Measurement invariance in mentoring research: A cross-cultural examination across Taiwan and the U.S.

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Article info
Article history:
Received 25 June 2010
Available online 13 October 2010

Keywords:
Mentoring
Measurement equivalence/invariance
Cross-cultural
International

ABSTRACT

Workplace mentoring in the international context is an emerging research area with significant potential for global integration. However, although measurement equivalence is a prerequisite for examining cross-cultural differences, this assumption has yet to be examined in mentoring research. This study contributes to the mentoring literature by assessing the measurement equivalence of the Mentoring Functions Questionnaire (MFQ-9) across two diverse cultural settings, the U.S. and Taiwan. Results of a series of multi-group confirmatory factor analyses supported full configural invariance, full metric invariance, and partial scalar invariance across the two groups. These findings suggest MFQ-9 may provide acceptable comparisons and meaningful interpretations across cultures. Implications for future international mentoring research and managerial practice are discussed.

Organizations worldwide are increasingly recognizing the value of mentoring relationships and attempt to reap the advantages through formal mentoring programs (Allen & Eby, 2007; Scandura & Pellegrini, 2007). The benefits of mentoring to protégés and mentors as well as to organizations are well-documented by research and further supported by human resource practitioners (Noe, Greenberger, & Wang, 2002; Ragins & Kram, 2007; Wanberg, Welsh, & Hezlett, 2003). Three decades of mentoring research has linked receipt of mentoring to an array of positive career outcomes including promotion, higher salary, career satisfaction, career commitment, job satisfaction, and greater expectation for advancement (Allen, Eby, Poteet, Lentz, & Lima, 2004; Kammeyer-Mueller & Judge, 2008). However, the majority of these early studies have been conducted in the Western context, specifically in the U.S.

Workplace mentoring in the international context is an emerging research area with increasing number of studies conducted beyond the U.S. context (e.g., Bozionelos & Wang, 2006; Carraher, Sullivan, & Crocitto, 2008; Gentry, Weberb, & Sadric, 2007; Hu, 2008; Wang, Noe, Wang, & Greenberger, 2009). Culture is important when examining close relationships such as mentoring, since relationship expectations and acceptable patterns of interaction may vary considerably across cultures (Allen, Eby, O'Brien, & Lentz, 2008). However, the most established mentoring scales such as the Mentoring Functions Questionnaire (Scandura & Ragins, 1993) were developed using North American samples. Therefore, research on cross-cultural mentoring should examine whether these measures demonstrate similar psychometric properties outside the U.S. context as well (Scandura & Pellegrini, 2007; Vandenberg & Lance, 2000). Cultural differences may dramatically influence norms and expectations regarding mentorships in the workplace (Allen, Eby, O'Brien, & Lentz, 2008). Accordingly, ensuring measurement equivalence/invariance (ME/I) of the measures reflecting mentoring functions should be established prior to studying mentoring across diverse cultural contexts. The current study addresses this gap and studies the measurement equivalence of the Mentoring Functions Questionnaire (MFQ-9) across two diverse business settings, Taiwan and the U.S.

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doi:10.1016/j.jvb.2010.10.003
Measurement equivalence/invariance (ME/I) refers to the extent to which respondents from different populations exhibit similar cognitive frameworks when interpreting and responding to a given measure (Drasgow & Kanfer, 1985; Vandenberg & Lance, 2000). Conceptually, ME/I at the measurement level examines the extent to which items of a measurement instrument demonstrate similar psychometric relations to their corresponding latent variables across different samples (Little, 1997). Therefore, researchers agree ME/I should be a prerequisite for the generalization of an instrument, in fact a requirement for cross-group comparisons to be interpretable and meaningful (Raju, Laffitte, & Byrne, 2002; Steenkamp & Baumgartner, 1998; Vandenberg & Lance, 2000).

Previous mentoring research largely focused on the protégé and examined how mentoring influences protégé career outcomes (Scandura & Pellegrini, 2007). In a recent review of the state of mentoring research, Allen et al. (2008) suggested that in 80.2% of the published mentoring studies the protégé was the focus of inquiry. Although the focus of mentoring research has largely been on mentoring functions received by protégés, empirical research on cross-cultural measurement of mentoring functions has lagged behind (Scandura & Pellegrini, 2007; Wanberg et al., 2003).

The Mentoring Functions Questionnaire (MFQ-9)

There are a number of commonly used mentoring functions scales which were all developed based on Kram’s (1983) pioneering work on mentoring (i.e., Dreher & Ash, 1990; Noe, 1988; Ragins & McFarlin, 1990; Scandura & Ragins, 1993). Kram (1985) distinguished two distinct mentoring functions provided by mentors: career support includes sponsorship, coaching, exposure and visibility, protection, and challenging work assignments whereas psychosocial support refers to the mentor’s acceptance and confirmation, counseling, role modeling and friendship. Subsequent research suggested role modeling as a third dimension of mentoring, rather than an aspect of the psychosocial function (Castro & Scandura, 2004; Hu, 2008; Pellegrini & Scandura, 2005; Scandura, 1992; Scandura & Ragins, 1993).

We specifically chose to examine the measurement equivalence of the MFQ since this instrument is the only mentoring scale that assesses a three-dimensional structure of mentoring relationships (see the Appendix). We used the most recent version of the Mentoring Functions Questionnaire (MFQ-9; Castro & Scandura, 2004) which is a shortened version of the 15-item MFQ (Scandura & Ragins, 1993).

MFQ-9 captures three mentoring functions: vocational support, psychosocial support, and role modeling. Each mentoring function is measured with three items. Our choice of MFQ-9 for this analysis is further based on the following reasons. First, MFQ has accumulated substantial information regarding its factor structure based on exploratory as well as confirmatory factor analyses (Castro & Scandura, 2004; Hu, 2008; Pellegrini & Scandura, 2005; Scandura & Ragins, 1993; Wanberg et al., 2003). Second, configural invariance and partial metric invariance of MFQ-9 have been established across satisfied and dissatisfied protégés (Pellegrini & Scandura, 2005). Further, full configural, metric, and scalar invariance have been established across genders (Hu, 2008). Finally, MFQ-9 has the least number of items among mentoring scales which may minimize translation errors and reduce hasty responding owing to too many items (Gosling, Rentfrow, & Swann, 2003).

The current study of U.S. and Taiwanese protégés present a preliminary attempt to examine the generalizability of mentoring functions across different cultural settings. Taiwan not only provides an informative cultural contrast to the U.S. but it also presents a particularly interesting context with its increasing globalization as a rising Asian economy. Taiwan is the world’s number one provider of chip foundry services, notebook PCs, and LCD monitors holding 70% of the world’s market share (Einhorn, Kovac, Engardio, Roberts, Balfour, & Edwards, 2005). However, despite rapid economic changes Taiwan still strongly adheres to traditional values as portrayed by its high rank on institutional collectivism and power distance (Cheng, Chi and Miao, 2007; House, Hanges, Javidan, Dorfman, & Gupta, 2004) making the Taiwanese organization an interesting contrast to the U.S. context.

Further, in Confucian societies such as Taiwan, relationships are influenced by Confucianism which guides proper ordering and responsibilities of positions in society (Fu, Wu, Yang, & Ye, 2007). For example, in the family the eldest male possesses absolute authority and all others are expected to obey and be loyal. These obligations of deference and loyalty are then extended to other institutions in the society such as the workplace. Taiwanese workers also place a high value on paternalism which combines strong authority and all others are expected to obey and be loyal. These obligations of deference and loyalty are then extended to other

Due to cultural differences, it is essential to establish at least partial measurement equivalence prior to inferring substantive conclusions from cross-cultural mentoring studies. If the MFQ-9 does not demonstrate sufficient invariance, the findings from cross-cultural studies employing the MFQ-9 may not be interpretable. However, the three-factor structure of MFQ-9 has previously been supported in Taiwanese samples (Hu, 2008) and therefore we expect potential sources of non-invariance, if any, may be in the item factor loadings or intercepts. For example, in terms of metric invariance, Taiwanese protégés may place more importance on role modeling than U.S. protégés due to a cultural norm which emphasizes respect and loyalty in hierarchical work relationships. As a result, the factor loadings of role modeling items may not be invariant across the two samples. Role modeling is a more passive form of mentoring and protégés in high-power distance cultures, such as Taiwan (Carl, Gupta, & Javidan, 2004) may be less willing to directly approach the mentor for career or psychosocial support. Thus, they should be more likely to engage in role modeling because of the hierarchical nature of work relationships in Taiwan. Further, in high-power distance cultures, there are strong norms that define who is expected to communicate with whom. Junior employees adhere to these norms and do not simply approach senior employees (Pellegrini, Scandura, & Jayaraman, 2010). Consequently, in the workplace, leaders maintain strong authority
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