Mohamed Khider University, Biskra, Faculty of Architecture, Civil Engineering, Hydraulics
Department of Architecture

Master 2 in **Construction Projects Management**
Course: **Data Analysis**

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About course

CHAPTER 05

Data interpretation and reporting

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Objectives Of The Chapter

At the end of the chapter, the learner will be able to:

- Define data interpretation and its importance.
- Differentiate between various data interpretation methods.
- Understand the structured steps involved in data interpretation.
- Develop skills to report interpreted data effectively using visuals and summaries







About course

Chapter Content

1. **What is Data Interpretation?**
2. **Importance of Data Interpretation**
3. **Data Interpretation Methods**
   - 2-2-Quantitative Data Interpretation
   - 2-2-Qualitative Data Interpretation
4. **Steps of Data Interpretation (interpreting results)**
5. **Data reporting**
6. **Formats of Reporting Data**
   - 6-1-Written Reports
   - 6-2-Visual Reports
   - 6-3-Presentations
   - 6-4-Video Reports

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About course





DATA INTERPRETATION

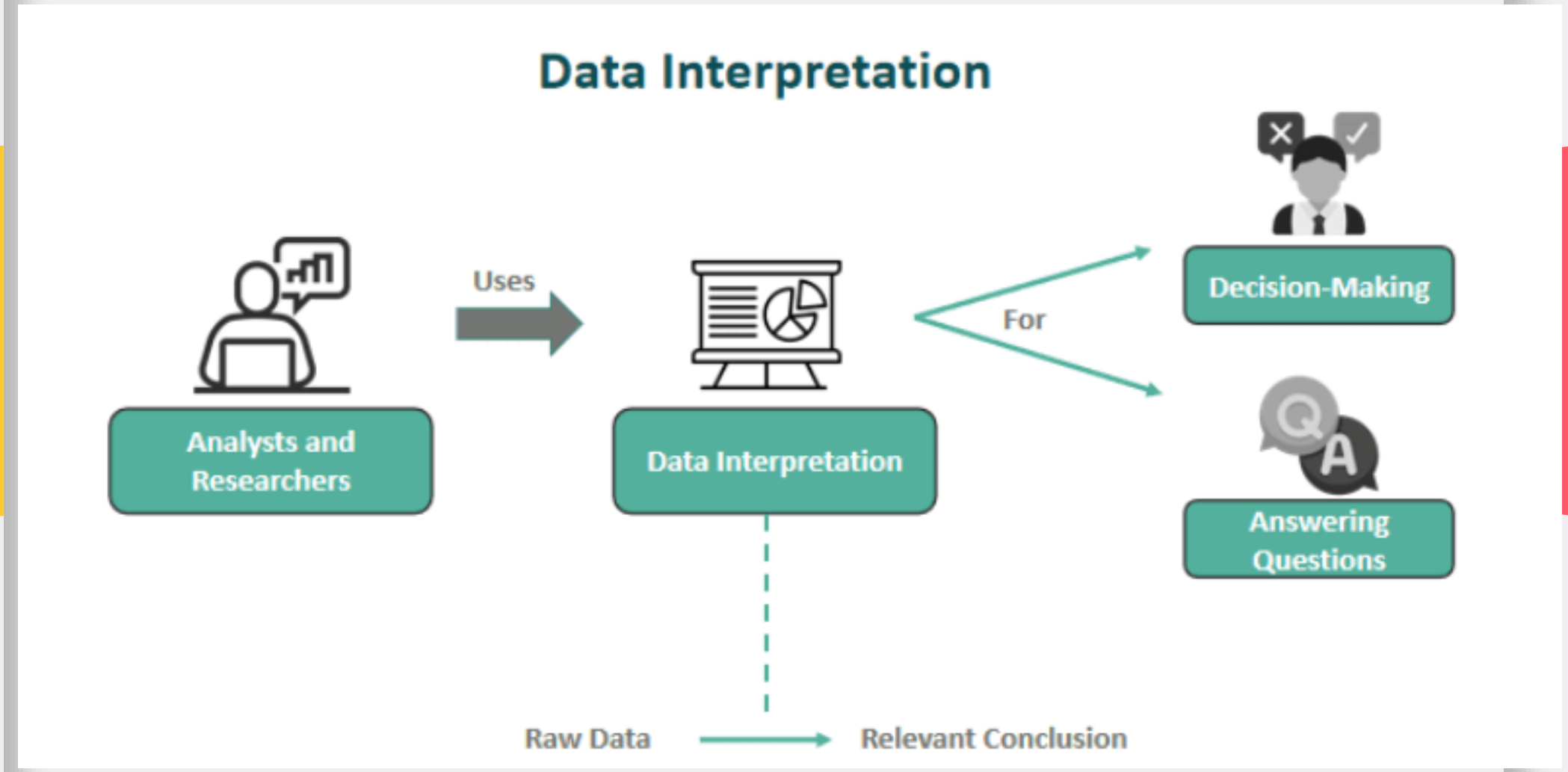


1.What is Data Interpretation?

Data interpretation is the process of examining analyzed data or results to identify patterns, relationships, trends, and insights, and then explaining their meaning in the context of the research objectives. It involves making sense of the data to draw conclusions, support decision-making, and provide recommendations.

A good data interpretation process is key to making your data usable. It will help you make sure you're drawing the correct conclusions and acting on your information.

1.What is Data Interpretation?



2. Importance of Data Interpretation

- **Supports Decision-Making:** Provides insights for informed and effective decisions.
- **Validates Hypotheses:** Confirms or disproves assumptions with evidence.
- **Simplifies Complex Data:** Makes raw data easier to understand using visuals and summaries.
- **Enhances Communication:** Facilitates clear communication with stakeholders.

03 Data Interpretation Methods



01

Quantitative Data interpretation

- Focuses on numerical data (e.g., statistics, percentages).
- Utilizes graphs, charts, and other visual tools to analyze trends and relationships.



02

Qualitative Data Interpretation

- Focuses on non-numerical data

(e.g., text, interviews, observations).

- Surveys are often used to assign numerical values to answers, making it easier to analyze.
- Relies on themes and patterns rather than graphs or charts.

03 Data Interpretation Methods

In simple terms, data interpretation involves understanding patterns in the data, ensuring it is relevant, and avoiding bias or incorrect assumptions. Quantitative methods deal with numbers, while qualitative methods focus on text and behavior.

4-Steps of Data Interpretation (interpreting results)

Here are some steps to correctly interpret the results obtained from data analysis.

1. Linking Findings to Objectives

Start by reviewing the main results and directly connecting them to the research questions or objectives.

Example:
If your study examined *factors causing schedule delays*, link the findings to each objective.

- Objective: Identify major delay factors.
- Finding: “Late material delivery” and “design changes” emerged as the most critical factors.
- **Interpretation:** These findings directly answer the objective by identifying which factors have the greatest impact on project timelines.

4-Steps of Data Interpretation (interpreting results)

2. Identifying and Explaining Patterns

Analyze the results to detect trends, recurring issues, relationships, or contradictions, then explain what these patterns indicate.

Example:

A pattern may show that delays are more frequent in projects with **multiple subcontractors** and **poor coordination**.

Interpretation: This suggests that communication complexity increases with the number of subcontractors, resulting in ineffective coordination and greater schedule slippage.

4-Steps of Data Interpretation (interpreting results)

3. Connecting to Literature and Context

Compare your findings with previous studies and consider the specific context of your project (country, project scale, procurement method, etc.).

Example:

If literature states that "material procurement issues are a global cause of delays," and your results also highlight material delays,

Interpretation: Your findings are consistent with international trends, confirming that procurement inefficiencies remain a major challenge in the construction sector, especially in fast-track urban projects.

If your context is *Algerian construction projects*,

Interpretation: Frequent administrative approvals and supply chain limitations may intensify this issue in the local context.

4-Steps of Data Interpretation (interpreting results)

4. Limitations and Implications

Recognize any constraints that may influence how the results should be understood, and explain the practical implications. (Silverman, 2011).

Example:

If your sample included only **government projects**,

Limitation: The findings may not fully represent private-sector projects.

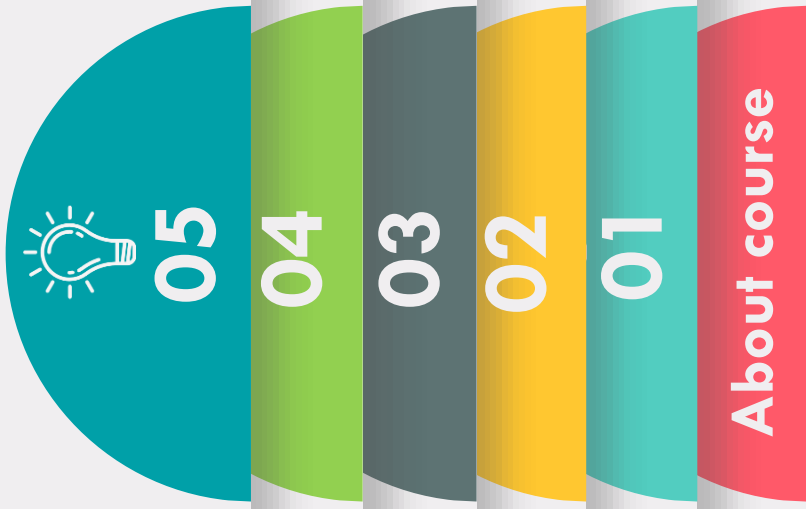
Implications:

- Construction firms should improve procurement tracking systems.
- Project managers should adopt stronger communication protocols with subcontractors.
- Policymakers may consider simplifying approval procedures to reduce administrative delays.

DATA REPORTING

Data Reporting

Data reporting is the process of presenting collected and analyzed information in a structured way to communicate findings, support conclusions, and provide evidence for decision-making. A well-written data report ensures transparency, accuracy, and credibility in the research process.



Formats of Reporting Data

Data can be reported in various formats depending on the audience, purpose, and complexity of the information. Below are the main formats used for data reporting:

1. Written Reports

A formal document that summarizes data findings, analysis,

and recommendations.

- **Examples:** Research papers, business reports, thesis and dissertations.
- **Features:**
  - Introduction, methodology, results, discussion, and conclusion.
  - Detailed explanations with textual descriptions.
  - Includes visuals like tables, charts, and graphs for support.

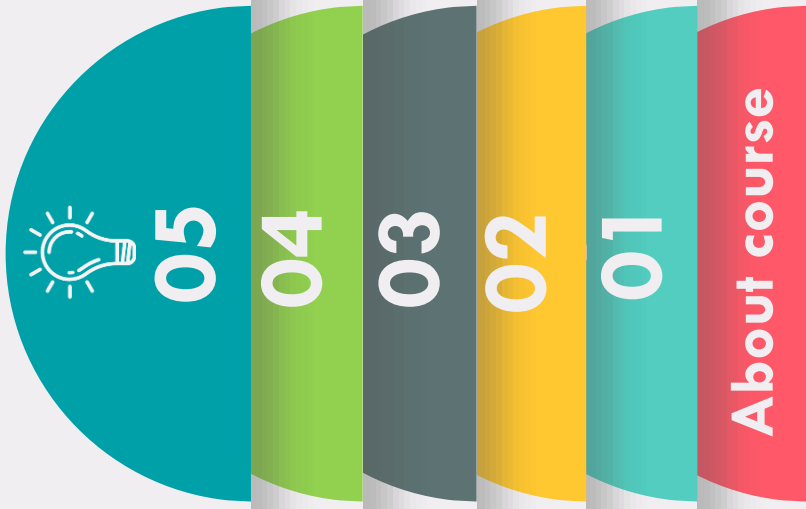


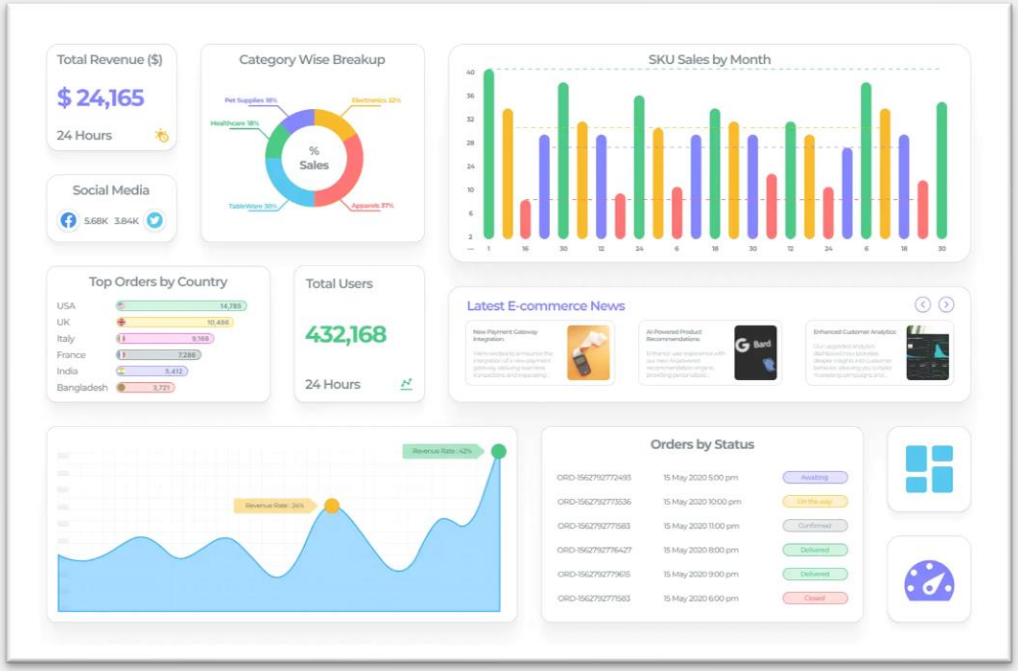
Formats of Reporting Data

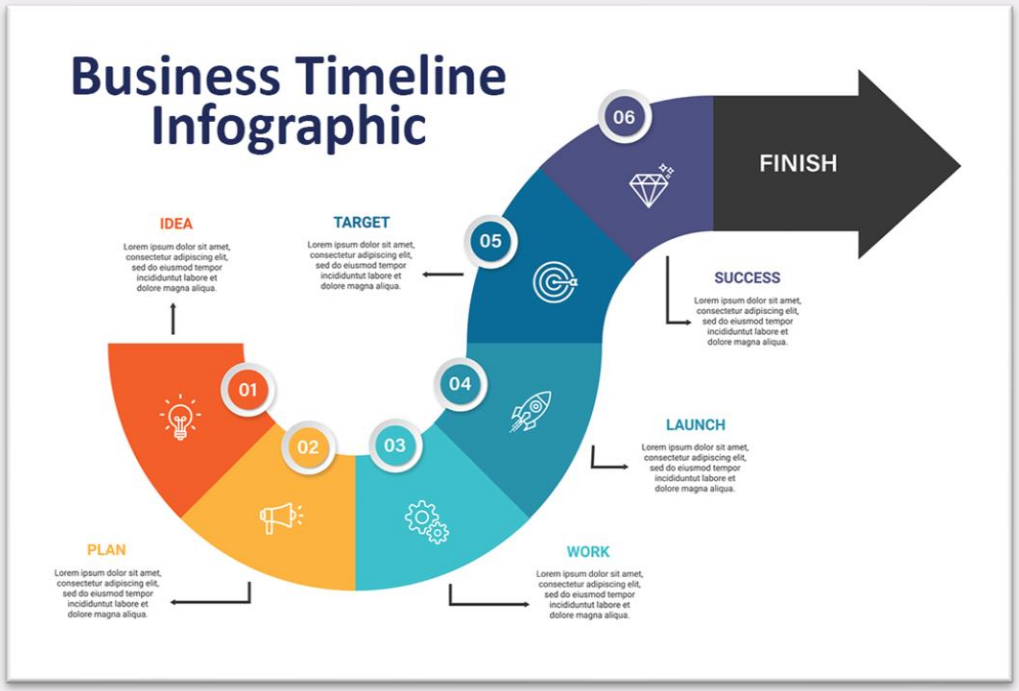
2. Visual Reports

Focuses on presenting data visually for quick understanding.

- Examples: Dashboards, infographics, posters.
- **Features:**
  - Charts (bar, pie, line, etc.), heatmaps, scatter plots, and diagrams.
  - Useful for summarizing large datasets.




Total Revenue ($)
$ 24,165
24 Hours
Category Wise Breakup
% Sales
SKU Sales by Month
Social Media
5.68K 3.84K
Top Orders by Country
USA 14,785
UK 10,488
Italy 9,168
France 7,286
India 5,412
Bangladesh 3,721
Total Users
432,168
24 Hours
Latest E-commerce News
Orders by Status


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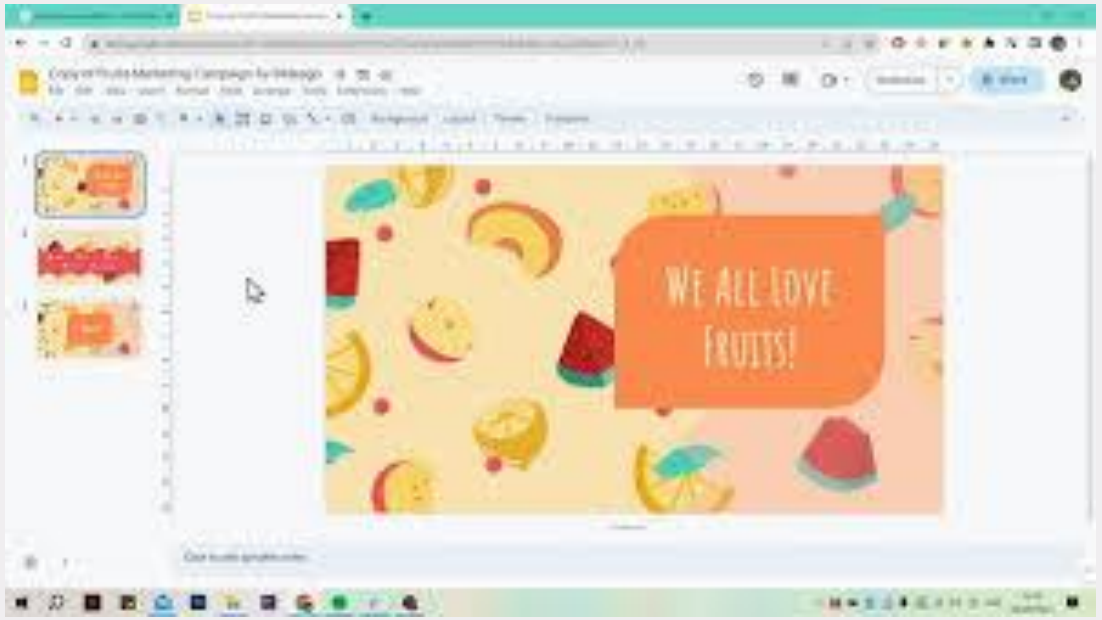

This text could be the main title of your research
Mario Brosito[1], Bowser Baddy[2], Shoe Backa[3]
1. Department of Jumping science, Mushroom Kingdom Hospital and Research Center, Napoli, Italy
2. Turtle Division, Mushroom Kingdom Hospital and Research Center, Napoli, Italy
3. Department of Starship and Flight Dynamics, Sky-woker Squadron Academy, Woods
1 INTRODUCTION
Begin your introduction with a general statement that provides an overview of your research topic. This statement should help to introduce the topic to the reader and provide some context.
Provide background information: provide some background information on your topic. This could include any relevant history, previous research or developments in the field that have led to your research.
State the problem: Once you have provided some context, state the problem that your research is addressing. This should be a clear and concise statement that outlines the focus of your research.
Explain the significance: After stating the problem, explain why it is significant. Discuss the potential implications of your research and how it could contribute to the field.
Outline the objectives: Finally, outline the objectives of your research. This should be a clear statement of what you are hoping to achieve through your research, and should help to guide the reader through the rest of the poster.
This box could be a summary of the introduction. You could use keywords or only state the objectives
The introduction should introduce your readers to what they already know, and what they do not know.
Why was the study undertaken? What was the research question, the tested hypothesis or the purpose of the research?
2 METHODS
Provide an overview: Begin the methods section with an overview of the experimental design and methods used in your study. This should help the reader understand the overall approach taken in your research.
THIS COULD BE A SECTION OF THE METHODS
Participants or subjects: Next, provide details on the participants or subjects used in your study, including relevant demographic information such as age, sex, and any other relevant characteristics.
POPULATION 1
POPULATION 2
POPULATION 3
Materials or apparatus: If your research involved the use of materials or apparatus, provide details on what these were, how they were prepared or calibrated, and how they were used.
Procedure: Describe the procedures used in your study in detail, including any instructions given to participants or subjects, any specific protocols followed, and any measurements taken.
Data analysis: Finally, provide information on how the data was analysed, including any statistical methods used and how the data was presented or visualized.
3 RESULTS
What answer was found to the research question; what did the study find? Was the tested hypothesis true ? Explains what the authors found following the method previously suggested. You should present your results as objectively as possible.
Figure name
Use visual aids such as graphs, charts, or tables to present your data. These visuals should be clearly labeled and easy to understand.
Don't forget to Quantify the results : When presenting numerical data, be sure to provide the relevant statistics, such as means, standard deviations, or p-values.
First chart heading
Second chart heading
Figure A: Identify any key findings or patterns that emerged from the data and highlight them for the reader.
Figure B: These could be unexpected or particularly important results.
Provide context : For each result presented, provide context by explaining what it means and how it relates to the research question or hypothesis being investigated.
Figures name
Avoid interpretation: In the results section, it's important to present the data objectively and avoid interpreting the results. That should be left for the discussion section.
Overall, the results section should be organized, clear, and concise, presenting the most important findings in a way that is accessible and easy to understand.
Using visuals can be very effective in presenting complex data, and highlighting key findings can help to draw the reader's attention to the most important information.
4 DISCUSSION
Begin the discussion section by reminding the reader of the main research question and objectives. Summarize the key findings of your study in a few sentences. Avoid repeating the results section.
Discuss the implications of your findings and what they mean in the context of the research question or hypothesis being investigated.
Visual aids
Are often
Less boring
THIS COULD BE A SECTION OF THE DISCUSSION
Compare with previous research: Compare your findings with those from previous research in the field. Discuss similarities, differences, and any inconsistencies or contradictions.
THIS COULD BE ANOTHER SECTION OF THE DISCUSSION
Explain limitations: Discuss the limitations of your study, including any potential sources of error or bias. Be honest and transparent about the limitations of your research, but also explain how they can be addressed in future studies.
Discuss implications and applications: Discuss the implications of your findings for theory and practice in the field. Explain how your research could be applied in real-world contexts and any potential future research directions.
Overall, the discussion section should be a thoughtful and reflective analysis of your results. It should interpret the findings in the context of previous research, discuss limitations and potential future directions, and highlight the practical implications of your research.
By providing a clear and comprehensive discussion of your results, you can help readers to understand the significance of your research and its contribution to the field.
5 CONCLUSION
Summary of your key conclusions: Recapitulate the main findings and the implications of the research for theory and practice. It could go along those lines :
In conclusion, this study highlights the importance of X in understanding Y and provides a foundation for future research in this area.
The findings suggest that X has a significant effect on Y, and that this effect may be mediated by [explain possible mechanisms]. The study has some limitations, but the implications of the findings are significant for clinical practice and public health policy.
Overall, this study contributes to the knowledge base in the field and may pave the way for further discoveries.
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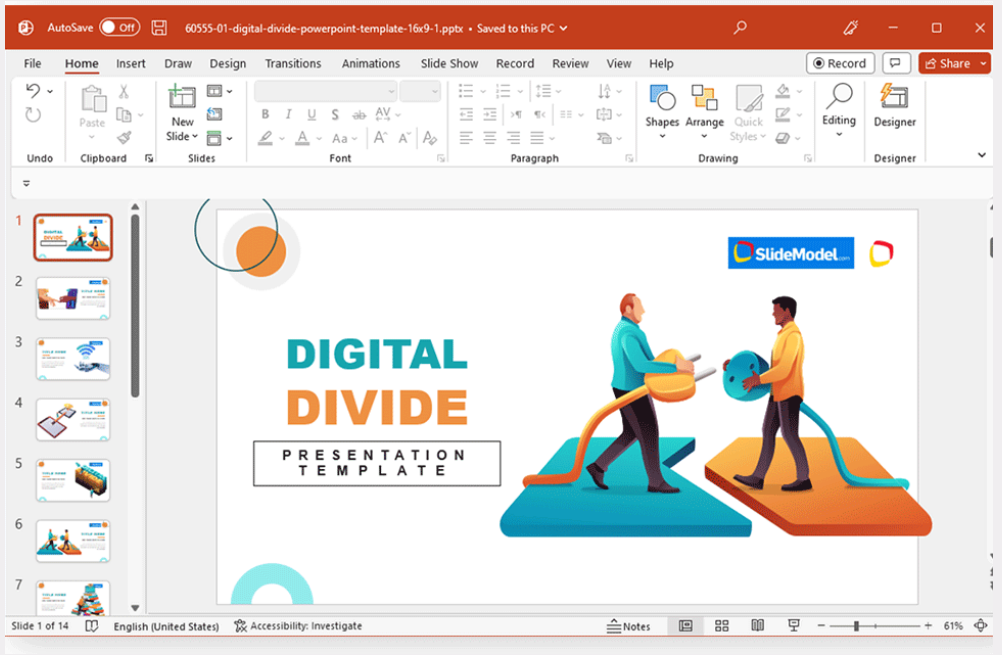
Formats of Reporting Data

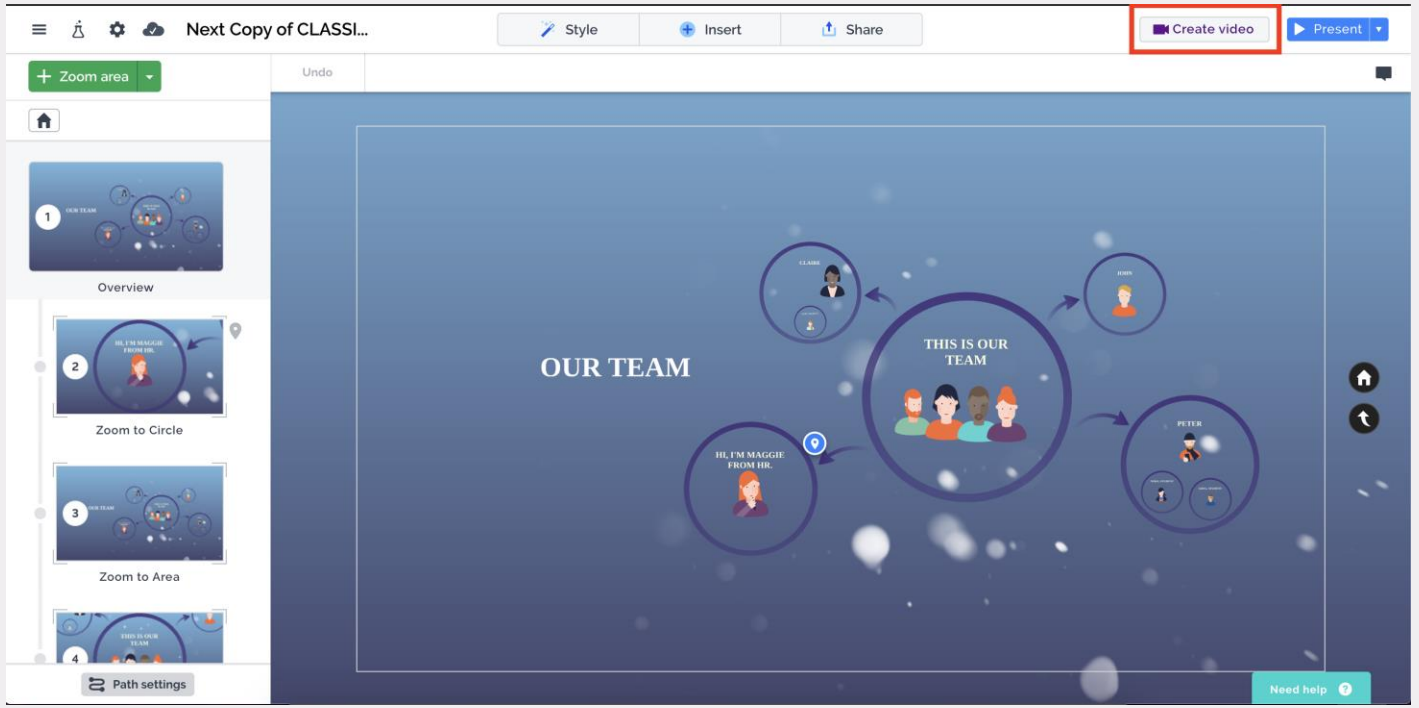
3. Presentations

Data is summarized and presented in slides for verbal communication.

- **Examples**: PowerPoint slides, Google Slides, Prezi presentations.
- **Features:**
  - Combines visuals, text, and bullet points.
  - Designed for live or virtual presentations to stakeholders.
  - Focuses on key insights rather than detailed data.


WE ALL LOVE FRUITS!


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File Home Insert Draw Design Transitions Animations Slide Show Record Review View Help
Record
Share
Undo
Clipboard
New Slide
Slides
Font
Paragraph
Shapes
Arrange
Quick Styles
Editing
Designer
SlideModel
DIGITAL DIVIDE
PRESENTATION TEMPLATE
Slide 1 of 14
English (United States)
Accessibility: Investigate
Notes
61%


Next Copy of CLASSI...
Style
Insert
Share
Create video
Present
Zoom area
Undo
Overview
Zoom to Circle
Zoom to Area
Path settings
OUR TEAM
THIS IS OUR TEAM
HI, I'M MAGGIE FROM HR.
PETER
Need help

Formats of Reporting Data

4. Video Reports

Communicates data visually through video presentations.

- **Examples:** Animated reports, recorded presentations, tutorials.
- **Features:**
  - Uses charts, visuals, voiceovers, and animations.
  - Suitable for engaging remote audiences.






Thank You!