

DOWNLOAD PDF OVERVIEW OF THE STUDY, SAMPLE, MEASURES, AND PATH MODEL

Chapter 1 : Introductory Statistics: Concepts, Models, and Applications by David Stockburger

What path analysis can and can't accomplish Cans-- for a given structural model you can $\hat{\neq}$ evaluate the contribution of any path or combination of paths to the overall fit of that structural model.

There is no single way to create a logic model. Who creates the model? This depends on your situation. The same people who will use the model - planners, program managers, trainers, evaluators, advocates and other stakeholders - can help create it. For practical reasons, though, you will probably start with a core group, and then take the working draft to others for continued refinement. Remember that your logic model is a living document, one that tells the story of your efforts in the community. As your strategy changes, so should the model. On the other hand, while developing the model you might see new pathways that are worth exploring in real life. Two main development strategies are usually combined when constructing a logic model. Moving forward from the activities also known as forward logic. This approach explores the rationale for activities that are proposed or currently under way. It is driven by But why? But why should we focus on briefing Senate staffers? But why do we need them to better understand the issues affecting kids? But why would they create policies and programs to support mentoring? But why would new policies make a difference? That same line of reasoning could also be uncovered using if-then statements: If we focus on briefing legislators, then they will better understand the issues affecting kids. If legislators understand, then they will enact new policies. Moving backward from the effects also known as reverse logic. This approach begins with the end in mind. It starts with a clearly identified value, a change that you and your colleagues would definitely like to see occur, and asks a series of "But how? But how do we overcome fear and stigma? But how can we ensure our services are culturally competent? At first, you may not agree with the answers that certain stakeholders give for these questions. Their logic may not seem convincing or even logical. But therein lies the power of logic modeling. You can talk about it, clarify misinterpretations, ask for other opinions, check the assumptions, compare them with research findings, and in the end develop a solid system of program logic. This product then becomes a powerful tool for planning, implementation, orientation, evaluation, and advocacy, as described above. By now you have probably guessed that there is not a rigid step-by-step process for developing a logic model. Like the rest of community work, logic modeling is an ongoing process. Nevertheless, there are a few tasks you should be sure to accomplish. Home Ownership Mobilization Effort. It does this through a combination of educating community residents, organizing the neighborhood, and building relationships with partners such as businesses. Steps for drafting a logic model Find the logic in existing written materials to produce your first draft. Available written materials often contain more than enough information to get started. Collect narrative descriptions, justifications, grant applications, or overview documents that explain the basic idea behind the intervention effort. For the HOME campaign, we collected documents from planners who proposed the idea, as well as mortgage companies, homeowner associations, and other neighborhood organizations. Your job as a logic modeler is to decode these documents. Keep a piece of paper by your side and sketch out the logical links as you find them. This work can be done in a group to save time and engage more people if you prefer. Read each document with an eye for the logical structure of the program. Sometimes that logic will be clearly spelled out e. Other times the logic will be buried in vague language, with big leaps from actions to downstream effects e. As you read each document, ask yourself the But why? See if the writing provides an answer. Pay close attention to parts of speech. Verbs such as teach, inform, support, or refer are often connected to descriptions of program activities. Adjectives like reduced, improved, higher, or better are often used when describing expected effects. Determine the appropriate scope of the model for its intended users and uses. Consider creating a family of models for multiple users. The HOME initiative , for instance, created different models to address the unique needs of their financial partners, program managers, and community educators. Mortgage companies, grant makers, and other decision makers who decided whether to allocate resources for the effort found the global view from space most helpful for setting context. Program managers

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wanted the closer, yet still broad view from the mountaintop. And community educators benefited most from the you are here version. The important thing to remember is that these are not three different programs, but different ways of understanding how the same program works. Check whether the model makes sense and is complete. Logic models convey the story of community change. As you iteratively refine the model, ask yourself and others if it captures the full story. Here are the plot points common in most community change initiatives, presented with their "storytelling" names. The Promised Land desired effects. Does the model show specific measurable results that you hope to achieve? Does it contain big leaps of faith or does it show change through a logical sequence of effects? Are crucial behavioral changes identified e. And if those behavior changes are supposed to be sustained, does the model explain how community conditions will change to reinforce new behaviors e. In the HOME model, we specified the following sequence of effects: Short-term - Potential home owners attain greater understanding of how credit ratings are calculated and more accurate information about the steps to improve a credit rating; mortgage companies create new policies and procedures allowing renters to buy their own homes; local businesses start incentive programs; and anti-discrimination lawsuits are filed against illegal lending practices. Longer-term - The proportion of owner-occupied housing rises; economic revitalization takes off as businesses invest in the community; residents work together to create walking trails, crime patrols, and fire safety screenings; rates of obesity, crime, and injury fall dramatically. An advantage of the graphic model is that it can display both the sequence and the interactions of effects. For example, in the HOME model, credit counseling leads to better understanding of credit ratings, while loan assistance leads to more loan submissions, but the two together plus other activities such as more new buyer programs are needed for increased home ownership. How will obstacles be overcome? Who is doing what? What kinds of conflict and cooperation are evident? What new services or conditions are being introduced? Your activities, based on a clear analysis of risk and protective factors, are the answers to these kinds of questions, Your interventions reveal the drama in your story of directed social change. Dramatic actions in the HOME initiative include offering educational sessions and forming business alliances, homeowner support groups, and a neighborhood organizing council. At evaluation time, each of these actions is closely connected to output indicators that document whether the program is on track and how fast it is moving. These outputs could be the number of educational sessions held, their average attendance, the size of the business alliance, etc. These outputs are not depicted in the global model, but that could be done if valuable for users. Raw Materials inputs, resources, or infrastructure. Real resources must come into the system. Those resources may be financial, but they may also include people, space, information, technology, equipment, and other assets. The HOME campaign runs because of the input from volunteer educators, support from schools and faith institutions in the neighborhood, discounts provided by lenders and local businesses, revenue from neighborhood revitalization, and increasing social capital among community residents. Setting background, context and conditions. Really good stories convey facts, but they also have texture. There is a backdrop against which the main action takes place. Community change always takes place in the context of history, geography, politics, etc. Although it is impossible to represent all of those factors in a model, you can strive to include features that remind users those conditions exist and will affect how change unfolds. Stakeholders working on the HOME campaign understood that they were challenging a history of racial discrimination and economic injustice. They saw gentrification occurring in nearby neighborhoods. They were aware of backlash from outside property owners who benefit from the status quo. None of these facts are included in the model per se, but a shaded box labeled History and Context was added to serve as a visual reminder that these things are in the background. Attend to the nuts and bolts of drawing the model. Draft the logic model using both sides of your brain and all the talents of your stakeholders. Use your artistic and your analytic abilities. Arrange activities and intended effects in the expected time sequence. Link components by drawing arrows or using other visual methods that communicate the order of activities and effects. Remember - the model does not have to be linear or read from left to right, top to bottom. A circle may better express a repeating cycle.

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Chapter 2 : Path analysis (statistics) - Wikipedia

Aims. The primary aim of this study was to provide applied behavioral science researchers with an accessible evaluation of sample size requirements for common types of latent variable models and to demonstrate the range of sample sizes that may be appropriate for SEM.

Horizontal rules signify the top and bottom edges of pages. For sample references which are not included with this paper, you should consult the Publication Manual of the American Psychological Association, 4th Edition. This paper is provided only to give you an idea of what a research paper might look like. You are not allowed to copy any of the text of this paper in writing your own report. Note especially that there are three formatting rules you will see in this sample paper which you should NOT follow. First, except for the title page, the running header should appear in the upper right corner of every page with the page number below it. Second, paragraphs and text should be double spaced and the start of each paragraph should be indented. Third, horizontal lines are used to indicate a mandatory page break and should not be used in your paper. The SE program involves extended individualized supported employment for clients through a Mobile Job Support Worker MJSW who maintains contact with the client after job placement and supports the client in a variety of ways. The resulting cases were randomly assigned to either the SE condition treatment group or the usual protocol control group which consisted of life skills training and employment in an in-house sheltered workshop setting. Significant treatment effects were found on all four measures, but they were in the opposite direction from what was hypothesized. Instead of functioning better and having more self esteem, persons in SE had lower functioning levels and lower self esteem. The most likely explanation is that people who work in low-paying service jobs in real world settings generally do not like them and experience significant job stress, whether they have severe mental illness or not. The implications for theory in psychosocial rehabilitation are considered. The Effects of a Supported Employment Program on Psychosocial Indicators for Persons with Severe Mental Illness Over the past quarter century a shift has occurred from traditional institution-based models of care for persons with severe mental illness SMI to more individualized community-based treatments. Along with this, there has been a significant shift in thought about the potential for persons with SMI to be "rehabilitated" toward lifestyles that more closely approximate those of persons without such illness. A central issue is the ability of a person to hold a regular full-time job for a sustained period of time. There have been several attempts to develop novel and radical models for program interventions designed to assist persons with SMI to sustain full-time employment while living in the community. The most promising of these have emerged from the tradition of psychiatric rehabilitation with its emphases on individual consumer goal setting, skills training, job preparation and employment support Cook, Jonikas and Solomon, These are relatively new and field evaluations are rare or have only recently been initiated Cook and Razzano, ; Cook, Most of the early attempts to evaluate such programs have naturally focused almost exclusively on employment outcomes. However, theory suggests that sustained employment and living in the community may have important therapeutic benefits in addition to the obvious economic ones. To date, there have been no formal studies of the effects of psychiatric rehabilitation programs on key illness-related outcomes. To address this issue, this study seeks to examine the effects of a new program of supported employment on psychosocial outcomes for persons with SMI. Over the past several decades, the theory of vocational rehabilitation has experienced two major stages of evolution. Original models of vocational rehabilitation were based on the idea of sheltered workshop employment. Clients were paid a piece rate and worked only with other individuals who were disabled. Controlled studies of sheltered workshop performance of persons with mental illness suggested only minimal success Griffiths, and other research indicated that persons with mental illness earned lower wages, presented more behavior problems, and showed poorer workshop attendance than workers with other disabilities Whitehead, ; Ciardiello, In the s, a new model of services called Supported Employment SE was proposed as less expensive and more normalizing for persons undergoing rehabilitation Wehman, The SE

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model emphasizes first locating a job in an integrated setting for minimum wage or above, and then placing the person on the job and providing the training and support services needed to remain employed Wehman, One of the more notable SE programs was developed at Thresholds, the site for the present study, which created a new staff position called the mobile job support worker MJSW and removed the common six month time limit for many placements. Time limits for many placements were removed so that clients could stay on as permanent employees if they and their employers wished. There are two key psychosocial outcome constructs of interest in this study. The first is the overall psychological functioning of the person with SMI. This would include the specification of severity of cognitive and affective symptomatology as well as the overall level of psychological functioning. The second is the level of self-reported self esteem of the person. This was measured both generally and with specific reference to employment. The key hypothesis of this study is: A program of supported employment will result in either no change or negative effects on psychological functioning and self esteem. A program of supported employment will lead to positive effects on psychological functioning and self esteem. The population that is accessible to this study consists of all persons who were clients of the Thresholds Agency in Chicago, Illinois between the dates of March 1, and February 28, who met the following criteria: The sampling frame was obtained from records of the agency. Because of the large number of clients who pass through the agency each year e. This resulted in a sample size of persons over the two-year course of the study. In terms of illness history, the members in the sample averaged 4 prior psychiatric hospitalizations and spent a lifetime average of 9 months as patients in psychiatric hospitals. Participants had spent an average of almost two and one-half years 29 months at the longest job they ever held. While the study sample cannot be considered representative of the original population of interest, generalizability was not a primary goal -- the major purpose of this study was to determine whether a specific SE program could work in an accessible context. Any effects of SE evident in this study can be generalized to urban psychiatric agencies that are similar to Thresholds, have a similar clientele, and implement a similar program. Measures All but one of the measures used in this study are well-known instruments in the research literature on psychosocial functioning. All of the instruments were administered as part of a structured interview that an evaluation social worker had with study participants at regular intervals. Two measures of psychological functioning were used. The Brief Psychiatric Rating Scale BPRS Overall and Gorham, is an item scale that measures perceived severity of symptoms ranging from "somatic concern" and "anxiety" to "depressive mood" and "disorientation. The Global Assessment Scale GAS Endicott et al, is a single 1-to rating on a scale where each ten-point increment has a detailed description of functioning higher scores indicate better functioning. For instance, one would give a rating between if the person showed "no symptoms, superior functioning The total score is simply the sum across the ten items, with five of the items being reversals. The final ten items were selected from a pool of 97 original candidate items, based upon high item-total score correlations and a judgment of face validity by a panel of three psychologists. This instrument was deliberately kept simple -- a shorter response scale and no reversal items -- because of the difficulties associated with measuring a population with SMI. The entire instrument is provided in Appendix A. All four of the measures evidenced strong reliability and validity. Test-retest reliabilities were nearly as high, ranging from. Convergent validity was evidenced by the correlations within construct. For the two psychological functioning scales the correlation was. Discriminant validity was examined by looking at the cross-construct correlations which ranged from. Design A pretest-posttest two-group randomized experimental design was used in this study. In notational form, the design can be depicted as:

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Chapter 3 : Units of Study Reading, Writing & Classroom Libraries by Lucy Calkins

A threat model, or threat risk model, is a process that reviews the security of any web-based system, identifies problem areas, and determines the risk associated with each area. There are five.

Study Design and Sampling

Study Design

Cross-sectional studies are simple in design and are aimed at finding out the prevalence of a phenomenon, problem, attitude or issue by taking a snap-shot or cross-section of the population. This obtains an overall picture as it stands at the time of the study. For example, a cross-sectional design would be used to assess demographic characteristics or community attitudes. These studies usually involve one contact with the study population and are relatively cheap to undertake. Such studies are often used to measure the efficacy of a program. These studies can be seen as a variation of the cross-sectional design as they involve two sets of cross-sectional data collection on the same population to determine if a change has occurred. Retrospective studies investigate a phenomenon or issue that has occurred in the past. Such studies most often involve secondary data collection, based upon data available from previous studies or databases. For example, a retrospective study would be needed to examine the relationship between levels of unemployment and street crime in NYC over the past years. Prospective studies seek to estimate the likelihood of an event or problem in the future. Thus, these studies attempt to predict what the outcome of an event is to be. General science experiments are often classified as prospective studies because the experimenter must wait until the experiment runs its course in order to examine the effects. Longitudinal studies follow study subjects over a long period of time with repeated data collection throughout. Some longitudinal studies last several months, while others can last decades. Most are observational studies that seek to identify a correlation among various factors. Thus, longitudinal studies do not manipulate variables and are not often able to detect causal relationships.

Sample

Once the researcher has chosen a hypothesis to test in a study, the next step is to select a pool of participants to be in that study. However, any research project must be able to extend the implications of the findings beyond the participants who actually participated in the study. For obvious reasons, it is nearly impossible for a researcher to study every person in the population of interest. The researcher must put some careful forethought into exactly how and why a certain group of individuals will be studied. This is also known as random sampling. A researcher can simply use a random number generator to choose participants known as simple random sampling, or every nth individual known as systematic sampling can be included. Researchers also may break their target population into strata, and then apply these techniques within each strata to ensure that they are getting enough participants from each strata to be able to draw conclusions. For example, if there are several ethnic communities in one geographical area that a researcher wishes to study, that researcher might aim to have 30 participants from each group, selected randomly from within the groups, in order to have a good representation of all the relevant groups.

Non-Probability Sampling, or convenience sampling, refers to when researchers take whatever individuals happen to be easiest to access as participants in a study. This is only done when the processes the researchers are testing are assumed to be so basic and universal that they can be generalized beyond such a narrow sample. Snowball sampling is not a stand-alone tool; the tool is a way of selecting participants and then using other tools, such as interviews or surveys.

Sampling Challenges

Because researchers can seldom study the entire population, they must choose a subset of the population, which can result in several types of error. Sometimes, there are discrepancies between the sample and the population on a certain parameter that are due to random differences. This is known as sampling error and can occur through no fault of the researcher. Far more problematic is systematic error, which refers to a difference between the sample and the population that is due to a systematic difference between the two rather than random chance alone. The response rate problem refers to the fact that the sample can become self-selecting, and that there may be something about people who choose to participate in the study that affects one of the variables of interest. For example, in our eye care case, we may experience this kind of error if we simply sample those who choose to come to an eye clinic for a free

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eye exam as our experimental group and those who have poor eyesight but do not seek eye care as our control group. It is very possible in this situation that the people who actively seek help happen to be more proactive than those who do not. Because these two groups vary systematically on an attribute that is not the dependent variable economic productivity, it is very possible that it is this difference in personality trait and not the independent variable if they received corrective lenses or not that produces any effects that the researcher observes on the dependent variable. This would be considered a failure in internal validity. Another type of systematic sampling error is coverage error, which refers to the fact that sometimes researchers mistakenly restrict their sampling frame to a subset of the population of interest. This means that the sample they are studying varies systematically from the population for which they wish to generalize their results. This leaves out all of the more rural populations in developing countries, which have very different characteristics than the urban populations on several parameters. Thus, the researcher could not appropriately generalize the results to the broader population and would therefore have to restrict the conclusions to populations in urban areas of developing countries. Errors in sampling can often be avoided by good planning and careful consideration. However, in order to improve a sampling frame, a researcher can always seek more participants. The more participants a study has, the less likely the study is to suffer from sampling error. In the case of the response rate problem, the researcher can actively work on increasing the response rate, or can try to determine if there is in fact a difference between those who partake in the study and those who do not. The most important thing for a researcher to remember is to eliminate any and all variables that the researcher cannot control. While this is nearly impossible in field research, the closer a researcher comes to isolating the variable of interest, the better the results. *Conducting Research in Psychology: Measuring the Weight of Smoke*, 3rd Edition. Wadsworth Publishing February 27,

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Chapter 4 : What is Multivariate Statistical Analysis? | The Classroom

Skewed Distributions and Measures of Central Tendency. Percentile Ranks Based on the Sample. INTRODUCTORY STATISTICS: CONCEPTS, MODELS, AND APPLICATIONS.

History[edit] Path analysis was developed around by geneticist Sewall Wright , who wrote about it more extensively in the s. Commonly, exogenous variables are those forming factors factor analysis or predictors in a regression multiple regression. In most real-world models, the endogenous variables may also be affected by variables and factors stemming from outside the model external effects including measurement error. These effects are depicted by the "e" or error terms in the model. Using the same variables, alternative models are conceivable. Path tracing rules[edit] In order to validly calculate the relationship between any two boxes in the diagram, Wright proposed a simple set of path tracing rules, [4] for calculating the correlation between two variables. The correlation is equal to the sum of the contribution of all the pathways through which the two variables are connected. The strength of each of these contributing pathways is calculated as the product of the path-coefficients along that pathway. The rules for path tracing are: You can trace backward up an arrow and then forward along the next, or forwards from one variable to the other, but never forward and then back. Another way to think of this rule is that you can never pass out of one arrow head and into another arrowhead: You can pass through each variable only once in a given chain of paths. No more than one bi-directional arrow can be included in each path-chain. Again, the expected correlation due to each chain traced between two variables is the product of the standardized path coefficients, and the total expected correlation between two variables is the sum of these contributing path-chains. Path tracing in unstandardized models[edit] If the modeled variables have not been standardized, an additional rule allows the expected covariances to be calculated as long as no paths exist connecting dependent variables to other dependent variables. The simplest case obtains where all residual variances are modeled explicitly. In this case, in addition to the three rules above, calculate expected covariances by: Compute the product of coefficients in each route between the variables of interest, tracing backwards, changing direction at a two-headed arrow, then tracing forwards. Sum over all distinct routes, where pathways are considered distinct if they contain different coefficients, or encounter those coefficients in a different order. Where residual variances are not explicitly included, or as a more general solution, at any change of direction encountered in a route except for at two-way arrows , include the variance of the variable at the point of change. That is, in tracing a path from a dependent variable to an independent variable, include the variance of the independent-variable except where so doing would violate rule 1 above passing through adjacent arrowheads: In deriving variances which is necessary in the case where they are not modeled explicitly , the path from a dependent variable into an independent variable and back is counted once only.

Chapter 5 : Social Research Methods - Knowledge Base - Sample Paper

Module 2: Study Design and Sampling Study Design. Cross-sectional studies are simple in design and are aimed at finding out the prevalence of a phenomenon, problem, attitude or issue by taking a snap-shot or cross-section of the population.

Chapter 6 : Summary statistics - Wikipedia

Identify your narrowed down research question, how your study will be different from previous work, conceptual hypotheses (if quant) only review articles which are directly related to your research question.

Chapter 7 : Study Design and Sampling - Research Methodology Course

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A case study is a story about something unique, special, or interesting—stories can be about individuals, organizations, processes, programs, neighborhoods, institutions, and even events. 1 The case study gives the story behind the result by capturing what happened.