

**POSTGRADUATE WRITING  
WEEK 8  
INTEGRATING DIGITAL TOOLS  
IN RESEARCH  
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## TOPIC INTRODUCTION

In this lesson, we are going to discuss how to integrate digital tools when carrying out research. We are going to discuss how to identify the most useful tools that we can use in research, the tools that are best suited for each stage of the research process and the ethical considerations required when using digital tools. In the previous lesson, we looked at searching for library sources, documentation and referencing. Today's class is therefore a continuation of the previous class because we are looking at the digital tools that we use for research.

# INTENDED LEARNING OBJECTIVES

By the end of this lesson, students will be able to:

1. Identify the purpose of various digital tools used in research.
2. Evaluate which tools are best suited for different stages of the research process.
3. Apply selected tools for literature review, data collection, analysis, and citation management.
4. Reflect on the ethical considerations and digital literacy required in using digital tools.

# HOW TO IDENTIFY THE PURPOSE OF VARIOUS DIGITAL TOOLS USED IN RESEARCH

We shall begin by looking at various digital tools and how they are used in the research process as shown below:

## 1. Zotero

Zotero is an open-access, easy-to-use reference management tool that serves as your personal research assistant and helps you **collect, organize, cite, and share** your research sources. Zotero runs on several operating systems including Windows, Mac X, and Linux.

Zotero allows you to:

- a) Save references from library catalogs, research databases, and the Web.
- b) Add PDFs, images, audio and video files, snapshots of web pages, and more.
- c) Write annotations and attach them to citations.
- d) Create bibliographies using most major citation styles.



## 2. Mendeley

- Mendeley is a reference management tool that can be used to manage citations to articles, books, government documents, book chapters, or websites.
- You can insert citations to articles that you find using multiple library databases. From the Mendeley program, you can then easily insert these references into Word documents. You can also use the web-based version to manage your research network of collaborators.

### **3. Google Scholar**

- Google Scholar is a freely accessible web search engine that indexes the full text or metadata of scholarly literature across an array of publishing formats and disciplines.
- The Google Scholar index includes peer reviewed academic journals and books, conference papers, theses, dissertations, preprints, abstracts, technical reports and other scholarly literature, including court opinions and patents.
- Google Scholar uses a web crawler, or web robot to identify files for inclusion in the search results. Google Scholar provides a simple way to broadly search for scholarly literature.



## 4. Nvivo

- NVivo is a software for qualitative data analysis. Qualitative researchers describe, evaluate and interpret social phenomena.
- They analyze data from interviews, surveys, field notes, web pages and journal articles and work in sectors from social science and education to healthcare and business.
- NVivo allows them to organize, analyze and visualize their data, finding the patterns it contains.



## 5. SPSS

- SPSS (Statistical Package for the Social Sciences) is a software program used by researchers in various disciplines for quantitative analysis of complex data.
- It is a suite of software programs that analyzes scientific data related to the social sciences. SPSS offers a fast-visual modeling environment that ranges from the smallest to the most complex models.
- The data obtained from SPSS is used for surveys, data mining, market research, etc.

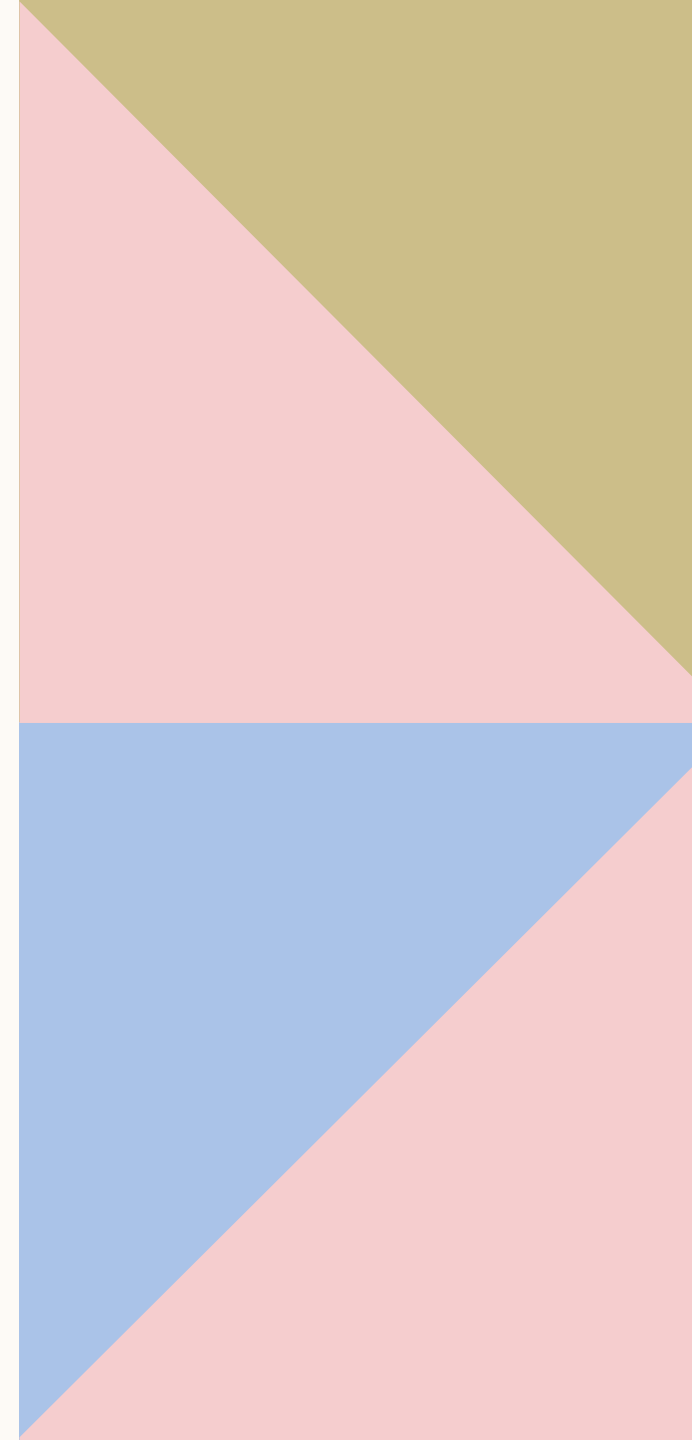


## 6. Notion

- Notion is a versatile multi-platform all-in-one workspace that allows you to manage notes, projects, tasks, wikis, information and much more. Notion's academic research templates help to organize literature reviews, track research progress, and collaborate on publications.
- It is an essential tool for academics, researchers, and students who are in pursuit of organized, impactful research endeavors. A Notion template is any publicly shared page in Notion that can be duplicated. They allow you to share your favorite workflows with the community, or duplicate other workflows that you want to use.

## 7. Trello

- Trello is the visual work management tool that empowers teams to ideate, plan, manage, and celebrate their work together in a collaborative, productive, and organized way.
- Whether you and your team are carrying out research, starting something new or trying to get more organized with your existing work, Trello adapts to any project.

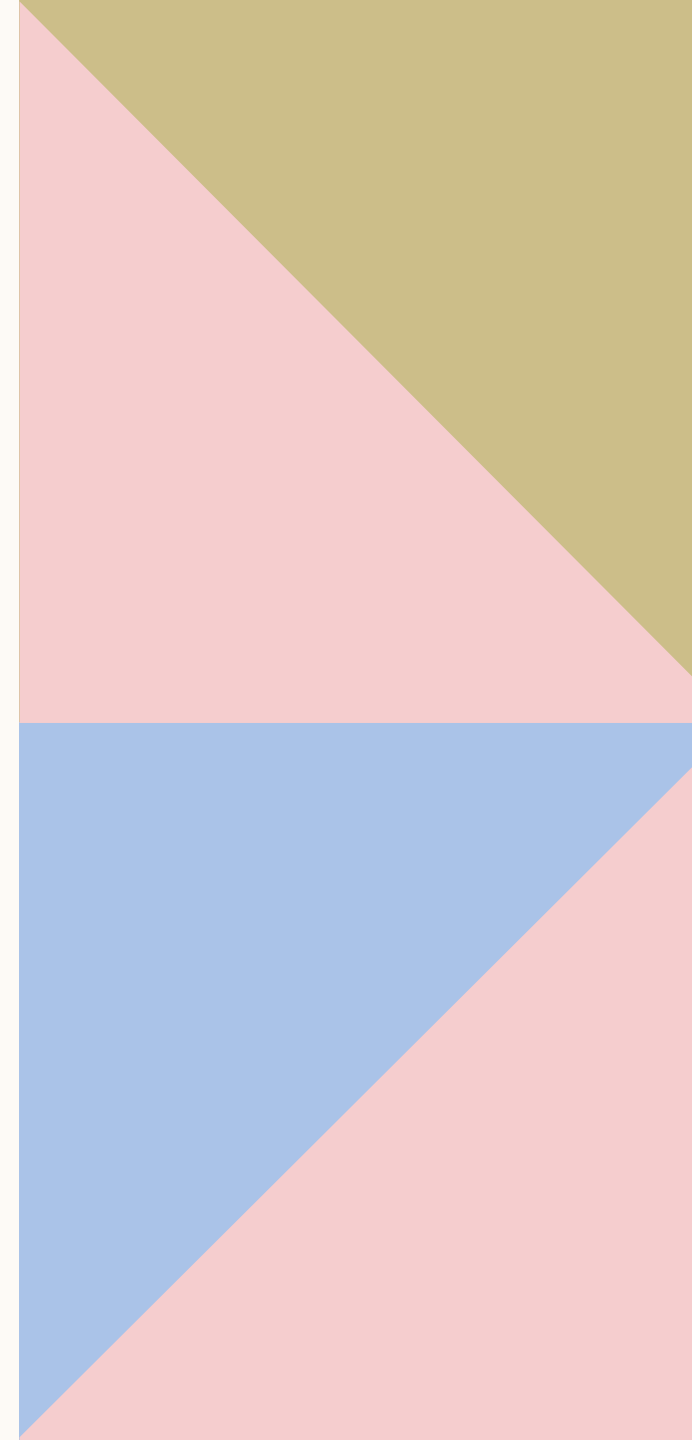


Trello is a collaboration tool that enables you to organize projects and to easily provide information about the project such as:

- What is being worked on?
- Who is working on what?
- What progress the project is making
- Given its qualities, Trello would be a useful tool when carrying out research especially as a team. It integrates well with Google Drive and Twitter among other integrations.

## **TOOLS BY RESEARCH STAGE**

Having looked at some of the digital tools that are used in research, let us now look at how these tools are used at different stages of the research process. The different stages are illustrated in the table below:



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**Research Stage****Recommended Tools****Topic Selection**

Google Trends, AnswerThePublic,  
ResearchRabbit

**Literature Review**

Zotero, Mendeley, Connected Papers, Google  
Scholar

**Project Management**

Trello, Notion, Asana

**Data Collection**

Google Forms, SurveyMonkey, KoboToolbox,  
Excel/Sheets

**Data Analysis**

SPSS, R, Python (Jupyter), Nvivo  
(qualitative), Excel

**Citation & Reporting**

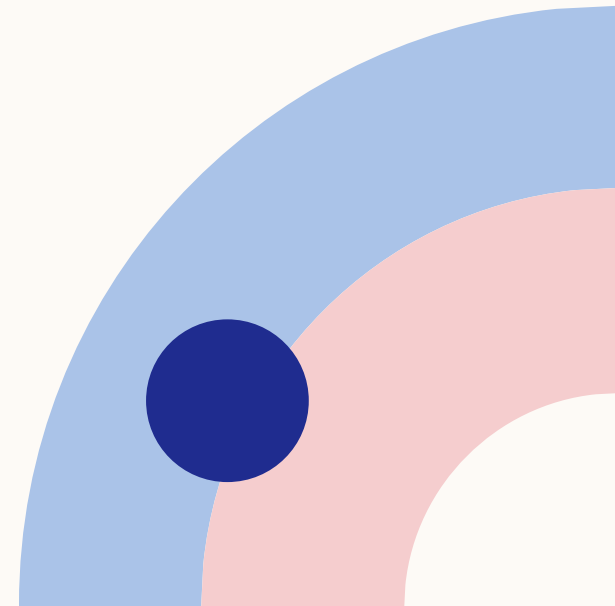
Zotero, EndNote, Grammarly, Overleaf  
(LaTeX), MS Word plugins

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## **SOCIAL MEDIA, AI AND YOUTUBE**

Social media, AI and YouTube can be powerful tools for research when used ethically and strategically. Let us now look at how each of them can be used to enhance the research process:

1. Social Media in Research
2. AI Tools in Research
3. YouTube in Research



## 1. Social Media in Research

### Data Collection

- **Sentiment analysis** from Twitter, Reddit, or Facebook comments
- **Observational studies** on behavior, trends, and community interactions
- **Surveys and polls** distributed via platforms like Instagram or LinkedIn

### Trend Identification

- Track hashtags or keywords to discover emerging topics
- Identify influencers or thought leaders in specific fields

### Recruitment

- Find and engage participants for studies or interviews

## 2. AI Tools in Research

### Literature Review and Summarization

- Use AI to summarize long articles (for example, **Elicit**, **ChatGPT**, **Scite**)
- Identify gaps in literature by clustering findings or comparing abstracts

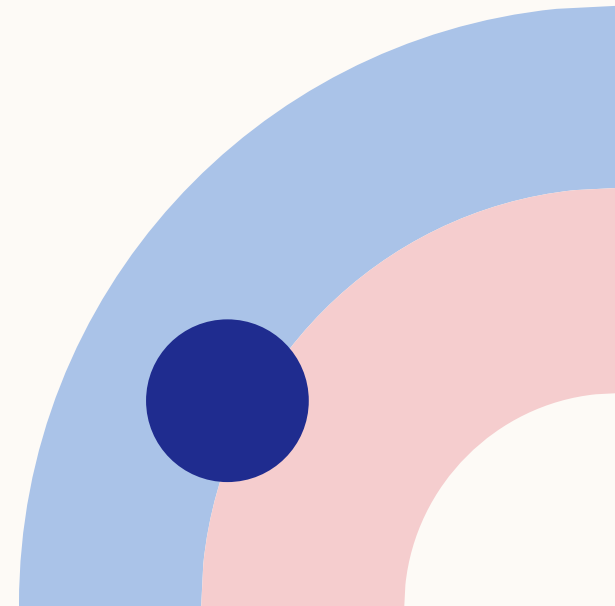
### Research Workflow Automation

AI tools can help with:

- Transcribing interviews (for example, Otter.ai)
- Cleaning datasets
- Creating research outlines

### Writing and Editing

- Improve clarity and coherence in drafts with AI writing assistants
- Generate citation lists and bibliographies



### **3. YouTube in Research**

#### **Educational Resources**

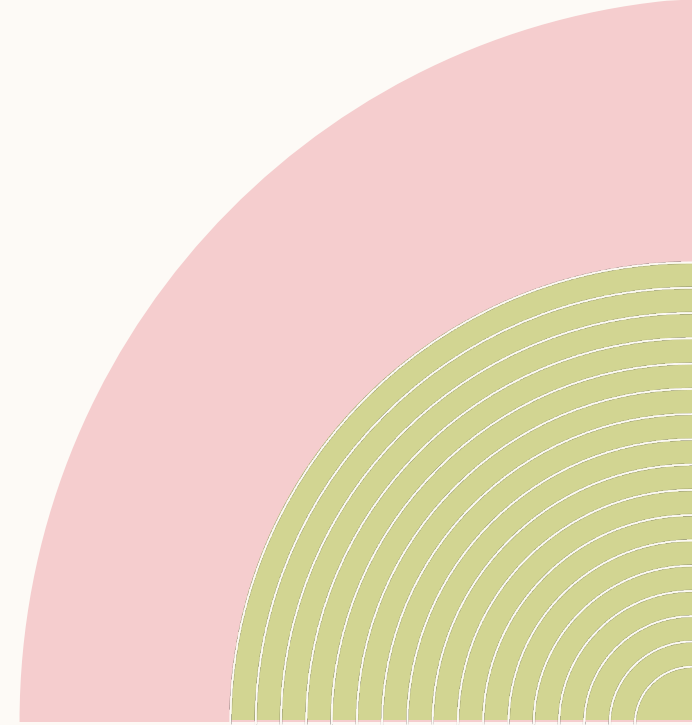
- Tutorials on software (SPSS, R, NVivo, Zotero, etc.)
- Expert talks, webinars, and academic presentations
- Background information on complex concepts

#### **Data Source**

- Analyze video content for media studies, communication research, or cultural analysis
- Use comments for audience sentiment or language studies

#### **Public Dissemination**

- Share your research findings in digestible video formats
- Reach broader audiences and gather feedback



## SUMMARY ON THE USE OF SOCIAL MEDIA, AI AND YOUTUBE FOR RESEARCH

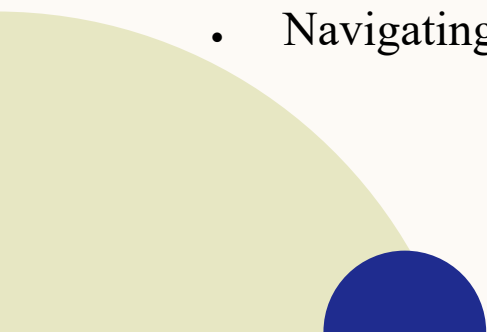
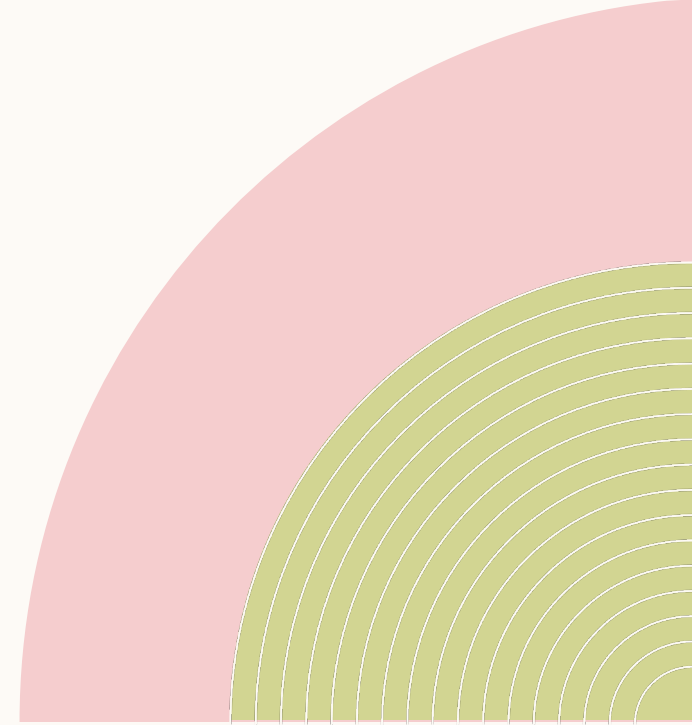
Purpose	Social Media	AI Tools	YouTube
Data Collection	Posts, polls, trends	Automation, transcription	Comments, video content
Literature Support	Expert accounts	Summarization, analysis	Lectures, tutorials
Writing & Analysis	Audience insights	Drafting, editing, data tools	Explainers, tool walkthroughs
Outreach & Impact	Dissemination, engagement	Presentation aids, formatting	Video publishing, public access

# ETHICAL USE AND DIGITAL LITERACY

## 1. Digital literacy

Digital literacy refers to the ability to effectively and responsibly use digital technologies for communication, collaboration, learning, and creating content. When discussing ethical use and digital literacy, the following key concepts should be considered:

- Critical thinking about online information
- Safe and responsible use of digital tools
- Understanding digital footprints and privacy
- Navigating misinformation and fake news





## 2. Ethical Use of Technology

Ethics in digital environments revolves around using technology in a fair, respectful and lawful manner.

The **key ethical principles** to consider are:

- **Respect for privacy** (for example, not sharing others' information without consent)
- **Academic integrity** (avoiding plagiarism and cheating)
- **Responsible sharing** (checking for misinformation before reposting)
- **Intellectual property rights** (honoring copyrights and licensing)



### **3. Real-World Scenarios in the use of social media and AI**

#### **Scenario 1: Misinformation**

You see a social media post going viral that you suspect is fake. What do you do?

#### **Scenario 2: Cyberbullying**

Someone is being harassed in a group chat. Do you step in, and how?

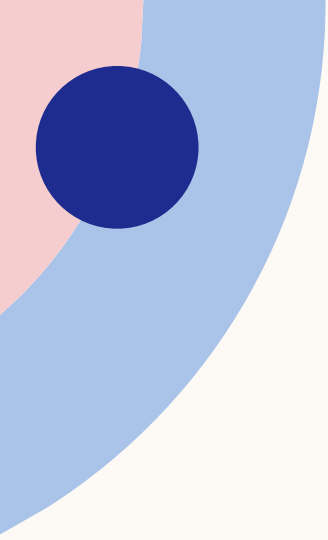
#### **Scenario 3: AI and Content Creation**

A student uses an AI tool to write their assignment. Is that ethical?



# CAUTION

- It is important to disclose the use of AI in your research process to avoid AI plagiarism.
- Always adhere to fair use and copyright guidelines when using content on social media, AI or YouTube such as clips or quotes, etc.
- When engaging with digital content, it is our responsibility to ensure that the content is factual and that we are not involved in using or spreading fake information or misinformation. We must verify our sources to ensure that they are credible.

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- When using innovation (like AI tools), we must use them in an ethical manner. This means doing the following:
    - a) Encouraging **media literacy education** from an early age
    - b) Promoting **open dialogue** about digital habits
    - c) Modeling good behavior in professional and educational settings
    - d) Using tools to verify sources and manage digital privacy



## SUMMARY

- In today's lesson, we have delved into the world of digital tools and their use in research. We have discussed the purpose of various digital tools in research as well as how these tools are applied for different stages of the research process such as the literature review, data collection, analysis, and citation management.
- We also looked at real world scenarios in the use of social media and AI in research. Finally, we have looked at the ethical considerations and digital literacy required in using digital tools.

# REFLECTION QUESTION

Which ethical considerations are required when using digital tools for research?

## ANSWER TO THE REFLECTION QUESTION

The **key ethical principles** to consider when carrying out research are:

- **Respect for privacy** (for example, not sharing others' information without consent)
- **Academic integrity** (avoiding plagiarism and cheating)
- **Responsible sharing** (checking for misinformation before reposting)
- **Intellectual property rights** (honoring copyrights and licensing)



## **PRESENTATION OVERVIEW**

### **Lesson Focus**

The session explores how to effectively integrate digital tools into the research process, building on the previous class about library sources, documentation, and referencing.

### **Learning Objectives**

By the end of the lesson, students should be able to:

- Identify various digital tools used in research.
- Evaluate which tools suit different stages of the research process.
- Apply selected tools for literature review, data collection, analysis, and citation.
- Reflect on ethical considerations and digital literacy.



## PRESENTATION OVERVIEW

### Key Digital Tools Discussed

1. **Zotero** – Citation management and research organization.
2. **Mendeley** – Managing and citing research sources, collaboration features.
3. **Google Scholar** – Search engine for scholarly literature.
4. **Nvivo** – Qualitative data analysis.
5. **SPSS** – Quantitative data analysis.
6. **Notion** – Organizing research, literature reviews, and collaboration.
7. **Trello** – Project and task management, especially for group research.



## PRESENTATION OVERVIEW

### Tools by Research Stage

- **Literature Review:** Zotero, Mendeley, Google Scholar, Notion.
- **Data Collection & Analysis:** SPSS, Nvivo, social media, AI tools.
- **Organization & Collaboration:** Trello, Notion.
- **Dissemination:** YouTube, social media.



## PRESENTATION OVERVIEW

### Use of Social Media, AI, and YouTube

- **Social Media:** Data collection, sentiment analysis, participant recruitment.
- **AI Tools:** Literature summarization, workflow automation, writing assistance.
- **YouTube:** Tutorials, expert talks, data analysis, public dissemination.



## PRESENTATION OVERVIEW

### Ethical Use & Digital Literacy

- **Digital Literacy:** Critical thinking, responsible tech use, privacy awareness.
- **Ethical Principles:**
  - Respect for privacy
  - Academic integrity
  - Responsible information sharing
  - Honoring intellectual property



## **PRESENTATION OVERVIEW**

**Scenarios explored:** Misinformation, cyberbullying, ethical AI use.

### **Key Takeaways**

- Digital tools enhance every stage of the research process.
- Strategic and ethical integration of technology is crucial.
- Disclosure of AI usage is essential to maintain academic integrity.

## REFERENCES

Michigan Central University. <https://libguides.cmich.edu/Zotero>

Libraries Research Guides. <https://libguides.northwestern.edu/mendeley>

NVivo. <https://help-nv.qsrinternational.com/20/win/Content/about-nvivo/about-nvivo.htm>

Survey Sparrow. <https://surveysparrow.com/blog/what-is-spss/#section1>



**THANK  
YOU**