

## Case 3: Employee Motivations and Engagement in the Skills and Competencies Development Program — Case Overview

### Case Summary:

Nexus Logistics Solutions is advancing its Strategic Analytics Initiative with a project focused on understanding employee motivations and engagement within the Skills and Competencies Development Program. This project will examine survey responses from 600 North American past training participants, aiming to uncover common themes in employee feedback and to group employees based on shared attitudes and motivations. Your task is to analyze employee responses to identify the key themes reflected in their feedback, organize employees into meaningful groups based on their responses, and explore any notable differences in these groups across locations.

### Materials:

- **Case 3 Memo from NLS**
- **Survey Questions**
- **Survey Response data (nls\_emp\_survey.csv)**

### Deliverables: due Tuesday, November 12 @ 11:59 PM ET

#### **One-page infographic (i.e., dashboard, poster) uploaded on Blackboard, with Appendix**

- Please follow the instructions on Blackboard for uploading your work

Your deliverable for this phase is a single-page dashboard or infographic summarizing your key findings. Since you will not present this information in person, your design should clearly communicate all major insights in an easy-to-read format. Consider the following elements as you design your dashboard:

- Infographic:
  - Your single-page infographic can be designed in any aspect ratio and dimensions of your choice, with a maximum size of 11 inches on any side and a minimum font size of 6 points for any element.
  - Prioritize the most important findings and use clear, communicative labels.
  - Arrange elements to guide the viewer's eye through the main themes, segments, and location insights logically. Place key findings or summaries at the top, with more detailed visuals or breakdowns below.
- Appendix:
  - The appendix can be a separate document (Word, PDF, Jupyter Notebook with Markdown, Excel file, etc).
  - Please include the essential outputs from your analysis (e.g., PCA loadings, cluster centers, statistical testing results)

- You don't need to include your code or every line of your output. Focus on the main outputs that informed your findings, making it clear how you arrived at your conclusions.
- You do not need to annotate the Appendix. Neatness is appreciated, such as making it reasonably easy to follow by clearly labeling key outputs (e.g., "PCA Loadings," "Cluster Centers", "Chi-squared test"). You do not need to invest extensive time in formatting or writing explanations.

## Learning Objectives and Assessment

### Case 3 Learning Objectives:

- Analytics Concepts and Skills:
  - Apply core tools to business solutions
    - Apply unsupervised machine learning methods to explore business problem
      - Perform principal components analysis and k-means clustering modeling and interpret and apply results to problem situation
  - Use descriptive statistics and relevant statistical testing techniques for given business scenario
- Experiential Concepts and Skills:
  - Use FACT to frame and communicate analytics proposals, methods, and results with business stakeholders
    - Focus on clarity and visual design to clearly convey complex insights in an accessible format for client stakeholders
    - Synthesize detailed analytical outputs (survey themes, employee segments, and regional insights) to present a focused, high-level overview, ensuring that key takeaways are accessible to viewer

### Gen AI Policy

- You may use ChatGPT or other AI tools to help you draft your slide deck or cover letter.
- On one slide in the Appendix of your slide deck, please briefly describe if you used Gen AI for any of your work (drafting language, brainstorming ideas, writing Python code, etc.). A few (1 to 4) bullet points is sufficient.

### Grading

- Your work will be graded according to the rubric below (also posted within the assignment)

	Needs Improvement	Partially Meets Expectations	Meets Expectations	Exceeds Expectations
<b>Framing (40 points)</b>	<b>16</b>	<b>24</b>	<b>32</b>	<b>40</b>
Focus on managerial insight	8 Information content good, but insight is lacking	12 One or two nice insights, but could be developed further	16 Solid managerial insights	20 Well-developed managerial insights main focus
Insight links across analyses	8 Provide no meaningful linkage across analyses	12 Infographic does some but not enough linking across slides	16 Infographic effectively links across analyses	20 Infographic tells clear, comprehensive story start to finish. <b>Tied to earlier analysis for client</b>
<b>Analysis (40 points)</b>	<b>16</b>	<b>24</b>	<b>32</b>	<b>40</b>
PCA Analysis	4 PCA missing from analysis	6 PCA specification and estimation performed, but with major errors or incomplete.	8 PCA specification and estimation performed with one or two minor errors.	10 PCA specification and estimation performed correctly.
Cluster Analysis	4 k-means missing from analysis	6 K-means specification and estimation performed, but with major errors or incomplete.	8 K-means specification and estimation performed with one or two minor errors.	10 K-means cluster analysis specification and estimation performed correctly.
Appropriate use & correct calculation of statistics	4 Statistics missing from analysis.	6 Missing key statistics to support analysis. Many incorrect calculations or applications of techniques.	8 Good use of statistics. A few minor errors or omissions.	10 Statistical tools used appropriately and correctly throughout analysis
Data wrangling & output analysis	4 Output analysis missing from analysis	6 Model input data and model output analysis not applicable to problem scenario	8 Model input data and model output analysis applied to business problem scenario with one or two minor errors	10 Model input data and model output analysis applied expertly to business problem scenario
<b>Communication (20 points)</b>	<b>8</b>	<b>12</b>	<b>16</b>	<b>20</b>
Communication - Presentation Skills: Clarity in infographic; content and style appropriate for business communication	2	3	4	5
Communication - Audience Focus: Audience preparation, Appropriate complexity and technical detail for audience; Concise wording	2	3	4	5
Communication - Visuals: Design of visualizations; Use of titles, chart and graph labels and captions; Use of space/clutter	2	3	4	5
Communication - Organization: Overall design of infographic, visual hierarchy and structure	2	3	4	5
<b>TOTAL</b>	<b>40</b>	<b>60</b>	<b>80</b>	<b>100</b>