Process: Conceptual Framework
Topics: Templates to develop your conceptual framework

After defining your research question, it is important to outline a conceptual framework. A conceptual framework explains the constructs to be studied, either visually or in words, and their relationships.

1. **Purpose: structure your analysis**

We develop a conceptual framework to:

1. decide which variables are relevant to the study
2. make decisions about how to define variables during data analysis
3. interpret model results

A conceptual framework is based on a literature review, and it may be included as a figure in the published manuscript, particularly in a social science journal.

2. **How to draw a conceptual framework**

There is no correct format for a conceptual framework. If you drew a picture of your statistical model, this would be a conceptual framework because it visualizes the variables and how they are related. Using this approach, a general explanatory model would include one outcome and multiple hypothesized associated factors. A hypothesis test question would have one “predictor” (covariate of interest) and one outcome, and several additional covariates to be tested for confounding.

Generally, however, a conceptual framework is something broader than a statistical model, it is a diagram that summarizes major, relevant social theories that have been described and evaluated in the peer-reviewed literature. I provide three general frameworks to get you started. As I mentioned in the Analysis Workflow video, I tend to start by documenting my own assumptions and knowledge about the research question, then update the layout and variables in the conceptual framework based on a systematic literature review.

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3. Social determinants framework

The social determinants framework shows nested circles. Smaller, internal circles relate to factors that are close to the individual such as biological characteristics. Larger circles represent general factors in society that influence the individual, sometimes indirectly such as access to the internet or living conditions of poverty. A social determinants framework is well suited for most general explanatory models (for example: What factors are associated with the outcome-Y?).

4. Example: Social determinants framework

These authors use a social determinants framework, also called an ecological framework, to study intimate partner violence against women in urban Tanzania. Factors related to individual women are in the center (visualized as dark grey). Factors related to a woman’s relationship are shown in the larger tan circles. And factors related to her community are in the largest white circle.


5. Sequential framework

The sequential framework demonstrates causal pathways (hypothesized and measured) between an exposure and an outcome. It is tempting to add lots of boxes and arrows to a sequential diagram, though too much information can make the core ideas and relationships difficult to understand. I recommend placing general themes (constructs) in the boxes, and listing specific variables under those themes, if necessary. A sequential framework is helpful when your research question is testing a specific hypothesis (for example: Is X associated with Y?).
6. Example: sequential framework

Here is a sequential framework summarizing hypothesized causal pathways between health status and socioeconomic status by way of access to treatment, therapy compliance, and environmental hazards. The authors show two main pathways that shape health history and socioeconomic history which they show as leading to current socioeconomic events.

7. Overlapping domains framework

An overlapping domains framework shows how multiple factors must occur simultaneously for an outcome to occur. This framework is useful when you are testing a hypothesis about an interaction (for example: Does Y occur when X and Z are both present?), or for a general explanatory model where the covariates do not share a hierarchical or embedded relationship.

8. Example: overlapping domains framework

These authors use an overlapping domains framework to describe their analysis of homeless patients who are hospitalized and then released to homeless shelters in the US. They investigate hospital experiences and outcomes, homeless shelter experiences and outcomes, and how patients experience the transition from one system to the other. This transition occurs in the community context where there are multiple actors including the city government, community clinics, and non-profit organizations.

I recommend adapting one of these conceptual framework templates to your specific research question.