



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

QUALITY ASSURANCE OF STATISTICAL METHODS FOR LOGISTICS DATA ANALYSIS



Introduction

The *Statistical Methods for Logistics Data Analysis* (C3) textbook and its accompanying teaching materials were developed for those seeking an in-depth understanding of statistical methods applied to logistics data analysis. This publication provides comprehensive practical and substantive support for students in logistics and business programs, as well as for academic instructors and professionals involved in analyzing and optimizing supply chain processes.

The handbook and its accompanying materials provide practical support for students, academic instructors, and professionals engaged in the analysis of logistics and business processes.



Textbook *Statistical Methods for Logistics* Data Analysis (C3)

The purpose of this report is to present the results of a quality assessment of the textbook *Statistical Methods for Analyzing Logistics Data* (C3), conducted by a group of academic instructors. The analysis includes both quantitative results for each evaluation criterion and qualitative feedback provided by the students. Particular emphasis was placed on assessing 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 21 responses, 90.5% of students rated this criterion as 5, and 9.5% rated it as 4. The average rating was 4.90, representing 98% of the maximum possible score.

Interpretation:

The results indicate that the content of the chapters in the *Statistical Methods for Logistics Data Analysis* (C3) textbook is closely aligned with the course title and objectives. Students considered the chapters relevant to the course and felt they effectively supported the achievement of the intended learning outcomes.

Comment:

The textbook is well aligned with the course curriculum and meets student expectations in terms of content. The few lower ratings may suggest a need to clarify certain sections or further emphasize connections to key course topics.

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

Of the 21 responses, 76.2% of students rated this criterion as 5, and 23.8% rated it as 4. The average rating was 4.76, representing 95.2% of the maximum possible score.



Interpretation:

The results indicate that most students found the chapter order in the textbook logical and well-organized. The layout supports gradual learning and enables effective understanding of statistical topics in the context of logistics and supply chains.

Comment:

The textbook is generally well-structured and thematically coherent, facilitating student engagement with the material. Lower ratings suggest that some sections could benefit from clearer introductions or improved continuity. Adding brief introductions or cross-references between topics could enhance smooth transitions and support student comprehension.

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

Of the 21 responses, 81% of students rated this criterion as 5, 14.3% as 4, and 4.8% as 3. The average rating was 4.76, representing 95.2% of the maximum possible score.

Interpretation:

The results indicate that most students found the images and tables in the textbook clear and well-presented. The graphics effectively support content comprehension and facilitate the understanding of statistical material in the context of logistics.

Comment:

The graphics are generally clear and well-designed. Lower ratings suggest that some charts or tables may require minor adjustments, such as increasing contrast, improving axis labels, or enlarging font size. Implementing these adjustments would ensure that all illustrations and tables are fully intuitive and easy to read for all students..

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

Of the 21 responses, 81% of students rated this criterion as 5, and 19% rated it as 4. The average rating was 4.81, representing 96.2% of the maximum possible score.



Interpretation:

The results indicate that most students considered the graphic quality of the textbook to be very good. The graphics, charts, and illustrations are clear, aesthetically appealing, and effectively support the understanding of the statistical concepts presented.

Comment:

The textbook's graphic materials facilitate content comprehension and enhance data visualization, which is essential for learning statistical methods. Lower ratings suggest that some visual elements may require minor adjustments, such as increasing contrast, clarifying axes, or improving legends. Implementing these refinements will ensure that all graphics are fully legible and intuitive for students.

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

Of the 21 responses, 66.7% of students rated this criterion as 5, 28.6% as 4, and 4.8% as 3. The average rating was 4.62, representing 92.4% of the maximum possible score.

Interpretation:

The results indicate that the textbook significantly provides new information that broadens students' knowledge of business analytics and statistical methods used in logistics. The material introduces content that complements and expands upon the participants' existing knowledge.

Comment:

The textbook effectively introduces new topics and enhances students' analytical skills. Lower ratings suggest that some sections could benefit from deeper explanations or additional practical examples illustrating the application of discussed methods. It is recommended to supplement these sections with specific logistics analysis cases to increase the material's practical relevance.



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

Of the 21 responses, 81% of students rated this criterion as 5, and 19% as 4. The average rating was 4.81, representing 96.2% of the maximum possible score.

Interpretation:

The results indicate that the content of the *Statistical Methods for Logistics Data Analysis* (C3) textbook is considered useful in business practice. Students felt that the statistical methods and examples presented are applicable to real-world logistics processes and support data-driven decision-making.

Comment:

The textbook materials are valuable both in terms of content and practical applicability, enabling students to develop analytical skills necessary for professional work. Lower ratings suggest that some sections could benefit from additional practical examples demonstrating the application of the discussed methods. It is recommended to supplement the textbook with such examples to further illustrate the use of statistics in logistics data analysis..

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

Of the 21 responses, 66.7% of students rated this criterion as 5, and 33.3% rated it as 4. The average rating was 4.67, representing 93.4% of the maximum possible score.

Interpretation:

The results indicate that the language used in the textbook is largely relevant to business needs. The terminology and style of presentation facilitate understanding of the methods discussed and their application in logistics practice.

Comment:

The textbook uses language that is appropriate for the business and analytical context in most cases. Lower ratings suggest that some terminology or explanations could be clarified or simplified. It is recommended to include additional definitions of key terms or brief



explanatory notes so that all students can fully understand the material without needing to consult external sources.

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

Of the 21 responses, 61.9% of students rated this criterion as 5, 33.3% as 4, and 4.8% as 3. The average rating was 4.57, representing 91.4% of the maximum possible score.

Interpretation:

The results indicate that the textbook is generally clear and well-organized. Students appreciated the clarity of explanations and the logical structure, which facilitate the acquisition of theoretical knowledge and the application of statistical methods in logistics analyses. Some sections covering more advanced concepts, however, may have been challenging, suggesting that minor clarifications or additional illustrative examples could enhance understanding.

Comment:

The textbook presents the content in an accessible and structured manner in most cases. It is recommended to add brief explanations or practical examples in more complex sections to ensure all students can fully comprehend the material..

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

Of the 21 responses, 71.4% of students rated this criterion as 5, and 28.6% as 4. The average score was 4.71, representing 94.2% of the maximum possible score.

Interpretation:

The results indicate that the textbook translation was generally rated as good and, in most cases, allows students to understand the content in the target language. The terminology and translation style are appropriate for the academic level of the course and support knowledge acquisition. Some lower scores may indicate that certain sections could benefit from clarification or simplification to improve accessibility.



Comment:

The textbook translation is largely clear and enables effective use of the material. It is recommended to review sections with more complex vocabulary or technical terminology and make minor corrections. Additionally, including brief explanations of more challenging concepts would help ensure all students can fully understand the material..

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

Of the 21 responses, 71.4% of students rated this criterion as 5, and 28.6% as 4. The average rating was 4.71, representing 94.2% of the maximum possible score.

Interpretation:

The results indicate that the textbook's content can be easily integrated into the course curriculum. The materials are consistent with the course objectives and support the intended learning outcomes, enabling students to effectively apply statistical methods in the context of logistics.

Comment:

The textbook effectively supports the learning process and can be seamlessly incorporated into the course curriculum.

**Question: Will you recommend this textbook to your
colleagues?**

Of the 21 responses, 71.4% of students rated this criterion as 5, 23.8% as 4, and 4.8% as 3. The average rating was 4.67, representing 93.4% of the maximum possible score.

Interpretation:

The results indicate that most students would be willing to recommend the textbook to their peers. The material is perceived as valuable, supporting the development of both theoretical and practical knowledge and enabling the effective application of statistical methods in logistics and supply chain management.



Comment:

The textbook is highly rated for its usefulness and substantive value, confirming its effectiveness as a learning resource. Individual lower ratings suggest that some sections could be made more accessible or supplemented with additional practical examples. It is recommended to include brief explanations or real-world applications of the methods discussed to further enhance the textbook's practical value and appeal to all students.

General comments

It is worth noting that students did not provide responses to the question regarding general comments about the textbook, which limits the opportunity to gather additional qualitative insights into their experiences. The absence of such feedback hinders a comprehensive analysis of the textbook's strengths and potential areas for improvement. Consequently, the evaluation of the textbook relies solely on numerical scores for individual criteria, which may not fully capture the overall perception of the material by course participants.



Teaching materials *Statistical Methods for Logistics Data Analysis (C3)*

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

Of the 21 responses, 81% of students rated this criterion as 5, and 19% rated it as 4. The average rating was 4.81, representing 96.2% of the maximum possible score.

Interpretation:

The results indicate that the materials for the *Statistical Methods for Logistics Data Analysis (C3)* course are largely consistent with the course title and objectives. Students found the content relevant and supportive of achieving the intended learning outcomes in the application of statistical methods in logistics.

Comment:

The materials are well aligned with the course curriculum and meet student expectations in terms of content. Individual lower ratings may indicate a need for minor clarifications or for strengthening the connections between certain sections and key course topics. It is recommended that these sections be reviewed and supplemented as necessary to enhance the overall consistency of the materials with the course objectives.

Question: Are the materials in the proper sequence?

Of the 21 responses, 76.2% of students rated this criterion as 5, and 23.8% rated it as 4. The average rating was 4.76, representing 95.2% of the maximum possible score.

Interpretation:

The results indicate that most students found the course materials logical and well-organized. The content layout supports gradual learning, enabling effective comprehension of successive statistical concepts in the context of logistics.



Comment:

The materials are generally coherent and facilitate student engagement. Individual lower ratings suggest that some sections could be better structured to enhance continuity. It is recommended to include introductions or cross-references to ensure smooth transitions between topics.

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

Of the 21 responses, 76.2% of students rated this criterion as 5, 19% as 4, and 4.8% as 3. The average rating was 4.71, representing 94.2% of the maximum possible score.

Interpretation:

The results indicate that the case study topics in the *Statistical Methods for Logistics Data Analysis* (C3) course materials are largely relevant to the course title and objectives. Students found that the practical examples supported the learning of statistical methods and enabled their application in real-world logistics contexts.

Comment:

The case study topics are well-selected and support the development of practical knowledge. Individual lower ratings suggest that some cases may require additional explanation or a more detailed discussion of the context to fully illustrate the application of the methods. It is recommended to supplement these case studies with brief notes or commentary to facilitate student understanding and strengthen their connection to the course topics.

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

Of the 21 responses, 66.7% of students rated this criterion a 5, and 33.3% rated it a 4. The average rating was 4.67, representing 93.4% of the maximum possible score.



Interpretation:

The results indicate that the majority of students considered the graphic quality of the materials for the *Statistical Methods for Logistics Data Analysis* (C3) course to be very good. The graphics, tables, and illustrations effectively support the learning of the content and facilitate visualization of data and the statistical methods discussed in logistics.

Comment:

The graphics are generally clear and visually appealing, enhancing comprehension of the presented concepts. Individual lower ratings may suggest that some charts or illustrations could benefit from minor improvements, such as better contrast, clearer axis labels, or larger font sizes. It is recommended to implement these adjustments to ensure that all visualizations are fully intuitive and easily readable by all students.

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

Of the 21 responses, 85.7% of students rated this criterion a 5, and 14.3% rated it a 4. The average rating was 4.86, representing 97.2% of the maximum possible score.

Interpretation:

The results indicate that the graphics and tables included in the course materials are largely legible and of high quality and resolution. Students found them useful for understanding the content and for visualizing the statistical methods presented.

Comment:

The graphics and tables are fully accessible and effectively support the learning process. Individual lower ratings may indicate that minor adjustments could be beneficial, such as improving axis labels or enhancing contrast. Implementing these small adjustments will help ensure maximum readability and clarity of all visual materials for students.

Question: Are the material files easily accessible?

Of the 21 responses, 66.7% of students rated this criterion a 5, and 33.3% rated it a 4. The average rating was 4.67, representing 93.4% of the maximum possible score.



Interpretation:

The results indicate that most students found the course materials easily accessible and user-friendly. The files are organized in a way that allows for quick retrieval of necessary information and efficient use of course resources.

Comment:

The materials are generally well-prepared and accessible. Individual lower ratings may suggest minor improvements are needed in file organization or folder labeling. It is recommended to implement a consistent naming system to help students quickly locate and use the materials.

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

Of the 21 responses, 71.4% of students rated this criterion a 5, and 28.6% rated it a 4. The average rating was 4.71, representing 94.2% of the maximum possible score.

Interpretation:

The results indicate that most students found the software and tools described in the course materials to be user-friendly. These tools facilitate statistical analysis and support learning through an intuitive interface and clear instructions.

Comment:

The software and tools are generally easy to use, enhancing learning efficiency and enabling practical application of knowledge. Individual lower ratings may suggest that some sections could benefit from more detailed descriptions. It is recommended to include brief comments or examples of specific functions to ensure all students can fully utilize the tools.

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

Of the 21 responses, 85.7% of students rated this criterion a 5, 4.8% a 4, and 9.5% a 3. The average rating was 4.76, representing 95.2% of the maximum possible score.



Interpretation:

The results indicate that most students found the course materials and assignments clear and easy to understand. The materials effectively support the acquisition of theoretical knowledge and facilitate the practical application of statistical methods in the context of logistics.

Comment:

The materials and assignments are generally clear and logically structured, which helps students learn and complete practical exercises. Individual lower ratings suggest that some sections may require additional clarification or illustrative examples for more complex concepts. It is recommended to add brief explanations or step-by-step instructions for challenging assignments to enhance comprehension for all students.

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

Of the 21 responses, 57.1% of students rated this criterion a 5, and 42.9% rated it a 4. The average score was 4.57, representing 91.4% of the maximum possible score.

Interpretation:

The results indicate that the translation of the course materials was generally rated as good and, in most cases, supported understanding of the content. The terminology and translation style are appropriate for the academic level of the course, although individual lower ratings suggest that some sections may require clarification or simplification.

Comment:

The translation is largely clear and allows for effective use of the course materials. Minor corrections are recommended in sections where terminology is complex or explanations are insufficient, ensuring that all students can fully understand the material and apply it in statistical analyses.



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

Of the 21 responses, 71.4% of students rated this criterion a 5, 23.8% a 4, and 4.8% a 3. The average rating was 4.67, representing 93.4% of the maximum possible score.

Interpretation:

The results indicate that the materials for the *Statistical Methods for Logistics Data Analysis* (C3) course are generally perceived as useful in a business context. Students considered the statistical methods and examples presented to be applicable to real-world logistics processes, supporting data-driven decision-making.

Comment:

The materials are valuable both in terms of content and practical applicability. Individual lower ratings suggest that some sections could benefit from additional real-world business examples or practical scenarios. It is recommended to include such examples to enhance the practical relevance of the material and facilitate the application of knowledge in actual business contexts.

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

Of the 21 responses, 81% of students rated this criterion 5, 14.3% rated it 4, and 4.8% rated it 3. The average rating was 4.76, representing 95.2% of the maximum possible score.

Interpretation:

The results indicate that the language used in the course materials largely meets business needs. The terminology and presentation style support understanding of the statistical methods discussed and their application within logistics and supply chain contexts.

Comment:

The materials predominantly use language appropriate for the business and analytical context. Individual lower ratings suggest that some terminology or explanations may require additional clarification. It is recommended to provide brief definitions or explanations for more challenging terms to ensure that all students can fully comprehend the material.



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

Of the 21 responses, 61.9% of students rated this criterion 5, and 38.1% rated it 4. The average rating was 4.62, representing 92.4% of the maximum possible score.

Interpretation:

The results indicate that the course materials largely introduce new information that broadens students' knowledge of business analytics and statistical methods applied in logistics. Students appreciated the inclusion of new concepts and practical examples that complement their existing understanding.

Comment:

The materials effectively develop students' analytical skills and provide valuable practical content. Individual lower ratings suggest that some topics could benefit from more in-depth discussion or additional examples. It is recommended to supplement the materials with extended commentary or case illustrations to further demonstrate the application of the methods in practice.

Question: Will you recommend this materials to your colleagues?

Of the 21 responses, 71.4% of students rated this criterion 5, 19% rated it 4, and 9.5% rated it 3. The average rating was 4.62, representing 92.4% of the maximum possible score.

Interpretation:

The results indicate that most students would be willing to recommend the course materials to their peers. The materials are perceived as valuable, well-prepared, and supportive of developing both theoretical and practical knowledge in statistical methods applied to logistics and supply chains.

Comment:

The materials are generally well-rated for their usefulness and substantive value, confirming their effectiveness for learning. Individual lower ratings suggest that some sections may benefit from improved accessibility or additional practical examples. It is recommended



to supplement these sections to further enhance the materials' attractiveness and practical relevance for all students.

Question: Are the content of the questions understandable?

Of the 21 responses, 71.4% of students rated this criterion a 5, and 28.6% rated it a 4. The average rating was 4.71, representing 94.2% of the maximum possible score.

Interpretation:

The results indicate that the questions in the course materials are largely understandable to students. The wording of the questions allows for correct interpretation of the tasks and effectively tests both theoretical and practical knowledge of statistical methods applied in logistics.

Comment:

The questions are generally clear and logically formulated, supporting effective knowledge acquisition. Individual lower ratings suggest that some questions may benefit from clarification or the addition of brief context to make them more intuitive for all students. It is recommended that these adjustments be implemented to improve comprehension and facilitate independent work with the materials.

Question: Will you recommend this materials to your colleagues?

Of the 21 responses, 81% of students rated this criterion a 5, and 19% rated it a 4. The average rating was 4.81, representing 96.2% of the maximum possible score.

Interpretation:

The results indicate that the vast majority of students would be willing to recommend the *Statistical Methods for Logistics Data Analysis* (C3) course materials to their peers. The materials are perceived as valuable, well-prepared, and supportive of developing both theoretical and practical knowledge in statistical methods.



Comment:

The materials are highly rated for their usefulness and substantive value, confirming their effectiveness in learning. It is recommended to continue using the current structure while maintaining the clarity and accessibility of exercises and practical examples to ensure all students can fully benefit from the materials.

General comments

Students did not provide responses to the question regarding general comments on the teaching materials for the *Statistical Methods for Logistics Data Analysis* (C3) course. The absence of such feedback limits the opportunity to gather additional qualitative insights into students' experiences with the materials, their strengths, and potential areas for improvement. Consequently, the evaluation of the materials is based solely on numerical scores for individual criteria, which may not fully capture the overall student experience of the course.

Conclusions

The textbook and teaching materials for the *Statistical Methods for Logistics Data Analysis* (C3) course received very positive evaluations from students. The content is well-aligned with the course title and objectives, and the statistical methods presented support both the understanding of theoretical concepts and their practical application in logistics and supply chain management. Students highlighted the logical structure of the materials, the clarity of exercises, and the high graphic quality of illustrations, tables, and charts, which enhance data visualization and facilitate effective learning.

The teaching materials were also rated as highly useful from a business perspective. Practical examples, case studies, and descriptions of tools and software enable students to apply the methods learned in real-world logistics scenarios. The language of the materials is appropriate for both business and analytical contexts, and the translations are clear and accessible.

Students particularly valued the clarity and practical relevance of the questions and exercises. Overall, the materials are user-friendly, easy to integrate into the curriculum, and promote independent work and effective knowledge acquisition. Lower ratings were minimal and mainly suggested minor improvements, such as linking specific sections more closely to



course topics. Implementing these refinements would enhance the coherence and accessibility of the materials for all students, regardless of their prior knowledge.

In summary, the textbook and teaching materials represent a comprehensive, valuable, and practical resource that supports the achievement of course objectives, the development of students' analytical skills, and the application of statistical methods in logistics and business contexts.