



**BAS4SC – Business Analytics Skills
for the Future-proof Supply Chains**
2022-1-PL01-KA220-HED-000088856



**BUSINESS ANALYTICS
SKILLS FOR THE FUTURE-
PROOF SUPPLY CHAINS**

STUDENT OPINION ANALYSIS - BAS4SC COMPETITION

**17-18
SEPTEMBER
2025**

POZNAN, POLAND



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Competition

The BAS4SC (“Business Analytics Skills for the Future-Proof Supply Chains”) competition was designed to address contemporary challenges in logistics and analytical education. Its primary goal was to bridge competency gaps among students, with a particular focus on data analysis and business intelligence.

Participants were granted access to teaching materials and online courses prior to the competition, enabling them to strengthen their skills and ensure a more balanced level of knowledge across teams. These preparatory resources supported participants in effectively preparing for the competition tasks.

The first stage of the competition was conducted online and involved teams independently solving analytical tasks prepared by the organisers. The task for this stage is presented in Appendix 1 and was based on shared logistics datasets and business intelligence tools. Teams developed case study solutions and prepared reports containing their analyses and recommendations. Upon completion, the submitted works were evaluated by the competition committee.

In the second stage, teams developed solution concepts and presented their results, including data analyses and supply chain recommendations, during the final session. The task for this stage is presented in Appendix 2. The final round was held in Poznan on September 17–18, 2025. Participants also took part in accompanying events such as panel discussions and networking meetings with representatives of both academic and business communities. The competition concluded with the announcement of results and recognition of the best-performing teams.

Participation in the competition contributed significantly to the development of soft skills, including teamwork, creativity, communication in an international environment, and the ability to solve problems under time pressure. Teams from Poland, Slovenia, Serbia, and Croatia took part in the final, emphasizing the international character of the event and its role in fostering collaboration among European universities. The competition created a platform for exchanging experiences and best practices, promoting the concept of learning by doing and integrating theory with practice.



The BAS4SC competition proved to be a valuable educational initiative that successfully combined learning with practical application, preparing students for work in modern, digital supply chains. Participation strengthened not only analytical and technical competencies but also strategic thinking and awareness of the role of data in business decision-making. In the long term, the initiative has strong potential to enhance the quality of education in logistics and business analytics.



Characteristics of BAS4SC Competition Participants

Students participating in the BAS4SC competition typically come from fields related to management, production engineering, and logistics. They are interested in data analysis supporting supply chain management and demonstrate familiarity with analytical tools and technologies such as spreadsheets (Excel, Google Sheets), business intelligence systems (Power BI, Tableau), and basic statistics. Participants can further expand their knowledge by accessing materials available at bas4sc.put.poznan.pl.

Their primary motivations include developing practical skills in data analysis and supply chain management, testing their knowledge in real-world business scenarios, and enhancing their CVs through gaining relevant experience.



Student Opinions – Survey Results

Question 1 How would you rate the organisation of the BAS4SC competition (date, duration, location/online platform)?

Figure 1 presents the evaluation of the BAS4SC competition organisation by 30 participants. The vast majority of respondents, 24 (80%), gave the maximum rating of 5, indicating a very high level of satisfaction with the event's organisation. This high score suggests that the competition date, duration, and online platform were well-suited to the participants' needs. Another five respondents (16.7%) rated the organisation as 4, which can be interpreted as a positive opinion with minor reservations, such as concerns regarding the schedule or technical aspects. Only one participant (3.3%) gave a rating of 3, which may indicate moderate satisfaction or isolated issues during the event.

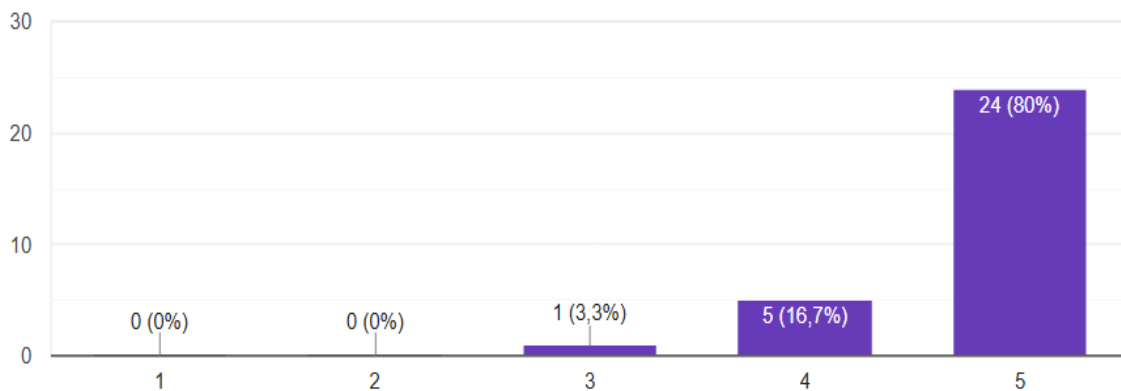


Fig. 1. How would you rate the organisation of the BAS4SC competition (date, duration, location/online platform)?

The absence of ratings of 1 or 2 clearly confirms that no participant considered the competition's organisation to be poor or unsatisfactory. Overall, these results demonstrate the organisers' high level of professionalism and the participants' positive experiences with BAS4SC. The high level of participant satisfaction may also indicate effective pre-event



communication and efficient technical support during the competition. Furthermore, these results can provide valuable guidance for organisers when planning future editions, allowing them to maintain proven practices while incorporating potential participant suggestions.

The evaluation results clearly demonstrate that the BAS4SC competition was organised to a very high standard, meeting or even exceeding the expectations of most participants.

Question 2 Was the format of the BAS4SC competition appropriate?

Figure 2 presents participants' ratings of the appropriateness of the BAS4SC competition format. The data show that the majority of respondents rated the event very positively – 21 participants (70%) gave the highest rating of 5. Another 9 participants (30%) rated it 4, which also indicates a high level of satisfaction, although with possible minor suggestions regarding the competition format..

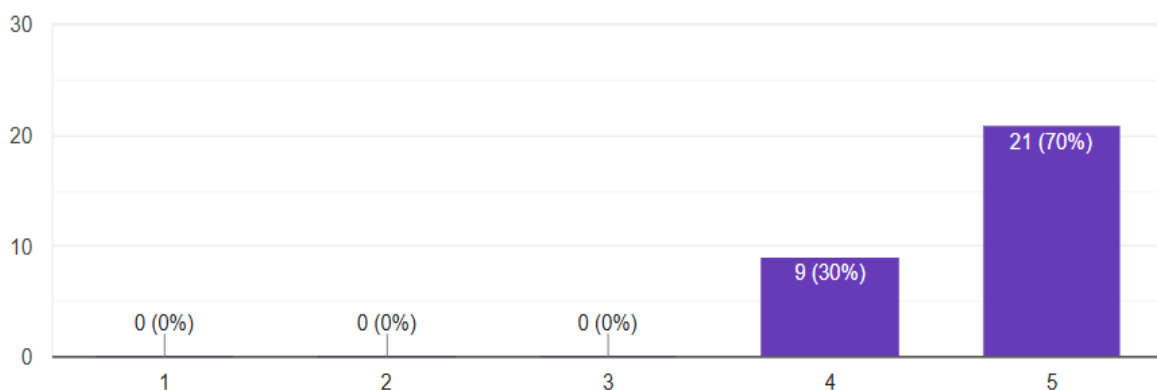


Fig. 2. Was the format of the BAS4SC competition appropriate?

No respondents awarded ratings of 1, 2, or 3, indicating the absence of negative opinions and widespread appreciation for the format.

The lack of negative ratings not only confirms the high acceptance of the adopted format but also indicates that participants felt confident and comfortable throughout the competition, which facilitated focus on the tasks and the effective use of their knowledge. The high level of positive feedback suggests that the tasks were well-balanced in terms of difficulty



and appropriately matched to the participants' competencies, enabling them to develop practical analytical skills while also demonstrating soft skills such as communication, teamwork, and presentation. Furthermore, the smooth running of the competition, clear rules, and well-structured schedule fostered full participant engagement and positively influenced their overall satisfaction. Consequently, the high rating for the format indicates that BAS4SC not only ensured a comfortable competition but also effectively supported the development of competencies crucial for the participants' future professional careers.

Question 3 To what extent did the BAS4SC competition meet your expectations?

Figure 3 shows the extent to which the BAS4SC competition met participants' expectations. The vast majority of respondents, 86.7%, indicated that the event fully met their expectations ("Fully"). This suggests that both the organisation and the course of the competition were rated very highly and aligned with participants' expectations. The remaining 13.3% of respondents selected "Partially," implying that while the overall experience was positive, certain elements may have required refinement—for example, the scope of tasks, judging methods, or level of difficulty.

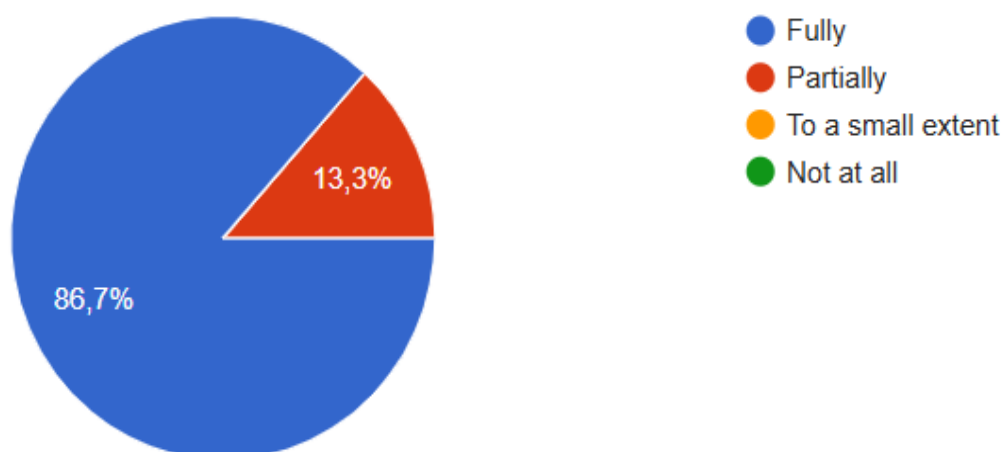


Fig. 3. To what extent did the BAS4SC competition meet your expectations?



No respondents selected "To a small extent" or "Not at all," demonstrating that the competition was received overwhelmingly positively and successfully met its objectives. The high percentage of "Fully" responses indicates strong participant satisfaction and the adequacy of the organisational and content-related solutions adopted. Meanwhile, the feedback from the "Partially" group can provide valuable guidance for organisers, allowing for minor improvements in potential future editions. Overall, these results confirm the competition's effectiveness in achieving its primary educational and motivational goals.

Question 4 Was the content provided during the BAS4SC competition understandable?

Figure 4 presents participants' responses regarding the comprehensibility of the content provided during the BAS4SC competition. The majority of respondents, 70%, indicated that the materials and instructions were fully understandable ("Definitely yes"). The remaining 30% of participants responded "Rather yes," which also reflects a positive assessment, although with minor ambiguities or points that may require clarification.

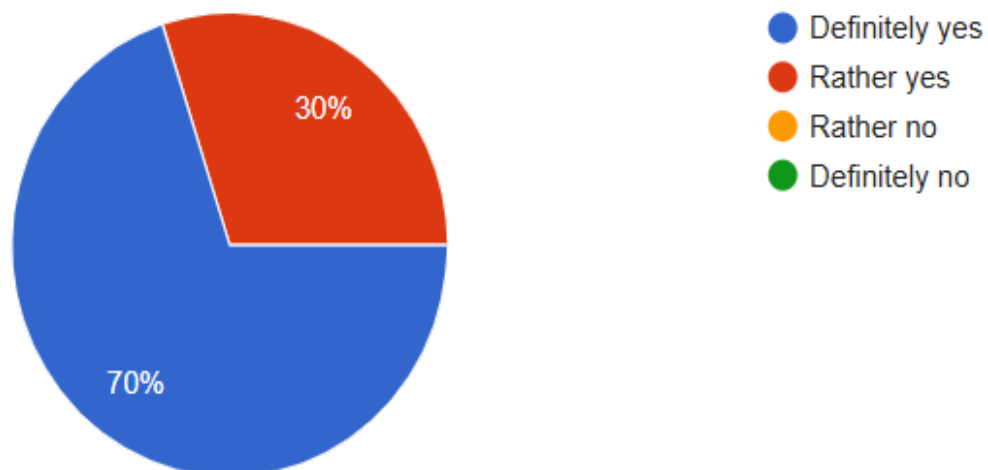


Fig. 4. Was the content provided during the BAS4SC competition understandable?

No participants selected "Rather no" or "Definitely no," indicating that all content was perceived as clear and appropriate for the participants' level. These results confirm that the



organisers effectively ensured the clarity of communication and the comprehensibility of the materials used during the competition. The high percentage of positive responses suggests that participants were able to easily absorb the required information and focus on the competition tasks. Overall, these findings demonstrate the effectiveness of communication and the preparation of the educational materials.

Question 5 How would you rate the usefulness of the educational materials provided as part of the BAS4SC project in preparing for the BAS4SC competition?

Figure 5 presents participants' ratings of the usefulness of the educational materials provided as part of the BAS4SC project. The vast majority of participants, 80%, rated the materials as "Very useful," indicating that the content effectively supported the learning process and preparation for the competition. The remaining 20% of respondents rated them as "Somewhat useful," suggesting that they also recognized their value, although some aspects could have been better tailored to the participants' needs—for example, in terms of difficulty level, topical coverage, or presentation format.

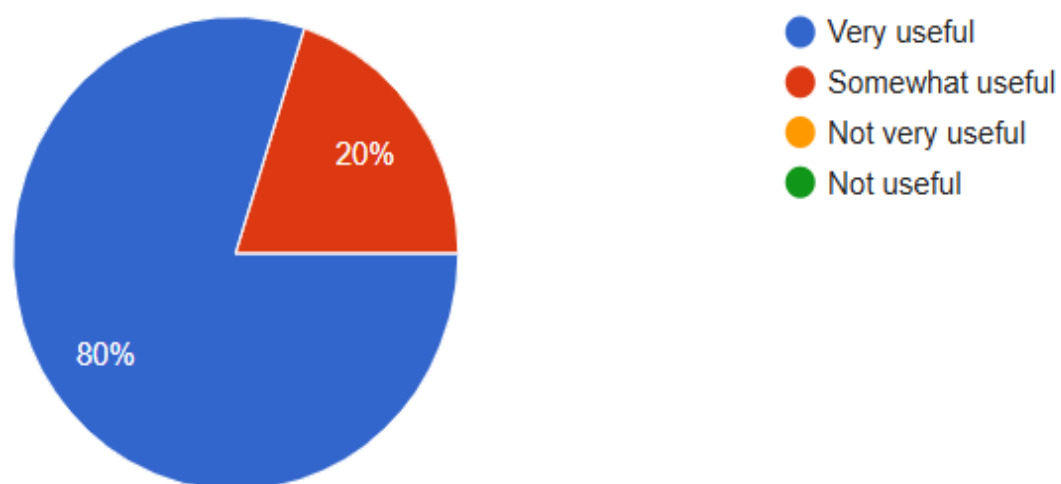


Fig. 5. How would you rate the usefulness of the educational materials provided as part of the BAS4SC project in preparing for the BAS4SC competition?



The absence of negative ratings ("Not very useful" and "Not useful") clearly confirms the high quality of the educational materials and their significant role in effective preparation for the BAS4SC competition. This high level of appreciation indicates that the materials were well-developed in terms of both content and practicality. It can therefore be concluded that they effectively deepened the participants' knowledge in areas related to the BAS4SC topic.

Question 6 How would you rate the substantive preparation of the BAS4SC competition leaders?

Figure 6 presents the assessment of the substantive preparation of the BAS4SC competition leaders. The vast majority of participants, 66.7%, rated the leaders' level of preparation as "Very High," while the remaining 33.3% rated it as "High".

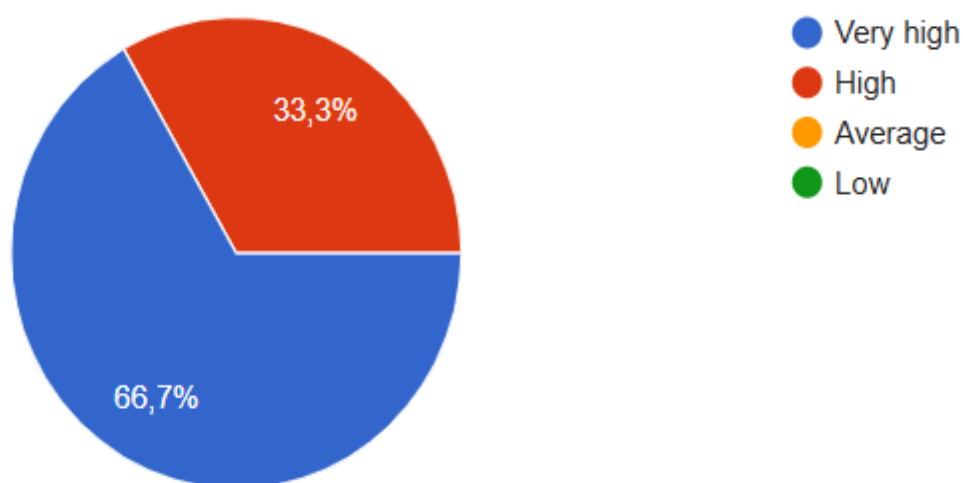


Fig. 6. How would you rate the substantive preparation of the BAS4SC competition leaders?

The absence of responses indicating a "Medium" or "Low" level reflects widespread recognition of the competence and knowledge of the event leaders. These results confirm that the competition participants were well-supported in terms of content. Such high ratings demonstrate the professionalism of the organisers and their commitment to achieving the



competition's goals. It can also be inferred that the leaders' strong preparation positively influenced the overall quality of the participants' experience. The high substantive level of the leaders may have boosted participants' confidence and facilitated the effective completion of competition tasks. Competence in both specialized knowledge and the ability to convey information ensured smooth communication and clear understanding of instructions. Consequently, this likely contributed to greater participant engagement and a positive evaluation of the competition, confirming that the role of the presenters is crucial for the effectiveness and educational quality of the event.

Question 7 Did the BAS4SC competition promote active participation?

Figure 7 presents participants' responses regarding whether the BAS4SC competition promoted active participation. The data show that the majority of respondents – 73.3% – answered "Definitely yes," while the remaining 26.7% selected "Rather yes".

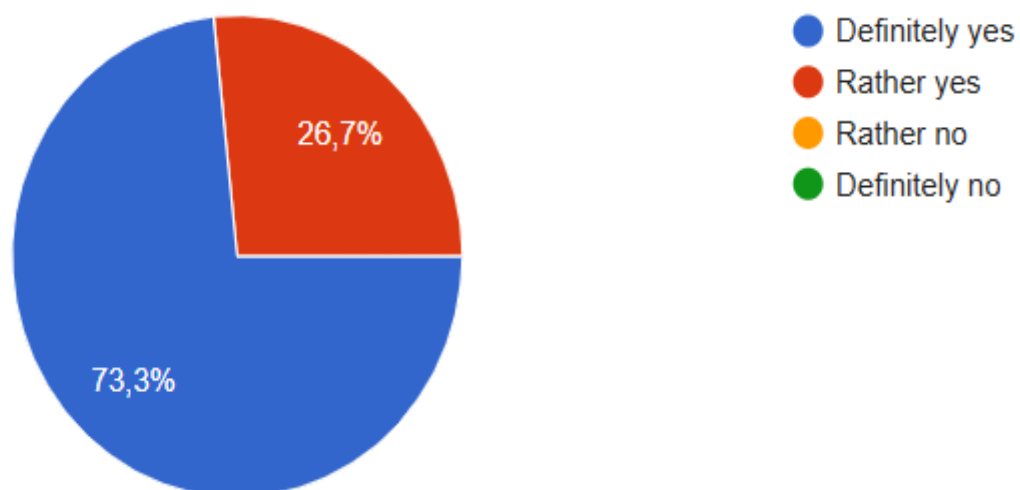


Fig. 7. Did the BAS4SC competition promote active participation?

The absence of negative responses ("Rather no" or "Definitely no") indicates that all participants felt engaged in the competition, although some may have experienced a lower level of engagement. The high proportion of positive responses suggests that the



competition's structure and task format effectively motivated participants to take an active role. The "Rather yes" responses can provide valuable guidance for organisers on how to further enhance engagement in future editions – for example, through additional interactive elements or more diverse tasks. Overall, these results confirm that BAS4SC effectively supported participant involvement and engagement throughout the competition..

Question 8 To what extent did the BAS4SC competition help you develop practical skills (e.g., data analysis, teamwork, tool use)?

Figure 8 presents participants' responses regarding the extent to which the BAS4SC competition contributed to the development of practical skills, such as data analysis, teamwork, and tool use. The data show that 73.3% of participants rated the competition as largely supporting the development of these competencies ("To a great extent"), while 23.3% selected "To some extent".

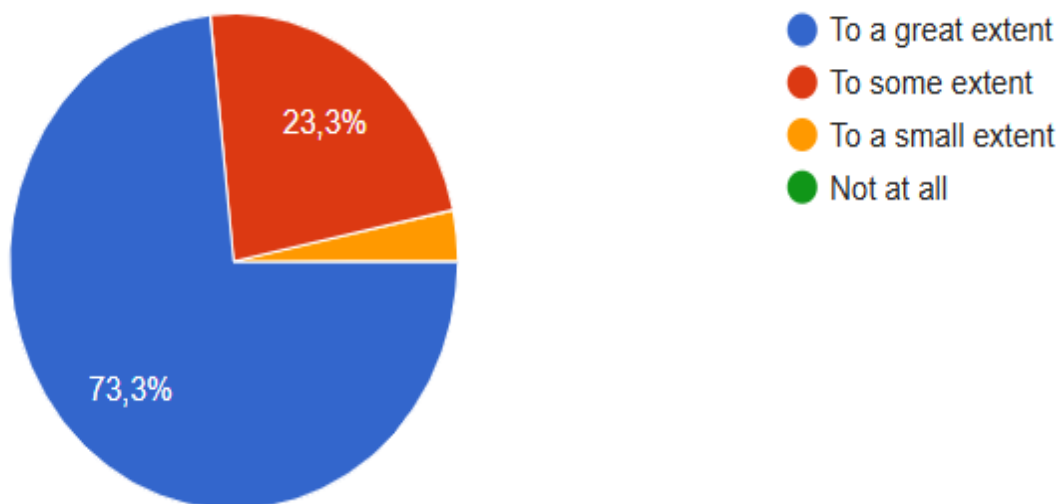


Fig. 8. To what extent did the BAS4SC competition help you develop practical skills (e.g., data analysis, teamwork, tool use)?



The absence of negative responses ("To a small extent" or "Not at all") indicates that all participants perceived at least a partial or significant impact of the competition on their skill development. These results suggest that both the BAS4SC project and the competition effectively achieved their educational goals by offering tasks and activities that fostered the acquisition of practical competencies. Overall, the competition proved to be a valuable experience in developing participants' practical skills.

Question 9 What types of skills did the BAS4SC competition help you develop?

Question 9 was open-ended and stated as follows: *What types of skills did the BAS4SC competition help you develop? (Please specify at least three).*

The participants' open-ended responses after the BAS4SC competition allow for drawing several interesting conclusions about the educational and competency-building effects of this event. Below is a summary of the key findings:

Key competencies developed by participants – the most frequently mentioned areas were:

- Data analytics and analytical tools – particularly Tableau and Excel. Many participants reported progress in data analysis, data visualization, and data management, confirming that the competition effectively supported the practical application of analytical tools.
- Soft skills – including teamwork, communication, presentation, and networking. This suggests that the competition not only had a technical dimension but also developed competencies essential for collaboration within an international team.
- Understanding of supply chain and logistics – with references to planning, forecasting, transport cost calculation, and inventory management. These responses indicate a deepening of participants' knowledge in the field of supply chain management.

Participants also highlighted the following strengths of the competition:

- Integration of theoretical and practical knowledge – students were able to apply analytical tools in a realistic business context.
- Emphasis on cross-cultural collaboration and communication in English.



- Development of presentation and self-presentation skills – several participants mentioned public speaking and self-presentation as major strengths.

Overall, the responses show that the BAS4SC competition significantly enhanced participants' analytical, digital, and interpersonal skills, which are becoming crucial in modern supply chain management. The competition effectively prepared students to work in an international and analytical environment, combining hard data with soft communication skills.

Question 10 Do you feel better prepared for work after the BAS4SC competition?

Figure 10 presents participants' responses regarding their sense of being better prepared for work after participating in the BAS4SC competition. The data show that 46.7% of participants selected "Definitely yes," while another 46.7% chose "Rather yes".

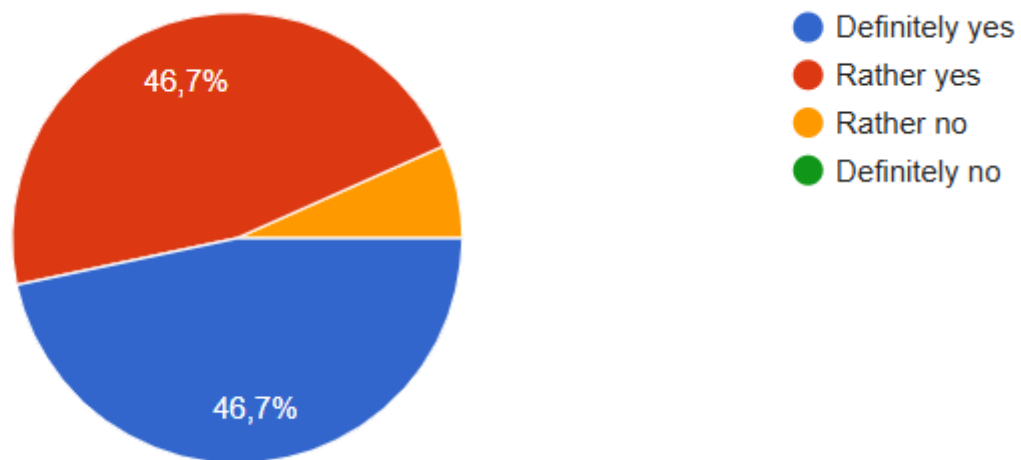


Fig. 10. Do you feel better prepared for work after the BAS4SC competition?

The absence of negative responses ("Rather no" or "Definitely no") indicates that all participants perceived a positive impact of the competition on their professional competencies. The results suggest that BAS4SC significantly contributed to participants' sense of being better prepared for employment, both through the development of practical skills and the experience gained during the competition. The even distribution between "Definitely yes" and "Rather



yes" responses may indicate that some participants still saw potential for further improvement of their competencies, providing valuable insights for organisers when designing future editions of the competition.

Overall, the positive feedback indicates that the competition not only engaged participants in solving tasks but also supported the development of self-confidence relevant to their future careers. This may serve as a signal to the organisers that continuing similar initiatives is worthwhile, while also incorporating elements that enable an even greater practical application of the knowledge gained.

Question 11 How do you rate the BAS4SC competition as an initiative supporting the development of students' analytical and digital competencies?

Figure 11 presents participants' ratings of how the BAS4SC competition supports the development of students' analytical and digital competencies, on a scale from 1 to 5. The data show that 76.7% of respondents awarded the highest rating of 5, while 23.3% chose a rating of 4. The absence of lower ratings (1–3) indicates that all participants evaluated the initiative very positively and recognized its educational value.

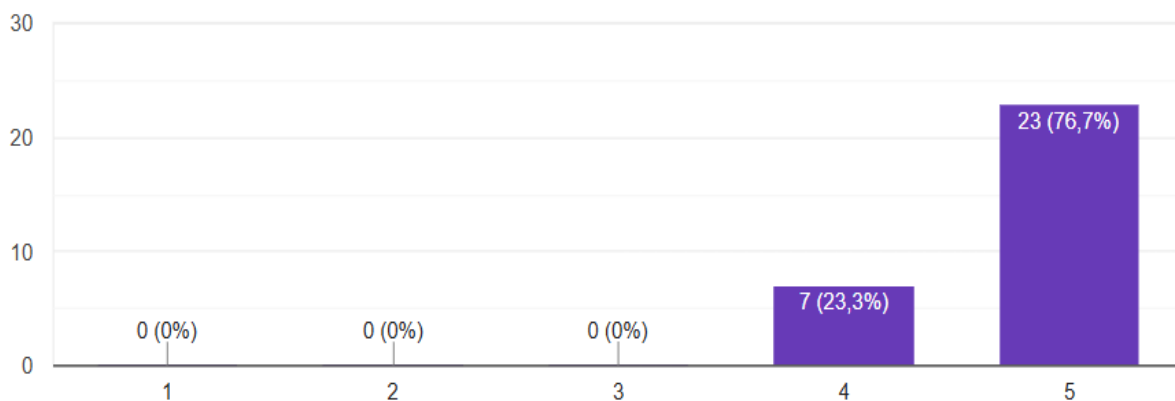


Fig. 11. How do you rate the BAS4SC competition as an initiative supporting the development of students' analytical and digital competencies?



These results suggest that BAS4SC effectively supported the development of analytical and digital skills by offering tasks that required the practical application of knowledge and tools. The high percentage of maximum ratings underscores the professionalism of the organisers and the relevance of the competition format, which can serve as a strong argument for further developing this type of educational initiative. Such a high level of ratings indicates that participants not only acquired new skills but also felt genuine support in developing key competencies for the job market. These findings can provide valuable insights for universities and organisers, confirming the effectiveness of practical, project-based forms of learning. Furthermore, the positive evaluations may encourage the introduction of even more advanced digital tools and data analysis methods to maintain high levels of participant engagement.

Question 12 How do you rate the BAS4SC competition overall?

Figure 12 presents participants' overall ratings of the BAS4SC competition on a scale from 1 to 5. The data show that 86.7% of respondents gave the highest rating of 5, while 13.3% chose a rating of 4.

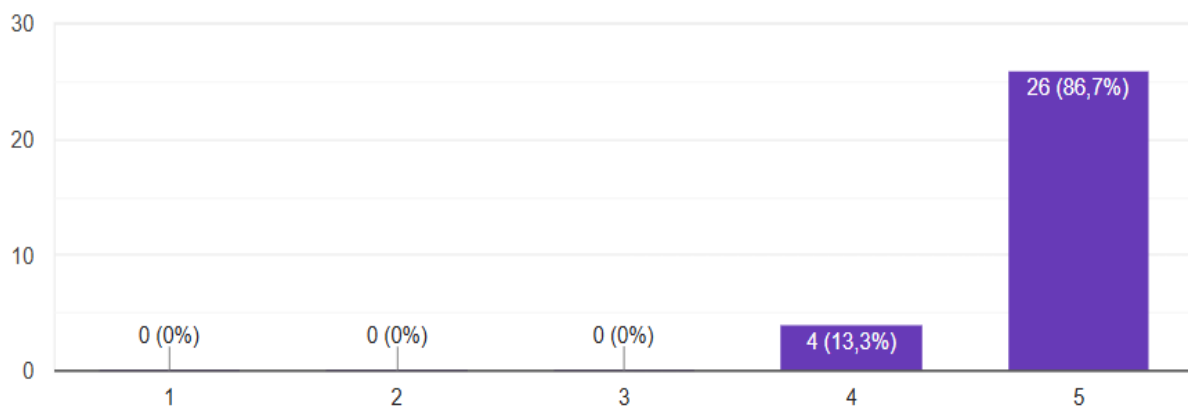


Fig. 12. How do you rate the BAS4SC competition overall?

The absence of lower ratings (1–3) indicates that all participants evaluated the event very positively and expressed overall satisfaction with taking part in the competition. This



demonstrates a consistently high level of participant satisfaction, suggesting that all key elements of the competition—ranging from substantive and organisational preparation to content delivery and task format—were well designed and effectively implemented. The high percentage of maximum ratings reflects not only overall satisfaction but also the recognition of the competition’s real educational value, both in terms of developing hard skills (analytical and digital) and soft skills (teamwork, presentation, and communication).

Furthermore, the positive evaluations suggest that the tasks were appropriately tailored to the students' knowledge level and promoted active engagement, thereby enhancing the effectiveness of the learning process. Overall, these results strongly confirm the effectiveness of the competition format and provide valuable guidance for organisers to maintain proven solutions in future educational projects while introducing minor improvements to further strengthen the educational value and participant experience.



Conclusions

Based on the participants' feedback, several conclusions can be drawn regarding the BAS4SC competition. The event was highly praised for its excellent organisation and the professionalism of the presenters. Participants appreciated the well-structured agenda, appropriate timing and duration, and the efficient use of the online platform. The presenters were perceived as well-prepared and engaging, which enhanced the overall experience and ensured the smooth running of the competition.

The format and clarity of the competition content were also highly rated. Both the structure of the event and the materials provided were considered clear, coherent, and well suited to participants' needs. This allowed students to easily understand the instructions, focus on their tasks, and actively engage in the learning process.

The competition significantly contributed to the development of practical and digital competencies. Participants emphasized that they had strengthened key skills such as data analysis using Excel and Tableau, teamwork, communication, and the practical application of analytical tools. They also reported gaining deeper substantive knowledge in logistics and supply chain management.

An equally important outcome was the strengthening of soft skills and professional readiness. The BAS4SC competition supported the development of interpersonal, presentation, and self-presentation abilities, helping students feel better prepared for their professional careers. This was confirmed by participants' positive self-assessments of practical skill development and their increased sense of job readiness after the event.

Overall, the competition received highly positive evaluations and was recognized for its strong educational value. The majority of participants gave top ratings to both individual elements and the overall organisation of the event. The feedback indicates that BAS4SC was perceived as a professional, engaging, and educational initiative that effectively combined theoretical knowledge with the practical application of analytical tools and methods.

In conclusion, the BAS4SC competition proved to be an effective and valuable educational experience that supported the development of both hard skills (analytical and digital) and soft skills (communication, teamwork, and presentation). The consistently high



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ratings across all evaluation criteria, along with the absence of negative feedback, confirm its professionalism, attractiveness, and educational effectiveness.



Appendix 1





BAS4SC - Business Analytics Skills for the Future-proof Supply Chains

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BAS4SC - Business Analytics Skills for the Future-proofs Supply Chains

1. DESCRIPTION OF THE DATA

You are the Logistics Director of a distribution company. You have a set of data that your colleagues have collected for you:

- Transakcje – information about customer orders and their execution from the year 2024;
- SKU – data on purchase price, sale price and number of items on one pallet;
- Suppliers – basic characteristics of the supplier;
- Customers – location of customers;
- Transport – transport costs depending on the means of transport and the distance over which the order is transported.



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3. TASK

Complete the tasks below:

- Analyze orders (timeliness, customer service level in terms of quantity), customers (turnover), suppliers (turnover, trade formulas), goods (turnover, profits) and others that you find interesting.
- Calculate annual transport costs in the dispersed distribution variant with warehouses in Poznań, Celje, Osijek and Novi Sad. Take into account the assumptions described in "Decision problem".
- Calculate the optimal warehouse location taking into account the locations of customers and the number of pallets sent to them annually.
- When calculating the optimal warehouse location, remember that this is a theoretical location and you must choose a real location that also takes into account other factors such as road infrastructure, access to labor and others. Choose a real location from several proposed using, for example, the Weighted Point Method.
- Calculate annual transport costs in the centralized distribution variant (warehouse location selected by you in the previous point). Again, consider the assumptions described in "Decision problem"
- Estimate the differences in transportation costs between the variant of a distributed distribution network with warehouses in Poznań, Celje, Osijek and Novi Sad and the centralized variant, in which the warehouse will be located in the location you choose.
- Use data visualization in the above analyses.





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Remember, this is a competition, you are competing with other teams and the above tasks are intended only as guidelines and you can expand on them by adding analyses that you consider important.

Also use different analytical tools (preferably at least 3) and analytical methods. For more details, visit:
<https://bas4sc.put.poznan.pl/>



BUSINESS ANALYTICS SKILLS FOR THE FUTURE- PROOF SUPPLY CHAINS



Appendix 2





1. DESCRIPTION OF THE DATA

You are the Data Analyst in a distribution company. You have a set of data that your colleagues have collected for you (the same data set as in 1st stage):

- Transactions – information about customer orders and their execution from the year 2024
- SKU – data on purchase price, sale price and number of items on one pallet
- Suppliers – basic characteristics of the supplier
- ~~Customers – location of customers~~
- Transport – transport costs depending on the means of transport and the distance over which the order is transported



BAS4SC - Business Analytics Skills for the Future-proof Supply Chains

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2. PROBLEM

The company operates in a competitive distribution market where supply chain efficiency directly impacts profitability. Every order involves multiple aspects: product prices, supplier conditions, transport costs, delivery times, and customer locations. While all this information is available, it is spread across different sources and formats, making it difficult to see the full picture.

The challenge lies in connecting these data points to better understand customer demand, supplier performance, product profitability, and logistics costs. Without an integrated view, it is hard to identify which customers or products generate the most value, where delays occur, or how transportation choices influence overall margins.

Decision-makers need clear, data-driven insights to improve supply chain operations, reduce costs, and increase customer satisfaction. The data provided offers the basis for uncovering such insights – the key is to bring it together and make it meaningful.



3. TASK

Using the given dataset, solve the following task:

- if you think it is necessary, first clean and organize the data in Excel
- in Tableau, link the worksheets by a common field
- if necessary, change the data type
- create visualizations and dashboard (more details below)

Create:

- at least **4 visualizations** (each worksheet - one visualization)
- **1 dashboard** with at least 4 visualizations on it. The dashboard should be dynamic (when something changes on one chart, the others change as well)
- at least **one calculated field, set or parameter**
- a story with at least **4 story points**

The goal of the task is not only to create visualizations, but also to demonstrate how the dataset can be used to better understand the company's supply chain. ~~Your work should help answer questions such as:~~

- Which products, customers or suppliers are most important for profitability?
- What role do transportation costs play in the overall order value?
- Where are delays or inefficiencies most visible?
- Etc.

Each team is **free to decide** what type of visualizations and dashboards to create, as long as the final solution provides meaningful insights for decision-making.



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- Visit the [Tableau Academic Program](#) page and select I'm a student. Click on **Get Tableau for Free**.
- Fill out the form using your academic email address
- **Verification:** Tableau will verify your application, and if approved, you will receive an email with instructions on how to download and activate the software
- **Download and install:** After receiving the email, follow the instructions to download and install Tableau Desktop and enter the license key you received.

Another solution is to download a 14-day trial version of Tableau.



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