Title:

Student’s name:

Professor’s name:

Institution’s name:

Date:

ANOVA and Repeated Measures ANOVA Designs

Use the South University Online Resources to find two peer-reviewed articles in which the authors used ANOVA designs and two peer-reviewed articles in which the authors used repeated measures ANOVA designs. Summarize each article and evaluate whether the design used was logical. Explain your reasoning. Do you think that the design influenced the statistical significance observed? Why or why not? Could this influence the validity of the work?

Article one: DOI: 10.15640/jibe.v2n4a6: The following DOI link is given here.

JOURNAL NAME: JOURNAL OF INTERNATIONAL BUSINESS AND ECONOMICS(Using ANOVA to measure the relationship between safety & Security and Human Development)

In this research article, there has been explained ANOVA technique is the strategy that is applied mostly in the provision of answers or deriving of answers that are related to the statistical questions. The article further explains that there are different ways in which the statistical relationship normally the interaction between safety and security and human development. Security and safety are considered to be diversified concepts when dealing with human development and also in data protection which is noted to be more private and not public. For this case, there has been sued the National Bureau of Economic Research website as the source of the information which is having large data sources. The participation has been subdivided into different 2 groups which are having the independent variables under consideration. ANOVA has been much considered important for this case because it helps on limitation of the errors mostly type 1 error (Figueroa-García et al., 2021).

One should note that the type 1 error is considered to be the probability of having rejection of the null hypothesis (HO) when it is true. Type 1 error is also considered to be the false positive and would happen whenever the researcher has incorrectly rejected a true null hypothesis and this would mean that in the report, the findings would only be significant when the findings themselves have just happened by chance and thus meaning they are having probabilities of happening or even not happening. This type of error results from two sources including having random chance technique used in the sampling and the second way is by improper research techniques (Tae Kyun Kim, 2017).

Article 2: DOI: 10.4097/kjae.2017.70.1.22: The DOI link is given.

The journal mane is: Korean Journal of Anesthesiology (UNDERSTANDING ONE WAY ANOVA

USING CONCEPTUAL FIGURES)

In this article, ANOVA has been explained to be the systematic methodology of having the partitioning of the total causes of a variation change into different disjoint components. One should note that the total cause of having the variations is considered to be the divisions that happen into the different independent which bring about the variation effects. The paper continues to have the examination of the reason why persons normally prefer the usage of the one-way ANOVA technique instead of the commonly known student's-t technique (Strunk & Mwavita, 2021). The one-way ANOVA has been used on explaining the comparison of the focused 3 groups, homoscedastic assumptions, and satisfying normality. The ANOVA technique thus would be applied on checking the differences between the heights of the students belonging to the three different groups according to their different grades. Because there are more than 2 groups already there, the ANOVA technique would be the most preferred in this case.

The 2 cases where repeated ANOVA is used are:

Article one: DOI: 10.1016/S2212-5671(15)01402-1 This is the DOI.

JOURNAL NAME: Science Direct (Procedia Economics and Finance)

(REPEATED MEASURES ANALYSIS ON DETERMINANT FACTORS OF ENTERPRISE VALUE)

The Statistical Package for the Social Science (SPSS) tool is noted to have been sued in this case whereby the tools are used in the different types of research which are having studies on complex statistical data analysis. The article under consideration is noted to be analyzing the different effects of having the variation of time on the non-financial factors or generally on the factors which are not having the consumption of money or even needing no money for them to be achieved. The total variations, in this case, are noted to have been partitioned into different disjointed components that include the variations happening among the individuals, the different occasions, and the residuals which are there. One should note that having repeated measurements is very important because it helps in creating the hierarchy for the different non-financial related factors (Tae Kyun Kim, 2017).

Article two: DOI: : 10.4103/0975-9476.113872 PMCID: PMC3737450

JOURNAL NAME: Journal of Ayurveda and Integrative Medicine.

This article has expressed that clinical trials are done or generally are conducted in the medical studies and thus helping in determining the efficiency related to each drug that is being used for patient's treatment. One should note that this process normally takes major four phases which are different from each other but are dependent on each other as results from one phase bring about the next phase of consideration and study. In this article, the Statistical Package for the Social Science software is noted to have been used on the data of about 423 patients who are being taken as points of focus. There have been used 4 different time points in the case study under consideration whereby there is even a unique feature of having a related measurement of the ANOVA. The results or outcome of the variable is noted to have been measured on a similar certain unit at different times and even conditions. The variable interest in this paper is considered to be hemoglobin which is noted to be a response variable that is being done in different days'/time intervals such as the 15, 30, 45 and so on days (Mouhamadou Thile Sow, 2014).

References

Figueroa-García, J. C., Díaz-Gutierrez, Y., Gaona-García, E. E., & Orjuela-Cañón, A. D. (2021). *Applied computer sciences in engineering: 8th workshop on engineering applications, WEA 2021, Medellin, Colombia, October 6–8, 2021, proceedings*. Springer Nature.

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Strunk, K. K., & Mwavita, M. (2021). One-way ANOVA case studies. *Design and Analysis in Educational Research Using jamovi*, 145-154. <https://doi.org/10.4324/9781003154297-12>

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