

Influence of AI-Based Work Systems on Psychological Ownership among Employees: Evidence from Higher Education Institutions

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Abstract

Integrating artificial intelligence into the organisational work culture has widened the implications on the psychological elements of the behaviour studies, considerably in the higher education sector. Based on psychological ownership theory, the study examined the influence of AI-based work system on the emotional and psychological ownership among the teachers of the higher education institutions. For this a descriptive research design was adopted and primary data was collected using structured questionnaire. Exploratory factor analysis validated the three-dimensional structure of psychological ownership, which included sense of ownership, sense of control and self-identity, which has accounted with the variance of 66% and confirmed the constructs applicability in the educational settings. Further, it was found that AI-based work system significantly correlated with the psychological ownership ($r=0.712$, $p < .01$). while, regression analysis also found the strong positive impact between the variables. While the dimension-wise investigation revealed that AI bases system has the strongest effect on self-identity and responsibility. The findings indicated that AI can be integrated into the work culture strategically to create a supportive and suggestive environment, which increases the employee commitment and stability in the organisation.

Keywords: Artificial intelligence, psychological ownership, higher education institutions, employee stability.

1. Introduction

AI-based work system is trendily integrated into the educational contexts, to improve education quality, and research exposure, while also providing ways for better performance evaluation. Technologies as learning management system and automated grading have altered the institutional processes and the operations (Prince R. 2026). With the introduction of data-driven decision making, automation of repetitive chores, and real-time performance monitoring, these systems are changing employee engagement with their job duties and work environment (Dierendonck D, et al. 2026).

Psychological ownership is a vital state in which employees develop feelings of possessiveness, responsibility, and emotional attachment to organisational goals, such as their institutional job positions and work processes. Employees feel more accountable and invested when they have psychological ownership (Park, J. & Kim, H. 2025). In higher education, where the quality of education is not totally dependent on the competence of teachers, the concept of psychological ownership is an important tool/power that allows a teacher to recognise meaning in their work and make attempts to improve the quality of the institution. The implementation of AI-enabled work

systems can have a substantial impact on employees' psychological ownership, either favourably or negatively, resulting in resistance or embrace of technical tools (Kirk, C. & Rifkin, L. S. 2022).

Jarrahi (2018) stated that an AI system that improves transparency, participation, and perceived control can strengthen employee psychological ownership, whereas a system that is perceived to be imposed and reduces autonomy can weaken ownership feelings and generate distance from initiatives. With the rising use of AI technologies in higher education institutions, it is necessary to delve into the psychological investigations that cause the outcomes rather than focussing on end results and effectiveness-based models (Zawacki-Richter et al., 2019). Thus, the present study aimed to emphasise the impact of AI-based work systems on employees' psychological ownership in higher education institutions.

2. Theoretical background

2.1 Psychological Ownership Theory

It is defined as a situation in which individuals feel a sense of responsibility and association with the organisation in which they are working (Jami, A et al. 2021). The sense of ownership implies a strong cognitive and emotional connection that forces the employee to work beyond the official duties assigned. Scholars and practitioners are paying more attention to the concept of psychological ownership for the company that is, the possessive sense that something is "MINE" or "OURS" as a potentially significant predictor of employee attitudes and behaviours. In other words, even though psychological ownership should be related to other work-related attitudes, it has a fundamentally different conceptual base (possession) and, as a result, should have a different explanatory power. The possessive nature of psychological ownership for the organization distinguishes it from other work-related attitudes while simultaneously (and more importantly) allowing psychological ownership for the organization to increase our understanding of employee attitudes and behaviour by explaining variance over and above existing constructs such as commitment and satisfaction (Dyne & Jon 2004). In addition to the associated processes of group productivity and creativity, cooperation, solidarity, stewardship behaviour, civic engagement, and crime prevention, the perception of collective ownership can also involve a sense of collective responsibility for safeguarding, maintaining, and further developing what is "ours" (Henssen & Koiranen, 2021).

2.2 Self-Determination Theory & Psychological Ownership

This theory works as a major scientific paradigm for understanding psychological ownership. In the higher education institutions teacher's autonomy, intellectual output and professional identity are directly linked to their jobs. As a result, work system that affect control and identity can influence the psychological ownership among the employees. But when the organisational goals become identity clear, employees are more likely to relate themselves as extensions of themselves, which results the increased psychological control. In higher education institutions Identity was found to be the major factor that influence the ownership views in professional setting (Bernhard & Driscoll 2011). Similarly, self-determination theory explains the importance of autonomy, competence and relatedness in generating intrinsic motivation and internalisation (Deci & Ryan, 2000). When these needs are met within the work environment individuals are more likely to develop a sense of responsibility and association.

2.3 Technology Adoption and Psychological Ownership

The usage of technology has impacted every aspect of the organisation, including the psychological working of the employee perceptions. Previous studies has also examined the impacts of adopting technology on sense of autonomy, control and engagement (Van D & Pierce 2004), which indicated that these techniques should be aligned carefully considering the every possible results of it. AI system and governance system can either improve or contrain human agency, which demonstrated that too automated or too opaque system may reduce the sensations of the work environment (Kellogg et al. 2020).

Considering the previous research on AI applications in higher education has focused on student learning outcomes, institutional effectiveness, and technology acceptability (Zawacki-Richter et al. 2019). However, there hasn't been much empirical research into the influence of AI enabled work systems on employees' psychological ownership. Because academic freedom, professional identity, and autonomy are highly valued in higher education settings, this disparity is especially relevant.

Research Gaps

Despite significant theoretical advances and increased empirical interest, the psychological ownership literature remains incomplete. While identity-based theories and psychological ownership theory provide convincing grounds for ownership formation, the majority of empirical research has concentrated on organisations or jobs as ownership objectives, with little attention paid to digitally mediated work environments. However, present psychological ownership criteria, which are essentially generic, would fail to capture the distinguishing features of AI-enabled work systems, such as algorithmic autonomy, system opacity, and reduced human discretion. Furthermore, while previous research has recognised the importance of autonomy, involvement, and transparency in technology adoption, there is a paucity of specific empirical data tying AI-enabled work systems to psychological ownership, particularly in higher education institutions. Whereas, most research on technology in higher education focuses on student viewpoints while ignoring staff psychological experiences. The current study investigates the direct effects of AI-enabled work systems on psychological ownership among employees in higher education institutions.

3. Hypothesis:

According to Psychological Ownership Theory, feelings of ownership occur when people have control over their job, understand work systems, and invest in organisational goals (Pierce et al., 2001). AI-enabled work systems affect all three channels by reorganising job execution, decision-making authority, and employee participation. When employees perceive AI systems as supporting rather than controlling, they are more inclined to internalise them as extensions of their work, increasing psychological ownership. Whereas, opposite or negative AI systems may undermine sentiments of ownership. Based on this theoretical logic following hypothesis is framed:

H1: AI-enabled work systems have a significant positive impact on psychological ownership among employees in higher education institutions.

4. Objectives of the study

1. To examine the underlying components of psychological ownership among employees in higher education institutions.
2. To analyse the impact of AI-based work systems on employees' psychological ownership in the higher education sector.

5. Conceptual Framework

Based on Psychological Ownership Theory (Pierce et al., 2001) and Self-Determination Theory (Deci & Ryan, 2000), the current study posits that AI-enabled work systems serve as a structural precursor to employees' psychological ownership. AI systems that improve perceived autonomy, control, transparency, and participation are projected to boost employees' sense of ownership over their jobs and institutions. In higher education institutions, where professional autonomy and identity are important, AI-enabled work systems can either promote or decrease ownership notions, depending on how they are developed and implemented.

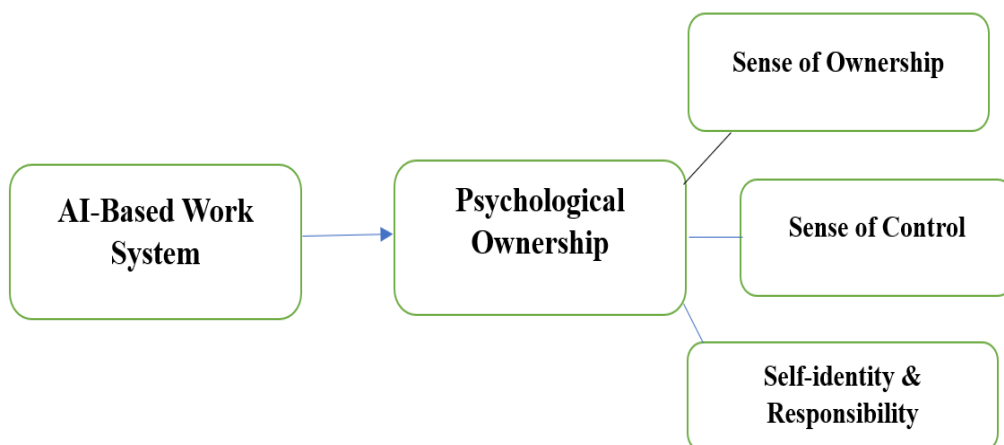


Figure 1.1: Conceptual Framework

6. Research Methodology

Quantitative-descriptive research design was used to investigate the role of AI-enabled work system on the sense of psychological ownership among the faculty of higher education institutions. Using convenience sampling the data was gathered from 300 teachers from the private universities of Punjab (India) region, where AI-enabled solutions such as learning management system, automated assessment tools, academic analytics and administrative decision support systems are popular. Data was collected using standardised questionnaire, scored on Five-point Likert scale with 1 = strongly disagree and 5=strongly agree.

6.1 Measurement of Variables

AI-based work system was assessed using a 17-item scale framed specifically for the present study which was based on previous research on AI integration in organisational processes (Davenport & Ronanki, 2018). The scale included dimensions relating to task integration, decision-support capabilities, system transparency, and user involvement. Psychological ownership was measured by a 13-item scale developed from Psychological Ownership Theory (Pierce et al., 2001) that reflects employees' sense of ownership, control, and responsibility for their work and institutional systems.

6.2 Reliability and Validity

Table: 1 Reliability test

Scale	No. of items	Cronbach's Alpha
1. AI-based work system	17	.875
2. Psychological Ownership	13	.864
2.1 Sense of Ownership	4	.815
2.2 Sense of Control	5	.832
2.3 Self-Identity and Responsibility	4	.848

Interpretation:

Cronbach's alpha was used to measure the reliability of scales. The AI-based work system scale had an internal consistency of (.875), and the psychological ownership scale was similarly highly reliable (.864). The total scale dependability for all 30 items was .848. All readings exceed the acceptable level of .70, suggesting that the instruments are dependable and appropriate for further analysis.

7. Data analysis and Interpretation

7.1 KMO and Bartlett's Test

Table: 2 (KMO and Bartlett's Test)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.798
Bartlett's Test of Sphericity	Approx. Chi-Square	4192.122
	df	365
	Sig.	.002

Interpretation:

The Kaiser-Meyer-Olkin (KMO) index of sampling adequacy for the psychological ownership scale was .798, suggesting a high level of sampling adequacy and verifying that the data were appropriate for factor analysis. The Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 4192.122$, $df = 365$, $p < .01$), indicating that the correlation matrix was not an identity matrix and that there were adequate correlations among the items. These findings support the validity of doing exploratory factor analysis on the psychological ownership scale.

7.2 Exploratory factor analysis

The psychological ownership scale was tested with exploratory component analysis after being converted to a new context, with the goal of examining its underlying dimensional structure.

7.2.1 Factor Loadings- Principal Component Analysis (PCA)

Table: 3 (Factor Loadings)

Psychological Ownership	F1. Sense of Ownership	F2. Sense of Control	F3. Self-Identity & Responsibility
1. I feel a personal sense of ownership toward my work in this organization	.741		
2. This organization feels like it is <i>my own</i> place to work	.762		
3. I feel emotionally attached to the systems and processes I regularly use here.	.718		
4. I care about this organization as if it were something I personally own.	.695		
5. I have sufficient control over how I carry out my work responsibilities		.625	
6. I can influence decisions that directly affect my work activities.		.812	
7. I feel empowered to adapt work-related systems or methods when needed		.751	
8. I have the freedom to decide how best to use organizational resources in my role.		.777	

9. I feel confident in managing challenges related to my work without excessive supervision		.706	
10. My role in this organization reflects who I am as a professional			.710
11. I have invested a great deal of personal effort and energy into my work here.			.695
12. I feel personally responsible for the success or failure of my work outcomes.			.789
13. I take initiative to protect, improve, and support organizational systems and practices			.801
Eigen values	11.232	2.101	1.030
% Of Variance	49.789	11.589	4.856

Interpretation:

The exploratory factor analysis revealed three factors with eigenvalues greater than one, which met the Kaiser requirement for factor retention. The eigenvalues and their contributions to explained variance are shown and discussed below. The first factor, Sense of Ownership, had an eigenvalue of 11.232 and accounted for 49.789% of the overall variance. This high eigenvalue suggests that sense of ownership is the most important characteristic of psychological ownership in the current study, reflecting employees' strong affective attachment and perceived possession of their work and organisation. The second factor, Sense of Control, had an eigenvalue of 2.101 and explained 11.589% of the overall variation. This implies that perceived control over work activities and decision-making is a significant and independent component of psychological ownership, supporting its theoretical function as a fundamental predictor of ownership feelings. While the third factor, Self-identity and responsibility, accounted with the 4.856% variance with eigen value of 1.030. in this factor 'efforts toward improvement of organisational system and process' had the highest factor loading indicating it to be the important aspect in determination of responsibility and identity. Overall, the three variables accounted with the variance of 66.234% indicating strong factor structure and empirical evidences for further analysis in the context of higher education institutions.

7.3 Correlation Analysis

Table: 4 (Correlation Analysis)

Correlations		AI-Based Work System	Psychological Ownership
AI-Based Work System	Pearson Correlation	1	.712**
Psychological Ownership	Pearson Correlation	.712**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Primary Data

Interpretation:

Correlation analysis was used to demonstrate the connection between psychological ownership and AI-based work systems as shown in Table 4 which indicated a positive, and statistically significant association, (r =.712, p <.01).

This suggests that employees' perceptions of the efficacy and integration of AI-based work systems are linked to much higher levels of psychological ownership. The correlation's strength indicates a significant relationship between employees' sense of ownership, accountability, and attachment to their job and organisational structures and AI-enabled work environments. Despite being quite high, the correlation is still below the widely recognised threshold of .80, suggesting that multicollinearity is not an issue. These results justify additional regression analysis to evaluate the predictive influence of AI-based work systems on psychological ownership and offer strong preliminary support for the suggested relationship.

7.4 Regression Results for AI-Based Work System and Psychological Ownership

Table: 5 (Regression Analysis)

Hypothesis	Regression weights	Beta coefficient	R ²	F	p-value	Hypothesis supported
H1	AIWS → PO (Overall)	.463	.215	79.560	.000	Yes
H1a	AIWS → Sense of Ownership	.481	.231	82.417	.000	Yes
H1b	AIWS → Sense of Control	.452	.204	68.935	.000	Yes
H1c	AIWS → Self-Identity & Responsibility	.498	.248	91.682	.000	Yes

Interpretation:

The results of the regression analyses looking at how AI-based work systems (AIWS) affect psychological ownership (PO) and its underlying aspects among workers in higher education institutions are shown in Table 5. Psychological Ownership in General (H1) Regression study shows that overall psychological ownership is significantly and favourably impacted by AI-based work systems ($\beta = .463, p < .001$). AI-based work systems account for about 21.5% of the variance in psychological ownership, according to the coefficient of determination ($R^2 = .215$). The regression model's good fit is confirmed by the statistically significant F-value ($F = 79.560, p < .001$). This result validates Hypothesis H1, showing that the existence and efficacy of AI-enabled work systems significantly influence workers' sense of ownership over their jobs and institutions.

Sense of Ownership (H1a)

The findings also show that employees' sense of ownership is greatly impacted by AI-based work systems ($\beta = .481, p < .001$). AI-based work systems account for 23.1% of the variance in employees' sense of ownership, according to the R² value of .231. This relationship's strength is further supported by the significant F-value ($F = 82.417, p < .001$). This implies that workers are more likely to experience a sense of possession and emotional commitment to their workplace when AI technologies are seen as supportive and integrated.

Sense of Control (H1b)

AI-based work systems have a favourable and significant impact on sensation of control, according to the regression results ($\beta = .452, p < .001$). With a significant F-value of 68.935 ($p < .001$), the model accounts for 20.4% of the variance in sensation of control ($R^2 = .204$). Employees' sense of autonomy and control over their work processes are improved by AI-enabled technologies that offer decision support, transparency, and task integration. This study supports Hypothesis H1b.

Self-Identity and Responsibility (H1c)

Self-identity and responsibility are the psychological ownership characteristics where AI-based work systems have the greatest impact ($\beta = .498, p < .001$). AI-based work systems account for 24.8% of the variance in this dimension, according to the R^2 value of .248, and the model's robustness is confirmed by the high F-value ($F = 91.682, p < .001$). These findings indicate that in knowledge intensive setting like higher education, AI enabled work system significantly influence the employee sense of accountability intended toward better institutional outcomes and their identification with their roles.

8. Discussions and Conclusions

The study was aimed at highlighting the impact of AI-based work system on the sense of psychological ownership in the higher educational setting. The results supported the hypothesis framed for the study, indicating that AI based system has significant influence on the psychological attachment with the workplace. This indicated that the integration of automated system, can enhance the routine academic and administrative procedures, also enhancing the psychological triggers that generate sense of ownership and accountability.

The findings also highlighted that every aspect of psychological ownership is impacted by AI-generated work system, while self-identity and responsibility was the most impacted area which was followed by a sense of control, and ownership. This pattern implicated that employee perceptions toward their professional identities are influenced by the automation of the duties. Whereas, AI technologies that are viewed as assistant toward decision making and academic processes strengthens the employee self-concept and dedication to their work in knowledge-intensive scope. The results also indicated that AI technologies are viewed as supporting rather than restrictive, they improve perceptions of autonomy, and control. This is consistent with psychological ownership theory, which holds a crucial pathway for the emergence of ownership feelings and sense of attachments. Overall the results provided empirical evidences to support for the hypothesis

9. Implications of the Study

9.1 Theoretical Implications

The study made multiple contribution to the literature. By recognising the influence of AI-based system at the workplace a new and significant intent was highlighted which expanded the psychological ownership theory. This study also demonstrated that electronically mediated systems can enhance the sentiments of ownership and the quality of the response toward the organisational duties and responsibilities. While one the other hand emphasising the psychological effects of the adoption of AI was beyond its traditional implications of performance outcomes and efficiencies criteria. The findings change the way AI was perceived in past, it is now more of a human centric approach rather than a technical or task oriented. However, the application of the psychological ownership theory in the contexts of higher education institutions widened the scope of the theoretical implications and connection to the social sciences.

9.2 Practical Implications

Considering the practical implications, the study has provided the human-centric approach of the AI systems that influence the sense of ownership and control in the organisations. Thus, the study provided insights about the use of Ai generated contexts into the behaviour management system. The study proved that employees are more inclined to take responsibilities when they feel sense of attachment and belongingness in the workplace, and these aspects can be triggered by using the automated systems to generate instant feedbacks and manipulate the perceptions toward the organisations. Thus, to promote the psychological ownership and reduced resistance to technological change, universities can involve academic staff with the active engagement with AI in the workplace to develop and learn new things and also a system to share feelings and chaos. The findings also highlighted the

significance of creating such automated systems that promote autonomy and sense of control and professional identity.

10. Limitations and Future Research Directions

Despite the significant results the study has some limitations that should be understood before pursuing the further research on this. The cross-sectional design of the study made it difficult to understand the causality, thus, for deeper prospects longitudinal research is more preferred to highlight the role and influence of AI based system on ownership and control psychology. However, self-reported data is prone to technical bias, which in future studies could be overcome using multi-source data from the other officials and administrators of the educational institutions. On the other hand, educational institutions are slow adapters of the technology, because of the curricular dependencies of the larger agencies like UGC and AICTE, thus, measuring the exact impact of adoption among this sector is not the full proof of the results, thus, the application of the concept should be widened to other sectors as manufacturing or IT based organisations. While, some of the mediation and moderations analysis could make the study more impactful as there are numerous factors that resist or reframe the psychology of the employees like organisational culture and support.

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