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ISLAMIC HUMAN RESOURCE MANAGEMENT, LEADERSHIP, WORK ETHICS, AND EMPLOYEE ENGAGEMENT: ASSOCIATIONS WITH INNOVATIVE WORK BEHAVIOR IN ISLAMIC BANKS

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ABSTRACT: Innovation in Islamic banking requires employees to generate and implement new ideas. This study extends social exchange theory by examining the concurrent relationships of Islamic human resource management practices, Islamic leadership, Islamic work ethics, and employee engagement with innovative work behavior. Survey data from 312 employees of Indonesian Islamic commercial banks were analyzed using partial least squares structural equation modeling (PLS-SEM). The findings reveal positive associations between all four predictors and innovative work behavior, suggesting their collective relevance to workplace innovation. However, substantial construct overlap raises concerns about discriminant validity and prevents reliable differentiation of their individual contributions. The cross-sectional, single-source design further limits causal inference, while unavailable diagnostic estimates constrain additional robustness assessments. Bank managers should integrate ethical human resource practices, value-based leadership, and employee engagement initiatives to support innovative work behavior.

Keywords: Innovative Work Behavior; Islamic Human Resource Management; Islamic Leadership; Islamic Work Ethics; Employee Engagement

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INTRODUCTION

The capacity to renew products, services, and work routines is increasingly important in financial services, including Islamic banking. At the end of 2024, Islamic banking assets in Indonesia were reported at approximately IDR 980.3 trillion, representing 9.88 percent annual growth and about 7.72 percent of national banking assets (Otoritas Jasa Keuangan, 2025). The industry also operates in a dual banking system in which Islamic banks compete with much larger conventional institutions and a growing number of digital players. In this setting, employees' day-to-day creativity can become an important organizational resource. Innovative work behavior refers to employees' deliberate efforts to generate, promote, and implement new ideas in their work roles (De Jong & Den Hartog, 2010). Because such behavior is discretionary rather than simply commanded, it is likely to be associated with both organizational conditions, and the meanings employees attach to their work.

Islamic financial institutions provide a distinctive context because commercial objectives are pursued alongside adherence to sharia principles. Human resource practices are therefore expected to reflect justice, accountability, and service, while leadership also carries ethical and spiritual expectations. Comparative work on Western and Islamic ethical systems suggests that Islamic perspectives connect work with worship and accountability before God, giving familiar management practices a particular moral frame (Haron et al., 2020). Accordingly, the organizational and individual factors associated with innovative work behavior in Islamic banks may be interpreted through a value-laden context even when the constructs themselves are also used in conventional management research.

Research on innovative work behavior often examines a limited set of predictors or draws on conventional banking and public-sector settings (Adekanmbi & Ukpere, 2023; Srirahayu et al., 2023). Studies in Muslim-majority contexts have begun to link Islamic work ethics with innovative work behavior and with other constructive employee behaviors such as prosocial voice (Akhmadi et al., 2023; Firmansah et al., 2023). Within the literature reviewed for the present study, however, comparatively little attention has been given to examining Islamic human resource management practices, Islamic leadership, Islamic work ethics, and employee engagement concurrently among employees of Indonesian Islamic banks. The resulting question is not whether these constructs are interchangeable, but whether each is associated with innovative work behavior when considered in the same model, a question that can be answered only to the extent that the constructs are empirically distinguishable.

Against this background, the study offers three bounded contributions. First, it examines four conceptually different correlates of innovative work behavior within one Indonesian Islamic-banking sample: Islamic human resource management practices as an organizational system, Islamic leadership as a relational form of conduct, Islamic work ethics as an individual value orientation, and employee engagement as a work-related psychological state. This is a contribution within the literature reviewed here rather than a claim of absolute novelty. Second, the four associations are estimated concurrently to describe their joint pattern; because discriminant validity is unresolved, the individual coefficients are not ranked or interpreted as independent or causal contributions. Third, social exchange theory is used most directly to interpret organizational and relational treatment, while Islamic values such as justice, trust, consultation, and excellence provide the contextual lens. Because those values were not measured as separate constructs, they are interpretive propositions rather than tested mechanisms. The aim is therefore to examine the joint associations of the four constructs with innovative work behavior within a single structural model, with the interpretation of individual paths restricted by the measurement limitations reported below

LITERATURE REVIEW

Social Exchange Theory and Innovative Work Behavior

Social exchange theory proposes that employees reciprocate favorable treatment with attitudes and behaviors that benefit the organization (Blau, 1964). When the organization supplies resources that employees value, whether material, developmental, or relational, employees may feel obliged to respond with effort beyond their formal duties. Innovative work behavior is one

such discretionary response. It unfolds as a sequence in which employees explore opportunities, generate and promote ideas, and work to implement them (De Jong & Den Hartog, 2010). In Islamic institutions this exchange is framed by a religious understanding of work as service and accountability. The values usually invoked in this framing, namely justice (*adl*), trust as a mandate (*amanah*), consultation (shura), and excellence (i*hsan* and *itqan*), serve here only as an interpretive lens for the hypotheses; they were not measured and are not tested as mechanisms.

The four predictors do not occupy equivalent positions within social exchange theory. The theory most directly explains why organizational practices and leadership conduct may elicit reciprocal responses, because both represent resources or treatment supplied by the organization and its agents. Islamic work ethics, by contrast, are an individual value orientation that employees bring to the exchange, while employee engagement is a work-related psychological state that may itself respond to organizational and job resources. The parallel specification used here is therefore a joint cross-sectional model: it places the four constructs on a common statistical footing for estimating concurrent associations with innovative work behavior, but it does not imply that they are theoretically interchangeable or causally equivalent. H1 and H2 follow most directly from the exchange logic, whereas H3 and H4 rest on value-based and psychological-state reasoning, respectively.

Islamic Human Resource Management Practices

Islamic human resource management practices refer to recruitment, training, appraisal, and compensation arranged in line with Islamic guidance, so that fairness, trust, and religious values are embedded in everyday people management (Toumi & Su, 2023; Zangoueinezhad & Moshabaki, 2011). Developmental and high-performance human resource configurations have been linked to higher innovation in conventional settings (Chang et al., 2021; Gautam & Gautam, 2024), and human resource practices have been associated with organizational performance through employee engagement (Alsakarneh et al., 2024). From a social exchange perspective, employees who experience merit-based selection, development of both competence and character, and fair rewards may reciprocate with discretionary effort, including idea generation and implementation. Whether grounding these practices in Islamic norms of justice and stewardship adds to this reciprocity was not tested here. On this basis, a positive association with innovative work behavior is expected.

H1: Islamic human resource management practices are positively associated with innovative work behavior.

Islamic Leadership

Islamic leadership emphasizes exemplary conduct, consultation with subordinates, accountability before God, and service, and it overlaps with the spiritual and ethical leadership traditions. Spiritual leadership has been linked to employees' innovative behavior through individual values and creative role identity (Yang et al., 2021), and ethical leadership through individual attributes such as thriving at work and attitudes toward performing well (Ahmed Iqbal et al., 2020). Leadership that supplies meaning has also been proposed as a distinct route to follower motivation (Van Knippenberg, 2020). In Muslim-majority contexts, Islamic leadership and Islamic spirituality have been associated with employee performance, passion for work, and citizenship behavior (Al Jabar & Suharnomo, 2023; Kessi et al., 2022; Sani, 2020; Tubastuvi et al., 2022). Leaders who model integrity and invite consultation may lower the personal risk of voicing an unconventional idea, a plausible exchange-based route to innovation that was not measured here. On this basis, a positive association with innovative work behavior is expected.

H2: Islamic leadership is positively associated with innovative work behavior.

Islamic Work Ethics

Islamic work ethics combine orientations toward diligence, honesty, cooperation, and excellence, and framework as a means of self-development and contribution to society rather than as an end (Ali & Al-Kazemi, 2007; Ali & Al-Owaihan, 2008). The construct has been associated with job satisfaction and commitment in banking (Gheitani et al., 2019), constructive

responses to organizational change in Islamic banks (Al-Shamali et al., 2021), prosocial and promotive voice (Akhmadi et al., 2023; Hameed et al., 2020), performance under work–family pressure (Muafi & Yogawati, 2021), citizenship behavior (Raza et al., 2024), and unethical pro-organizational behavior (Alqhaiwi et al., 2023). More directly, Islamic work ethics have been linked with innovative work behavior (Firmansah et al., 2023) and with the relationship between entrepreneurial leadership and innovation (Hussain et al., 2023). The ideal of itqan provides a value-consistent basis for continuous improvement. This pathway is not framed as reciprocity in the strict social-exchange sense: Islamic work ethics are held by the employee rather than granted by the organization, so the expected association with innovative work behavior is better understood as internally guided conduct operating alongside the exchange process. On this basis, a positive association with innovative work behavior is expected.
H3: Islamic work ethics are positively associated with innovative work behavior.

Employee engagement is a positive work-related psychological state characterized by vigor, dedication, and absorption (Schaufeli & Bakker, 2004). It is conceptually proximal to discretionary effort, and recent studies report positive associations between engagement and innovative work behavior, either directly or within models involving job resources and leadership (Dei Mensah et al., 2024; Ghani et al., 2023; Salem et al., 2023). Engagement can itself arise in response to organizational and relational resources, including inclusive leadership (Ly, 2024); its inclusion as a parallel predictor here therefore serves the descriptive purpose of the present cross-sectional analysis and does not imply causal equivalence with human resource practices or leadership. A longitudinal mediation specification would be a useful subsequent test once the measurement model has been shown to distinguish the constructs adequately. On this basis, a positive association with innovative work behavior is expected.
H4: Employee engagement is positively associated with innovative work behavior.

The four constructs operate at different conceptual levels: Islamic human resource management practices concern organizational systems; Islamic leadership concerns the leader–employee relationship; Islamic work ethics concern an individual value orientation; and employee engagement concerns a work-related psychological state. Figure 1 therefore presents a deliberately parsimonious joint model in which all four are related directly to innovative work behavior. Because the constructs are conceptually close and may correlate strongly, discriminant validity is treated as a critical empirical requirement. Any interpretation of separate path coefficients is conditional on that requirement and should not be read as a decomposition of independent causal effects.

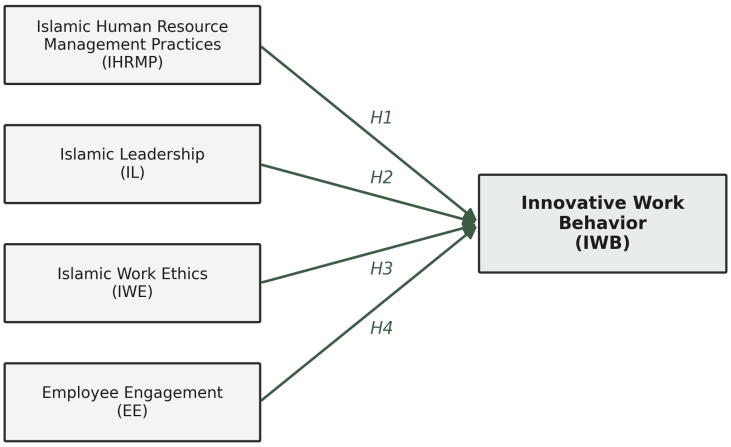


Figure 1. Conceptual framework

RESEARCH METHOD

This study used a quantitative cross-sectional survey to estimate the hypothesized associations among reflective latent constructs within one joint model. Partial least squares structural equation modeling (PLS-SEM) was implemented in the SEMinR package following

established guidance for measurement- and structural-model assessment (Hair et al., 2019, 2022). The cross-sectional specification is used to estimate concurrent associations and in-sample explained variance, not to establish causal ordering. No claim of out-of-sample predictive performance is made because the retained analysis archive does not contain PLSpredict output.

The population comprised employees of Islamic commercial banks operating in Indonesia. Eligibility was restricted to permanent employees with customer contact or operational decision authority and at least six months of tenure; outsourced staff, interns, and employees on extended leave were excluded. Recruitment was organized across institution and functional-unit strata, with front-line roles comprising customer service and financing and supporting roles comprising operations, compliance, and administration. The retained study records describe this recruitment as proportionate allocation across strata, but the operational basis of that allocation, namely the sampling-frame counts, the roster date, and the allocation formula, is not documented, and no reproducible randomization record exists. The term is therefore used descriptively for the intended recruitment design: proportionality in the realized sample cannot be verified, respondent selection is not characterized as simple random sampling, and the sample is treated as a non-probability sample for inferential purposes. The results should accordingly not be generalized to all employees of Islamic banks in Indonesia. A total of 360 employees were invited, and 312 usable questionnaires were returned (86.7%), leaving 48 invitations without a usable questionnaire (13.3%). Sample adequacy was assessed using the inverse square root method (Kock & Hadaya, 2018). For a two-tailed test at alpha = 0.05 and power = 0.80, a smallest standardized path of interest of 0.20 requires at least 155 observations; with n = 312, the approximate minimum detectable standardized path is 2.486 / sqrt (312) = 0.141 under the same assumptions. Participation was voluntary and anonymous, and respondents were informed that there were no right or wrong answers as a procedural step intended to reduce evaluation apprehension and common-method concerns (Podsakoff et al., 2003). The number of participating banks, the total number of eligible employees and branches in the sampling frame, the roster date, stratum-specific frame sizes, and fieldwork dates are not documented in the retained study records; these quantities are therefore not reconstructed or reported as observed data, and their absence limits the assessment of coverage and representativeness. An early-versus-late response comparison likewise cannot be reconstructed because response timing or response-order data are not available in the retained records; consequently, no inference of equivalence between early and late respondents, or of absence of nonresponse bias, is made.

All five constructs were modeled reflectively with four indicators each, giving 20 items rated on a five-point Likert scale. Innovative work behavior was based on De Jong and Den Hartog (2010); employee engagement on the vigor, dedication, and absorption tradition of Schaufeli and Bakker (2004); and Islamic work ethics on the Islamic work-ethic literature (Ali & Al-Kazemi, 2007; Ali & Al-Owaihan, 2008). The item-selection and adaptation steps related to the original scales are not documented in the article or in the retained records. Instrument-development information is reported at three evidentiary levels. Traceable to the retained manuscript: an Indonesian-language questionnaire was administered, and the English item wording is reproduced in Table A1. Reported without supporting records: the manuscript states that translation/back-translation, review by three experts in Islamic economics and human resource management, and a pilot preceded full distribution, but the archived materials available for this revision do not contain the original administered questionnaire, the translation-reconciliation record, the pilot log, or the item-level expert-rating forms. Reconstructed: The Indonesian item renderings in the Appendix, which are editorial verification aids rather than the administered wording. The article reports only evidence that can be traced to the retained manuscript and does not reconstruct undocumented pilot or content-validity statistics; statements about translation, expert review, and piloting should therefore be read as the authors' reports rather than as verified procedures.

Measurement provenance is documented item by item in the Appendix 1. The innovative work behavior, employee engagement, and Islamic work ethics items are classified as adaptations of prior quantitative measures. By contrast, the Islamic leadership and Islamic human resource management items are treated as study-specific items newly written from conceptual or qualitative sources rather than as adopted psychometric scales; Toumi and Su (2023) is qualitative, while Zangoueinezhad and Moshabaki (2011) is primarily conceptual in orientation. The Appendix reproduces the English wording retained in the manuscript, provides a transparent Indonesian rendering for author verification, identifies the source basis and adaptation/new-

construction status, and reports the final-sample indicator loading from Table 2. These final-sample loadings are not relabeled as pilot loadings. Because the historical pilot sample, pilot dates, pilot loadings, and item-level expert ratings were not preserved in the supplied records, a historical CVI cannot be recalculated or reported as observed data. The measurement properties of the two study-specific scales therefore remain provisional and require independent validation. Accordingly, no claim is made about their content validity or dimensionality, and the structural interpretation of the two paths that involve them (H1 and H2) is correspondingly more tentative.

The analysis proceeded in two stages. The measurement model was evaluated using indicator loadings, Cronbach's alpha, rho_A, composite reliability (CR), average variance extracted (AVE), and discriminant validity. HTMT (Henseler et al., 2015) is the preferred discriminant-validity criterion, evaluated against 0.85 and 0.90 guidelines, with the Fornell–Larcker criterion reported as a secondary diagnostic. Structural-model assessment used inner VIF, R^2 and adjusted R^2, standardized path coefficients, and effect sizes f^2. The manuscript states that 5,000 bootstrap subsamples were used. The retained analysis archive contains construct-level correlations, point estimates, and t statistics, but not the respondent-level 20-item matrix, the saved HTMT output, the bootstrap-draw distribution or percentile confidence limits, or the PLSpredict fold-level predictions. Consequently, exact HTMT estimates and their 90% bootstrap intervals cannot be reproduced from the retained files. Table 4 therefore combines the available Fornell–Larcker matrix with the status of the requested HTMT quantities, without treating those correlations as substitutes for HTMT. For transparency, Table 6 provides only a normal-approximation interval derived from the reported β and t statistics as a sensitivity diagnostic; it is not presented as the requested percentile bootstrap interval. Full-collinearity VIF is retained only as a diagnostic for potential common-method concerns, not as proof of their presence or absence.

RESULTS

Respondent Profile

The demographic profile of the 312 respondents is summarized in Table 1. The reported distribution is relatively balanced by gender and is concentrated among employees aged 30–39 years, bachelor's degree holders, staff-level employees, and respondents with at least three years of tenure. The frequencies and percentages in the supplied table are arithmetically consistent with N = 312; however, verification against the original analysis dataset remains an author-level data check.

Table 1. Respondent profile (N = 312)

Characteristic	Category	n	%
Gender	Male	168	53.8
	Female	144	46.2
Age (years)	< 30	96	30.8
	30–39	138	44.2
	40–49	60	19.2
	≥ 50	18	5.8
Education	Diploma	40	12.8
	Bachelor	214	68.6
	Master	58	18.6
Tenure (years)	< 3	74	23.7
	3–5	128	41.0
	6–10	74	23.7
	> 10	36	11.5
Position	Staff	208	66.7
	Supervisor	74	23.7
	Manager	30	9.6

Note: Percentages are rounded to one decimal. Each reported characteristic sums to N = 312; final source verification should be made against the original frequency output before resubmission.

Measurement Model Assessment

Table 2 reports indicator loadings ranging from 0.756 to 0.844. All reported loadings exceed 0.70, supporting indicator reliability within the specified reflective measurement model (Hair et al., 2019).

Table 2. Indicator loadings

Construct	Indicator	Loading
Employee Engagement	EE1	0.773
	EE2	0.806
	EE3	0.758
	EE4	0.779
Islamic HRM Practices	IHRMP1	0.772
	IHRMP2	0.778
	IHRMP3	0.772
	IHRMP4	0.829
Islamic Leadership	IL1	0.797
	IL2	0.756
	IL3	0.804
	IL4	0.844
Islamic Work Ethics	IWE1	0.764
	IWE2	0.793
	IWE3	0.793
	IWE4	0.758
Innovative Work Behavior	IWB1	0.790
	IWB2	0.805
	IWB3	0.770
	IWB4	0.827

Note: All loadings exceed the 0.70 benchmark (Hair et al., 2019).

Table 3 summarizes internal consistency and convergent validity. Cronbach's alpha, rho_A, and CR all exceed 0.70, while AVE ranges from 0.604 to 0.641 and exceeds 0.50 for every construct. Recalculation from the reported loadings reproduces the AVE and CR values to rounding, indicating internal numerical consistency between Tables 2 and 3.

Table 3. Reliability and convergent validity

Construct	α	rho_A	CR	AVE
Employee Engagement	0.784	0.785	0.861	0.607
Islamic HRM Practices	0.796	0.798	0.868	0.621
Islamic Leadership	0.813	0.815	0.877	0.641
Islamic Work Ethics	0.782	0.784	0.859	0.604
Innovative Work Behavior	0.810	0.811	0.875	0.637

Note: α = Cronbach's alpha; rho_A = Dijkstra-Henseler reliability; CR = composite reliability; AVE = average variance extracted. Thresholds: α, rho_A, CR > 0.70; AVE > 0.50 (Hair et al., 2019). AVE was computed as the means of the squared indicator loadings.

Discriminant validity requires particular caution. HTMT is the preferred criterion for this purpose (Henseler et al., 2015), but it cannot be calculated exactly from the retained construct-level summaries because the respondent-level item responses or item-level intercorrelations are not available. Table 4 therefore combines the Fornell–Larcker matrix preserved in the analysis archive with the reporting status of HTMT and its bootstrap interval, which are not recoverable; the correlations in the matrix must not be read as HTMT estimates. The Fornell–Larcker results show systematic overlap: the square root of AVE is lower than at least one inter-construct correlation for every construct, and for nine of the ten construct pairs the correlation exceeds the √AVE of at least one of the two constructs (for seven pairs, of both). For example, employee engagement has √AVE = 0.779 while correlations reach 0.803; Islamic human resource management practices have √AVE = 0.788 while correlations reach 0.818; and innovative work

behavior has √AVE = 0.798 while correlations reach 0.803. Thus, discriminant validity cannot be established from the evidence currently retained. Recovering the respondent-level 20-item dataset or the saved SEMinR output, so that HTMT and percentile bootstrap intervals can be computed, remains the priority for this study. Until then, the four structural paths are reported as a jointly estimated set and are not interpreted individually as separate explanatory dimensions.

Table 4. Discriminant validity: Fornell–Larcker matrix and HTMT reporting status

Construct	1	2	3	4	5
1. Employee Engagement	0.779				
2. Islamic HRM Practices	0.779	0.788			
3. Islamic Leadership	0.797†	0.814*	0.801		
4. Islamic Work Ethics	0.803*	0.818*	0.798†	0.777	
5. Innovative Work Behavior	0.803*	0.801*	0.802*	0.802*	0.798

Note: Diagonal values (bold) are the square root of the AVE; off-diagonal values are correlations among the constructs (Fornell & Larcker, 1981). * The correlation exceeds the √AVE of both constructs in the pair (7 of 10 pairs); † it exceeds the √AVE of one of the two constructs (2 of 10 pairs); the remaining pair (Employee Engagement–Islamic HRM Practices, r = 0.779) does not exceed either diagonal value.

The correlations are not HTMT estimates. HTMT should be evaluated against the 0.85 conservative and 0.90 liberal guidelines, and its 90% bootstrap confidence interval should be assessed for exclusion of 1.00 (Henseler et al., 2015). Exact HTMT values and bootstrap bounds require the original respondent-level 20-item dataset or saved SEMinR HTMT/bootstrap output; neither is present in the retained archive, so these quantities are reported as not recoverable rather than estimated from construct-level correlations.

Structural Model Assessment

Before interpreting the structural paths, predictor collinearity was examined using inner VIF. The reported values (Table 5) range from 3.60 to 4.06. These values exceed the conservative 3.3 guideline (Kock, 2015) but remain below the commonly used threshold of 5 (Hair et al., 2022), indicating nontrivial rather than negligible collinearity. The reported full-collinearity VIF of 4.105 also exceeds 3.3. This diagnostic does not by itself demonstrate that common-method variance is the source of the covariance, but it does mean that common-method concerns cannot be ruled out in a single-source, single-instrument, single-occasion design. In combination with the high inter-construct correlations, the finding warrants caution in ranking coefficients or claiming unique contributions.

Table 5. Lateral collinearity and effect sizes

Predictor → Innovative Work Behavior	Inner VIF	f^2	Effect
Employee Engagement	3.60	0.082	Small
Islamic HRM Practices	4.01	0.051	Small
Islamic Leadership	3.93	0.056	Small
Islamic Work Ethics	4.06	0.049	Small

Note: Inner VIF guidelines shown are 3.3 (conservative; Kock, 2015) and 5 (Hair et al., 2022). Effect-size benchmarks are f^2 = 0.02 (small), 0.15 (medium), and 0.35 (large) (Cohen, 1988). The reported f^2 values are internally consistent, within rounding, with the reported correlation matrix and R^2 when each predictor is omitted in turn. Exact reconciliation with the original SEMinR omitted-predictor run is not possible from the retained construct-level summaries alone.

The four predictors jointly account for 75.6 percent of the reported in-sample variance in innovative work behavior (R^2 = 0.756; adjusted R^2 = 0.753). The reported standardized coefficients are 0.224 for Islamic human resource management practices, 0.231 for Islamic leadership, 0.219 for Islamic work ethics, and 0.269 for employee engagement; the corresponding reported t values all exceed 3.29. The f^2 values are small (0.049–0.082). Because predictor collinearity is nontrivial and discriminant validity is unresolved, the numerical ordering of the

coefficients is not interpreted as a ranking, and the four paths are read as a jointly estimated set rather than as separable effects. Judged only by sign and the reported t values, H1–H4 are provisionally supported as positive concurrent associations; because discriminant validity is unresolved, this does not establish that each construct is separately associated with innovative work behavior. The exact 5,000-subsample percentile confidence limits are not preserved in the retained analysis archive. As an auditable sensitivity check, Table 6 reports approximate normal 95% intervals calculated from the reported β and t statistics using SE ≈ β/t. All four approximate intervals exclude zero and are consistent with the direction indicated by the reported t values; however, these intervals are not substitutes for the requested percentile bootstrap intervals and are not labelled as such. PLSpredict Q²predict and the indicator-level PLS-SEM versus linear-model RMSE comparison likewise cannot be reproduced without the respondent-level data or saved prediction output, so no claim of out-of-sample predictive power is made.

Table 6. Reported structural path estimates and recoverable interval diagnostic

H	Path	β	*t*- value	Approx. 95% CI*
H1	Islamic HRM Practices → Innovative Work Behavior	0.224	3.775	[0.108, 0.340]
H2	Islamic Leadership → Innovative Work Behavior	0.231	3.881	[0.114, 0.348]
H3	Islamic Work Ethics → Innovative Work Behavior	0.219	3.805	[0.106, 0.332]
H4	Employee Engagement → Innovative Work Behavior	0.269	5.424	[0.172, 0.366]

Note: β = standardized path coefficient. *Approximate 95% normal intervals were calculated as β ± 1.96 × (β/t), treating the reported t statistic as β divided by its reported standard error. These are sensitivity intervals only; they are not percentile bootstrap intervals and must not be substituted for the exact bounds from the original 5,000-subsample bootstrap run. Exact percentile intervals require the saved bootstrap output or the respondent-level analysis dataset.

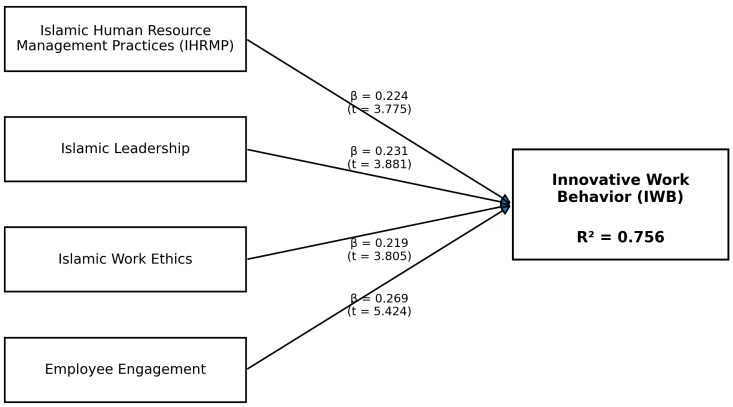


Figure 2. Reported structural model with standardized path coefficients and t values.
Note: The β and t values reproduce Table 6. Exact percentile bootstrap confidence limits are not displayed because the saved 5,000-subsample interval output is not present in the retained analysis archive. The coefficients are shown together as a jointly estimated set and are not ranked.

DISCUSSION

The reported structural model shows positive coefficients for all four predictors and high in-sample explained variance. The central qualification, however, is measurement distinctiveness. The available Fornell–Larcker results show substantial construct overlap, while HTMT cannot be recomputed from the retained construct-level analysis because the item-level data are unavailable. Accordingly, the four coefficients are read as a jointly estimated set of conditional associations rather than as evidence that four empirically distinct resources make independent contributions to innovative work behavior. For the same reason, the discussion below does not rank the predictors or interpret any single path in isolation; it asks instead what the pattern can

and cannot indicate about how organizational practices, leadership relationships, individual ethical orientations, and psychological engagement relate to innovative work behavior. The approximate intervals in Table 6 are consistent with positive reported paths, but they do not replace the missing exact percentile bootstrap intervals. This qualification is substantive, not a minor technical caveat, and it governs the interpretations that follow.

The four constructs differ in what they represent theoretically, and these differences matter more for interpretation than the individual coefficients. Islamic human resource management practices describe how the organization structures selection, development, appraisal, and rewards; they are a system-level resource and the most direct fit with social exchange theory (Blau, 1964). Islamic leadership describes the relational conduct of leaders toward subordinates, a second form of treatment that employees may reciprocate; the spiritual and ethical leadership literature links such conduct with innovative behavior through individual values, role identity, thriving, and performance-related attitudes (Ahmed Iqbal et al., 2020; Yang et al., 2021). Islamic work ethics are, by contrast, an orientation that employees bring to the job rather than a resource the organization supplies, so any association with innovation is better understood as internally guided conduct than as reciprocity (Ali & Al-Owaihan, 2008; Firmansah et al., 2023). Employee engagement is a work-related psychological state that is conceptually proximal to discretionary effort (Schaufeli & Bakker, 2004) and may itself respond to organizational and relational resources such as inclusive leadership (Ly, 2024). Read together, the four constructs span organizational, relational, dispositional, and psychological levels, and the positive coefficients are compatible with each level being associated with innovative work behavior.

What the data cannot show is whether these levels operate as independent mechanisms. Three readings are consistent with the same pattern of positive, similar-sized coefficients and strong intercorrelations. Organizational practices and leadership may be associated with innovation in parallel with employee values and engagement; organizational and relational resources may operate partly through engagement, as the job-resources literature suggests (Alsakarneh et al., 2024; Dei Mensah et al., 2024); or a shared evaluative tendency, including common-method variance, may inflate the associations among all five constructs. The cross-sectional, single-source design, the full-collinearity VIF of 4.105, and the unresolved discriminant validity prevent these readings from being separated. Prior studies in Muslim-majority settings that connect Islamic leadership, Islamic spirituality, and Islamic work ethics with performance, voice, and citizenship behavior (Akhmadi et al., 2023; Al Jabar & Suharnomo, 2023; Sani, 2020) are compatible with the first reading, but they do not adjudicate among the three.

The Islamic values that frame the hypotheses map conceptually onto the constructs: adl and amanah onto fair and trustworthy people-management practices, shura and amanah onto leader conduct, and itqan onto individual work ethic. Because adl, amanah, shura, ihsan, itqan, religiosity, and perceived religious meaning were not measured as separate variables, these mappings are interpretive propositions. Likewise, psychological safety and perceived interpersonal risk were not measured, so mechanisms such as a lower risk of voicing unconventional ideas remain explanations proposed in prior literature rather than tested here. The current data therefore support positive reported associations, not a demonstrated moral-intensification mechanism, and they cannot show whether the Islamic framing adds anything beyond what the same constructs would show in conventional banks.

Two theoretical implications follow. First, separating exchange-based constructs (Islamic human resource management practices and Islamic leadership) from an employee-held value orientation and a proximal psychological state (Islamic work ethics and employee engagement) offers a clearer basis for specifying future models. The present data, however, do not test whether Islamic values intensify reciprocity, because *adl, amanah, shura, ihsan, itqan*, religiosity, and perceived religious meaning were not modeled as separate variables. Second, the numerical proximity of the reported coefficients and the high correlations suggest that a mediation or higher-order specification may be worth testing in future work, but only after the measurement model is resolved. Estimating more elaborate paths before establishing discriminant validity risks converting construct overlaps into an apparently substantive mediation result.

The practical implications should therefore remain provisional. The findings do not justify prioritizing employee engagement solely because its reported coefficient is the largest, nor do they demonstrate that a particular intervention will cause innovation to rise. A more defensible implication is that Islamic banks should examine the coherence of people-management practices,

leadership conduct, employee values, and engagement while simultaneously improving how these constructs are measured. Integrated initiatives may be reasonable from a managerial perspective, but their superiority over separate programs was not tested in this study and should not be presented as an empirical finding.

CONCLUSION AND FURTHER STUDY

This study examined the concurrent associations of Islamic human resource management practices, Islamic leadership, Islamic work ethics, and employee engagement with innovative work behavior among employees of Islamic banks. The principal conclusion is therefore conditional: the model reports positive concurrent associations and high in-sample explained variance, but construct distinctiveness, exact bootstrap interval inference, and out-of-sample predictive performance remain unverified without the original respondent-level analysis files.

Several limitations define the agenda for further study and re-analysis. First, discriminant validity is unresolved. The Fornell–Larcker criterion fails for multiple construct pairs, while HTMT estimates and their bootstrap confidence intervals cannot be recovered from the retained construct-level output; a definitive assessment requires the original 20-item respondent-level dataset or saved SEMinR object. Consequently, individual structural paths cannot be interpreted as separable effects. Second, the exact percentile confidence limits from the reported 5,000-subsample bootstrap and the PLSpredict Q^2predict/RMSE results were not preserved in the retained analysis archive. The normal-approximation intervals shown in Table 6 are provided only as a transparent sensitivity calculation and should be replaced by the exact bootstrap intervals if the original output becomes available; no out-of-sample predictive claim is made. Third, the cross-sectional, single-source, single-occasion design cannot establish causal ordering and leaves common-method concerns unresolved; the reported full-collinearity VIF of 4.105 exceeds the conservative 3.3 diagnostic guideline but does not identify the cause of the covariance. Longitudinal and multi-source designs, ideally with an appropriate marker or method-factor strategy, would strengthen inference. Fourth, the Islamic leadership and Islamic human resource management items are study-specific measures derived partly from conceptual or qualitative sources. Their provenance is reported transparently, but the translation, expert review, and pilot are reported without supporting records and the historical pilot log and item-level expert ratings were not preserved; these measures therefore require independent psychometric validation. Fifth, the proposed Islamic mechanisms (*adl, amanah, shura, ihsan, itqan*, religiosity, and perceived religious meaning) were not measured directly. Sixth, the number of participating banks, the sampling-frame characteristics, and the fieldwork dates are not documented, and the reported proportionate allocation cannot be verified, so the sample is treated as non-probability, which limits generalization and the assessment of nonresponse bias. Future work may test engagement as a mediator or examine broader Islamic organizational contexts, but such structural extensions should follow not substitute for resolution of the measurement model.

ETHICAL DISCLOSURE

All participants provided written informed consent prior to participation. They were informed about the study's purpose, their voluntary participation, the right to withdraw at any time, and the confidentiality of their responses.

CONFLICT OF INTERESTS

The authors declare no conflicts of interest.

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Appendix 1. Item-level measurement provenance and retained measurement evidence

Code	Retained English wording / Indonesian rendering	Provenance and source basis	Final-sample loading
IWB1	EN: I pay attention to issues that are not part of my daily work. ID: Saya memperhatikan persoalan yang bukan bagian dari pekerjaan rutin saya sehari-hari.	Adapted; De Jong & Den Hartog (2010)	0.790
IWB2	EN: I generate original solutions to problems at work. ID: Saya menghasilkan solusi yang orisinal terhadap masalah di tempat kerja.	Adapted; De Jong & Den Hartog (2010)	0.805
IWB3	EN: I try to persuade colleagues to support an innovative idea. ID: Saya berusaha meyakinkan rekan kerja untuk mendukung suatu gagasan inovatif.	Adapted; De Jong & Den Hartog (2010)	0.770
IWB4	EN: I contribute to the implementation of new ideas in my work. ID: Saya berkontribusi dalam penerapan gagasan baru dalam pekerjaan saya.	Adapted; De Jong & Den Hartog (2010)	0.827
EE1	EN: At work, I feel bursting with energy. ID: Saat bekerja, saya merasa penuh energi.	Adapted; Schaufeli & Bakker (2004)	0.773
EE2	EN: I am enthusiastic about my job. ID: Saya antusias terhadap pekerjaan saya.	Adapted; Schaufeli & Bakker (2004)	0.806
EE3	EN: I am immersed in my work. ID: Saya larut dan terlibat penuh dalam pekerjaan saya.	Adapted; Schaufeli & Bakker (2004)	0.758
EE4	EN: I find the work that I do is full of meaning and purpose. ID: Saya merasa pekerjaan yang saya lakukan penuh makna dan tujuan.	Adapted; Schaufeli & Bakker (2004)	0.779

IWE1	EN: I perform my work diligently as a form of worship. ID: Saya melaksanakan pekerjaan dengan sungguh-sungguh sebagai bentuk ibadah.	Adapted; Ali & Al-Kazemi (2007); Ali & Al-Owaihan (2008)	0.764
IWE2	EN: I uphold honesty and trustworthiness in carrying out my tasks. ID: Saya menjunjung kejujuran dan amanah dalam melaksanakan tugas.	Adapted; Ali & Al-Kazemi (2007); Ali & Al-Owaihan (2008)	0.793
IWE3	EN: I strive for excellence (itqan) in everything I do at work. ID: Saya berupaya mencapai keunggulan (itqan) dalam setiap pekerjaan yang saya lakukan.	Adapted; Ali & Al-Kazemi (2007); Ali & Al-Owaihan (2008)	0.793
IWE4	EN: I value cooperation with colleagues to achieve shared goals. ID: Saya menghargai kerja sama dengan rekan kerja untuk mencapai tujuan bersama.	Adapted; Ali & Al-Kazemi (2007); Ali & Al-Owaihan (2008)	0.758
IL1	EN: My leader sets a good example through honest and ethical conduct. ID: Pemimpin saya memberi teladan yang baik melalui perilaku yang jujur dan etis.	Newly written; conceptual basis: Sani (2020); Al Jabar & Suharnomo (2023)	0.797
IL2	EN: My leader consults subordinates (shura) before making important decisions. ID: Pemimpin saya bermusyawarah dengan bawahan (shura) sebelum mengambil keputusan penting.	Newly written; conceptual basis: Sani (2020); Al Jabar & Suharnomo (2023)	0.756
IL3	EN: My leader treats employees fairly and with justice. ID: Pemimpin saya memperlakukan karyawan secara adil.	Newly written; conceptual basis: Sani (2020); Al Jabar & Suharnomo (2023)	0.804
IL4	EN: My leader encourages us to align our work with Islamic values. ID: Pemimpin saya mendorong kami untuk menyelaraskan pekerjaan dengan nilai-nilai Islam.	Newly written; conceptual basis: Sani (2020); Al Jabar & Suharnomo (2023)	0.844
IHRMP1	EN: Recruitment in this institution is based on competence and integrity. ID: Rekrutmen di institusi ini didasarkan pada kompetensi dan integritas.	Newly written; conceptual/qualitative basis: Zangoueinezhad & Moshabaki (2011); Toumi & Su (2023)	0.772
IHRMP2	EN: Training develops both professional skills and moral character. ID: Pelatihan mengembangkan keterampilan profesional sekaligus karakter moral.	Newly written; conceptual/qualitative basis: Zangoueinezhad & Moshabaki (2011); Toumi & Su (2023)	0.778
IHRMP3	EN: Performance appraisal is conducted transparently and fairly. ID: Penilaian kinerja dilakukan secara transparan dan adil.	Newly written; conceptual/qualitative basis: Zangoueinezhad & Moshabaki (2011); Toumi & Su (2023)	0.772
IHRMP4	EN: Compensation is distributed justly in line with Islamic principles. ID: Kompensasi didistribusikan secara adil sesuai dengan prinsip-prinsip Islam.	Newly written; conceptual/qualitative basis: Zangoueinezhad & Moshabaki (2011); Toumi & Su (2023)	0.829

Note: The Indonesian renderings in this table are editorial verification aids reconstructed from the retained English wording; they are not asserted to be the exact wording historically administered. Provenance labels distinguish adapted items from study-specific newly written items. The loading values are the final-sample outer loadings reported in Table 2 and must not be interpreted as pilot loadings. The extent to which adapted items depart from the wording of the original scales is not documented in the retained records.

Appendix 2. Instrument-development records available for audit

Instrument-development record	Retained evidence / reporting decision
Questionnaire language	Traceable to the retained manuscript text only; the administered form is not available. The retained manuscript states that an Indonesian-language questionnaire was administered.
English back-translation	Reported without supporting records. The English wording retained in the manuscript is reproduced in Table A1; the supplied records do not include a bilingual reconciliation sheet or independent verification certificate.
Expert review	Reported without supporting records. Three experts in Islamic economics and human resource management are reported in the manuscript.
Historical pilot sample and dates	Not preserved in the supplied records; no sample size or date has been imputed.
Historical pilot loadings	Not preserved in the supplied records. Final-sample loadings are reported separately in Table A1 and are not relabeled as pilot results.
Expert CVI / item-level ratings	Not preserved. A CVI cannot be recalculated without the experts' item-level relevance ratings and therefore is not reported as an observed statistic.

Note: This table replaces unsupported numerical reconstruction with an auditable record of what is and is not preserved. If the original questionnaire, pilot log, or expert-rating sheets are subsequently recovered, the historical wording, pilot statistics, and CVI should replace the corresponding archival-status statements before resubmission. Status labels: "Reported without supporting records" denotes a procedure stated in the manuscript for which no supporting document is available; "Not preserved" denotes that no record exists in the supplied files.

Appendix 3. Available sample-accounting information from retained study records

Sample-accounting item	Value
Invitations issued	360
Usable questionnaires returned	312
Invitations without a usable questionnaire	48
Overall usable-response rate	86.7%
Participating banks / branches / roster date / eligible-frame size	Not preserved
Stratum-specific frame sizes and invitations/returns	Not preserved
Fieldwork dates	Not preserved
Randomization record	Not preserved; random-selection claim removed
Early-versus-late response comparison	Not reconstructable

Note: Front-line roles comprise customer service and financing; supporting roles comprise operations, compliance, and administration. Unpreserved bank/branch/stratum/date/randomization/response-timing values were not imputed; therefore, no simple-random-selection or early-versus-late nonresponse-bias claim is made. The operational basis of the reported proportionate allocation (frame counts and allocation formula) is not documented; the term is used descriptively for the intended recruitment design.