Do culture-dependent response styles distort substantial relationships?

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A R T I C L E   I N F O

A B S T R A C T

Survey data are frequently distorted by answering tendencies, such as acquiescence, disacquiescence, midpoint and extreme response style. Cross-cultural research projects may be particularly vulnerable to misinterpretations. This paper provides empirical insights into the manner and degree to which culture systematically distorts findings from survey data. The study is based on data from 1027 respondents from Austria, France, Germany, India, Mexico, Russia, Spain, and the United States. The investigation firstly demonstrates that Hofstede's and project GLOBE's cultural dimensions explain variations in response styles across different countries. Secondly, and most importantly, the paper explores the impact of culture-dependent response styles on findings. Remarkably, the extent of distortion in correlation analysis and mean comparisons is less severe than expected. Nonetheless, cross-cultural researchers would be well advised to control at least for (dis-)acquiescence before analyzing and interpreting their data.

1. Introduction

Cross-cultural comparisons have become standard in the international business literature (Nakata & Hung, 2005; Okazaki & Mueller, 2007; Okazaki, Taylor, & Doh, 2007), with most comparative work being based on surveys. However, survey data are frequently distorted by certain response patterns, such as acquiescence, disacquiescence, midpoint tendencies and extreme response style (Harzing et al., 2009; Tsui, Nifadkar, & Ou, 2007; van de Vijver & Leung, 2000). The influence of these answering tendencies on study results may be particularly severe when conducting cross-cultural research because culture determines how participants respond to rating scales (Baumgartner & Steenkamp, 2001; Harley, 1998; Smith, 2004; van Herk, Poortinga, & Verhallen, 2004). Depending on their cultural background, respondents may be more (or less) likely to answer in the affirmative or use the extreme points of a scale irrespective of the item content. Consequently, answering tendencies are a source of unwanted differences in observed measurement scores when comparing data from different cultures. If culture-specific contamination is large, scholars might not be able to draw valid conclusions in cross-cultural research.

While several researchers have already demonstrated in large cross-national survey studies that culture affects the degree of different response biases (Harzing, 2006; Johnson, Kulesa, Cho, & Shavitt, 2005; Smith, 2004; van Herk et al., 2004), no comprehensive study has yet analyzed the consequences of this methodological issue. In this paper, we examine how strongly culture-dependent response styles distort substantial findings from cross-cultural research. In doing so, we

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consider *if* and *when* it is necessary to correct for *which* response styles. Note that we use the term "substantial" to differentiate the impact of response bias on important study results (the answers to the research question) from purely methodological issues. For example, the influence of a response style on the observed level of a certain scale (e.g., ethnocentrism) is a methodological issue. A substantial issue would be the relationship between this scale and other relevant constructs (e.g., cosmopolitanism). For this particular example, we examine whether the influence of a response style on the scales of ethnocentrism and cosmopolitanism (=methodological issue) affects the relationship between both constructs in different cultures (=substantial issue). Expressed more formally, we approach the so far unanswered question of whether the well-documented methodological issue actually affects substantial relationships in cross-cultural comparison research.

To fill the outlined void, this paper focuses on the four most widely discussed response styles, namely acquiescence response style (ARS), disacquiescence response style (DRS), midpoint response style (MRS) and extreme response style (ERS). Among others, Baumgartner and Steenkamp (2001), as well as Weijters, Geuens, and Schillewaert (2008), suggest methods for detecting and correcting the four types of response biases. We apply these methods in a multi-cultural sample in order to make the following two contributions to the field. First, we analyze which cultural dimensions vary with response style. While previous studies have already considered some of the possible influences (Harzing, 2006; Johnson et al., 2005; Smith, 2004; van Herk et al., 2004), we extend the literature by replicating findings on a broader empirical basis and by extending previous approaches to a wider set of response styles, countries, and cultural dimensions. The empirical study is based on a data set collected in eight countries (Austria, France, Germany, India, Mexico, Russia, Spain and the United States). In total, the sample consists of 1027 respondents. Our second and main contribution is to demonstrate how strongly culture distorts survey findings. To the best of our knowledge, no study has yet systematically conducted this second and most crucial step in analyzing culture-dependent response style distortions. We analyze contaminations in correlations and mean comparisons in international business research considering three focal constructs. We choose ethnocentrism, patriotism and cosmopolitanism, because they are often subject to research in international business. On a broad empirical basis, we reveal that although the effect of culture on response styles is significant, the influence on substantial relationships is less severe than commonly expected.

We organize the remainder of the paper as follows. First, we briefly describe correction methods for different types of response styles and review previous research on the relationships between these response styles and the cultural dimensions suggested by Hofstede (2001), as well as project GLOBE (House, Hanges, Javidan, Dorfman, & Gupta, 2004). We reanalyze and largely confirm these relationships with our empirical data. Building on this robust finding, we then assess the extent to which culture-dependent response styles distort findings in cross-cultural studies.

2. Conceptual background

2.1. Response styles

The international business literature has identified four main answering tendencies that may distort survey data in cross-cultural research projects (Baumgartner & Steenkamp, 2001; Harzing et al., 2009; Weijters et al., 2008). Firstly, *acquiescence response style* (ARS) describes the tendency of respondents to agree with items regardless of their content. For example, if the respondent rates a statement on a seven-point scale ranging from "1" = "I strongly disagree" to "7" = "I strongly agree", (s)he chooses "5", "6" or "7" disproportionately often. Secondly, *disacquiescence response style* (DRS) describes a tendency toward disagreement. Regardless of the item's content, the respondent chooses the categories that disaffirm the statement ("1", "2" and "3"). Thirdly, *midpoint response style* (MRS) describes the tendency of respondents to avoid a clear positioning. These respondents tend to choose the middle of the scale ("4"). Fourthly, *extreme response style* (ERS) describes the tendency to check the most extreme points of the scale ("1" and "7"). Harzing (2006) additionally identifies two subtypes of ERS: positive extreme response style ("7") and negative extreme response style ("1").

We follow the procedures suggested by Baumgartner and Steenkamp (2001) and Weijters et al. (2008) to calculate response style indicators. Therefore, we counted how often each respondent ticks the different points of seven-point answering scales ("1" to "7"). In order to calculate the indices for different response styles (ARS, DRS, ERS, MRS), we weighted each of these frequencies differently. The specific weights for each response style and the complete formula for seven-point-rating scales are depicted in Table 1. We calculated the indices in such a way that each index ranges from "0" to "1", with "0" indicating no response bias at all and "1" indicating a strong bias. In the next step, the influence of response styles is partialled out to estimate unbiased answers (Fischer, 2004; Leung & Bond, 1989; Smith, 2004).

2.2. Culture

Hofstede's (1991) "software of the mind" metaphor is a widely cited concept of culture. A collective level of mental programming is shared by a group of people that distinguishes itself from other groups. In a related manner, the project Global Leadership and Organizational Behavior Effectiveness (GLOBE) emphasizes that culture refers "to a set of parameters of collectives that differentiate the collectives from each other in meaningful ways" (House, Javidan, Hanges, & Dorfman, 2002, p. 5). Many researchers attempt to operationalize the concept of culture through a multidimensional approach. Cultural dimensions are used to describe the differences and similarities between societies. Dimensional concepts have been suggested, among others, by Hofstede (1991), Triandis (1988), Trompenaars (1994), Schwartz (1994) and House et al. (2004).