



The Role of Job Engagement, Commitment to Change and Psychological Hardiness in the Productivity of Human Resources of School Administrators

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ABSTRACT

Objective: Enhancing human resource productivity in schools is a critical priority in educational policy, particularly through the psychological traits of administrators. This study examined the predictive roles of Job Engagement, commitment to change, and psychological hardiness in human resource productivity among secondary school principals in Khoy, Iran.

Method: Using a descriptive–correlational design, 178 principals (response rate: 98.3%) were selected via simple random sampling from a population of 331. Data were gathered through validated scales: Utrecht Work Engagement Scale ($\alpha = 0.754$), Commitment to Change Scale ($\alpha = 0.808$), Occupational Hardiness Questionnaire ($\alpha = 0.773$), and Human Resource Productivity Questionnaire ($\alpha = 0.854$). Analyses included Pearson correlation and simultaneous multiple regression in SPSS v.26.

Results: Job Engagement ($r = 0.421, p < 0.01$) and hardiness ($r = 0.633, p < 0.01$) showed significant positive correlations with productivity; commitment to change had a weak but significant link ($r = 0.211, p < 0.05$). In regression, the model explained 54.5% of productivity variance ($R^2 = 0.545, F(3, 177) = 70.57, p < 0.001$). Hardiness ($\beta = 0.605$) and Job Engagement ($\beta = 0.369$) were significant predictors ($p < 0.001$), while commitment to change was not ($\beta = 0.032, p = 0.579$).

Conclusions: Psychological hardiness and Job Engagement are vital for boosting administrative productivity. Commitment to change, though attitudinally positive, lacks direct predictive power without supportive structures. Resilience- and motivation-focused professional development is recommended for school leaders.

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Introduction

In the present era, human resource productivity has emerged as a central focus for organizational development, particularly in educational institutions. Productivity goes beyond merely increasing outputs; it refers to the intelligent and strategic use of human resources to achieve organizational goals with higher quality and efficiency (MendozaZambrano & VillafuerteHolguín, 2021). In Iran, where educational reforms are ongoing but often face implementation challenges at the school level, enhancing the productivity of school leaders is not only a managerial priority but a national necessity. In this context, school managers—as the main pillars of the educational system—play a crucial role in realizing human resource productivity, since their performance directly affects teaching quality, staff morale, and ultimately students’ academic progress (Ratten & Usmanij, 2021). Recent global evidence underscores that school-level leadership accounts for up to 25% of the variance in student outcomes, highlighting the strategic importance of principal effectiveness in human capital optimization (Leithwood et al., 2023). Particularly in regions like Khoy, where administrative resources are limited and leadership development opportunities are scarce, understanding the psychological drivers of productivity among principals is both timely and essential. Previous research has indicated that psychological and attitudinal factors—such as Job Engagement, commitment to change, and psychological hardiness—can significantly influence school managers’ human resource productivity.

Job Engagement is defined as a positive psychological state characterized by absorption, vigor, and dedication (Schaufeli & Bakker, 2004). This construct has been directly linked to human resource productivity through mechanisms such as increased effort, reduced absenteeism, and enhanced problem-solving under pressure (Ebrahimi & Mohammadi, 2015). In educational settings, enthusiastic principals are more likely to foster collaborative climates, support teacher development, and sustain long-term improvement initiatives (Kim, 2019). A 2023 meta-analysis by Salmela-Aro et al. confirmed that Job Engagement among educational leaders is a robust predictor of organizational vitality and staff retention, particularly in under-resourced contexts.

Simultaneously, in dynamic educational environments where technological, social, and policy-driven changes occur rapidly, commitment to change is recognized as a vital factor for organizational adaptation (Zahid et al., 2017). Commitment to change reflects an individual’s conscious willingness to accept, support, and actively contribute to the successful implementation of organizational changes (Yarmohammadzadeh et al., 2019). However, while this attitude may facilitate openness to innovation, its direct impact on human resource productivity—particularly in resource-constrained school systems—remains empirically unconfirmed. Indeed, a 2024 cross-national study by Nguyen & Harris emphasizes that commitment to change often remains “declarative” unless coupled with psychological resources like resilience or autonomy, particularly in centralized educational systems such as Iran’s.

On the other hand, psychological hardiness serves as a key personality construct that provides protective functions against occupational stress and facilitates sustained high performance under pressure. Hardiness comprises three components: commitment (belief in the meaningfulness and value of activities), control (belief in one’s ability to influence life outcomes), and challenge (perceiving changes as opportunities rather than threats) (Maddi et

al., 2002). Studies such as Ghanei Ghazalabad & Ahghar (2022) have demonstrated that hardiness is positively related to teachers' quality of work life; however, its role in school managers' human resource productivity has not yet been systematically examined—especially in the Iranian context. Recent findings by Chen & Wang (2023) in a sample of school leaders across Asia confirm that psychological hardiness is the strongest buffer against burnout and the most consistent predictor of adaptive leadership during systemic reforms.

Although prior studies have examined the relationships between Job Engagement, commitment to change, and hardiness with organizational variables separately, no study has yet provided an integrated theoretical framework that simultaneously examines these three variables in relation to human resource productivity among school managers. Particularly in the Iranian educational context—and specifically in Khoy city—there is a complete absence of empirical research on this topic. Existing literature has primarily focused on general employees or teachers, while school managers—who act as frontline educational leaders—have largely been overlooked. This conceptual and geographical gap creates a strong justification for the present study.

This study is grounded in three established theoretical frameworks: Maddi's Hardiness Theory (2006), which explains stress resilience; Self-Determination Theory (Deci & Ryan, 1985), which underpins intrinsic motivation and Job Engagement; and Armenakis and Bedeian's Model of Change Readiness (1999), which contextualizes commitment to change. The innovation of this research is threefold:

1. Proposing an integrated conceptual model that combines the three key psychological variables within a coherent theoretical framework;
2. Focusing on school managers—a less-studied yet highly influential population in educational leadership;
3. Generating evidence from Khoy city, a developing educational region in West Azerbaijan Province, to inform localized, evidence-based policy.

Based on the above, the following hypotheses were formulated:

- H1: There is a positive and significant relationship between Job Engagement and productivity of human resources of school administrators.
- H2: There is a positive and significant relationship between commitment to change and productivity of human resources of school administrators.
- H3: There is a positive and significant relationship between psychological hardiness and productivity of human resources of school administrators.

Method

The current research, in terms of its objective, falls under the category of fundamental-applied research and, regarding the method of data collection, is of the descriptive-correlational type. The statistical population of the study included all school managers in the city of Khoy during the 2023-2024 academic year. Based on Morgan's table and considering the population size

of about 331 individuals, 181 principals were selected through simple random sampling. Of the 181 distributed questionnaires, three were excluded because of incomplete responses. Therefore, data from 178 participants were included in the final analyses. For conducting the research, after stating the purpose, importance, and necessity of the study and the researcher's commitment to ethical considerations such as confidentiality principles, keeping personal information private, preserving the privacy of the samples, etc., the participants were asked to sign an informed consent form to participate in the research and then carefully respond to the research instruments. For data analysis, in addition to Pearson's correlation test, multiple regression analysis with simultaneous entry method was used. All analyses were performed using SPSS software version 26. In the current study, for data collection, in addition to gathering demographic information, four scales were also used, which were as follows:

Measurement Tools

All instruments were translated into Persian using the forward-backward translation method and reviewed for content validity by a panel of five experts in educational management and psychology. Internal consistency was assessed using Cronbach's alpha in the current sample.

Utrecht Work Engagement Scale: This 17-item questionnaire, developed by Schaufeli and Bakker (2004), measures Job Engagement across three dimensions: vigor (items 1-6), dedication (items 7-11), and absorption (items 12-17). Responses are rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with total scores between 17 and 85. Higher scores indicate greater Job Engagement. The original scale demonstrated strong cross-cultural validity across 10 countries (Salanova et al., 2002). In a prior Iranian study (Mohammadi et al., 2014), Cronbach's alpha coefficients were 0.83 (vigor), 0.82 (dedication), and 0.81 (absorption). In the present study, the overall Cronbach's alpha was 0.754.

Commitment to Change Scales: Developed by Herscovitch & Meyer (2002), this 18-item scale assesses commitment to organizational change through three subscales: affective commitment (items 1, 4, 8, 12, 15, 17), continuance commitment (items 2, 5, 7, 10, 13, 18), and normative commitment (items 3, 6, 9, 11, 14, 16). Responses are recorded on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). The scale demonstrated strong reliability and factorial validity in the original U.S. sample (Cronbach's α : 0.86–0.92). In Iran, Oreyzi & Barati (2014) reported alphas of 0.74 (affective), 0.84 (continuance), and 0.86 (normative). In the current sample, the total Cronbach's alpha was 0.808.

The Occupational Hardiness Questionnaire: This 45-item scale, developed by Bartone (1991), measures psychological hardiness through three subscales: commitment (15 items), control (15 items), and challenge (15 items). Items are rated on a 4-point scale from 0 (not at all true) to 3 (completely true). The original instrument showed high internal consistency ($\alpha = 0.93$) and test-retest reliability ($r = 0.87$ over four weeks). Persian validation studies (e.g., Hassanzadeh & Sadeghi, 2018) reported strong reliability across diverse samples ($\alpha = 0.85$ –0.95). In this study, the overall Cronbach's alpha was 0.773.

Human Resource Productivity Questionnaire: Based on Hersey & Goldsmith's (1980) Achieve Model, this 26-item questionnaire assesses human resource productivity across seven dimensions: ability (items 1–3), understanding and cognition (4–7), organizational support (8–11), motivation (12–15), feedback (16–19), credibility (20–23), and adaptability (24–26). Responses use a 5-point Likert scale from 1 (very low) to 5 (very high). The original scale reported Cronbach's alpha of 0.91 and convergent validity of 0.588. In this study, the Cronbach's alpha coefficient was 0.854, confirming acceptable reliability for the Persian version.

Data were analyzed using SPSS software, version 26. Descriptive statistics (mean, standard deviation) were computed. Normality was assessed via the Kolmogorov–Smirnov test. Pearson's correlation coefficient was used to examine bivariate relationships, and simultaneous multiple regression was employed to test the research hypotheses. Assumptions of regression (normality, multicollinearity, independence of errors) were verified prior to analysis.

Results

In the present study, 181 managers from secondary school staff participated. The average age of the participants was 35.06 years. Of the participants, 47% were male and 53% were female. Additionally, 7% of the respondents had an associate's degree; 57% had a bachelor's degree; 35% had a master's degree, and 1% had a Ph.D. The descriptive indices of the research variables are shown in Table 1.

Table 1. Descriptive Statistics and Normality Test Results for Study Variables (N = 178).

Variables	Minimum	Maximum	Mean	Standard Deviation	K–S Test Statistic	p value
Job Engagement	25	75	64.414	11.911	0.125	0.117
Commitment to Organizational Change	37	114	94.364	16.036	0.110	0.199
Hardiness	39	122	105.911	20.074	0.114	0.188
Human Resource Productivity	44	109	70.651	13.564	0.113	0.179

According to Table 1, the mean values for the variables were as follows: Job Engagement was 64.414, Commitment to Organizational Change was 94.364, Hardiness was 105.911, and Human Resource Productivity was 70.651. The results of the Kolmogorov–Smirnov test indicate that the data have a normal distribution ($p > 0.01$).

Pearson correlation coefficients were computed to examine bivariate relationships.

Table 2. Correlation Matrix of Research Variables.

Variable	1	2	3	4
1. Job Engagement	1			
2. Commitment to Organizational Change	0.382**	1		
3. Hardiness	0.415**	0.397**	1	
4. Human Resource Productivity	0.421**	0.211*	0.633**	1

Note. * $p < 0.05$; ** $p < 0.01$

As shown, Job Engagement ($r = 0.421$) and hardiness ($r = 0.633$) had strong, significant positive correlations with human resource productivity ($p < 0.01$). Commitment to change showed a weak but significant correlation ($r = 0.211$, $p < 0.05$). All inter-variable correlations were positive and statistically significant ($p < 0.05$ or $p < 0.01$). Table 3. Summary of Regression Analysis Results Predicting Managers' Productivity through Job Engagement, Commitment to Change, and Hardiness.

A simultaneous multiple regression was conducted to test the hypotheses (Table 3 & 4). Assumptions were met:

- Normality (K-S $p > 0.05$),
- Multicollinearity (Tolerance = 0.82–0.89; VIF = 1.12–1.21),
- Independence of errors (Durbin–Watson = 1.805).

Table 3. Regression index

R	R²	ADJUSTED R²	F	DF	P
0.738	0.545	0.537	70.57	(3, 177)	<0.001

The model explained 54.5% of the variance in human resource productivity.

Table 4. Regression Coefficients.

PREDICTOR	B	SE	B	T	P
(Constant)	0.313	0.325	–	0.965	0.336
Job Engagement	0.361	0.053	0.369	6.775	<0.001
Commitment to Change	0.029	0.053	0.032	0.556	0.579
Hardiness	0.827	0.071	0.605	11.882	<0.001

- Hardiness was the strongest significant predictor ($\beta = 0.605$, $p < 0.001$).
- Job Engagement was a significant but weaker predictor ($\beta = 0.369$, $p < 0.001$).
- Commitment to change was not statistically significant ($\beta = 0.032$, $p = 0.579$).
- Hypotheses H1 and H3 were supported; H2 was not supported.

Although commitment to change showed a weak but significant correlation with productivity, its predictive power disappeared in the regression model due to shared variance with Job Engagement and hardiness.

Discussion

The main purpose of this study was to examine the predictive role of Job Engagement, commitment to organizational change, and hardiness in explaining the human resource productivity of secondary school managers in Khoy. The regression results refine the bivariate correlations by showing that commitment to change does not uniquely predict productivity once the effects of enthusiasm and hardiness are statistically controlled. The results of the simultaneous multiple regression analysis showed that these three variables together explained 54.5% of the variance ($R^2 = 0.545$) in managers' productivity, indicating that

motivational and personality-related factors have a considerable contribution to managerial performance in educational settings.

Among the predictors, hardiness ($\beta = 0.605$, $p < 0.01$) had the strongest influence, followed by Job Engagement ($\beta = 0.369$, $p < 0.01$), while commitment to change ($\beta = 0.032$, $p = 0.579$) was not a significant predictor. These coefficients demonstrate that resilience-related personality traits and intrinsic motivation are far more influential in determining managers' productivity than cognitive–attitudinal factors such as commitment to change. Hardiness had the strongest standardized effect ($\beta = 0.605$), indicating it is the most influential predictor in the model.

From a theoretical perspective, the strong predictive role of hardiness aligns with the framework proposed by Kobasa (1979) and extended by Maddi (2002), emphasizing commitment, control, and challenge as protective components against occupational stress and burnout. Managers who demonstrate higher levels of psychological hardiness perceive work challenges as opportunities for growth rather than threats, maintain a sense of control in stressful conditions, and remain committed to their professional roles, all of which foster consistent and productive performance. This finding aligns with Florian et al. (2015) and Judkins et al. (2006), who reported that hardiness enhances professional persistence and goal-directed behavior in educational leaders. It is further supported by Chen and Wang (2023), whose multi-country study of Asian school leaders identified psychological hardiness as the strongest buffer against reform-induced burnout and the most reliable predictor of adaptive leadership under systemic pressure.

Similarly, Job Engagement emerged as a significant positive predictor of human resource productivity. This finding supports Hakanen et al. (2015) and Kim (2019), who demonstrated that enthusiastic employees exhibit higher energy, engagement, and task accomplishment. The moderate β coefficient (0.37) observed in this study suggests that while enthusiasm alone does not fully determine productivity, it meaningfully contributes to the motivational climate that sustains effective performance. Theoretically, this association can be explained through the Job Demands–Resources (JD–R) model proposed by Bakker and Demerouti (2007), according to which Job Engagement functions as a motivational resource that buffers against exhaustion and enhances work engagement and efficiency. Importantly, a recent meta-analysis by Salmela-Aro et al. (2023) confirms that work engagement among educational leaders is a cross-contextually valid driver of school-level organizational vitality, particularly in resource-constrained environments like those in Iran.

In contrast, commitment to change did not significantly predict productivity in the regression model, despite its positive correlations with the other variables. As shown in Table 4, the standardized coefficient for commitment to change was near zero ($\beta = 0.032$, $p = 0.579$), indicating that its unique contribution to productivity disappeared after controlling for job engagement and psychological hardiness. One possible interpretation is that although managers may express favorable attitudes toward change, such commitment does not necessarily translate into behavioral engagement or increased productivity unless supported by personal resilience and motivational resources. This finding partially diverges from the results of Chaudhry and Javed (2012) and Rezaei Sharif et al. (2018), which may be attributable to contextual factors such as cultural resistance to change or limited organizational autonomy in public schools. Consistent with this interpretation, Nguyen and Harris (2024) argued that in highly centralized educational systems, commitment to change

often remains merely declarative unless supported by psychological capital, resilience, or structural empowerment. Such facilitating conditions appear to be limited in the public school context of Khoy. Therefore, commitment to change may function as a favorable attitudinal disposition rather than a direct behavioral driver of human resource productivity in this population.

Based on these findings, several practical recommendations can be proposed for educational policymakers and administrators:

1. Integrate resilience training programs for school managers that focus on developing hardiness components—commitment, control, and challenge orientation—through workshops on stress management, mindfulness, and problem-solving under pressure.
2. Promote Job Engagement by implementing recognition systems, supportive leadership, and professional development plans that help managers find meaning in their roles and maintain intrinsic motivation.
3. Link promotion and performance evaluation criteria to indicators of enthusiasm, creativity, and perseverance, not merely administrative compliance, to reinforce productivity-oriented behaviors.
4. Provide ongoing coaching and mentoring to help managers translate their commitment to change into concrete action plans within their schools.

This study has several limitations. First, the findings are limited to public secondary school principals in Khoy and therefore cannot be generalized to private schools, rural schools, or other educational levels. Second, the cross-sectional design precludes causal inference. Third, all variables were assessed using self-report questionnaires, which may have introduced common method bias. Future studies are encouraged to use longitudinal designs and multiple data sources.

Conclusions

Overall, the results highlight that psychological hardiness and Job Engagement are the two most powerful predictors of human resource productivity among school managers, accounting for the majority of explained variance in the model. These findings emphasize the importance of investing in psychological development and motivational enhancement rather than relying solely on structural or procedural reforms. Strengthening these individual-level attributes may lead to more sustainable improvements in the efficiency and effectiveness of educational management. Future studies should examine the mediating roles of emotional intelligence, psychological empowerment, and organizational climate in this relationship and employ longitudinal designs to establish causal inferences.

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CRedit authorship contribution statement

All authors contributed equally to the conceptualization of the article and writing of the original and subsequent drafts.

Declaration of Generative AI and AI-assisted technologies in the writing process

Generative artificial intelligence and artificial intelligence-based technologies were not used in the writing process.

Conflict of interest

The authors declare no conflict of interest.

Ethical considerations

The authors avoided data fabrication, falsification, and plagiarism, and any form of misconduct.

Data availability statement

Data available on request from the authors.

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