

**Department of MBA**

**Details of Lesson**

**Plan**

S.No.	Particulars	Details
1.	Course Name	Business Statistics and Research Methods
2.	Course Code	MBA-106
3.	Academic Year	2024-25
4.	Semester	5th
5.	Number of Lesson plans	48
6.	Faculty Assigned	Dr Rakesh Sharma



Faculty Signature



<b>Lesson Plan No. 1</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Arithmetic Mean</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ol style="list-style-type: none"> <li>Understand the concept of the arithmetic mean.</li> <li>Learn how to calculate the arithmetic mean for different sets of data.</li> <li>Apply the arithmetic mean in various real-life situations.</li> </ol>
<b>Teaching Aids (if any)</b>	<ol style="list-style-type: none"> <li>Power point presentation</li> </ol>
<b>Teaching Development</b>	<ol style="list-style-type: none"> <li><b>Introduction</b> (5 minutes)           <ul style="list-style-type: none"> <li>Discuss the definition of the arithmetic mean.</li> <li>Explain the significance of the arithmetic mean in summarizing data.</li> <li>Provide examples of where the arithmetic mean is used in real life (e.g., average grades, average income).</li> </ul> </li> <li><b>Development</b> (30 minutes)           <ul style="list-style-type: none"> <li>Definition and Formula</li> <li>Introduce the formula for the arithmetic mean</li> <li>Explain each component of the formula (sum of data points and number of data points).</li> <li>Calculation Steps</li> <li>Demonstrate how to calculate the arithmetic mean with a simple dataset.</li> <li>Provide step-by-step instructions for calculating the arithmetic mean.</li> <li>Examples and Applications</li> <li>Solve a few examples with different types of data (e.g., discrete data, continuous data).</li> <li>Discuss the implications of the arithmetic mean in real-world scenarios.</li> <li>Exercise (5 minutes)</li> <li>Summarizing</li> </ul> </li> </ol>
<b>Closure</b>	<ol style="list-style-type: none"> <li>Summarize the Lesson Learning Outcomes and get affirmation from students on these. Suggested Reading <a href="https://www.investopedia.com/terms/a/arithmeticmean.asp">https://www.investopedia.com/terms/a/arithmeticmean.asp</a></li> <li>Homework           <ul style="list-style-type: none"> <li>Solve some numerical problems related to mean</li> </ul> </li> <li>Spend 5 minutes to wrap up and consolidate the learnings</li> </ol>
<b>Evaluation</b>	<ol style="list-style-type: none"> <li>Reflective Questions (What, Why, Who?). Allow students to answer and discuss. Define the arithmetic mean.</li> </ol>



	<p>Calculate the arithmetic mean of the following dataset: 5, 8, 12, 15, 20.</p> <p>Provide one real-life example where the arithmetic mean is used and explain its significance.</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>
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<b>Lesson Plan No. 2</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Median</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>d. Understand the concept of the median.</li> <li>e. Learn how to calculate the median for different sets of data.</li> <li>f. Recognize the importance of the median in data analysis.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>b. Power point presentation</li> </ul>
<b>Teaching Development</b>	<ul style="list-style-type: none"> <li>3. <b>Introduction</b> (5 minutes) <ul style="list-style-type: none"> <li>- Define the median and its significance.</li> <li>- Explain the situations where the median is a better measure of central tendency than the arithmetic mean.</li> <li>- Provide real-life examples of the median (e.g., median household income).</li> </ul> </li> <li>4. <b>Development</b> (30 minutes) <ul style="list-style-type: none"> <li>- Definition and Calculation</li> <li>- Define the median for both odd and even datasets.</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>- Explain how to find the median in a sorted dataset.</li> <li>- Calculation Steps</li> <li>- Demonstrate how to calculate the median with simple datasets.</li> <li>- Provide step-by-step instructions for finding the median.</li> <li>- Examples and Applications</li> <li>- Solve examples with different types of data.</li> <li>- Discuss the implications of the median in real-world scenarios.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>4. Summarize the Lesson Learning Outcomes and get affirmation from students on these. Suggested Reading <a href="https://www.cuemath.com/data/median/">https://www.cuemath.com/data/median/</a></p> <p>5. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>6. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>2. Reflective Questions (What, Why, Who?). Allow students to answer and discuss. Define the median. Calculate the median of the following dataset: 3, 5, 7, 9, 11, 13. Why is the median often used in reporting household income? Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 3</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Mode</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>g. Understand the concept of the mode.</li> <li>h. Learn how to identify the mode in a dataset.</li> <li>i. Recognize the importance of the mode in data analysis.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>c. Power point presentation</li> <li>d. White Board and Marker</li> </ul>
<b>Teaching Development</b>	<p>5. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define the mode and its significance.</li> <li>- Explain the situations where the mode is a useful measure of central tendency.</li> <li>- Provide real-life examples of the mode (e.g., most common shoe size).</li> </ul> <p>6. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Definition and Identification</li> <li>- Define the mode and explain how to find it in a dataset.</li> <li>- Discuss the possibility of having no mode, one mode, or multiple modes.</li> <li>- Calculation Steps</li> </ul>



	<ul style="list-style-type: none"> <li>- Demonstrate how to identify the mode with simple datasets.</li> <li>- Provide step-by-step instructions for finding the mode.</li> <li>- Examples and Applications</li> <li>- Solve examples with different types of data.</li> <li>- Discuss the implications of the mode in real-world scenarios.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>7. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading  <a href="https://www.investopedia.com/terms/m/mode.asp">https://www.investopedia.com/terms/m/mode.asp</a></p> <p>8. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>9. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>3. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>Define the mode.</p> <p>Identify the mode in the following dataset: 2, 4, 4, 6, 8, 8, 10.</p> <p>In what situations is the mode more useful than the mean or median?</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 4</b>	<b>Course Name: Business Statistics and Research Methods</b>	<b>Course No.: MBA-106</b>
	<b>Topic: Measures of Dispersion: Standard Deviation</b>	

<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>j. Understand the concept of standard deviation.</li> <li>k. Learn how to calculate the standard deviation for a dataset.</li> <li>l. Recognize the importance of standard deviation in data analysis.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>e. Power point presentation</li> <li>f. White Board and Marker</li> </ul>
<b>Teaching Development</b>	<p>7. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define standard deviation and its significance.</li> <li>- Explain why standard deviation is used to measure the spread of data.</li> <li>- Provide real-life examples where standard deviation is important (e.g., stock market)</li> </ul> <p>8. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Definition and Formula</li> <li>- Introduce the formula for standard deviation</li> <li>- Explain each component of the formula.</li> <li>- Calculation Steps</li> </ul>



	<ul style="list-style-type: none"> <li>- Demonstrate how to calculate standard deviation with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculation.</li> <li>- Examples and Applications</li> <li>- Solve examples with different types of data.</li> <li>- Discuss the implications of standard deviation in real-world scenarios.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>10. Summarize the Lesson Learning Outcomes and get affirmation from students on these. Suggested Reading <a href="https://www.geeksforgeeks.org/measures-of-dispersion/">https://www.geeksforgeeks.org/measures-of-dispersion/</a></p> <p>11. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>12. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>4. Reflective Questions (What, Why, Who?). Allow students to answer and discuss. Define standard deviation. Calculate the standard deviation of the following dataset: 4, 8, 6, 5, 3. Why is standard deviation important in data analysis? Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 5</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Coefficient of Variation</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>m. Understand the concept of the coefficient of variation.</li> <li>n. Learn how to calculate the coefficient of variation for different datasets.</li> <li>o. Recognize the importance of the coefficient of variation in comparing data variability.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>g. Power point presentation</li> <li>h. White Board and Marker</li> </ul>
<b>Teaching Development</b>	<p>9. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define the coefficient of variation and its significance.</li> <li>- Explain why the coefficient of variation is used to compare the spread of data relative to the mean.</li> <li>- Provide real-life examples of the coefficient of variation (e.g., comparing investment risks).</li> </ul> <p>10. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Definition and Formula (10 minutes)</li> </ul>



	<ul style="list-style-type: none"> <li>- Introduce the formula for the coefficient of variation</li> <li>- Explain each component of the formula.</li> <li>- Calculation Steps</li> <li>- Demonstrate how to calculate the coefficient of variation with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculation.</li> <li>- Examples and Applications</li> <li>- Solve examples with different types of data.</li> <li>- Discuss the implications of the coefficient of variation in real-world scenarios.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>13. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading  <a href="https://www.investopedia.com/terms/c/coefficientofvariation.asp">https://www.investopedia.com/terms/c/coefficientofvariation.asp</a></p> <p>14. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>15. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>5. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>Define the coefficient of variation.</p> <p>Calculate the coefficient of variation for the following dataset: 4, 8, 6, 5, 3 (Assume the mean is 5.2 and the standard deviation is 1.72).</p> <p>Why is the coefficient of variation useful in comparing different datasets?</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 6</b>	<b>Course Name: Business Statistics and Research Methods</b>	<b>Course No.: MBA-106</b>
	<b>Topic: Skewness</b>	

<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>p. Understand the concept of skewness.</li> <li>q. Learn how to identify and calculate skewness for different datasets.</li> <li>r. Recognize the importance of skewness in data analysis.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>i. Power point presentation</li> <li>j. White Board and Marker</li> </ul>
<b>Teaching Development</b>	<p>11. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define skewness and its significance.</li> <li>- Explain why skewness is used to describe the asymmetry of data.</li> <li>- Provide real-life examples of skewness (e.g., income distribution).</li> </ul>



	<p><b>12. Development (30 minutes)</b></p> <ul style="list-style-type: none"> <li>- Definition and Calculation</li> <li>- Define skewness and explain how to identify it in a dataset.</li> <li>- Discuss positive, negative, and zero skewness.</li> <li>- Calculation Steps</li> <li>- Demonstrate how to calculate skewness with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculation.</li> <li>- Examples and Applications</li> <li>- Solve examples with different types of data.</li> <li>- Discuss the implications of skewness in real-world scenarios.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>16. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading  <a href="https://www.geeksforgeeks.org/skewness-measures-and-interpretation/">https://www.geeksforgeeks.org/skewness-measures-and-interpretation/</a></p> <p>17. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>18. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>6. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>Define skewness.</p> <p>Calculate the skewness of the following dataset: 1, 2, 2, 3, 4, 5, 6.</p> <p>Explain the significance of positive and negative skewness in data analysis.</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 7</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Kurtosis</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>s. Understand the concept of kurtosis.</li> <li>t. Learn how to identify and calculate kurtosis for different datasets.</li> <li>u. Recognize the importance of kurtosis in data analysis.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>k. Power point presentation</li> <li>l. White Board and Marker</li> </ul>
<b>Teaching Development</b>	<p><b>13. Introduction (5 minutes)</b></p> <ul style="list-style-type: none"> <li>- Define kurtosis and its significance.</li> <li>- Explain why kurtosis is used to describe the tails and peaks of data distribution.</li> <li>- Provide real-life examples of kurtosis (e.g., financial returns).</li> </ul>



	<p><b>14. Development (30 minutes)</b></p> <ul style="list-style-type: none"> <li>- Definition and Calculation</li> <li>- Define kurtosis and explain how to identify it in a dataset.</li> <li>- Discuss positive, negative, and zero kurtosis.</li> <li>- Calculation Steps</li> <li>- Demonstrate how to calculate kurtosis with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculation.</li> <li>- Examples and Applications</li> <li>- Solve examples with different types of data.</li> <li>- Discuss the implications of kurtosis in real-world scenarios.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>19. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading  <a href="https://www.scribbr.com/statistics/kurtosis/">https://www.scribbr.com/statistics/kurtosis/</a></p> <p>20. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>21. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>7. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>Define kurtosis.</p> <p>Calculate the kurtosis of the following dataset: 1, 2, 2, 3, 4, 5, 6 (Assume the mean is 3 and the standard deviation is 1.7).</p> <p>Explain the significance of positive and negative kurtosis in data analysis.</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 8</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Combined Measures - Mean and Standard Deviation</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>v. Understand how to use both mean and standard deviation to describe a dataset.</li> <li>w. Learn the importance of combining these measures for a comprehensive data analysis.</li> <li>x. Apply these measures in various real-life situations.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>m. Power point presentation</li> <li>n. White Board and Marker</li> </ul>
<b>Teaching Development</b>	<p><b>15. Introduction (5 minutes)</b></p> <ul style="list-style-type: none"> <li>- Discuss the definitions of mean and standard deviation.</li> </ul>



	<ul style="list-style-type: none"> <li>- Explain why using both measures together provides a more complete picture of data.</li> <li>- Provide real-life examples (e.g., comparing student grades).</li> </ul> <b>16. Development (30 minutes)</b> <ul style="list-style-type: none"> <li>- Definitions and Formulas</li> <li>- Review the formulas for mean and standard deviation.</li> <li>- Explain each component of the formulas.</li> <li>- Calculation Steps</li> <li>- Demonstrate how to calculate mean and standard deviation with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculations.</li> <li>- Examples and Applications</li> <li>- Solve examples with different types of data.</li> <li>- Discuss the implications of using both measures in real-world scenarios.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>22. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading  <a href="https://www.geeksforgeeks.org/combined-standard-deviation-meaning-formula-and-example/">https://www.geeksforgeeks.org/combined-standard-deviation-meaning-formula-and-example/</a></p> <p>23. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>24. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>8. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>Why is it important to use both mean and standard deviation in data analysis?</p> <p>Calculate the mean and standard deviation of the following dataset: 5, 8, 12, 15, 20.</p> <p>Provide an example where combining mean and standard deviation is useful.</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 9</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Combined Measures - Median and Mode</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>y. Understand how to use both median and mode to describe a dataset.</li> </ul>
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	<p>z. Learn the importance of combining these measures for a comprehensive data analysis.</p> <p>aa. Apply these measures in various real-life situations.</p>
<b>Teaching Aids (if any)</b>	<p>o. Power point presentation</p> <p>p. White Board and Marker</p>
<b>Teaching Development</b>	<p>17. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Discuss the definitions of median and mode.</li> <li>- Explain why using both measures together provide a more complete picture of data.</li> <li>- Provide real-life examples (e.g., most common household sizes).</li> </ul> <p>18. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Definitions and Calculations</li> <li>- Review the definitions and calculation steps for median and mode.</li> <li>- Explain each component of the calculations.</li> <li>- Calculation Steps Demonstrate how to calculate median and mode with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculations.</li> <li>- Examples and Applications</li> <li>- Solve examples with different types of data.</li> <li>- Discuss the implications of using both measures in real-world scenarios.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>25. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading</p> <p><a href="https://www.britannica.com/science/mean-median-and-mode">https://www.britannica.com/science/mean-median-and-mode</a></p> <p>26. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>27. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>9. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>Why is it important to use both median and mode in data analysis?</p> <p>Calculate the median and mode of the following dataset: 1, 2, 2, 3, 4, 4, 4, 5, 6.</p> <p>Provide an example where combining median and mode is useful.</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 10</b>	<b>Course Name: Business Statistics and Research Methods</b>	<b>Course No.: MBA-106</b>
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	<b>Topic: Summary and Application of All Measures</b>	
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<b>Objectives</b>	At the end of the lesson the student shall be able to: bb. Review the concepts of mean, median, mode, standard deviation, coefficient of variation, skewness, and kurtosis. cc. Learn how to choose appropriate measures for different datasets. dd. Apply these measures comprehensively in various real-life situations.
<b>Teaching Aids (if any)</b>	q. Power point presentation r. White Board and Marker
<b>Teaching Development</b>	<p>19. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Summarize the key points of all the measures discussed.</li> <li>- Explain the importance of understanding all measures for comprehensive data analysis.</li> <li>- Provide real-life examples (e.g., analyzing survey data).</li> </ul> <p>20. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Review and Comparison</li> <li>- Review definitions, formulas, and calculations for all measures.</li> <li>- Compare and contrast the uses of each measure.</li> <li>- Choosing Appropriate Measures</li> <li>- Discuss guidelines for choosing the most appropriate measure(s) based on the data type and analysis needs.</li> <li>- Provide examples of scenarios where different measures are most useful.</li> <li>- Comprehensive Application</li> <li>- Solve a comprehensive example that requires the use of multiple measures.</li> <li>- Discuss the implications and insights gained from using multiple measures.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	28. Summarize the Lesson Learning Outcomes and get affirmation from students on these. Suggested Reading <a href="https://byjus.com/maths/central-tendency/">https://byjus.com/maths/central-tendency/</a> 29. Homework <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> 30. Spend 5 minutes to wrap up and consolidate the learnings
<b>Evaluation</b>	10. Reflective Questions (What, Why, Who?). Allow students to answer and discuss. Why is it important to understand and use multiple measures in data analysis?



	<p>Provide an example where using mean, median, and standard deviation together provides a more comprehensive understanding of the data.</p> <p>Explain the significance of choosing appropriate measures based on data type and analysis needs.</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>
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<b>Lesson Plan No. 11</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Correlation and Karl Pearson Coefficient of Correlation</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: ee. Understand the concept of correlation. ff. Learn about Karl Pearson's coefficient of correlation. gg. Calculate and interpret the Pearson correlation coefficient.
<b>Teaching Aids (if any)</b>	s. Power point presentation t. White Board and Marker
<b>Teaching Development</b>	<p>21. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define correlation and its importance in statistics.</li> <li>- Discuss different types of correlation (positive, negative, and zero).</li> <li>- Introduce Karl Pearson's coefficient of correlation and its significance.</li> </ul> <p>22. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Meaning and Concept</li> <li>- Define Karl Pearson's coefficient of correlation.</li> <li>- Explain the formula and notation (<math>r</math>).</li> <li>- Calculation Steps</li> <li>- Demonstrate how to calculate Pearson's correlation coefficient with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculation.</li> <li>- Interpretation</li> <li>- Discuss how to interpret the value of <math>r</math>.</li> <li>- Provide examples of different correlation values and their meanings.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>31. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading  <a href="https://ebooks.inflibnet.ac.in/mgmt15/chapter/ccorrelation-karl-pearsons-coefficient-of-correlation-spearman-rank-correlation-ar/">https://ebooks.inflibnet.ac.in/mgmt15/chapter/ccorrelation-karl-pearsons-coefficient-of-correlation-spearman-rank-correlation-ar/</a></p> <p>32. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul>



	33. Spend 5 minutes to wrap up and consolidate the learnings
<b>Evaluation</b>	<p>11. Reflective Questions (What, Why, Who?). Allow students to answer and discuss. Define Karl Pearson's coefficient of correlation. Calculate the Pearson correlation coefficient for the following dataset (x: 1, 2, 3, 4, 5; y: 2, 4, 6, 8, 10). What does an r value of 0.85 indicate about the relationship between two variables? Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 12</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Spearman's Rank Correlation Method</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>hh. Understand the concept of rank correlation.</li> <li>ii. Learn about Spearman's rank correlation method.</li> <li>jj. Calculate and interpret Spearman's rank correlation coefficient.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>u. Power point presentation</li> <li>v. White Board and Marker</li> </ul>
<b>Teaching Development</b>	<p>23. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define rank correlation and its importance.</li> <li>- Discuss the differences between Pearson and Spearman correlation methods.</li> <li>- Introduce Spearman's rank correlation method and its significance.</li> </ul> <p>24. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Meaning and Concept</li> <li>- Define Spearman's rank correlation coefficient.</li> <li>- Explain the formula and notation (<math>\rho</math> or <math>r_s</math>).</li> <li>- Calculation Steps</li> <li>- Demonstrate how to calculate Spearman's rank correlation coefficient with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculation.</li> <li>- Interpretation</li> <li>- Discuss how to interpret the value of <math>r_s</math>.</li> </ul>



	<ul style="list-style-type: none"> <li>- Provide examples of different rank correlation values and their meanings.</li> <li>- Provide examples of different correlation values and their meanings.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>34. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading  <a href="https://geographyfieldwork.com/SpearmanRank.htm">https://geographyfieldwork.com/SpearmanRank.htm</a></p> <p>35. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>36. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>12. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>Define Spearman's rank correlation coefficient.</p> <p>Calculate the Spearman rank correlation coefficient for the following dataset: (x: 1, 2, 3, 4, 5; y: 5, 6, 7, 8, 7).</p> <p>What does an <math>r_s</math> value of -0.5 indicate about the relationship between two variables?</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 13</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Simple Linear Regression Model</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>kk. Understand the concept of simple linear regression.</li> <li>ll. Learn how to create and interpret a simple linear regression model.</li> <li>mm. Apply the simple linear regression model to real-life data.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>w. Power point presentation</li> <li>x. White Board and Marker</li> </ul>
<b>Teaching Development</b>	<p>25. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define regression and its importance in statistics.</li> <li>- Discuss the difference between correlation and regression.</li> <li>- Introduce the simple linear regression model and its significance.</li> </ul> <p>26. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Meaning and Concept</li> <li>- Define the simple linear regression model.</li> <li>- Explain the formula and components (<math>y = mx + b</math>).</li> <li>- Calculation Steps</li> </ul>



	<ul style="list-style-type: none"> <li>- Demonstrate how to create a simple linear regression model with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculation.</li> <li>- Interpretation and Application</li> <li>- Discuss how to interpret the slope and intercept.</li> <li>- Provide examples of real-life applications of simple linear regression.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>37. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading  <a href="https://online.stat.psu.edu/stat462/node/91/">https://online.stat.psu.edu/stat462/node/91/</a></p> <p>38. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>39. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>13. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>Define a simple linear regression model.</p> <p>Calculate the slope and intercept for the following dataset: (x: 1, 2, 3, 4, 5; y: 2, 4, 5, 4, 5).</p> <p>What does the slope represent in a simple linear regression model?</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 14</b>	<b>Course Name: Business Statistics and Research Methods</b>	<b>Course No.: MBA-106</b>
	<b>Topic: Regression Coefficients</b>	

<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>nn. Understand the concept of regression coefficients.</li> <li>oo. Learn how to calculate and interpret regression coefficients.</li> <li>pp. Apply regression coefficients to real-life data.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>y. Power point presentation</li> <li>z. White Board and Marker</li> </ul>
<b>Teaching Development</b>	<p>27. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define regression coefficients and their importance in regression analysis.</li> </ul>



	<ul style="list-style-type: none"> <li>- Discuss the role of regression coefficients in predicting the dependent variable.</li> <li>- Introduce the process of calculating regression coefficients.</li> </ul> <b>28. Development (30 minutes)</b> <ul style="list-style-type: none"> <li>- Meaning and Concept</li> <li>- Define regression coefficients (slope and intercept).</li> <li>- Explain the formula and notation for calculating regression coefficients.</li> <li>- Calculation Steps</li> <li>- Demonstrate how to calculate regression coefficients with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculation.</li> <li>- Interpretation and Application</li> <li>- Discuss how to interpret the slope and intercept.</li> <li>- Provide examples of real-life applications of regression coefficients.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>40. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading  <a href="https://www.cuemath.com/data/regression-coefficients/">https://www.cuemath.com/data/regression-coefficients/</a></p> <p>41. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>42. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>14. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>Define regression coefficients.</p> <p>Calculate the regression coefficients for the following dataset: (x: 1, 2, 3, 4, 5; y: 2, 4, 5, 4, 5).</p> <p>What does the intercept represent in a regression model?</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 15</b>	<b>Course Name: Business Statistics and Research Methods</b>	<b>Course No.: MBA-106</b>
	<b>Topic: Regression Equations</b>	

<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>qq. Understand the concept of regression equations.</li> <li>rr. Learn how to construct and interpret regression equations.</li> <li>ss. Apply regression equations to real-life data.</li> </ul>
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<b>Teaching Aids (if any)</b>	aa. Power point presentation bb. White Board and Marker
<b>Teaching Development</b>	<p>29. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define regression equations and their importance in regression analysis.</li> <li>- Discuss the role of regression equations in predicting the dependent variable.</li> <li>- Introduce the process of constructing regression equations.</li> </ul> <p>30. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Meaning and Concept</li> <li>- Define regression equations.</li> <li>- Explain the formula and notation for constructing regression equations.</li> <li>- Calculation Steps</li> <li>- Demonstrate how to construct regression equations with a simple dataset.</li> <li>- Provide step-by-step instructions for the construction.</li> <li>- Interpretation and Application</li> <li>- Discuss how to interpret the regression equation.</li> <li>- Provide examples of real-life applications of regression equations.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>43. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading  <a href="https://byjus.com/maths/linear-regression/">https://byjus.com/maths/linear-regression/</a></p> <p>44. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>45. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>15. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>Define regression equations.</p> <p>Construct the regression equation for the following dataset: (x: 1, 2, 3, 4, 5; y: 2, 4, 5, 4, 5).</p> <p>What does the regression equation represent in a regression model?</p> <p>Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 16</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Standard Error of Estimate</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: tt. Understand the concept of the standard error of estimate. uu. Learn how to calculate and interpret the standard error of estimate. vv. Apply the standard error of estimate to real-life data.
<b>Teaching Aids (if any)</b>	cc. Power point presentation dd. White Board and Marker
<b>Teaching Development</b>	<p>31. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define the standard error of estimate and its importance in regression analysis.</li> <li>- Discuss the role of the standard error of estimate in measuring the accuracy of predictions.</li> <li>- Introduce the process of calculating the standard error of estimate.</li> </ul> <p>32. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Meaning and Concept</li> <li>- Define the standard error of estimate.</li> <li>- Explain the formula and notation for calculating the standard error of estimate.</li> <li>- Calculation Steps</li> <li>- Demonstrate how to calculate the standard error of estimate with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculation.</li> <li>- Interpretation and Application</li> <li>- Discuss how to interpret the standard error of estimate.</li> <li>- Provide examples of real-life applications of the standard error of estimate.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>46. Summarize the Lesson Learning Outcomes and get affirmation from students on these. Suggested Reading <a href="https://onlinestatbook.com/2/regression/accuracy.html">https://onlinestatbook.com/2/regression/accuracy.html</a></p> <p>47. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>48. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>16. Reflective Questions (What, Why, Who?). Allow students to answer and discuss. Define the standard error of estimate. Calculate the standard error of estimate for the following dataset: (x: 1, 2, 3, 4, 5; y: 2, 4, 5, 4, 5). What does a low standard error of estimate indicate about the accuracy of predictions?</p>



	Spend 5 minutes evaluating student assimilation of the lesson contents
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<b>Lesson Plan No. 17</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Coefficient of Determination</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: ww. Understand the concept of the coefficient of determination. xx. Learn how to calculate and interpret the coefficient of determination. yy. Apply the coefficient of determination to real-life data.
<b>Teaching Aids (if any)</b>	ee. Power point presentation ff. White Board and Marker
<b>Teaching Development</b>	<p><b>33. Introduction (5 minutes)</b></p> <ul style="list-style-type: none"> <li>- Define the coefficient of determination and its importance in regression analysis.</li> <li>- Discuss the role of the coefficient of determination in measuring the goodness of fit.</li> <li>- Introduce the process of calculating the coefficient of determination.</li> </ul> <p><b>34. Development (30 minutes)</b></p> <ul style="list-style-type: none"> <li>- Meaning and Concept</li> <li>- Define the coefficient of determination (<math>R^2</math>).</li> <li>- Explain the formula and notation for calculating the coefficient of determination.</li> <li>- Calculation Steps</li> <li>- Demonstrate how to calculate the coefficient of determination with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculation.</li> <li>- Interpretation and Application</li> <li>- Discuss how to interpret the coefficient of determination.</li> <li>- Provide examples of real-life applications of the coefficient of determination.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>



<b>Closure</b>	<p>49. Summarize the Lesson Learning Outcomes and get affirmation from students on these. Suggested Reading <a href="https://www.investopedia.com/terms/c/coefficient-of-determination.asp">https://www.investopedia.com/terms/c/coefficient-of-determination.asp</a></p> <p>50. Homework - Solve some numerical problems related to mean</p> <p>51. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>17. Reflective Questions (What, Why, Who?). Allow students to answer and discuss. Define the coefficient of determination. Calculate the coefficient of determination for the following dataset: (x: 1, 2, 3, 4, 5; y: 2, 4, 5, 4, 5). What does a high coefficient of determination indicate about the fit of a regression model? Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 18</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Multiple Linear Regression Model</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <p>zz. Understand the concept of multiple linear regression.</p> <p>aaa. Learn how to create and interpret a multiple linear regression model.</p> <p>bbb. Apply the multiple linear regression model to real-life data.</p>
<b>Teaching Aids (if any)</b>	<p>gg. Power point presentation</p> <p>hh. White Board and Marker</p>
<b>Teaching Development</b>	<p>35. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define multiple linear regression and its importance in statistics.</li> <li>- Discuss the difference between simple and multiple linear regression.</li> <li>- Introduce the multiple linear regression model and its significance.</li> </ul> <p>36. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Meaning and Concept</li> </ul>



	<ul style="list-style-type: none"> <li>- Define the multiple linear regression model.</li> <li>- Explain the formula and components (<math>y = b_0 + b_1x_1 + b_2x_2 + \dots + b_nx_n</math>).</li> <li>- Calculation Steps</li> <li>- Demonstrate how to create a multiple linear regression model with a simple dataset.</li> <li>- Provide step-by-step instructions for the calculation.</li> <li>- Interpretation and Application</li> <li>- Discuss how to interpret the coefficients in the multiple linear regression model.</li> <li>- Provide examples of real-life applications of multiple linear regression.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>52. Summarize the Lesson Learning Outcomes and get affirmation from students on these. Suggested Reading <a href="https://www.investopedia.com/terms/m/mlr.asp">https://www.investopedia.com/terms/m/mlr.asp</a></p> <p>53. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>54. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>18. Reflective Questions (What, Why, Who?). Allow students to answer and discuss. Define a multiple linear regression model. Construct the multiple linear regression equation for the following dataset: (<math>x_1: 1, 2, 3, 4, 5; x_2: 2, 3, 4, 5, 6; y: 3, 5, 7, 9, 11</math>). What does the coefficient <math>b_1</math> represent in a multiple linear regression model? Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 19</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Assumptions of Regression Analysis</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>ccc. Understand the key assumptions of regression analysis.</li> <li>ddd. Learn how to verify these assumptions in practice.</li> <li>eee. Recognize the implications of violating these assumptions.</li> </ul>
<b>Teaching Aids (if any)</b>	<ul style="list-style-type: none"> <li>ii. Power point presentation</li> <li>jj. White Board and Marker</li> </ul>



<b>Teaching Development</b>	<p>37. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define the key assumptions of regression analysis.</li> <li>- Discuss the importance of verifying these assumptions.</li> <li>- Introduce the common methods for testing these assumptions.</li> </ul> <p>38. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Meaning and Concept</li> <li>- List and define the key assumptions of regression analysis (linearity, independence, homoscedasticity, normality).</li> <li>- Explain the significance of each assumption.</li> <li>- Verification Methods</li> <li>- Demonstrate how to verify each assumption with a simple dataset.</li> <li>- Provide step-by-step instructions for testing these assumptions.</li> <li>- Implications and Remedies</li> <li>- Discuss the implications of violating these assumptions.</li> <li>- Provide examples of common remedies for addressing assumption violations.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>55. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>Suggested Reading  <a href="https://www.statisticssolutions.com/free-resources/directory-of-statistical-analyses/assumptions-of-linear-regression/">https://www.statisticssolutions.com/free-resources/directory-of-statistical-analyses/assumptions-of-linear-regression/</a></p> <p>56. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>57. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>19. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>List the key assumptions of regression analysis.        How can you test for homoscedasticity in a dataset?        What are the implications of violating the assumption of normality in regression analysis?        Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 20</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Concept of Probability</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>fff. Understand the basic concept of probability.</li> <li>ggg. Learn how to calculate probability.</li> <li>hhh. Apply probability concepts to real-life situations.</li> </ul>
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<b>Teaching Aids (if any)</b>	kk. Power point presentation ll. White Board and Marker
<b>Teaching Development</b>	<p>39. <b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define probability and its importance in statistics.</li> <li>- Discuss the role of probability in decision-making and risk assessment.</li> <li>- Introduce basic probability terms: experiment, outcome, event, and sample space.</li> </ul> <p>40. <b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Meaning and Concept</li> <li>- Define probability and explain its notation (P(A)).</li> <li>- Discuss different interpretations of probability: classical, relative frequency, and subjective probability.</li> <li>- Calculation of Probability</li> <li>- Explain the formula for calculating probability: <math>P(A) = \frac{\text{Number of favorable outcomes}}{\text{Total number of outcomes}}</math>.</li> <li>- Provide examples to illustrate the calculation of probability.</li> <li>- Real-life Applications</li> <li>- Discuss examples of probability in real life: weather forecasting, insurance, and games of chance.</li> <li>- Explain the significance of understanding probability in various fields.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>
<b>Closure</b>	<p>58. Summarize the Lesson Learning Outcomes and get affirmation from students on these.          Suggested Reading  <a href="https://testbook.com/maths/probability">https://testbook.com/maths/probability</a></p> <p>59. Homework</p> <ul style="list-style-type: none"> <li>- Solve some numerical problems related to mean</li> </ul> <p>60. Spend 5 minutes to wrap up and consolidate the learnings</p>
<b>Evaluation</b>	<p>20. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.          Define probability.          Calculate the probability of rolling a 3 on a six-sided die.          Provide an example of probability in real life.          Spend 5 minutes evaluating student assimilation of the lesson contents</p>



<b>Lesson Plan No. 21</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Binomial Distribution</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: iii. Understand the concept of binomial distribution. jjj. Learn how to calculate probabilities using the binomial distribution. Apply the binomial distribution to real-life situations.
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Define binomial distribution and its significance in probability.</li> <li>- Discuss the conditions required for a binomial distribution.</li> <li>- Introduce the formula for binomial probability.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Meaning and Concept</li> <li>- Define binomial distribution and explain its properties.</li> <li>- Discuss the notation used in binomial distribution (n, p, q).</li> <li>- Calculation of Binomial Probability</li> <li>- Explain the formula for binomial probability: <math>P(X = k) = {}^n C_k * (p^k) * (q^{(n-k)})</math>.</li> <li>- Provide examples to illustrate the calculation of binomial probabilities.</li> <li>- Real-life Applications</li> <li>- Discuss examples of binomial distribution in real life: quality control, genetics, and marketing.</li> <li>- Explain the significance of binomial distribution in various fields.</li> <li>- Exercise (5 minutes)</li> <li>- Summarizing</li> </ul>



<b>Closure</b>	<ul style="list-style-type: none"> <li>- Summarize the Lesson Learning Outcomes and get affirmation from students on these.               <ul style="list-style-type: none"> <li>o Suggested Reading</li> <li>o <a href="https://www.cuemath.com/binomial-distribution-formula/">https://www.cuemath.com/binomial-distribution-formula/</a></li> <li>o Homework</li> </ul> </li> <li>- Solve some numerical problems related to mean               <ul style="list-style-type: none"> <li>o Spend 5 minutes to wrap up and consolidate the learnings</li> </ul> </li> </ul>
<b>Evaluation</b>	<p>21. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.          Define binomial distribution.          Calculate the probability of getting exactly 3 heads in 5 coin tosses (<math>p = 0.5</math>).          Provide an example of binomial distribution in real life.          Spend 5 minutes evaluating student assimilation of the lesson contents</p>

<b>Lesson Plan No. 22</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Introduction to Hypothesis Testing</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Define a hypothesis and describe its purpose in research.</li> <li>- Differentiate between null and alternative hypotheses.</li> <li>- Identify the types of hypotheses: one-tailed and two-tailed.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Start by asking: "What assumptions do you make about the world around you?"</li> <li>- Define a hypothesis as an assumption or prediction that can be tested.</li> <li>- Explain the purpose of hypotheses in scientific research.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Explain null hypothesis (<math>H_0</math>) as the default assumption and alternative hypothesis (<math>H_1</math>) as the statement to be tested.</li> <li>- Provide examples of null and alternative hypotheses in business and economics.</li> </ul>



	<ul style="list-style-type: none"> <li>- Describe one-tailed and two-tailed hypotheses with illustrations.</li> <li>- Use a business scenario (e.g., a company predicting higher sales in a specific region).</li> <li>- Discuss why hypotheses are critical for the validity of research findings.</li> <li>- Show how poorly defined hypotheses can mislead research outcomes.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Summarize the Lesson Learning Outcomes and get affirmation from students on these.</li> <li>- Recap key points and ask students to provide examples of null and alternative hypotheses from their daily lives.</li> <li>-           <ul style="list-style-type: none"> <li>o Homework: Write a null and alternative hypothesis for a research question of your choice</li> <li>o Spend 5 minutes to wrap up and consolidate the learnings</li> </ul> </li> </ul>
<b>Evaluation</b>	22. Reflective Questions (What, Why, Who?). Allow students to answer and discuss. 23. Conduct a short quiz on definitions and types of hypotheses. 24. Spend 5 minutes evaluating student assimilation of the lesson contents

<b>Lesson Plan No. 23</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Procedure of Hypothesis Testing</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Describe the steps involved in hypothesis testing.</li> <li>- Understand the logic and process behind statistical tests.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Ask: "How do researchers decide whether to accept or reject a hypothesis?"</li> <li>- Briefly outline the steps of hypothesis testing.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Formulate null and alternative hypotheses.</li> <li>- Choose the significance level (e.g., 0.05).</li> <li>- Select the appropriate statistical test (e.g., Z-test, t-test).</li> </ul>



	<ul style="list-style-type: none"> <li>- Calculate the test statistic and p-value.</li> <li>- Compare the p-value to the significance level and make a decision.</li> <li>- Provide a business scenario (e.g., testing the effectiveness of a marketing strategy).</li> <li>- Use a dataset to demonstrate the steps of hypothesis testing.</li> <li>- Show how decisions are made based on p-values and test statistics.</li> <li>-</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Summarize the Lesson Learning Outcomes and get affirmation from students on these.</li> <li>- Summarize the steps and emphasize their sequential importance.</li> <li>- Pose a question: "Why is the significance level chosen before the test?"           <ul style="list-style-type: none"> <li>o Homework: Apply the procedure to a simple dataset and interpret the results.</li> <li>o Spend 5 minutes to wrap up and consolidate the learnings</li> </ul> </li> </ul>
<b>Evaluation</b>	<p>25. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>26. Conduct a quick exercise where students outline the steps for a given hypothesis.</p>

<b>Lesson Plan No. 24</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Errors in Hypothesis Testing</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>- Define Type I and Type II errors.</li> <li>- Understand the implications of these errors in research.</li> </ul>
<b>Teaching Aids (if any)</b>	<p>Power point presentation White Board and Marker</p>
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Start with a question: "What happens if we make the wrong decision during hypothesis testing?"</li> <li>- Introduce the concept of errors in decision-making.</li> </ul>



	<p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Define as rejecting the null hypothesis when it is true (false positive).</li> <li>- Example: Approving a faulty product based on incorrect test results.</li> <li>- Define as failing to reject the null hypothesis when it is false (false negative).</li> <li>- Example: Missing a profitable market opportunity due to incorrect analysis.</li> <li>- Discuss the relationship between Type I and Type II errors.</li> <li>- Show how changing the significance level affects these errors.</li> <li>-</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Recap definitions and trade-offs.</li> <li>- Pose a reflective question: "Which type of error is more serious in a medical trial and why?"           <ul style="list-style-type: none"> <li>o Homework: Research a real-world example where either error had significant consequences.</li> <li>o Spend 5 minutes to wrap up and consolidate the learnings</li> </ul> </li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Conduct a class discussion on the importance of balancing errors in decision-making.</li> </ul>

<b>Lesson Plan No. 25</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Tests of Significance for Attribute</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>- Explain the concept of tests of significance for attributes.</li> <li>- Conduct Z-tests for proportions.</li> </ul>
<b>Teaching Aids (if any)</b>	<p>Power point presentation White Board and Marker</p>
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Ask: "How can we test if a specific proportion in a population is valid?"</li> </ul>



	<ul style="list-style-type: none"> <li>- Define attributes as categorical data and their significance in business.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Explain the formula and conditions for applying the Z-test.</li> <li>- Demonstrate with an example (e.g., customer satisfaction survey).</li> <li>- Calculate the test statistic and compare it to critical values.</li> <li>- Discuss what the results imply for decision-making.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Recap definitions and trade-offs.</li> <li>- Summarize the key steps and their applications.             <ul style="list-style-type: none"> <li>o Homework: Analyze a dataset with categorical attributes and test the significance.</li> <li>o Spend 5 minutes to wrap up and consolidate the learnings</li> </ul> </li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Facilitate a discussion on the limitations of Z-tests.</li> </ul>

<b>Lesson Plan No. 26</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Tests of Significance for Variables</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Differentiate between tests for means and variances.</li> <li>- Apply Z-tests for means.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Pose a question: "How do we test the significance of numerical data?"</li> <li>- Define variables and their importance in testing.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Explain the formula and assumptions.</li> <li>- Solve an example problem (e.g., testing average income levels).</li> </ul>



	<ul style="list-style-type: none"> <li>- Introduce tests for variances and their applications.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Recap the importance of choosing the right test for variables.               <ul style="list-style-type: none"> <li>o Homework: Perform a Z-test for means on a provided dataset.</li> <li>o Spend 5 minutes to wrap up and consolidate the learnings</li> </ul> </li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Quiz on formulas and their applications.</li> </ul>

<b>Lesson Plan No. 27</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Tests of Significance for Small Samples</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	<p>At the end of the lesson the student shall be able to:</p> <ul style="list-style-type: none"> <li>- Understand when to apply tests for small samples.</li> <li>- Conduct a t-test for means.</li> </ul>
<b>Teaching Aids (if any)</b>	<p>Power point presentation White Board and Marker</p>
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Discuss the limitations of large sample tests.</li> <li>- Introduce the concept of small sample testing.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Explain the formula and conditions for applying a t-test.</li> <li>- Solve a practical example (e.g., testing average waiting time in a small office).</li> <li>- Discuss the degrees of freedom and their role in t-tests.</li> </ul>



<b>Closure</b>	<ul style="list-style-type: none"><li>- Recap the importance of using the correct test for sample size.<ul style="list-style-type: none"><li>o Homework: Perform a t-test for means on a provided dataset.</li><li>o Spend 5 minutes to wrap up and consolidate the learnings</li></ul></li></ul>
<b>Evaluation</b>	<ul style="list-style-type: none"><li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li><li>- Facilitate a class discussion on small sample challenges.</li></ul>

<b>Lesson Plan No. 28</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Chi-Square Test and Goodness of Fit</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"><li>- Understand the concept of the Chi-Square test.</li><li>- Conduct a test for Goodness of Fit.</li></ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"><li>- Discuss the limitations of large sample tests.</li><li>- Pose the question: "How can we check if our data matches a theoretical distribution?"</li><li>- Introduce the Chi-Square test as a non-parametric method.</li></ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"><li>- Explain the formula and purpose.</li><li>- Demonstrate its application with an example (e.g., dice roll outcomes).</li><li>- Show step-by-step calculation for observed vs. expected frequencies.</li></ul>



	<ul style="list-style-type: none"> <li>- Discuss interpreting results and the importance of degrees of freedom.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Summarize the importance of the Chi-Square test and its limitations.</li> <li>- Pose a question for discussion: "Where can you apply Goodness of Fit in business scenarios?"             <ul style="list-style-type: none"> <li>o Homework: Conduct a Chi-Square test on a provided dataset.</li> <li>o Spend 5 minutes to wrap up and consolidate the learnings</li> </ul> </li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Facilitate a peer-reviewed exercise on Chi-Square test applications.</li> </ul>

<b>Lesson Plan No. 29</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: F-Test and Analysis of Variance (ANOVA)</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Explain the purpose of the F-test.</li> <li>- Conduct a One-Way ANOVA.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Ask: "How do we compare more than two group means simultaneously?"</li> <li>- Introduce the F-test and ANOVA as tools for comparing group variances and means.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Explain the formula and purpose of F-tests.</li> <li>- Provide a real-world example (e.g., comparing sales performance across regions).</li> </ul>



	<ul style="list-style-type: none"> <li>- Explain the steps: calculate between-group and within-group variances.</li> <li>- Solve a step-by-step example.</li> <li>-</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Summarize the importance of the ANOVA and its limitations.</li> <li>- Recap the importance of ANOVA in comparing multiple groups.               <ul style="list-style-type: none"> <li>o Homework: Conduct a One-Way ANOVA using a given dataset.</li> <li>o Spend 5 minutes to wrap up and consolidate the learnings</li> </ul> </li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Class exercise on ANOVA interpretation.</li> </ul>

<b>Lesson Plan No. 30</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Analysis of Variance (ANOVA)</b> <b>– Two-Way</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Explain the concept and purpose of Two-Way ANOVA.</li> <li>- Differentiate between One-Way and Two-Way ANOVA.</li> <li>- Conduct a Two-Way ANOVA to analyze data with two independent variables.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Ask: “What happens when there are two factors influencing a dependent variable?”</li> <li>- Briefly recap the One-Way ANOVA process.</li> <li>- Introduce the concept of Two-Way ANOVA and its importance in evaluating two independent variables simultaneously..</li> </ul> <p><b>Development</b> (30 minutes)</p>



	<ul style="list-style-type: none"> <li>- Define Two-Way ANOVA as a statistical test that examines the influence of two factors on a dependent variable.</li> <li>- Highlight its ability to identify interaction effects between the two factors.</li> <li>- Provide real-life examples (e.g., studying the effect of price and advertising on sales).</li> <li>- Identify dependent and independent variables.</li> <li>- Define the null hypotheses for main effects and interaction effects.</li> <li>- Compute sums of squares for factors, interaction, and error.</li> <li>- Calculate F-statistics for each effect and compare with critical values.</li> <li>- Use a dataset to demonstrate Two-Way ANOVA (e.g., impact of education level and gender on test scores).</li> <li>- Walk students through each step using statistical software.</li> <li>- Interpret the results for main effects and interaction effects.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Summarize the importance of Two-Way ANOVA in understanding interactions between variables.</li> <li>- Recap the steps and key takeaways.</li> <li>- Pose a reflective question: "In what types of research problems would Two-Way ANOVA be most useful?"</li> <li>- Homework: Find a dataset with two independent variables and perform a Two-Way ANOVA. Write a short interpretation of the results.</li> <li>- Spend 5 minutes to wrap up and consolidate the learnings</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Conduct a short in-class exercise to identify factors and hypotheses for Two-Way ANOVA in a given scenario.</li> <li>- Evaluate students' ability to interpret interaction effects..</li> </ul>

<b>Lesson Plan No. 31</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Concept and Meaning of Research</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Define research and its purpose.</li> <li>- Identify the characteristics of good research.</li> </ul>
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	<ul style="list-style-type: none"> <li>- Differentiate between basic and applied research.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Begin by asking students, "What comes to mind when you hear the word 'research'?"</li> <li>- Define research as a systematic process of inquiry.</li> <li>- Explain the importance of research in solving real-world problems.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Provide definitions of research from textbooks and scholars.</li> <li>- Discuss the objectives of research: exploration, description, and explanation.</li> <li>- Highlight characteristics such as validity, reliability, and generalizability.</li> <li>- Provide examples of well-conducted research.</li> <li>- Define basic research as theoretical and applied research as practical.</li> <li>- Discuss examples from business and economics.</li> <li>-</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Summarize key points.</li> <li>- Pose a reflective question: "What type of research do you think is more relevant in your field of study and why?"</li> <li>- Homework: Identify one example each of basic and applied research and explain their significance.</li> <li>- Spend 5 minutes to wrap up and consolidate the learnings</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Conduct a quick quiz or group discussion on the concepts covered.</li> </ul>



<b>Lesson Plan No. 32</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Types of Research</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Define and differentiate exploratory, descriptive, and causal research.</li> <li>- Identify appropriate situations for using each type of research.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Start by asking: "How would you investigate a new market or problem?"</li> <li>- Briefly introduce the three types of research.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Define exploratory research as preliminary research to gain insights.</li> <li>- Provide examples such as focus groups or expert interviews.</li> <li>- Define descriptive research as detailing facts and figures.</li> <li>- Use examples such as market segmentation studies.</li> <li>- Define causal research as determining cause-and-effect relationships.</li> <li>- Example: impact of advertising on sales.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Recap the definitions and examples.</li> <li>- Pose a reflective question: "Which type of research would you use to understand customer satisfaction, and why?"</li> <li>- Homework: Identify an example of each type of research in business contexts and describe their objectives.</li> <li>- Spend 5 minutes to wrap up and consolidate the learnings</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Conduct a group activity to categorize scenarios into exploratory, descriptive, or causal research.</li> </ul>



<b>Lesson Plan No. 33</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: The Process of Research</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Describe the steps in the research process.</li> <li>- Explain the importance of each step in ensuring research validity.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Ask: "What are the steps involved in conducting a research project?"</li> <li>- Outline the stages of research.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Problem Identification</li> <li>- Literature Review</li> <li>- Formulating Hypotheses</li> <li>- Research Design</li> <li>- Data Collection</li> <li>- Data Analysis</li> <li>- Interpretation and Report Writing</li> <li>- Use a business research example to demonstrate each step.</li> <li>- Discuss why skipping steps can compromise research validity.</li> <li>- Provide examples of flawed research due to improper planning.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Summarize the steps and their relevance.</li> <li>- Pose a reflective question: "Which step do you think is the most critical, and why?"</li> <li>- Homework: Find a dataset with two independent variables and perform a Two-Way ANOVA. Write a short interpretation of the results.</li> <li>- Spend 5 minutes to wrap up and consolidate the learnings</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Develop a flowchart for a hypothetical research project.</li> </ul>



<b>Lesson Plan No. 34</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Analysis of Variance (ANOVA)</b> <b>– Two-Way</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Understand the principles of effective questionnaire design.</li> <li>- Test and refine a questionnaire for clarity and validity.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Start with: "What makes a good survey question?"</li> <li>- Discuss the importance of well-structured questionnaires in research.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Principles of Questionnaire Design</li> <li>- Clarity, brevity, and relevance.</li> <li>- Open-ended vs. closed-ended questions.</li> <li>- Testing and Refining</li> <li>- Conduct a mock survey in class.</li> <li>- Discuss issues like ambiguity or leading questions.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Recap the key principles of questionnaire design.</li> <li>- Pose a reflective question: "How would you design a survey for customer feedback?"</li> <li>- Homework: Design a questionnaire for a simple research topic and test it with peers.</li> <li>- Spend 5 minutes to wrap up and consolidate the learnings</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Assess the clarity and relevance of students' questionnaires.</li> </ul>



<b>Lesson Plan No. 35</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Scaling Techniques</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Explain the concept and importance of scaling.</li> <li>- Differentiate between types of scales: nominal, ordinal, interval, and ratio.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Ask: "How do we measure customer satisfaction or loyalty?"</li> <li>- Introduce the concept of scaling as a measurement tool.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Types of Scales</li> <li>- Nominal: Categorization without order.</li> <li>- Ordinal: Rank order without equal intervals.</li> <li>- Interval: Rank order with equal intervals but no true zero.</li> <li>- Ratio: Includes a true zero point.</li> <li>- Practical Applications</li> <li>- Discuss examples of each scale in business research.</li> <li>- Conduct a class activity to classify variables into scales.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Recap the types and applications of scales.</li> <li>- Pose a reflective question: "Which scale would you use to measure product satisfaction, and why?"</li> <li>- Homework: Identify 5 examples of each type of scale from daily life or business research.</li> <li>- Spend 5 minutes to wrap up and consolidate the learnings</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Conduct a short quiz or group activity to classify scenarios into different scales.</li> </ul>



<b>Lesson Plan No. 36</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Analysis of Variance (ANOVA)</b> <b>– Two-Way</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Explain the concept and purpose of Two-Way ANOVA.</li> <li>- Differentiate between One-Way and Two-Way ANOVA.</li> <li>- Conduct a Two-Way ANOVA to analyze data with two independent variables.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Ask: “What happens when there are two factors influencing a dependent variable?”</li> <li>- Briefly recap the One-Way ANOVA process.</li> <li>- Introduce the concept of Two-Way ANOVA and its importance in evaluating two independent variables simultaneously..</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Define Two-Way ANOVA as a statistical test that examines the influence of two factors on a dependent variable.</li> <li>- Highlight its ability to identify interaction effects between the two factors.</li> <li>- Provide real-life examples (e.g., studying the effect of price and advertising on sales).</li> <li>- Identify dependent and independent variables.</li> <li>- Define the null hypotheses for main effects and interaction effects.</li> <li>- Compute sums of squares for factors, interaction, and error.</li> <li>- Calculate F-statistics for each effect and compare with critical values.</li> <li>- Use a dataset to demonstrate Two-Way ANOVA (e.g., impact of education level and gender on test scores).</li> <li>- Walk students through each step using statistical software.</li> <li>- Interpret the results for main effects and interaction effects.</li> </ul>



<b>Closure</b>	<ul style="list-style-type: none"> <li>- Summarize the importance of Two-Way ANOVA in understanding interactions between variables.</li> <li>- Recap the steps and key takeaways.</li> <li>- Pose a reflective question: "In what types of research problems would Two-Way ANOVA be most useful?"</li> <li>- Homework: Find a dataset with two independent variables and perform a Two-Way ANOVA. Write a short interpretation of the results.</li> <li>- Spend 5 minutes to wrap up and consolidate the learnings</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Conduct a short in-class exercise to identify factors and hypotheses for Two-Way ANOVA in a given scenario.</li> <li>- Evaluate students' ability to interpret interaction effects..</li> </ul>

<b>Lesson Plan No. 37</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Research Report Preparation and Presentation</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Understand the structure of a research report.</li> <li>- Identify key elements of an effective presentation.</li> <li>- Develop skills for presenting research findings.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Ask students: "What are the key elements of a good report?"</li> <li>- Discuss the importance of effective report preparation and presentation.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Structure of a Research Report.</li> <li>- Explain components: Abstract, Introduction, Literature Review, Methodology, Results, Discussion, Conclusion, and References.</li> <li>- Show examples of well-written reports.</li> <li>- B. Effective Presentation Techniques.</li> <li>- Discuss how to design clear slides and visuals.</li> </ul>



	<ul style="list-style-type: none"> <li>- Tips for confident delivery: voice modulation, body language, and engaging the audience.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Recap the elements of a strong research report and presentation.</li> <li>- Pose a reflective question: "What challenges do you anticipate while presenting your research?"</li> <li>- Homework: Draft an outline of a research report on a topic of your choice.</li> <li>- Spend 5 minutes to wrap up and consolidate the learnings</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Review outlines submitted by students.</li> <li>- Conduct a mock presentation activity in the next class.</li> </ul>

<b>Lesson Plan No. 38</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Citation and Referencing Style</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Define the purpose of citations and referencing.</li> <li>- Apply common citation styles such as APA, MLA, and Chicago.</li> <li>- Avoid plagiarism by using proper referencing techniques.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Begin with: "Why is it important to give credit to original authors?"</li> <li>- Discuss the ethical and academic importance of citations and referencing...</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Overview of Citation Styles.</li> <li>- Briefly introduce APA, MLA, and Chicago styles.</li> <li>- Show examples of in-text citations and reference lists for each style.</li> </ul>



	<ul style="list-style-type: none"> <li>- Avoiding Plagiarism.</li> <li>- Discuss what constitutes plagiarism and its consequences.</li> <li>- Demonstrate how proper citations ensure academic integrity.</li> <li>- Practical Activity.</li> <li>- Provide sample texts and ask students to practice citing them in APA and MLA formats.</li> <li>- Demonstrate the use of reference management tools like Zotero or EndNote.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Recap the purpose and techniques of citation and referencing.</li> <li>- Pose a reflective question: "How do citations enhance the credibility of research work?"</li> <li>- Homework: Create a reference list for five journal articles using APA style.</li> <li>- Spend 5 minutes to wrap up and consolidate the learnings</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Review the accuracy of students' reference lists in the next class.</li> </ul>

<b>Lesson Plan No. 39</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Scaling Techniques and Measurement Methods</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Explain the concept and importance of scaling.</li> <li>- Differentiate between types of scales: nominal, ordinal, interval, and ratio.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Ask: "How do we measure customer satisfaction or loyalty?"</li> <li>- Introduce the concept of scaling as a measurement tool.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Types of Scales</li> <li>- Nominal: Categorization without order.</li> <li>- Ordinal: Rank order without equal intervals.</li> </ul>



	<ul style="list-style-type: none"> <li>- Interval: Rank order with equal intervals but no true zero.</li> <li>- Ratio: Includes a true zero point.</li> <li>- Practical Applications</li> <li>- Discuss examples of each scale in business research.</li> <li>- Conduct a class activity to classify variables into scales.</li> </ul>
<b>Closure</b>	<ul style="list-style-type: none"> <li>- Recap the types and applications of scales.</li> <li>- Pose a reflective question: "Which scale would you use to measure product satisfaction, and why?"</li> <li>- Homework: Identify 5 examples of each type of scale from daily life or business research.</li> <li>- Spend 5 minutes to wrap up and consolidate the learnings</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li> <li>- Conduct a short quiz or group activity to classify scenarios into different scales.</li> </ul>

<b>Lesson Plan No. 40</b>	<b>Course Name: Business Statistics and Research Methods</b> <b>Topic: Writing Research Report and Presentation of Findings.</b>	<b>Course No.: MBA-106</b>
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<b>Objectives</b>	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> <li>- Understand the structure of a research report.</li> <li>- Identify key elements of an effective presentation.</li> <li>- Develop skills for presenting research findings.</li> </ul>
<b>Teaching Aids (if any)</b>	Power point presentation White Board and Marker
<b>Teaching Development</b>	<p><b>Introduction</b> (5 minutes)</p> <ul style="list-style-type: none"> <li>- Ask students: "What are the key elements of a good report?"</li> <li>- Discuss the importance of effective report preparation and presentation.</li> </ul> <p><b>Development</b> (30 minutes)</p> <ul style="list-style-type: none"> <li>- Structure of a Research Report.</li> <li>- Explain components: Abstract, Introduction, Literature Review, Methodology, Results, Discussion, Conclusion, and References.</li> <li>- Show examples of well-written reports.</li> <li>- B. Effective Presentation Techniques.</li> <li>- Discuss how to design clear slides and visuals.</li> </ul>



	<ul style="list-style-type: none"><li>- Tips for confident delivery: voice modulation, body language, and engaging the audience.</li></ul>
<b>Closure</b>	<ul style="list-style-type: none"><li>- Recap the elements of a strong research report and presentation.</li><li>- Pose a reflective question: "What challenges do you anticipate while presenting your research?"</li><li>- Homework: Draft an outline of a research report on a topic of your choice.</li><li>- Spend 5 minutes to wrap up and consolidate the learnings</li></ul>
<b>Evaluation</b>	<ul style="list-style-type: none"><li>- Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</li><li>- Review outlines submitted by students.</li><li>- Conduct a mock presentation activity in the next class.</li></ul>