Truth and Lies – The Misrepresentation of Statistics

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The effective use of statistics to shape personal opinions is the combined responsibility of both the provider and consumer of data. Unfortunately, information providers often misrepresent statistical data to better support a research claim or to more favorably portray a product being advertised for a client. Additionally, for reasons which are both intentional and unintentional, many statistical claims are made without including the context necessary to fully comprehend the data that is provided. Accordingly, it is more important than ever before for the consumer of statistics to realize that data presented may not accurately depict the actual situation. Further, consideration must be given to who is making the statistical claim, how the data was obtained and what methods are used to present the information. Simply put, consumers must step back and view information provided as an impartial observer rather than accept statistical data at face value.

Video – Don't Be Fooled by Bad Statistics

The reporting of statistics by the media must be approached with some measure of caution given that the manner in which data is collected and interpreted can often significantly alter how the results are presented to consumers (Ainsworth, 2011). This basic premise of how statistics are reported is deftly presented by Dressler (2010) in the video Don’t be Fooled by Bad Statistics which highlights some of the fundamental problems with the manner in which the media interpret numbers. The three specific forms of bad statistics identified by Dressler (2010) are poorly collected data, leading questions and misuse of center.

Poorly Collected Data

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The concept of data collection implies a somewhat straightforward method of gathering information through activities such as observations, questionnaires, interviews and review of survey

results. However, all too often data collection methods are poorly designed which results in the reporting of inaccurate or biased statistical results (Pullinger, 2013). Although issues associated with bias can occur at any point in the process of reporting statistics, issues with poorly collected data ultimately have the potential to cause some level of harm when inaccurate statistics are used as the basis for critical decision-making processes (Pannucci & Wilkins, 2010).

Leading Questions

Statistics developed through surveys are ultimately only as good as the questions that were used to obtain the data. For this reason, a critical aspect that must be considered when analyzing the results of a survey is whether the questions were designed in a manner that could be expected to provide reliable and valid results. Accordingly, the use of leading questions must be avoided to ensure that the results obtained were not indirectly suggested to an individual by conveying information that may slant the answer in a given direction (Dolnicar, 2013).

Misuse of Center

Decisions associated with developing numbers presented by statistical references have a direct result in the assumptions that are made by the consumer. Even when data is correct, the manner in which figures are portrayed can convey statistically insignificant results. Dressler (2010) emphasizes the importance of correctly presenting data in discussing the misuse of center for the numerical averaging of the starting salary of geography majors from the University of North Carolina (UNC) in 1986. In this example, the inclusion of the salary of UNC geology major and professional basketball player Michael Jordon skewed the data presented when the mean was used to identify the average starting salary of geography majors. The solution for this issue is to use the median value to report averages to discount numbers which fall outside the overall data pattern such as the higher basketball salary of Michael Jordon (Dressler, 2010).

Most Misrepresented Segment of the Media

Within the last decade the inaccurate reporting of events by the television news media has markedly increased, to include the inaccurate portrayal of statistics regarding various events (Harper, 2005; Walma, 2004). At issue is not whether a given event should be reported, but rather the increasingly sensationalist manner in which even the most mundane events are depicted (Grabe, Zhou & Barnett, 2001). In some instances, the use of live broadcasts is seemingly more intent upon increasing viewership rather than promoting responsible journalism (Heath & Gilbert, 1996). So much so that in many instances involving criminal activities the television news media only reports the culminating act of a given situation and fails to provide in-depth reporting of the overall context of an issue (Collins, 2008). Even when the television news media does report on the overall conditions of an issue the segment is generally edited to broadcast the event in a more concise and engaging manner (Collins, 2008). An example of both sides of the news media reporting spectrum was readily observable in the impending preparation and subsequent impact of Hurricane Katrina in the city of New Orleans, Louisiana. The news media reported dutifully in the days preceding the hurricane and provided live footage of the aftermath. However, in the days after the disaster, reporting tended to focus more on violent confrontations and desperate conditions in the city of New Orleans while omitting in-depth insight into the events unfolding in neighboring parishes. However, issues with sensationalizing events aside, the general public perception is that the television news media routinely misrepresents issues ranging from politics to criminal activities (Kiousis, 2009). However, regardless of whether issues are or are not intentionally misrepresented, the mistrust in the news media can also be attributed to new technologies that are available to inform the public which allow for a more useful comparison with televised information (Kiousis, 2009).

References

Ainsworth, S. (2011). Lies, damned lies and health statistics. *Practice Nurse, 41*(2), 39-40.

Collins, R. (2008). *Violence: A micro sociological theory*. Princeton: Princeton University Press.

Dolnicar, S. (2013). Asking good survey questions. *Journal of Travel Research*, *52*(5), 551-574.

Dressler, E. (2010, February 27). Don't be fooled by bad statistics [Video file]. Retrieved from http://www.youtube.com/watch?v=jguYUbcIv8c

Grabe, M. E., Zhou, S., & Barnett, B. (2001). Explicating sensationalism in television news. *Journal of Broadcasting & Electronic Media*, *45*(3), 635-655.

Harper, S. (2005). Media, madness and misrepresentation. *European Journal of Communication*, *20*(4), 460-483.

Heath, L., & Gilbert, K. (1996). Mass media and fear of crime. *American Behavioral Scientist*, *39*(4), 379-386.

Kelman, I. (2007). Hurricane Katrina disaster diplomacy. *Disasters*, 31(3), 288-309.

Kiousis, S. (2009). Public Trust Or Mistrust? Perceptions Of Media Credibility In The Information Age. *mass communication and society*, *4*(4), 381-403.

Pannucci, C. J., & Wilkins, E. G. (2010). Identifying and avoiding bias in research. *Plastic and Reconstructive Surgery*, *126*(2), 619-625.

Pullinger, J. (2013). Statistics making an impact. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, *176*(4), 819-840.

Walma, J. H. (2004). Violence and suffering in television news: Toward a broader conception of harmful television content. *Pediatrics*, *113*(6), 1771-1775.