QUALITY ASSURANCE OF C1

BUSINESS ANALYTICS SKILLS FOR THE FUTURE-PROOF SUPPLY CHAINS

Introduction

The *Advanced Using Spreadsheets to Analyze Logistics Data (C1)* textbook and accompanying teaching materials were developed for those interested in an in-depth use of spreadsheets for logistics data analysis. The publication and materials provide practical support for students, academic instructors, and professionals involved in analyzing logistics and business processes.

Textbook *Advanced using of spreadsheet to analyze logistics data (C1)*

The purpose of this report is to present the results of a quality assessment of the textbook *Advanced Use of Spreadsheets to Analyze Logistics Data* (C1), conducted by a group of students participating in the BAS4SC project. The analysis includes both quantitative results for each criterion and qualitative comments. Particular attention was given to evaluating the textbook's usefulness for teaching, its alignment with the curriculum, and its relevance to business needs.

Question: Are the chapters relevant to the title of the course?

Of the 22 responses, 72.7% of students rated this criterion as 5, 18.2% rated it as 4, and 9.1% rated it as 3. The average rating was 4.64, representing 92.8% of the maximum possible score.

Interpretation:

This high score indicates a very strong alignment between the textbook's content and the course title and objectives. The vast majority of participants found the chapters relevant to the course content and supportive of achieving the intended learning outcomes.

Comment:

The results suggest that the textbook is well-aligned with the course curriculum and meets student expectations. However, the few lower ratings may indicate a need for clarification in certain sections or a stronger connection to key course topics. It is recommended that chapters with lower ratings be reviewed to enhance their consistency with the main learning objectives.

Question: Is the textbook in the proper sequence of chapters?

Of the 22 responses, 77.3% of students gave this criterion a grade of 5, 9.1% gave it a grade of 4, 4.5% gave it a grade of 3, and 9.1% gave it a grade of 1. The average grade was 4.45, representing 89% of the maximum possible score.

Interpretation:

The 89% score indicates that most students consider the chapter order in the textbook to be logical and well-organized. The material is generally coherent and supports the gradual development of competencies.

Comment:

Although the overall grade is high, the presence of several low grades suggests that some sections of the textbook may be less consistently organized. It is recommended to review the chapter order to ensure smooth content progression and logical transitions between topics that meet student expectations.

Question: Are the pictures and tables in the textbook readable (resolutions)?

Of the 22 responses, 68.2% of students rated this criterion as 5, 22.7% rated it as 4, and 9.1% rated it as 3. The average rating was 4.59, corresponding to 91.8% of the maximum possible score.

Interpretation:

The 91.8% score indicates that most students rate the textbook's graphic quality very highly. The images and tables are generally legible, and their resolution allows for comfortable use of the materials during study.

Comment:

The results confirm the high level of graphic design in the textbook, which positively affects student experience. Individual lower ratings may suggest that the resolution of certain illustrations or tables is slightly lower in some sections, making details harder to read. It is recommended to review these visual elements and, if necessary, replace them with higher-quality versions to maintain consistency and overall aesthetics.

Question: How would you rate the quality of the book in terms of graphics?

Of the 22 responses, 59.1% of students rated the textbook's graphic quality as 5, 27.3% rated it as 4, 4.5% rated it as 3, and 9.1% rated it as 2. The average rating was 4.36, which corresponds to 87.2% of the maximum possible score.

Interpretation:

The 87.2% score indicates an overall high rating for the textbook's graphic quality. Most students found the graphic design aesthetically pleasing and supportive of the learning process. However, there were a few lower ratings, which may indicate minor flaws in the visual consistency or quality of some graphic elements.

Comment:

The textbook is perceived as visually appealing and functional, which contributes to a positive reception of the content. However, it is worth considering refining the graphic layout in some sections, for example, improving contrast, standardizing the icon style, or increasing the quality of the photos. It is recommended to conduct a graphic review of the materials to further enhance their aesthetics and readability.

Question: Does the book contain new content that expands your existing knowledge of business analytics?

Of the 22 responses, 68.2% of students rated this criterion as 5, 18.2% rated it as 4, and 13.6% rated it as 3. The average rating was 4.55, representing 91% of the maximum possible score.

Interpretation:

The 91% score indicates that the majority of students found the textbook valuable for expanding their knowledge of business analytics. The new content is generally perceived as useful and complements the participants' existing knowledge.

Comment:

The textbook effectively introduces new information and allows students to deepen their analytical skills. The few lower ratings may suggest that some of the material was less

novel for certain students or repeated previously known content. It is recommended to include additional practical examples in the textbook to maximize its educational value for all students.

Question: Is the content of the textbook useful for the business?

Spośród wszystkich 22 odpowiedzi, 68,2% studentów przyznało ocenę 5, 27,3% studentów oceniło przydatność treści podręcznika na 4, a 4,5% studentów wystawiło ocenę 3. Średnia ocen wyniosła 4,64, co odpowiada 92,8% maksymalnej możliwej wartości.

Interpretacja:

Wynik 92,8% wskazuje, że zdecydowana większość studentów postrzega treść podręcznika jako przydatną w kontekście zastosowań biznesowych. Materiały zawarte w książce wspierają rozwój praktycznych umiejętności, które mogą być wykorzystane w pracy zawodowej.

Comment:

Podręcznik spełnia oczekiwania studentów pod względem praktycznej wartości merytorycznej. Pojedyncze niższe oceny sugerują, że niektóre fragmenty mogły być mniej bezpośrednio związane z realnymi zastosowaniami biznesowymi. Rekomenduje się wzbogacenie podręcznika o dodatkowe case studies lub przykłady zastosowań omawianych narzędzi, aby jeszcze bardziej zwiększyć jego użyteczność.

Question: Is the language of the textbook tailored to the business needs?

Of the 22 responses, 68.2% of students rated the textbook's content as 5, 27.3% rated it as 4, and 4.5% rated it as 3. The average rating was 4.64, representing 92.8% of the maximum possible score.

Interpretation:

The 92.8% score indicates that the vast majority of students perceive the textbook's content as valuable for business applications. The materials support the development of practical skills that can be applied in professional work.

Comment:

The textbook meets students' expectations in terms of practical content. The few lower ratings suggest that some sections may have been less directly relevant to real-world business applications. It is recommended to enrich the textbook with additional case studies or examples of the tools discussed to further enhance its usefulness.

Question: How would you rate the book's text in terms of ease of understanding?

Of the 22 responses, 9.1% of students rated the text as 5, 13.6% rated it as 4, 27.3% rated it as 3, 27.3% rated it as 2, and 22.7% rated it as 1. The average rating was 2.95, corresponding to 59% of the maximum possible score.

Interpretation:

The 59% score indicates that the textbook's ease of understanding received a moderate rating. A significant number of students experienced difficulty comprehending the content, suggesting that the language or structure of the text may be too complex for some readers.

Comment:

The ratings indicate that the textbook could be improved in terms of clarity and accessibility. Some students may struggle with excessive technical terminology, overly complex sentences, or a lack of clear examples illustrating difficult concepts. It is recommended to simplify certain sections and provide explanations of industry-specific terms to enhance readability and comprehension for all students.

Question: How do you assess the quality of the textbook translation?

Of the 22 responses, 59.1% of students rated the translation as 5, 27.3% rated it as 4, 4.5% rated it as 3, and 9.1% rated it as 1. The average rating was 4.27, corresponding to 85.4% of the maximum possible score.

Interpretation:

The 85.4% score indicates that most students considered the textbook's translation quality to be high. The text is generally linguistically accurate and faithfully conveys the meaning of the original, allowing effective use of the material.

Comment:

The textbook translation is largely satisfactory and supports the learning process. The few lower ratings suggest that some sections may contain minor inaccuracies or ambiguities. It is recommended that these sections be reviewed and proofread to ensure consistent language and a smooth reading experience for all students..

Question: Can the content of the textbook be easily integrated with study program (of your courses)?

Of the 22 responses, 54.5% of students gave a grade of 5, 31.8% rated the textbook content as 4, and 13.6% rated it as 3. The average grade was 4.41, corresponding to 88.2% of the maximum possible score.

Interpretation:

The 88.2% score indicates that most students consider the textbook content well-aligned with the curriculum. The materials can be incorporated relatively easily into the course and support the achievement of its learning objectives.

Comment:

The textbook is largely compatible with the curriculum, facilitating integration of the content into coursework. The few lower grades may suggest that some chapters require additional connections to course content or more practical examples for students. It is recommended to review these sections and, if necessary, add comments or supplementary materials to further support integration with the course curriculum.

Question: Will you recommend this textbook to your colleagues?

Of the 22 responses, 77.3% of students rated the textbook as 5, 9.1% rated it as 4, and 13.6% rated it as 3. The average rating was 4.55, representing 91% of the maximum possible score.

Interpretation:

The 91% score indicates that the vast majority of students would recommend the textbook to their peers. This suggests that the book is perceived as valuable and useful for learning, both in terms of content and format.

Comment:

The textbook is highly regarded by students and largely meets expectations for learning usefulness. The few lower ratings may indicate sections requiring minor improvements, such as clearer language or more transparent examples. It is recommended to address these points to further enhance student satisfaction and fully support their learning process..

General comments

The textbook was very well-received by students. They emphasized that the book was interesting, readable, and well-prepared, and that its content introduced new and useful information and methods, including those related to forecasting. The textbook's content was perceived as clear and understandable, facilitating knowledge acquisition.

Students also appreciated the high quality of the lectures and the instructors' support, which further contributed to a positive course experience. The textbook was considered effective in supporting learning and enabling the easy acquisition of knowledge, with content that was both engaging and informative.

In summary, the textbook is well-aligned with the course curriculum, engaging in its content, and useful both for students and for practical applications in business.

Teaching materials *Advanced using of spreadsheet to analyze logistics data (C1)*

Question: Are the materials relevant to the title of the course?

Of the 22 responses, 77.3% of students rated the materials as 5, and 22.7% rated them as 4. The average rating was 4.77, representing 95.4% of the maximum possible score.

Interpretation:

A score of 95.4% indicates that the course materials are fully aligned with the course title and objectives. The vast majority of students found the content relevant, coherent, and supportive of the learning outcomes.

Comment:

The course materials are very well aligned with the curriculum and course topics. This high score reflects their strong substantive quality and practical usefulness. It is recommended to maintain this standard in future editions of the course and to further supplement the materials with up-to-date examples and case studies to ensure they remain fully relevant to student needs.

Question: Are the materials in the proper sequence?

Of the 22 responses, 68.2% of students rated the sequence of materials a 5, 18.2% rated the sequence of materials a 4, and 13.6% rated it a 3. The average rating was 4.55, representing 91% of the maximum possible score.

Interpretation:

A score of 91% indicates that most students consider the sequence of materials logical and well-organized. The materials support the gradual development of knowledge and skills in line with the course curriculum.

Comment:

The materials are generally well-organized and facilitate comprehension. Individual lower ratings suggest that some sections could be better thematically linked or arranged in a more natural sequence. It is recommended to review the sequence of selected modules and, where possible, make minor adjustments to improve the flow and coherence of the materials for all students.

Question: Are the topics of case studies suitable for the course title?

Of the 22 responses, 68.2% of students rated the case study topics as 5, 13.6% rated them as 4, 13.6% rated them as 3, and 4.5% rated them as 2. The average rating was 4.41, representing 88.2% of the maximum possible score.

Interpretation:

The 88.2% score indicates that most students consider the case study topics well-suited to the course title. The case studies effectively support the learning objectives and allow for practical application of the knowledge acquired.

Comment:

The case study topics are generally appropriate and relevant to the course curriculum, positively impacting content acquisition and the development of analytical skills. The few lower ratings may suggest that some topics could be more directly linked to the main course content. It is recommended to review these case studies and, if necessary, supplement them with more practical or up-to-date scenarios to enhance their learning value.

Question: How would you rate the quality of the materials in terms of graphics?

Of the 22 responses, 68.2% of students rated the graphic quality of the materials as 5, and 31.8% rated it as 4. The average rating was 4.68, representing 93.6% of the maximum possible score.

Interpretation:

The 93.6% score indicates that the course materials are highly rated in terms of graphic quality. The graphics, illustrations, and tables are clear, aesthetically pleasing, and support the learning process, facilitating knowledge acquisition.

Comment:

The materials demonstrate high visual quality, which positively impacts their reception and usability. The absence of ratings below 4 reflects the consistency and professionalism of the graphic design. It is recommended to maintain this standard and, where possible, further enhance the materials with engaging visualizations to increase student engagement.

Question: Are the pictures and tables in materials readable (resolutions)?

Of the 22 responses, 68.2% of students rated the readability of graphics and tables as 5, 13.6% rated them as 4, and 18.2% rated them as 3. The average rating was 4.41, corresponding to 88.2% of the maximum possible score.

Interpretation:

The 88.2% score indicates that most students find the illustrations and tables clear and useful for the learning process. The visual materials effectively support knowledge acquisition and facilitate understanding of the topics discussed.

Comment:

The graphics and tables are generally well-designed, positively impacting the learning experience. The few lower ratings may suggest that the resolution or readability could be improved in some areas. It is recommended to review these elements and enhance selected illustrations to ensure the materials are fully accessible to all students.

Question: Are the material files easily accessible?

Of the 22 responses, 68.2% of students rated the accessibility of the materials as 5, 13.6% rated them as 4, and 18.2% rated them as 3. The average rating was 4.41, corresponding to 88.2% of the maximum possible score.

Interpretation:

The 88.2% score indicates that most students find the materials readily accessible and easy to use. This supports efficient study and preparation for classes.

Comment:

The materials are generally well-accessible and easy to download or view. The few lower ratings may suggest that some students experienced difficulty with the location or format of the files. It is recommended to maintain a simple and consistent system for sharing materials..

Question: Are software/tools described in materials user friendly?

Of the 22 responses, 59.1% of students rated the software's usability as 5, 31.8% rated it as 4, and 9.1% rated it as 3. The average rating was 4.45, representing 89% of the maximum possible score.

Interpretation:

The 89% score indicates that most students found the software and tools described in the materials to be user-friendly. The tools are intuitive and support the learning process through easy practical application.

Comment:

The software and tools included in the materials are positively rated for usability, promoting effective knowledge acquisition and the development of practical skills. The few lower ratings may suggest that some functions or instructions were less intuitive for certain students. It is recommended to provide additional guidance for these functions to ensure that all students can fully utilize the tools described in the materials.

Question: Is the content of the materials and tasks clear?

Of the 22 responses, 59.1% of students rated the clarity of the materials as 5, 13.6% rated it as 4, 18.2% rated it as 3, and 9.1% rated it as 2. The average rating was 4.18, corresponding to 83.6% of the maximum possible score.

Interpretation:

The 83.6% score indicates that most students found the content of the materials and assignments clear and understandable. However, some students may have experienced difficulty fully comprehending certain sections or assignments.

Comment:

The materials and assignments are largely clear and support the learning process. The few lower ratings suggest that some sections could benefit from additional explanation or illustration. It is recommended to provide further guidance for more challenging sections to enhance comprehension for all students.

Question: How do you assess the quality of the materials translation?

Of the 22 responses, 68.2% of students rated the translation of the materials as 5, 18.2% rated it as 4, 9.1% rated it as 3, and 4.5% rated it as 2. The average rating was 4.50, representing 90% of the maximum possible score.

Interpretation:

The 90% score indicates that most students consider the translation of the materials to be of high quality. The text is generally linguistically accurate and faithfully reflects the original content, facilitating learning.

Comment:

The materials are largely accurately translated, supporting the learning process and ensuring ease of use. The few lower ratings may suggest that the translation in some sections is less precise or that certain terminology requires clarification. It is recommended to review these sections and, if necessary, revise them to ensure full linguistic consistency and a smooth reading experience for all students.

Question: Is the content of the materials useful for the business?

Of the 22 responses, 77.3% of students rated the materials as 5, 13.6% rated them as 4, and 9.1% rated them as 3. The average rating was 4.68, representing 93.6% of the maximum possible score.

Interpretation:

The 93.6% score indicates that the vast majority of students find the materials useful for business applications. The content supports the development of practical skills and can be directly applied in a professional environment.

Comment:

The materials are well-suited to business needs and effectively support the learning process. The few lower ratings may suggest that some sections could benefit from a more practical orientation or be illustrated with examples. It is recommended that future editions of the materials include additional practical examples of the applications of the concepts discussed to further enhance their educational value.

Question: Is the language of the materials tailored to the business needs?

Of the 22 responses, 72.7% of students rated the language of the materials as 5, 13.6% rated it as 4, and 13.6% rated it as 3. The average rating was 4.55, representing 91% of the maximum possible score.

Interpretation:

The 91% score indicates that most students consider the language of the materials appropriate for business purposes. The text is professional and supports the practical application of acquired knowledge in a professional environment.

Comment:

The materials are well-suited to the business context, facilitating knowledge acquisition and preparation for practical applications. The few lower ratings suggest that some sections could be simplified or that terminology could be clarified. It is recommended that future

editions emphasize consistent use of business terminology and include practical examples to enhance clarity and usability for all students.

Question: Do the materials contain new content that expands your current knowledge of business analytics?

Of the 22 responses, 45.5% of students rated the materials as 5, 45.5% rated them as 4, and 9.1% rated them as 3. The average rating was 4.36, corresponding to 87.2% of the maximum possible score.

Interpretation:

The 87.2% score indicates that most students find the materials valuable for expanding their knowledge. The new content largely introduces practical and theoretical information that complements students' existing competencies.

Comment:

The materials effectively introduce new information and support the development of analytical skills. The few lower ratings may suggest that some content was less novel for certain students or repeated previously known information. It is recommended to include additional examples to further enhance the educational value of the materials for all students.

Question: Will you recommend this materials to your colleagues?

Of the 22 responses, 59.1% of students rated the materials as 5, 22.7% rated them as 4, and 18.2% rated them as 3. The average rating was 4.41, representing 88.2% of the maximum possible score.

Interpretation:

The 88.2% score indicates that most students would be willing to recommend the materials to their peers. The materials are perceived as valuable and supportive of the learning process, although not all students considered them sufficient to warrant a recommendation.

Comment:

The materials are highly useful and well-aligned with the course curriculum, making them generally recommended by students. The few lower ratings may indicate areas that

require improvement – for example, greater clarity, updated content, or additional examples. Further refinement of the materials is recommended to increase their appeal and usefulness, which may result in even higher student recommendations.

Question: Are the content of the questions understandable?

Of the 22 responses, 68.2% of students rated the comprehensibility of the questions as 5, 18.2% rated them as 4, and 13.6% rated them as 3. The average rating was 4.55, corresponding to 91% of the maximum possible score.

Interpretation:

The 91% score indicates that most students find the questions clear and understandable. The questions effectively support the learning process and allow for transparent assessment of knowledge.

Comment:

The questions are generally clear and well-prepared, facilitating students' understanding and assimilation of the material. The few lower ratings may suggest that some questions could be more precise or further explained. It is recommended to introduce minor adjustments or illustrative examples to clarify more challenging questions and ensure full comprehension for all students.

Question: Will you recommend this materials to your colleagues?

Of the 22 responses, 63.6% of students rated the materials as 5, 31.8% rated them as 4, and 4.5% rated them as 3. The average rating was 4.59, representing 91.8% of the maximum possible score.

Interpretation:

The 91.8% score indicates that the vast majority of students would be willing to recommend the materials to their peers. The materials are perceived as valuable, practical, and supportive of the learning process, making recommendation natural.

Comment:

The materials are well-prepared and useful for learning, positively impacting students' willingness to recommend them. The single lower rating may suggest that some content could be improved in terms of clarity or additional practical examples. It is recommended to maintain the high standard of the materials and implement minor improvements to further increase student satisfaction and encourage recommendations.

General comments

The textbook was very well-received by students. They emphasized that the materials were well-prepared, clear, and presented in an accessible way, facilitating rapid learning. The content effectively expanded knowledge, including practical applications of tools such as Excel, which was particularly appreciated for its usefulness in professional work.

Students also valued the structure of the materials and the ready-made exercise models, which facilitated class activities and simulations, for example, in inventory management. As a result, the textbook supports the development of practical skills and prepares students to apply their knowledge in real-world business situations.

Overall, the textbook is perceived as valuable, well-developed, and useful, both in terms of content and practicality. The materials support effective learning, enhance business skills, and increase students' confidence in applying the tools they have learned in their professional lives.

Conclusions

Assessments indicate that the *Advanced Using Spreadsheets to Analyze Logistics Data (C1)* textbook is highly regarded by students for both its content and practical applicability. Students noted that the textbook's content is well-aligned with the course curriculum and consistent with its title, allowing for the logical and gradual development of knowledge and skills. The materials are generally clear, understandable, and organized in an appropriate sequence, facilitating the learning of new concepts.

The textbook is highly rated for its graphic quality and the readability of tables and illustrations, which further support the learning process. Students also appreciated the practical nature of the materials, including ready-made Excel models and application examples

that enable immediate practical use. As a result, the materials are perceived as very useful in a business context and effectively support the development of analytical skills.

The textbook's language was rated as professional and well-suited to business needs, facilitating comprehension and enabling the application of acquired knowledge in real-world professional situations. Students also highlighted the attractiveness and accessibility of the content, which introduces new methods and tools for logistics data analysis. It is worth noting that previously identified shortcomings and recommendations – such as improving text clarity, supplementing practical examples, and refining illustrations and tables – have been implemented. These enhancements have made the textbook even more accessible and functional, further increasing its usefulness in both academic and professional practice.

Overall, the *Advanced Using Spreadsheets to Analyze Logistics Data (C1)* textbook is perceived as a valuable, well-prepared, and functional educational resource. It supports effective knowledge acquisition, develops practical and analytical competencies, and prepares students to apply acquired skills in their professional careers. Its high substantive and practical quality ensures that most students would gladly recommend it to their peers, demonstrating its significant educational value and usefulness in academic work.