

INNUMERACY AND STUDENT PERCEPTION OF RACIAL DEMOGRAPHICS

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ABSTRACT

Marketing students consistently overestimate the percentage of African-Americans. They also overestimated the percentage of other minorities, and constantly underestimate the percentage who defines themselves as "born-again" Christians. They overestimate the population of the United States with almost half stating that it is roughly the size of the entire world. Closer to home, they overestimate their own state's population by 15X. Do marketing students really believe that African-Americans make up 30, or even 50 percent of the U.S. population, or that the populations in which they live are 3, or even 15X larger than they actually are? Some have suggested that since the discrepancies are so large, the results could only be explained by innumeracy, or the inability to use math and numbers. The overestimation could be related to innumeracy, or to the overwhelming influence of modern media.

METHOD

A convenient sample of 137 undergraduate students from marketing classes in two states were administered a questionnaire. Students were asked to estimate demographics. The students' ability to handle basic math was evaluated along with their ability to handle numbers and real-life numerical activities. Attention to the media was measured by questions about current events that were covered in all media the previous week.

RESULTS AND DISCUSSION

Innumeracy was related to the overestimation of the proportion of African-Americans. The more innumerate the student in relation to management of number and measurement concepts, the larger the estimate of the proportion became. The understanding of basic math concepts, and attention to the media did not appear to influence the size of the estimates. The level of innumeracy in this sample of marketing students was profound. Over 30% could not calculate correct change, 61% did not know the square root of 0.25, and 53% did not know the size of an angle of an equilateral triangle. Thirty-five percent of the students mis-estimated the population of the United States by 10X (equivalent to suggesting that the Sears Tower is under 140 feet tall). It appeared that simple discussion of demographics had little effect on erroneous beliefs, without being coupled with more rigorous mathematical and measurement instruction.

This level of innumeracy raises serious questions about the decision-making ability of our students. They appear to be unaware of the world in which they live, and also unable to use mathematical tools to see that their view is illogical. There appears to be urgent reasons, beyond that of business proficiency, for demanding and providing the means to achieve mathematical literacy.