sectors of the Kraków economy in the analyzed period.

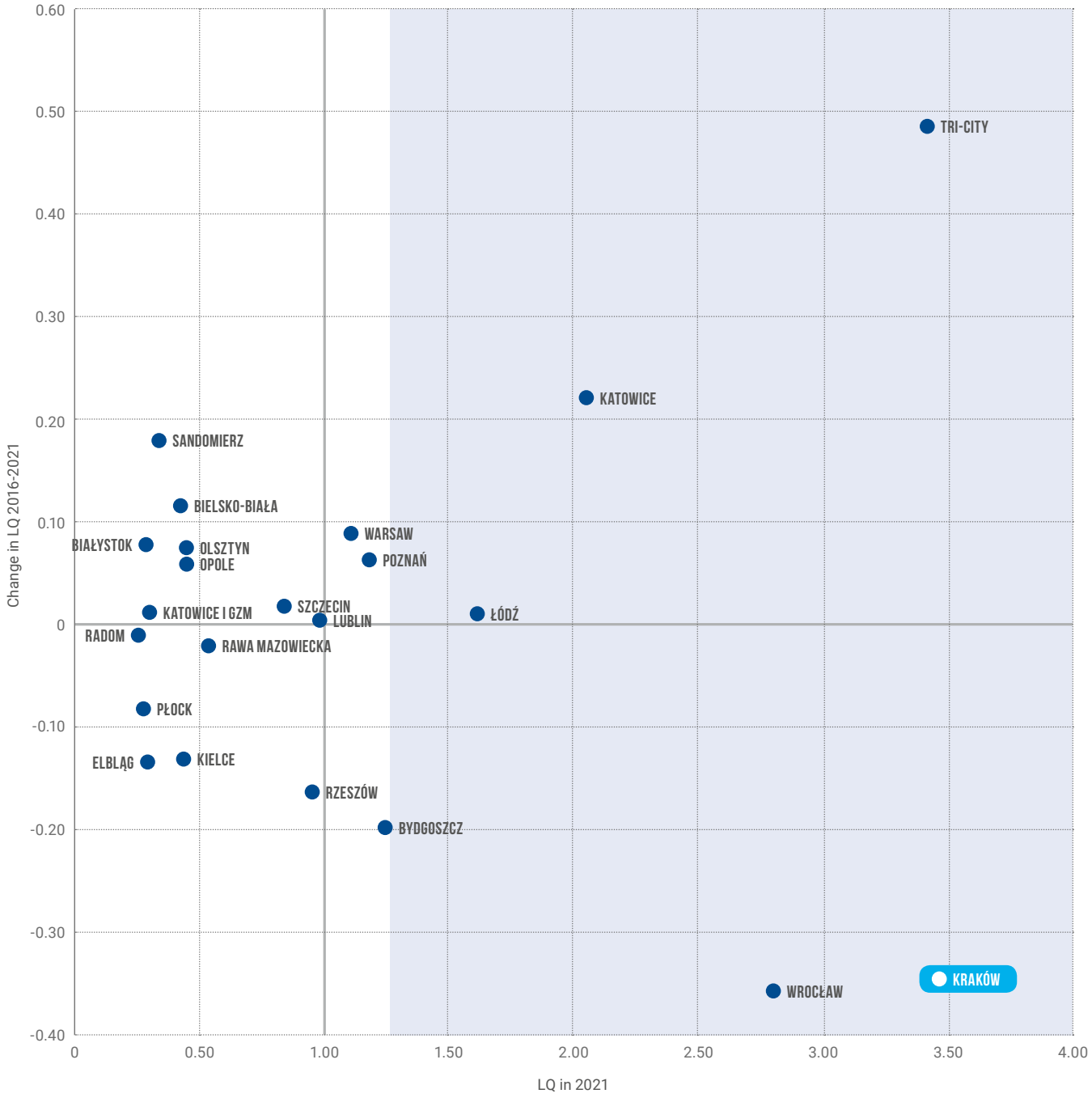
TABLE 8.1

NUMBER OF GRADUATES AND STUDENTS OF SELECTED MAJORS AT THE UNIVERSITIES IN KRAKÓW IN THE 2020/2021 ACADEMIC YEAR

	STUDENTS	GRADUATES
business and administration	20,492	5,646
computer science	10,916	2,194
biomedicine	7,846	1,819
engineering and technology	14,805	4,298
languages	7,419	1,671
ICT	9,172	1,968
extended philology	5,066	1,083

Source: ABSL study based on the data of POLon

FIGURE 8.1
LOCATION QUOTIENT (LQ) FOR THE BUSINESS SERVICES SECTOR IN 2021 AND CHANGES RELATIVE TO 2016



Source: ABSL study based on centers database and Local Data Bank of Statistics Poland

Kraków

The Investors and Innovative Economy Support Centre

- supports investors during the project development process
- provides information about investment opportunities in Kraków
- engages in active cooperation with other municipal bodies, educational establishments, HR agencies and real estate agencies in our city
- organizes meetings and site visits for the companies and shows them the benefits of locating their business in Kraków
- prepares dedicated information for the investor and monitors the development of the companies in Kraków
- investigates the current needs of the companies regarding the availability of qualified personnel and office space in the city
- prepares up-to-date information about Kraków, the economy and investment climate for the investors

Find out more about the investment opportunities of Kraków!

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