

HARDINESS SCALES IN IRANIAN MANAGERS: EVIDENCE OF INCREMENTAL VALIDITY IN RELATIONSHIPS WITH THE FIVE FACTOR MODEL AND WITH ORGANIZATIONAL AND PSYCHOLOGICAL ADJUSTMENT¹

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Summary.—This study examined the incremental validity of Hardiness scales in a sample of Iranian managers. Along with measures of the Five Factor Model and of Organizational and Psychological Adjustment, Hardiness scales were administered to 159 male managers (M age = 39.9, SD = 7.5) who had worked in their organizations for 7.9 yr. (SD = 5.4). Hardiness predicted greater Job Satisfaction, higher Organization-based Self-esteem, and perceptions of the work environment as being less stressful and constraining. Hardiness also correlated positively with Assertiveness, Emotional Stability, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness and negatively with Depression, Anxiety, Perceived Stress, Chance External Control, and a Powerful Others External Control. Evidence of incremental validity was obtained when the Hardiness scales supplemented the Five Factor Model in predicting organizational and psychological adjustment. These data documented the incremental validity of the Hardiness scales in a non-Western sample and thus confirmed once again that Hardiness has a relevance that extends beyond the culture in which it was developed.

Hardiness as a personality construct is defined as an “existential courage” that “emphasizes self-confidence and self-reliance at times of peril” (Maddi, 1998, p. 9). Research into this construct began with an analysis of how American managers coped with the stress of severe corporate instability (Maddi, 2002). Three dimensions of Hardiness predicted successful managerial coping: Commitment, Control, and Challenge. Commitment reflected a dedicated involvement of managers in their work. Control represented an avoidance of passivity through proactive efforts to influence ongoing circumstances. Challenge was evident when managers embraced difficulties as opportunities for growth rather than as threats to personal well-being. Over the past quarter century, evidence has confirmed that Hardiness is associated with psychological adjustment, superior work performance, and greater physical health (Maddi, 2002).

Scales for measuring Hardiness have been widely used and translated into numerous languages (Maddi, 2002). An earlier study, for instance, show-

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ed that Persian Hardiness measures were valid when administered to a sample of Iranian managers (Ghorbani, Watson, & Morris, 2000). The present project extended the analysis of Iranian managers by most importantly testing the hypothesis that Hardiness scales would display incremental validity. This hypothesis would be confirmed if Hardiness increased the variance already explained by the Five Factor Model (Goldberg, 1999) when predicting organizational and psychological adjustment (e.g., Piedmont, 1999).

Three subsidiary hypotheses supplied the necessary backdrop for assessing incremental validity. First, given that Hardiness predicts adaptive responding in American corporations (Maddi, 2002), it was expected these scales would also correlate with self-reported managerial adjustment in Iranian work organizations. In addition to the Cooper Work Stress Questionnaire (Cooper & Watt, 1992), which was examined in the previous Iranian study (Ghorbani, *et al.*, 2000), managers in the present sample responded to the Intrinsic and Extrinsic factors of the Minnesota Satisfaction Scales (Weiss, Dawis, England, & Lofquist, 1967), to the Organization-based Self-esteem Scale (Pierce, Gardner, Cummings, & Dunham, 1989), and to the Organizational Constraints Scale (Spector & Jex, 1998). The hypothesis was that Hardiness would correlate negatively with Work Stress and Organizational Constraints and positively with the other indices of work adjustment.

Second, Hardiness was expected to predict psychological adjustment. Depression and Anxiety Scales (Costello & Comrey, 1967) not examined in the previous Iranian study were administered along with measures of Perceived Stress (Cohen, Kamarack, & Mermelstein, 1983), Assertiveness (Rathus, 1973), and an Internal, Powerful Others, and Chance Locus of Control (Levenson, 1973). The specific hypotheses were that Control, Commitment, and Challenge would correlate positively with Assertiveness and Internal Control and negatively with Depression, Anxiety, Perceived Stress, Chance External Control, and a Powerful Others External Control.

Finally, a demonstration of incremental validity would be especially noteworthy if Hardiness also displayed associations with traits of the Five Factor Model. Indeed, the presumed adjustment of Control, Commitment, and Challenge suggested that Hardiness would correlate positively with all five traits, including Emotional Stability, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness (Goldberg, 1999). Within the context of such relationships, evidence of incremental validity would specify that Hardiness scales defined at least somewhat unique sources of variance, which were not reducible to more general dimensions of psychological functioning.

In summary, the principal goal of the present study was to test the hypothesis that Hardiness scales would display incremental validity. Subsidiary hypotheses suggested that Hardiness would correlate positively with Intrinsic

and Extrinsic Work Satisfaction, Organization-based Self-esteem, Assertiveness, Internal Control, and the Five Factor Model traits, and negatively with Work Stress, Organizational Constraints, Depression, Anxiety, Perceived Stress, Chance External Control, and a Powerful Others External Control.

METHOD

Participants

Managers from a wide range of Iranian private sector companies volunteered to serve as the research participants. These 159 men had a mean age of 39.9 yr. ($SD=7.5$). All worked in middle or upper management. They had been in their organizations for 7.9 yr. ($SD=5.4$) and in their current positions for 3.7 yr. ($SD=2.4$).

Measures

Three questionnaire booklets contained scales employed in this and a number of other projects. All measures had been translated from English into Persian in preparation for the present or previous investigations. The adequacy of all translations was confirmed by translating the Persian versions of questionnaires back into English.

Hardiness was assessed with the second version of the Personal Views Survey (cf. Maddi, & Khoshaba, 1994; Maddi, 1997) of Ouellette² which presented statements of relevance to the three dimensions of Hardiness and used a response scale with anchors of 1: not at all true and 4: completely true. For Intrinsic and Extrinsic Job Satisfaction, managers rated their employment circumstances with anchors of 1: very dissatisfied and 4: very satisfied. On the Organizational Constraints measures, managers indicated the frequency of work limitations experienced from 0: less than once per month or never to 4: several times per day. The Work Stress Questionnaire presented a list of potentially stressful work-related events, to which managers reacted along a scale anchored by 0: not at all stressful and 4: very stressful. All other scales employed a scale in Likert format using anchors of 0: strongly disagree and 4: strongly agree. Descriptive statistics and internal reliability information for the Goldberg (1999)³ Five Factor Model traits were reported previously for this sample (Ghorbani & Watson, 2004).

Procedure

Copies of questionnaires were sent via regular mail to managers working throughout Iran. After responding, managers sent the questionnaires

²Suzanne C. Ouellette graciously gave permission for use of the Personal Views Survey in this research.

³This inventory is in Dr. Goldberg's International Personality Item Pool (<http://ipip.ori.org/ipip/indextext.htm>) of measures of individual differences in the public domain.

back to the first author. The final sample represented 79% of a larger group of individuals who had earlier enrolled in a managerial training program. Data on promotion were available for 99 of these participants, but Hardiness scales displayed no significant correlations with promotions. Given that the focus of this project was on incremental validity, these data were not reported for the sake of brevity. Managerial participation in the study was fully voluntary, and care was taken to guarantee the confidentiality of all responses. As a reward for taking part in the study, managers were given an opportunity to attend a free workshop.

RESULTS

With one exception, adequate internal consistencies were obtained for all the measures (see Table 1). Internal Control was the lone scale displaying an unacceptably low α of .42, suggesting a need for caution in interpreting data obtained with this scale. Internal reliabilities were acceptable for Control ($\alpha = .71$, M response per item = 3.23, $SD = 0.31$), Commitment ($\alpha = .80$, $M = 3.33$, $SD = 0.36$), and Challenge ($\alpha = .60$, $M = 2.36$, $SD = 0.35$). Challenge predicted higher levels of Commitment (.42) and Control (.33), with the latter two variables displaying a robust positive correlation as well (.66, all $ps < .001$).

With regard to the Five Factor Model, Challenge was associated with greater Emotional Stability (.21, $p < .05$), and Commitment was indicative of higher Conscientiousness (.28, $p < .01$) and Emotional Stability (.18, $p < .05$).

TABLE 1
CORRELATIONS OF CONTROL, COMMITMENT, AND CHALLENGE WITH MEASURES
OF ORGANIZATIONAL AND PSYCHOLOGICAL ADJUSTMENT

Measure	α	M	SD	Correlations		
				Control	Commitment	Challenge
Organizational Adjustment						
Intrinsic Work Satisfaction	.70	2.8	0.5	.27	.32	.19
Extrinsic Work Satisfaction	.76	2.2	0.7	.23	.26	.10
Organization Based Self-esteem	.86	3.2	0.5	.28	.17	.12
Organization Constraints	.89	1.3	0.8	-.30	-.23	-.11
Work Stress Questionnaire	.93	1.3	0.5	-.17	-.28	-.34
Psychological Adjustment						
Assertiveness	.83	3.1	0.0	.38	.26	.12
Internal Control	.42	3.1	0.4	.16	.10	.12
Powerful Others External Control	.69	1.6	0.6	-.34	-.26	-.32
Chance External Control	.80	1.1	0.7	-.38	-.38	-.27
Depression	.87	0.7	0.5	-.42	-.44	-.22
Anxiety	.82	1.2	0.7	-.26	-.23	-.23
Perceived Stress	.82	1.1	0.5	-.30	-.30	-.27

Note.—For correlations, $r = .15$ to $.21$ ($p < .05$); $r = .22$ to $.28$ ($p < .01$); and $r > .28$ ($p < .001$).

Positive correlations appeared between Control and Agreeableness (.23), Extraversion (.25), Conscientiousness (.20), and Openness to Experience (.18, all $ps < .05$). No other Hardiness linkages with the Five Factor Model traits reached conventional significance.

Table 1 presents the relationships of Hardiness with the remaining variables. The absence of a significant relationship between Hardiness and Internal Control was the only outcome which did not support the empirical hypotheses. As expected, at least one and usually more dimensions of Hardiness were associated with higher ratings of Intrinsic and Extrinsic Work Satisfaction, Organization-based Self-esteem, and Assertiveness, and with lower scores on the Organizational Constraints, Work Stress, External Control, Anxiety, Depression, and Perceived Stress measures.

Hardiness scales displayed clear incremental validity. After the Five Factor Model traits had been entered into the first step of multiple regressions, the three Hardiness dimensions increased the amount of variance explained in 7 of the 12 organizational and psychological adjustment variables. Significant ΔR^2 values ranged from .03 to .15 ($ps < .05$). Commitment served as the lone significant predictor of Depression ($\beta = -.22$, $p < .05$), and the same was true with regard to the association between Challenge and Work Stress ($\beta = -.25$, $p < .01$). In the other significant results, Control was the only Hardiness dimension that increased the predictability of Organizational Constraints ($\beta = -.32$), Assertiveness ($\beta = .30$), Powerful Others External Control ($\beta = -.29$), Chance External Control ($\beta = -.31$), and Anxiety ($\beta = -.16$, $p < .05$).

DISCUSSION

This study most importantly tested the hypothesis that Hardiness scales would display incremental validity in a sample of Iranian managers. Subsidiary hypotheses suggested that Control, Commitment, and Challenge would also be associated with organizational and psychological adjustment and with the traits of the Five Factor Model. The results of this investigation offered general support for all of these expectations.

With regard to organizational variables, Iranian managers high in Hardiness were more satisfied with their careers, obtained a greater sense of self-esteem through their contributions to the organization, and evaluated their work environment as less stressful and constraining. Psychologically, they were more assertive and less depressed, anxious, and stressed. They also were less likely to operate from an external locus of control.

Data obtained with the Goldberg (1999) index of the Five Factor Model further clarified the meaning of Hardiness in Iranian managers. Specifically, these data supplied further evidence of the positive psychological consequences of Hardiness. Challenge was indicative of Emotional Stability,

whereas Commitment was associated with both Emotional Stability and Conscientiousness. Only Emotional Stability did not display significant associations with Control, and the relatively broader psychological significance of this dimension of Hardiness also appeared in the finding that Control was more likely than Commitment and Challenge to exhibit zero-order correlations with the other measures.

At the same time, however, Hardiness was not reducible to the traits of the Five Factor Model. At least one finding testified to the incremental validity of each aspect of Hardiness. Control once again was identified as especially important in explaining additional variance in organizational and psychological adjustment.

The complete lack of Hardiness correlations with an Internal Locus of Control represented the lone failure to obtain at least some support for the hypotheses of this investigation. The Internal Locus of Control Scale was also the one scale that displayed poor internal reliability, which presumably contributed to the nonappearance of relationships. The importance of the Control dimension of Hardiness in predicting other measures nevertheless indicated that the concept of personal control was very much germane to understanding the adjustment of Iranian managers. A reasonable conclusion, therefore, would be that either the Levenson scale (1973) does not express Internal Control in a manner sensitive in the Iranian context or that the translation of this scale was somehow inadequate.

Hardiness scales were developed to record the ability of managers in the United States to cope with severe stress. The present and previous data have demonstrated that these scales are valid for understanding the organizational and psychological adjustment of Iranian managers as well. Moreover, the empirical usefulness of the three Hardiness scales was not reducible to more general psychological traits like those described by the Five Factor Model. Perhaps most importantly, therefore, these data once again confirmed that the Hardiness construct has a relevance which extends beyond the culture in which it was developed.

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