From Hypothesis to Publication: How Clear Hypotheses Lead to Better Quality Papers

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Hypothesis as the Focus of a Paper

- Your hypotheses are the hinge that holds all the parts of your paper together, linking what was done before and what your study found.
- The Introduction and Literature Review sections tell about the topic and are the basis for making the hypotheses.
- The Methodology and Results sections are testing those hypotheses.
- The Discussion and Conclusion sections put the results of the hypotheses testing in context and offer next steps in theoretical development.

Introduction

- The beginning of your paper tells us:
  - Background information
  - Why we should care about this topic

Literature Review

- Definitions/Conceptualization of variables
- What's been done
- What we assume because of what's been done = HYPOTHESIS

Hypothesis Writing Checklist

- Are all the concepts in this hypothesis clearly defined?
  - If not, can I improve my literature review
    - by clearly defining terms and conceptualizing my ideas?
    - by changing a term to more precisely mean what I intend?
- Can this hypothesis be tested with the data I have/will have?
  - If not, can I improve it:
    - by narrowing the scope?
      - Build certain limitations into the hypothesis with phrases like “in Thailand” or “among Thai university students”
    - by modifying my data collection?
      - Revise questionnaire
      - Collect additional data
    - by modifying the concept measured?

Development of Hypotheses

- I was part of a team interested in studying young university students across Asia and their perceptions of and intention to travel to various Asian cities. We were also interested in how media or other exposure to information would affect these intentions.
- In early meetings, we talked about whether knowledge about a particular city or culture would influence this decision and whether more exposure to a city through media, word of mouth, etc. would affect this.
- Early discussions of hypotheses included something like:
  - H1: Knowledge about a city makes someone more likely to visit that city.
  - H2: More exposure to information about a city makes someone more likely to visit that city.
- Neither of these was used.

Why would this hypothesis not work for our project?

- H1: Knowledge about a city makes someone more likely to visit that city.
  - What does “knowledge” about a city mean?
  - How would we measure it?
    - Would it include a long, objective test for each city?
    - Even if you are very familiar with a city, you may not know everything about it that would be asked in a test.
    - Ultimately, it would have made our questionnaire too long.
- We could not measure knowledge (given our budget, time frame, and lack of clear conceptualization about this term) and so couldn’t be part of the hypothesis. We needed to think again about what we wanted to measure to capture this idea.

Development - changing a term

- We decided the concept that we were trying to measure was familiarity rather than knowledge.
- We wrote the following in the methodology section of our paper:

  Familiarity was measured by using a scale of 1-6 for each city, where 1 = *never heard of it* and 6 = *know it very well*. Assessing the accuracy of respondents' self-assessed familiarity was not necessary since we were not interested in their actual knowledge but their perceived familiarity relative to their perceived familiarity with the other cities.

How did we have to clarify our definition of exposure?

- H2: More exposure to information about a city makes someone more likely to visit that city.
  - How do you measure exposure?
  - Can you quantify how much time you spent consuming media related to a particular city in your life?
    - How many times have I heard the song “Gangnam Style”? I have no idea. I expect most respondents wouldn’t know either.
    - Have I ever heard a song about Seoul, South Korea? Sure! I’ve heard “Gangnam Style.” I expect most respondents could answer that.
- Based on these discussions, we modified our idea about how to measure exposure and in our methodology section (coming soon!).

Multi-part models

- Often you may have a multi-part model.
- Sometimes you may look for moderating or mediating effects.
  - We hypothesized exposure to a city would affect intention to visit.
  - We also thought exposure would affect familiarity, which would then affect city image attitudes, and that would then affect intention to visit.
- It is easier to manage if you break these different parts into different hypotheses (H1, H2, etc.). Or, if you really want a single sentence, with multiple ideas, you could use H1a, H1b, etc.
- A model showing a path may be marked to indicate which hypothesis goes with which line.

Example of model and hypotheses

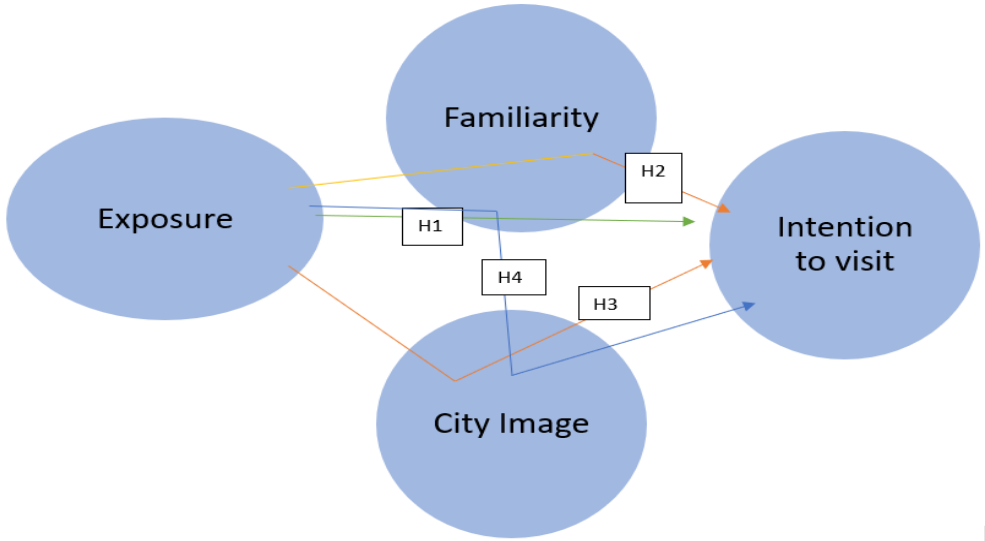
List of Hypotheses in Text

- H1: Exposure to a city is positively correlated with intention to visit that city.
- H2: Exposure to a city is positively correlated with intention to visit a city through self-perceived familiarity with that city.
- H3: Exposure to a city is positively correlated with intention to visit a city through city image of that city.
- H4: Exposure to a city is positively correlated with intention to visit a city through self-perceived familiarity and city image.

Figure Showing Hypotheses

Figure 1

Paths of Hypotheses



Where do I put my hypotheses?

- Most frequently these appear at the end of the literature review.
- If you have multiple hypotheses that are related to different sub-sections of your literature review, it's fine to put the relevant ones at the end of each sub-section.
- Giving each hypothesis its own line makes it easier for readers (editors, reviewers, potential readers citing your paper) to find them and understand your paper. I recommend it.
  - H1:
  - H2:

Methodology Example

- Your methodology section shows us **how** you can evaluate your hypothesis.
- From the sub-section Methodology-Questionnaire Design and Variable Measurement – Exposure:
  - Since it would be difficult for respondents to accurately remember or quantify their exposure to a particular city, the exposure variable was measured by how many of the seven exposure methods (visited it myself, someone I know visited/lives there, social media, traditional media [newspaper, TV news, radio, etc.], TV/movie that takes place or references this city, music, learned about it in a class/academic text) a respondent had ever experienced for each city.

Variable Measurement – Justification

- Where are you getting your survey items from?
  - If they have been validated by another study, cite it.
    - Example: Of the city attributes used on our questionnaire, 13 were from Dolnicar & Grun (2012).
  - If you made them yourself, did you do any kind of testing of the survey items?
    - If you made a scale, how did you validate it? How are you sure that the survey items you included are measuring the same concept?

Sampling

- Without explaining your methodology, we cannot evaluate the quality of your research.
- **AJPOR Guidelines About Survey Reporting Survey**
  If you write about a survey you conducted, please include:
  - population of survey
  - response rate
  - survey dates
  - survey methodology, including sampling method and survey mode
- **AAPOR also has more detailed guidelines about what should be reported and how to calculate response rates, etc.**

Selecting Your Test

- Ensure that your data is compatible with a test that will let you test your hypotheses.
- If not, think again about what kind of statistical analysis you will need to show whether your hypotheses were supported?
- If the data won’t allow you to do a certain kind of analysis, think about getting the data you need before you start (or revise your hypotheses to match what you can do).

Results

- Your results should be carefully presented in a way that tests your hypotheses.
- What information should be included for the tests you performed?
- What significance level are you looking for.
- Don’t overstate your results.
  - Don’t state causality when all that has been shown is a correlation.
  - Try using language like “H1 was supported [or not supported].”

Discussion/Conclusion

- Some generalizability is needed (without them, there would be no implications beyond the people you surveyed, etc.), but don’t overgeneralize.
- State limitations clearly.
- State future directions of research to fill remaining gaps in research, to confirm results, or to re-test without some of your limitations.

How do hypotheses make your paper stronger?

- A well-written hypothesis indicates that you have organized your thoughts about the rest of the paper in a clear way.
- Without a clear literature review, you would not have any basis for a hypothesis. So, a justified hypothesis means you did your literature review correctly.
- Without clear conceptualization of your variables, it would be impossible to write a convincing hypothesis.
- Without a strong methodology to test your hypotheses, there would not be a paper.
- Without having theoretical implications, there would be no hypotheses.

Do all papers need a hypothesis?

- No, of course not.
- Certain exploratory research might have research questions but no hypothesis.
- Review papers may not always have a hypothesis but should still systematically address something.
- If you think you don’t need one, ask yourself why. There may be reasons, but it shouldn’t just be that you haven’t finished conceptualizing your variables.

How do they help with publication and impact?

- Editors and reviewers may be busy. Clearly indicated, well-written hypotheses allow editors to see what this paper is about very quickly. They can then check if everything else seems to match (e.g., the methodology allows it to be observed) and speed up the review process.
- High-impact scores are dependent on high citations. When other authors are doing their literature review, making it easy for readers (potential citation creators!) to find out your idea and whether it was supported may help you get citations.

Paper discussed in examples

- Luo, Y., LoCascio, S. P., Kheokao, J., Cho, S. K., Gopalan, R., Kartikawangi, D., Hasan, N. N. N., Jitprapai, N., Reyes, R., Shaw, K., Song, I., & Visperas, N. B. (2024). Mere exposure effect on travel intention of educated young people in Asia: Results from a cross-country survey. *Asian Journal for Public Opinion Research*, *12*(2), 122–

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