**Summary of Chapter 11 - Correlational Designs**

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A correlational design is a statistical test used when researchers are looking to find a relationship between two variables. Variables often covary, meaning that researchers can predict a score of one variable because they already have knowledge regarding another variable (Creswell & Guetterman, 2019, p. 343). This statistical test has been used for centuries; however it has taken a more advanced turn since the introduction of computers (Creswell & Guetterman, 2019, p. 344). Just like any type of research there are ethical issues to consider. It is important to have a healthy sample size, explore all demographics, have zero measurement errors, avoid plagiarism and reporting contradictory findings. Most importantly, it is essential to know that correlational designs are not “cause and effect” (Creswell & Guetterman, 2019, pp. 362-363).

**The Explanatory Design and The Prediction Design**

Creswell and Guetterman (2019) note that explanatory design is when researchers are interested in how two or more variables covary. Data is always collected at one point in time and never reflects the past or future. Participants are researched in a single group and are not spread across categories. Their scores are reflective on a continuum, and they would receive a score for each variable being assessed. A statistical test is administered and must include the strength and direction of the relationship. Lastly, interpretations are made based on the results (Creswell & Guetterman, 2019, pp. 345-346).The purpose of a prediction design is to predict an outcome. Unlike explanatory designs, the variables are measured at different points in time and researchers usually attempt to predict performance (Creswell & Guetterman, 2019, pp. 346-347).

**Characteristics in a Correlational Design and Statistical Analysis**

Moreover, Creswell and Guetterman (2019) state that a positive relationship means that the points in an analysis move in the same direction and are known as a positive correlation. This means that when one variable does something the other does the same. A negative correlation would then mean the opposite, having points move in opposite directions. Form is how researchers identify a linear or non-linear relationship. A linear relationship requires both variables to move in the same direction at a constant rate. A non-linear, or curvilinear distribution would then mean that the change in variables is not constant (Creswell & Guetterman, 2019, pp. 348-349).

Pearson’s *r* is a statistical measure on a scale of -1.0 to +1.0 and determines the strength and direction of the linear relationship. *r2* is the degree of how strong the variables are predictive of each other. For example, if *r2 = .20* then there is only a small relationship between the variables and if *r2 = 0.80* would mean there is a strong relationship between the variables (Creswell & Guetterman, 2019, p. 350).

Partial correlations are used when a researcher uses multiple variables and wants to find the impact that that variable has on both the independent and dependent variables. A multiple regression is used to see the combined effect of multiple variables on a dependent variable (Creswell & Guetterman, 2019, pp. 353-355).

A meta-analysis is an extension of correlational research, and one would look at multiple studies regarding the same or a similar issue. The researcher is looking to see if the effect size varies and if it does then, then why. It often uses more advanced statistical procedures such as a factor analysis, discriminant functional analysis, intraclass correlation, path analysis and structural equation modeling (Creswell & Guetterman, 2019, pp. 357-362).

**Steps in Conducting and Evaluating a Correlational Study**

Determining if your research questions require a correlational analysis is your first step. You must identify individuals to study and two or more measures for each participant. After you collect your data, you must analyze and interpret the results (Creswell & Guetterman, 2019, pp. 363- 366). Once you complete these steps you are ready to perform a correlational design.

References

Creswell, J. W., & Guetterman, T. C. (2019). Correlational Designs. *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (pp. 342–370). Pearson.