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Cost vs credibility: the student sample trap in business research

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Abstract

Purpose – This paper focuses on the problems inherent in the use of student samples in business research.

Design/methodology/approach – The subject is examined through the opinions of prior researchers, and the pros and cons are presented. The issues of internal and external validity are discussed, and the dangers of theory development without proper application are highlighted.

Findings – Business researchers are cautioned, especially in the case of scale development and cross-cultural research, to avoid the use of student samples.

Originality/value – While this subject has been the source of debate for many years, business researchers are still regularly using student samples for their research. The dangers are too great to simply be ignored because the price is right.

Keywords Generalizability, Research validity, Student samples

Paper type Viewpoint

Introduction

The debate has raged for generations over the value of using student samples for business research, and the answers are never as encouraging as scholars would like them to be. Cunningham *et al.* (1974) raised the issue of whether students are "real people". They make the powerful statement, "What we know about consumer behavior may be too closely tied to the socio-psychological and behavioral profile of the college sophomore" (p. 399). They suggest that this is a problematic situation. Sears (1986) echoed this same concern. Peterson (2001) found that student populations are problematic, as they are significantly more homogeneous in their responses when compared with more broad-based general adult samples. The problem for all academics doing business research is the issue of the easy access to students to serve as surrogates for the public at large when doing academic studies. They are a captive audience and readily available and can get course credit for participating. If the basic focus for the research is on theory testing, the argument is often made that any data are helpful. This is the argument used when the focus is on internal validity. The basis for the argument is that this is particularly appropriate when the researcher is examining basic characteristics of human nature that are not directly connected to either context or life experience (Bello *et al.*, 2009). So, often, the rationale is that if we test this theory on students and find success, then we can shift our focus to more broad-based samples of adults. For me, the whole problem is the mindset and representativeness of students.

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External validity issues with student samples

External validity looks at the nature of generalizability. As Bello *et al.* (2009, p. 362) suggest:

> […] for authors who want to publish student-based results, it is incumbent upon them to demonstrate that their results can be generalized to real-life situations on which they intend to shed light.

Application testing of studies that started with student results and shifted to general adult sampling is often problematic unless we can truly justify that students are, in some way, generalizable as a testing population. When would that really be true? Think of the potential bias inherent in asking students, particularly those who are studying a particular area of business as a major, for their opinions about something that pertains to how people react to advertising or feel about certain business practices. If they are already aware and sensitized to certain subjects, how can their view be reflective of those who are not regularly being exposed to and educated about certain practices and procedures? They are not the same as the general public in their outlook. Take the field of advertising for instance. If I use a sample of students and ask them about how they feel about a particular ad treatment that they are shown, this is exactly what they are exposed to on a regular basis with a much more critical eye to advertiser motives and strategy. It would be impossible for them to separate their mindsets, experiences and knowledge from the assessment of various stimuli in an experimental design in a way that would allow the researcher to generalize to anyone else not exposed to that material on a regular basis. Yes, of course, they are our students and readily available, but how does their involvement allow me to rationalize their perspectives to the rest of society? The issue of external validity is a thorny one.

Issues in cross-cultural research sample frames

Of particular concern is when cross-cultural research is undertaken and we look to using students as surrogates for the general population at large. Of course, they are easily available, but now the disparity is even greater when examining the experiences and exposure of students, particularly in developing countries, as those who are in a university setting may be exposed to information that their parents and grandparents may never have seen or heard about. In fact, the students may be the first family members ever to attend a college or university, and their views of the world may be vastly different from the rest of their family members, let alone the population at large. The types of justifications for this type of university-student sample involve arguments about their ability to see the world as objective observers. Williams and Best (1990, p. 53), for example, stated:

> University students are likely to have given attention and thought to the question of the different statuses and roles occupied by women and men and to have become sensitized to the psychological traits attributed to men and women in their respective countries. Many university students have – or like to think they have – a relatively egalitarian view of women and men, which may include the belief that men and women actually differ very little in their psychological makeup. The juxtaposition of this belief with the evidence of stereotypes in the culture probably sharpens their perception of the latter and makes them more aware of the differences in psychological characteristics ascribed to men and to women .

As the researcher should quickly be able to see, this is nothing more than a convenient justification for the easy access to students in university settings, in a variety of countries, to pass a judgment on their cultures in general. This sounds good, but these students do not look at the world in the same way as their elders, and assuming that they have the capability to speak for everyone is a dangerous assumption to make. It begs the difficulties of accessing sample respondents in developing countries, which is extremely challenging.

Scale development using student samples

An even more problematic situation is often found in the process that surrounds scale development. Many authors have begun the process with student samples. If one follows the Churchill (1979) protocols, once the literature has been studied and possible items have been identified, then a qualitative phase is needed to further probe for relevant items using appropriate sample respondents. If students are used for this process, then their experiences and mindsets will flavor the development of relevant manifestations of the phenomenon in question. This is a phase in which as broad a list of manifestations as possible that are potentially relevant is needed, and if students are not truly representative of the sample population in question, then the whole basis for the scale may be flawed. Usually the use of focus groups or in-depth interviews allows for some level of convenience, but if the process is based solely on students (particularly students in business), their non-representative input may undermine the later validity and reliability of any resulting scale (Stevens, 2011). This is further compounded if students are used as the first quantitative sampling population, which unfortunately is more the norm than the exception in many scale development articles. If students are used in the first quantitative work, then their insights and input would be used to create the factor structure that would be established in exploratory factor analysis (EFA). This would then serve as the imposed factor structure that would be subsequently tested and refined with a second quantitative study. Now it becomes clearer why this is problematic, as this is often when authors decide to bring in a more generalizable adult sample. The crux of the problem is that this group of individuals may not see the world in the same way as the students (and the likelihood is that they will not), and their input that would be used in the confirmatory factor analysis (CFA), when imposed upon the factor structure produced from the students in the EFA, will then be used to refine the scale. This may create serious issues as the EFA and CFA would be based upon substantially different populations, and any scale refinements would be potentially producing scales that will not do well in other generalizable adult sample tests. As can easily be seen, the foundation for the scale really needs to be based upon the population that will later be used to validate the scale. The issue of external validity becomes a serious one in this case.

Implications

The debate will continue to rage in business research, as the ever-decreasing level of university funding will push researchers to use inexpensive yet problematic sources of data. Look at the growth of interest in using Amazon's Mechanical Turk (MTurk); this is a highly problematic data source, which allows the respondent to choose the studies that they want to participate in as opposed to the panel choosing the respondent based on pre-assessed information. The issue is that MTurk is cheap, and the "wonderful" thing for researchers is that it is a broader-based population that is better than student samples. The problem is that students want to make money, and many will say that they fit the needs of the study in question whether they really do or not. Lies are constantly found when trap questions are used in which the respondent actually forgot their sex between the beginning of the questionnaire and the end. These samples are, at best, only marginally better than student samples. If the researcher pays say $.50-$1.00 per completed questionnaire, think of how many respondents they can get for a relatively small amount of money as opposed to spending more on the $5.00-$6.00 per completed questionnaire charged by more quality-controlling sources like Qualtrics. Of course, students are the cheapest of all mechanisms for data collection. The problem is that the buyer must always be wary. You get what you pay for!

Conclusion

Journals like the *Journal of Advertising Research* are focused on publishing immediately actionable research and will not use research based upon student samples, which argues for a healthy balancing of theory development, empirical validation and generalizability. It would be difficult for business journals to survive if they only publish theory for the sake of theory. Without application and external validation, we are not helping business to perform more effectively. In the end, if there is no improvement of business practice, then there may be no need of business education.

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About the author

Dr John B. Ford, professor of marketing and international business and eminent scholar earned his doctoral degree from the University of Georgia. His research interests are in the areas of international advertising strategy, consumer reaction to advertising exposure, cross-cultural marketing research issues and non-profit donor behavior. He has presented seminars in many different countries on global advertising strategy, cultural mistakes and how to correct them, sensitivity to different cultures in the workplace and what makes people give to charitable organizations. He has worked with many area non-profit businesses to develop viable strategic plans. He is the Director of the PhD program in business administration for the Strome College of

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