A Guide to Conducting Your Own Research on Harrisonburg, VA

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Importance of Accessible Research

Research is a valuable tool for understanding our complex world. Not only does research help us understand scientific information, but it is also useful in the humanities. However, most research available to the public is related to health or social sciences. This research primarily focuses on health conditions and other science-related topics that directly impact humans. Project Harrisonburg is like these health studies that we often come across, however, there is one major difference between this project and others: accessibility. To say that a research project is accessible means that anyone regardless of education level can access the study and confidently read its contents. Other similar health-related studies tend to allow large media organizations to create their own conclusions from the study and report on their interpretations. These interpretations of research studies by media sources often are inaccurate and generalize the findings of the study. These generalizations create hook lines that encourage more engagement with the content from the media's audience. Why is this a problem? With this method of sharing a research study with the public, researchers allow media organizations to control the narrative surrounding the study. Many current researchers focus solely on authoring a report that can be shared with and interpreted by their peers with the same education levels and background in the field of study. This often means that their papers are inaccessible to anyone other than a researcher belonging to the same or a similar field of study. So, even if you were to read the study yourself after seeing an article on its findings, you may not be able to easily form your own conclusions about the meaning of its conclusions. This lack of accessibility of the original study results in misguided conclusions being widespread throughout the public.

Project Harrisonburg seeks to change this vicious cycle of spreading inaccurate information by making the research accessible to all who come across it. Increasing accessibility of the study empowers those it effects to take away their own conclusions and create plans their own plans for improving their health outcomes. Making sure that you make your research study accessible, or you share its findings responsibly is crucial in reducing the effects of such a cycle.

Topics of Research

For Project Harrisonburg, the selected research topic revolves around factors that influence community health outcomes. These selected topics are health, environmental justice and climate, recreation access and adequacy, and socioeconomic status. However, these listed topics are not the only factors that play a role in the health status of Harrisonburg residents. There are more specific factors within each research topic that impact the overall health of Harrisonburg residents, as well as the health of individual communities within the city. For more specific results, one could research the number of Hispanic residents active in Harrisonburg's athletic clubs. This is a specific example under the topic of recreation, but it could be important in identifying the specific recreation activity and needs of Harrisonburg's Hispanic community. A lack of participation in Harrisonburg's recreational leagues could influence poor community health outcomes in Hispanic residents. This example shows how one can use the findings from Project Harrisonburg to spur other similar yet more specific research studies. If you're interested in doing a study of your own based on the findings of Project Harrisonburg's data analysis or survey, you can choose any related research topic based on your specific areas of interest, a certain community within the city that you belong to or are involved with, or in a field in which you have some background knowledge. The only thing to keep in mind when selecting a topic is the more specific it is, the better it will be. For instance, if you were interested in studying trends in mental health outcomes in Harrisonburg, you may want to narrow the scope of the project. You may narrow the scope by selecting a specific community or subgroup within a community, a specific period from which you will collect data, and a group of mental illnesses to explore.

Below is a helpful tool that you can use to narrow the scope of your desired project down to a manageable and impactful size. Fill the table out with the ideas you currently have or that you would like to pursue in the future. The first row is an example of how one may use the table to make a research topic more specific.

Broad Explanation of the Topic of Interest	**WHO – Who are you studying? Is there a subgroup within this population that is of particular interest? Why?**	**WHEN – What period do you want to collect data from? Why?**	**WHAT – What are you studying? If it is a broad topic, narrow it down to a particular aspect of the topic that you are interested in or that is particularly relevant to your population of interest?**
Mental health trends in Harrisonburg, VA	Harrisonburg City residents: I could look at mental health trends in Harrisonburg's Black or African American community because this group has a higher risk of suffering from a mental illness than other racial/ethnic groups in the city.	For this project, it would be best to analyze pre-existing mental health data from the past 5 years (2017-2022) in this community. Picking this range of time will allow me to have enough data from which I can make conclusions regarding mental health trends in the community of interest.	I originally wanted to study mental health overall, but since anxiety and depression-related disorders are the most diagnosed mental disorders in the nation, it may be best to focus only on these in my study. So, I will study the trends in anxiety and depression disorders in Harrisonburg's Black or African American population since 2017.

When you have finished filling out this table, you should have a challenging time at first creating a one-line title for your proposed research study. It should take a sentence of two to best explain the intentions of your study.

Selecting a Research Method (or a few)

Below are some resources that explain the several types of research methods.

- Types of Research (Qualitative vs. Quantitative): https://guides.lib.berkeley.edu/c.php?g=1262657&p=9256360

- Qualitative Research and its Methods: https://myperfectwords.com/blog/research-paper-guide/types-of-qualitative-research
- Quantitative Research and its Methods: https://www.educba.com/types-of-quantitative-research/

Here is a basic and quick overview of qualitative and quantitative research. This overview also includes the most common methods of research for both qualitative and quantitative studies.

Qualitative Research is not based on numerical or statistical data. This research instead focuses on written or spoken text, images, or other forms of media to make conclusions. A qualitative study is best for research projects that seek to understand the public's opinion on a certain matter. This type of research is also commonly used for studies examining the language in marketing of a particular product or experience. Fields of research that most often use qualitative research methods include: market research, psychological research, and humanities-based studies. A few examples of the popular qualitative research methods are listed below.

- Surveys (with open-ended and non-coded questions)
- Interviews
- Observational

Quantitative Research is the type of research that most people think about when they think of a scientific study. This research is based on numerical and statistical data. Quantitative research is often used in studies related to health sciences, computer sciences, and social sciences. Example of the most popular quantitative research methods include:

- Data Analysis
- Survey (without open-ended, non-coded questions)

Selecting the correct research method or methods is crucial to designing an effective study. For instance, if I were to do a study on anxiety and depression trends in the Black or African community in Harrisonburg since 2017, I would not want to do an observational study. An observational study would only give me information about real-time events and interactions in the community. This type of study would provide me with little information on trends of mental health experiences in the community. However, I could technically use interviews for this study. I could find community members who have experienced issues with mental health related to anxiety or depression and ask them questions about their individual experiences, health outcomes, and find out what they know about the general mental health of their communities. However, would interviews be more effective than a data analysis at identifying these trends of interest? No, they would not be. As implied by that example, there are numerous methods that could technically fit the same study, however, there is a particular method that stands out as the better of the other options.

When a particular method does not stand out, there is an option to do a mixed-methods approach. If I wanted to look at the trends in anxiety and depression in the Black or African American community of Harrisonburg since 2017 AND patient experiences with seeking mental health treatment, I may decide to do both interviews and a data analysis. Only doing one method or the other would fail to provide me with enough information to make informed conclusions about both topics of interest in the example study. There may also be moments in which you find out during a study that you need another method to fully cover the topic of interest. In this case, there is no harm in adding in more components to a study to cover your bases. Making sure your study is as complete and accurate as it can be is extremely important to ensuring its usefulness to all who may come across it.

Threats to Validity

In research, the term “Validity” is defined as the extent to which the design or selected research method of a study accurately measures what the study is supposed to measure. What the study is supposed to measure depends on the original purpose of your research. Using the same example above, only using interviews to find out about the mental health trends in Harrisonburg would reduce the validity of my study. Researchers would classify my study as having a higher validity if I were to instead use both interviews and a data analysis. A well-designed research study allows the audience to understand what is being done to whom. A strong study also enables readers to easily identify the independent and dependent variables*, as well as how the independent variable(s) effects the dependent variable(s). Making the relationships between these variables clear helps readers analyze the effectiveness of the study itself and rule out confounds*. There are two types of validity to consider when designing a research study.

Internal Validity explains the extent to which you can confidently conclude that a cause-effect relationship between two variables in a study cannot be better explained by other factors not accounted for within a study. For example, an experiment studying the effects of increased screen time on children’s memory as they age may present threats to internal validity. As they grow, children are going to mature and the way in which screen time (the independent variable) will impact the children’s memory (the dependent variable) may change as the study progresses. Therefore, one cannot confidently say that maturation does not influence a relationship between screen time and a child’s memory over time.

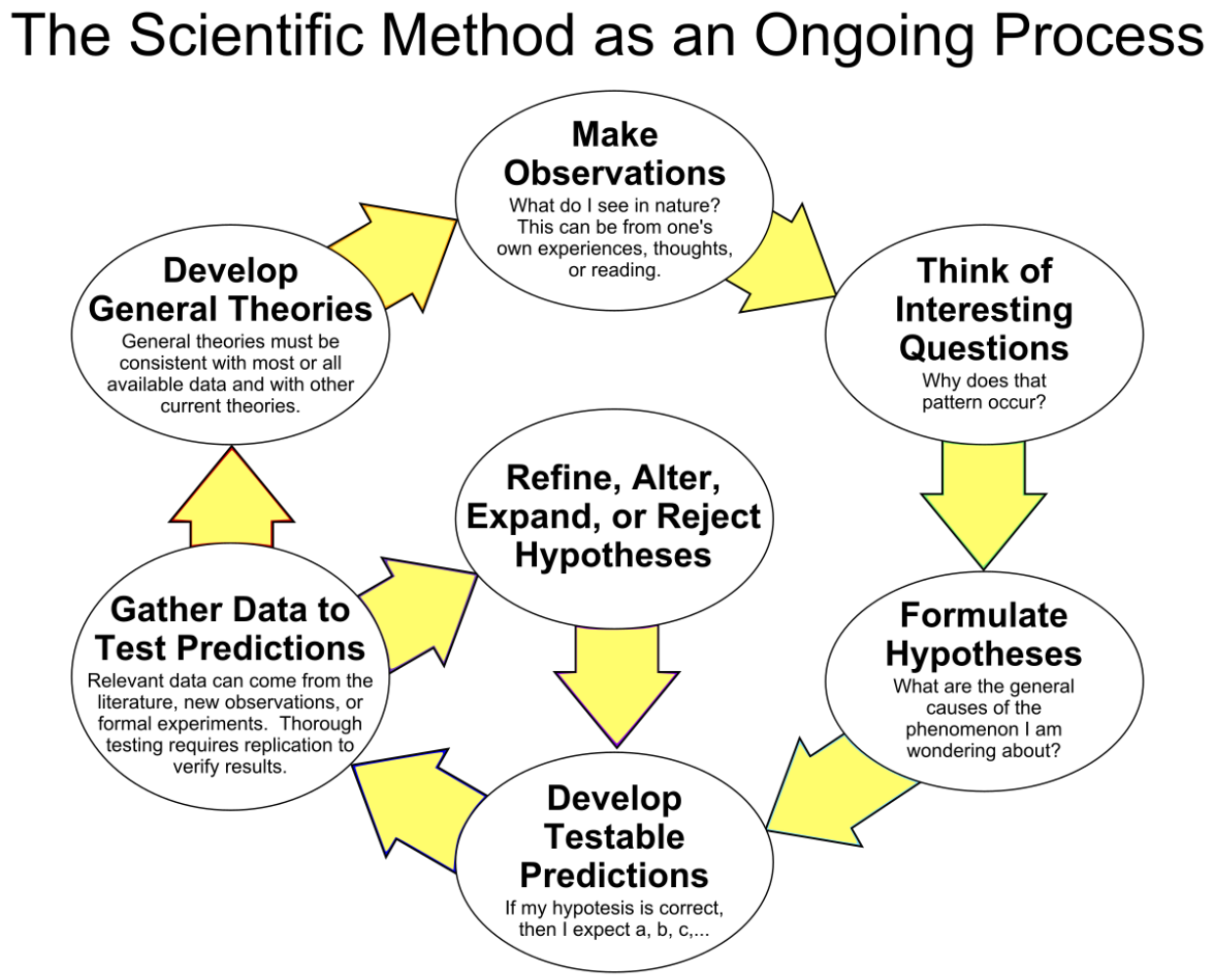
External Validity explains the extent to which results from your study can be generalized. Having a high external validity means that researchers can use their findings about a specific population to make claims about another similar population that they have not directly studied. A threat to external validity includes selecting participants for your study that are not representative of the population that you want to find out more information about. An example of this type of threat to external validity is selecting participants from an affluent neighborhood of Harrisonburg for a study that aims to make general claims about the current socioeconomic status of Harrisonburg residents. Such an error in selecting participants can result in skewed data that makes your study invalid.

*Confounds: A variable, other than the independent or dependent variable, in a study that influences the relationship between the independent and dependent variables but is unmeasured.
*Dependent Variable: A variable in a study that is influenced by the independent variable. It is the effect in the cause-effect relationship between the independent variable and dependent variable.
*Independent Variable: A variable in a study that influences the dependent variable. It is the cause in the cause-effect relationship between the independent variable and the dependent variable.

The Scientific Method of Research

The scientific method of research is a universal principle used for studies of all genres. This method relies on empirical evidence, or evidence gathered directly from observation or experience. The scientific method reduces research errors and increases a study’s validity. Below, I have included a graphic of the steps involved in the scientific method and a link to a Crash Course video explaining the history of the scientific method, as well as how to apply it to a study.

"The Scientific Methods: Crash Course History of Science #14":
https://www.youtube.com/watch?v=UdQreBq6MOY



Example:
Make an Observation: When looking at mental health data for the nation, I noticed that Harrisonburg, VA reports poor community mental health outcomes.
Think of Questions: What is the cause or causes of the poor community mental health outcomes in Harrisonburg? Which communities within Harrisonburg tend to have the worst mental health outcomes and what factors contribute to that?*
Formulate a Hypothesis: The lack of adequate recreational facilities in communities with a majority of Black or African American residents may be contributing to poor community mental health outcomes since 2017 in Harrisonburg, VA.
Develop Testable Predictions: If my hypothesis is correct, then I expect to find:
a. That Black or African American communities in Harrisonburg have limited access to recreational facilities.
b. That Black of African American communities in Harrisonburg have higher rates of depression and anxiety-related disorders than other racial or ethnic populations.

Gather Data and Test Predictions: I decided to conduct a data analysis and found that Black and African American communities in Harrisonburg do not have adequate access to recreational facilities. My findings indicate that this same marginalized community is at greater risk of suffering from depression or an anxiety-related illness than other racial and ethnic communities in the city.
Refine, Alter, Expand, or Reject Hypothesis: My original hypothesis has been validated by my research findings.
Develop General Theories: It is very possible that access to recreational facilities impacts current community mental health outcomes in Black or African American communities in Harrisonburg, VA.

*The questions section is another time during which you want to narrow the scope of your project. Begin with something very vague and then continue to see how specific you can get with each new question.

Deliverable and Presentation of Research

There are many different ways to present research. You first want to consider who your intended audience will be. For instance, my intended audience for Project Harrisonburg was members of the public. So, I decided to create an interactive website with easy-to-understand infographics and supporting documents. However, there are projects that you want to share with fellow researchers. In this case, a website such as the Project Harrisonburg site would not be your best choice for a deliverable. The most basic form of a deliverable for research when you want to share your study with the researchers within your selected field is the research report. A research report includes a few crucial elements, but the sections required in a paper depend on the field in which your study belongs. The example paper linked below is a psychological study, so the paper uses APA guidelines as APA is the accepted form for all psychology-related research.

Example Research Report:

https://docs.google.com/document/d/10N7d2GMuhjkbTK2pzPl9AdgNpxDQcb4EKKpVyhZQagU/edit?usp=sharing

There are a few elements of a research paper that belong in most if not all research reports. These elements include: the title page, the abstract, the introduction, including the statement of purpose for the study, the methods and design, the results, the discussion or conclusion, and sources. Each of the elements are explained in more detail below.

Title Page: This is where you want to put the title of your study, the author's name, or names if there are multiple, and what department or organization you belong to (if you belong to one).
The Abstract: You write the abstract after you have finished writing the entirety of the research paper. The abstract serves as the blurb for your research paper and tells other researchers what the purpose of your study was, what you found, and what your basic conclusions were.
The Introduction: The introduction of a study sets the scene for other researchers. In this section, you explain the current literature and knowledge available on your selected research topic, how your project contributes to that knowledge, and the significance of the project overall (either to the population you are researching or other).
Methods and Design: In this section, you explain to other researchers exactly how you designed your project, including your selected research method(s), and how you used each method. This section also requires that you name the materials used. Think of the methods and

design as a recipe. You are providing other researchers with all the ingredients and step-by-step instructions required to accurately replicate your study.

The Results: The results section is exactly what it sounds like: the results of your study. You list the results and ONLY the results. You do not want to add in the meaning of your results or any conclusions yet.

The Discussion or Conclusion: The discussion or conclusion of the paper is where you consider the study as a whole. You answer the following questions: Was my hypothesis correct? Did I use the most effective method and design possible to evaluate my hypothesis? If not, how could I have better designed my study? What are the limitations of my study? (For example, if I did the study on mental health trends in Harrisonburg and found that Black or African American residents have poor mental health outcomes in the city, I cannot generalize these results for the entire nation and say that all Black or African American communities in the United States have poor community mental health outcomes.) Are there future directions that researchers could take based on my study? How did my study contribute to the existing knowledge on the topic?

Sources: The sources section is just a list of citations in the correct citation format indicated by the field in which your research topic belongs.

Sources

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