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From Knowledge Sharing To Innovation and Productivity: Empirical Evidence From Higher Education Lecturers

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Abstract

Higher education institutions increasingly rely on lecturers' ability to generate innovative practices and sustain high levels of academic productivity in teaching, research, and scholarly engagement. Despite these expectations, empirical evidence explaining how collaborative and psychological factors jointly shape academic outcomes remains limited. This study examines the roles of knowledge sharing, self-efficacy, and self-leadership in influencing innovative work behaviour and academic productivity among lecturers in higher education institutions. Using survey data collected from 312 lecturers from public and private institutions in the Klang Valley, Malaysia, the study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyse the proposed relationships. The findings reveal that knowledge sharing and self-efficacy significantly predict innovative work behaviour and academic productivity, while self-leadership demonstrates a more nuanced role within the proposed model. Knowledge sharing emerged as the strongest predictor of academic productivity. The results highlight the importance of fostering collaborative academic environments and strengthening lecturers' psychological resources and self-regulatory capabilities to enhance innovation and productivity in higher education. This study contributes empirical evidence to the higher education literature by demonstrating how social, psychological, and self-regulatory factors interact to influence academic outcomes within a Malaysian context.

Keywords: Knowledge sharing, Self-efficacy, Self-leadership, Innovative work behaviour, Academic productivity, Higher education lecturers

1. Introduction

Higher education institutions operate in an increasingly complex and competitive environment characterised by heightened accountability, performance measurement, digital transformation, and growing expectations for innovation. Universities are no longer evaluated solely based on their educational mandate but also on their ability to produce impactful research, generate innovation, and contribute to national and global development agendas. Consequently, lecturers have become central actors in determining institutional performance, competitiveness, and reputation.

Academic productivity extends beyond traditional indicators such as publication counts and teaching workload. Contemporary scholarship recognises academic productivity as a multidimensional construct encompassing research output, teaching quality, community engagement, knowledge dissemination, and contributions to academic development (Ramsden, 2003; Shin & Jung, 2014). In recent years, increased emphasis on university rankings, performance-based funding mechanisms, and international benchmarking has intensified expectations placed upon lecturers to demonstrate measurable academic outcomes (Hazelkorn, 2015; Doğan & Arslan, 2024). These pressures require lecturers to perform multiple roles simultaneously while adapting to rapidly changing educational demands.

In knowledge-intensive environments such as universities, collaborative interaction among academics becomes increasingly important. Knowledge sharing enables lecturers to exchange expertise, research experiences, teaching strategies, and professional insights that may enhance both individual and institutional performance. Previous studies have consistently reported that effective knowledge sharing promotes learning, creativity, problem-solving capabilities, and innovation (Wang & Noe, 2010; Al-Kurdi et al., 2020; Ramayah et al., 2023). Through collaborative engagement, lecturers are better equipped to refine teaching practices, generate new ideas, and respond to emerging academic challenges.

At the same time, lecturers' psychological resources influence how they perceive and respond to these demands. Self-efficacy, defined as an individual's belief in his or her capability to organise and execute courses of action required to achieve desired outcomes (Bandura, 1997), has been recognised as an important determinant of work performance. Lecturers with stronger self-efficacy tend to demonstrate greater persistence, resilience, and confidence when undertaking challenging academic responsibilities. Such individuals are more likely to embrace innovative practices, experiment with new approaches, and sustain productivity despite competing demands (Bandura, 2012; Schunk & DiBenedetto, 2020).

Although previous studies have examined knowledge sharing, self-efficacy, innovative work behaviour, and academic productivity independently, limited empirical evidence integrates these factors within a single framework to explain academic outcomes among higher education lecturers. Existing research has often focused on either social mechanisms or psychological resources in isolation, thereby overlooking their complementary influence on innovation and productivity. Furthermore, evidence from Malaysian higher education institutions remains relatively limited despite increasing pressure on universities to strengthen academic excellence and innovation.

This study addresses these gaps by examining how knowledge sharing and self-efficacy jointly influence innovative work behaviour and academic productivity among lecturers from public and private higher education institutions in the Klang Valley, Malaysia. By integrating collaborative and psychological perspectives, the study contributes to the higher education literature by providing a more comprehensive understanding of the factors shaping lecturers' work outcomes. The findings are expected to inform institutional strategies aimed at fostering collaborative academic cultures, strengthening lecturers' psychological resources, and ultimately enhancing innovation and productivity within higher education institutions.

2. Literature Review

This section reviews key theoretical and empirical studies related to knowledge sharing, self-efficacy, innovative work behaviour, and academic productivity in higher education. Rather than treating these constructs independently, the review highlights how collaborative and psychological factors interact to shape lecturers' work outcomes. The discussion provides the conceptual grounding for the proposed research model and hypotheses tested in this study.

2.1 Academic Productivity in Higher Education

Academic productivity is a central performance indicator in higher education institutions, reflecting lecturers' contributions to teaching, research, supervision, scholarly engagement, and service to the academic community. Traditionally, productivity has been assessed using quantitative measures such as publication output, citation counts, teaching workload, and grant acquisition (Ramsden, 1994; Abramo et al., 2011). However, contemporary scholarship argues that academic productivity should be understood as a multidimensional construct encompassing both the quantity and quality of academic contributions (Ramsden, 2003; Shin & Jung, 2014). This broader perspective recognises the complex and interconnected nature of academic work.

In recent years, performance-based funding systems, international benchmarking, and global university rankings have intensified pressure on lecturers to demonstrate measurable academic outcomes. Universities are increasingly expected to contribute to knowledge creation, innovation, and societal development while maintaining excellence in teaching and research (Hazelkorn, 2015; OECD, 2019). Consequently, lecturers are required to perform multiple roles simultaneously and adapt to rapidly changing academic environments.

Recent empirical studies indicate that academic productivity is influenced by a combination of organisational, social, and psychological factors. Aboramadan et al. (2021) found that work engagement and job autonomy significantly influence academic staff performance in higher education institutions. Similarly, Doğan and Arslan (2024) reported that sustainable faculty productivity depends not only on institutional expectations but also on supportive work environments and individual motivation. Orfan et al. (2024) further demonstrated that institutional support, collaborative environments, and personal capabilities contribute substantially to research productivity among university academics.

These findings suggest that academic productivity cannot be explained solely by institutional structures or individual competence. Rather, productivity emerges through interactions

between supportive organisational conditions, collaborative academic practices, and lecturers' psychological resources. Building upon this perspective, the present study examines academic productivity as an outcome shaped by knowledge sharing and self-efficacy among higher education lecturers.

2.2 Knowledge Sharing in Higher Education

Knowledge sharing refers to the exchange of information, expertise, experiences, and skills among individuals within an organisation to facilitate learning and improve performance (Davenport & Prusak, 1998). In higher education institutions, knowledge sharing is embedded in academic activities such as collaborative research, mentoring, curriculum development, professional dialogue, and participation in scholarly communities. As knowledge-intensive organisations, universities rely heavily on the willingness of academics to create, disseminate, and apply collective knowledge (Nonaka & Takeuchi, 1995).

Prior research consistently demonstrates that knowledge sharing enhances both individual and organisational outcomes. Wang and Noe (2010) argued that knowledge sharing improves problem-solving capabilities, facilitates organisational learning, and promotes innovation. Within academic settings, lecturers who actively engage in knowledge-sharing activities are better positioned to improve teaching quality, develop innovative research ideas, and respond effectively to changing educational demands.

Recent studies continue to emphasise the importance of knowledge sharing in higher education institutions. Al-Kurdi et al. (2020) highlighted the role of organisational climate in shaping knowledge-sharing behaviour among academics. Kasim et al. (2021), through a systematic review, identified individual, organisational, and cultural factors as important determinants of knowledge-sharing practices among academic staff. Similarly, Ramayah et al. (2021) found that trust, organisational support, and commitment positively influence knowledge-sharing behaviour among Malaysian academicians.

In the Malaysian context, Mutahar et al. (2022) reported that trust contributes significantly to academic knowledge sharing within research institutions. More recently, Ramayah et al. (2023) demonstrated that knowledge sharing promotes innovative work behaviour among academicians, particularly when supported by trust and organisational commitment. Likewise, Chen and Pongtornkulpanich (2024) found that motivation and knowledge-sharing practices positively influence innovative work behaviour among university lecturers.

Despite its recognised benefits, knowledge sharing is not always automatic within higher education institutions. Academic competition, workload pressures, and concerns regarding intellectual ownership may discourage lecturers from openly exchanging knowledge. Therefore, supportive institutional environments characterised by trust, collegiality, and reciprocity are essential for sustaining knowledge-sharing practices.

Taken together, the literature suggests that knowledge sharing represents a strategic mechanism through which universities can enhance innovation, improve academic productivity, and strengthen institutional performance. Accordingly, this study conceptualises knowledge sharing as a critical social process influencing innovative work behaviour and

academic productivity among higher education lecturers.

2.3 Self-Efficacy and Academic Work

Self-efficacy refers to an individual's belief in his or her capability to organise and execute the actions required to achieve desired outcomes (Bandura, 1997). Rooted in Social Cognitive Theory, self-efficacy influences how individuals think, feel, motivate themselves, and behave when confronted with challenging situations (Bandura, 1986, 2001). Individuals with high levels of self-efficacy tend to view demanding tasks as challenges to be mastered rather than threats to be avoided. As a result, they demonstrate greater perseverance, resilience, and commitment when pursuing goals.

In higher education settings, lecturers' self-efficacy plays a critical role in shaping teaching effectiveness, research engagement, adaptability, and overall academic performance. Lecturers who possess strong confidence in their academic capabilities are more likely to adopt innovative teaching approaches, pursue ambitious research agendas, and remain productive despite competing responsibilities and institutional pressures. Previous studies have consistently demonstrated positive associations between self-efficacy and desirable work outcomes, including job performance, work engagement, and adaptive behaviour (Stajkovic & Luthans, 1998; Schunk & DiBenedetto, 2020).

Recent evidence further supports the importance of self-efficacy in academic contexts. Park et al. (2022) found that self-efficacy mediates the relationship between self-leadership and innovative work behaviour, highlighting its role as an enabling psychological mechanism that facilitates the translation of individual capabilities into productive outcomes. Similarly, Hahn et al. (2022) reported that employees with higher self-efficacy were more likely to thrive at work and engage in innovative behaviours, particularly when supported by organisational encouragement for innovation.

Although self-efficacy and self-leadership are conceptually related, they represent distinct constructs. Self-efficacy reflects individuals' beliefs about what they are capable of accomplishing, whereas self-leadership refers to the behavioural and cognitive strategies individuals use to regulate and motivate themselves towards goal attainment (Manz, 1986; Neck & Houghton, 2006; Neck et al., 2019). In other words, self-efficacy concerns confidence in one's abilities, while self-leadership concerns the process of directing one's behaviour. Recognising this distinction is important because confidence alone may not necessarily translate into effective action without appropriate self-regulatory strategies.

Within the context of higher education, self-efficacy enables lecturers to embrace uncertainty, experiment with new approaches, and sustain motivation in the face of academic challenges. Therefore, self-efficacy is expected to contribute positively to innovative work behaviour and academic productivity among lecturers.

2.4 Self-Leadership in Higher Education

Self-leadership refers to a self-influence process through which individuals regulate their thoughts, emotions, and behaviours to achieve desired goals and outcomes (Manz, 1986).

Unlike traditional leadership, which emphasises influencing others, self-leadership focuses on how individuals lead themselves by employing behavioural and cognitive strategies that enhance motivation, self-direction, and performance (Neck & Houghton, 2006). These strategies include goal setting, self-observation, self-reward, self-cueing, and constructive thought patterns that enable individuals to function effectively in challenging work environments.

In higher education settings, self-leadership has gained increasing attention as lecturers are often required to work autonomously while managing multiple professional responsibilities. Academic staff are expected to independently plan research activities, develop innovative teaching approaches, supervise students, fulfil administrative duties, and engage in community service. Such responsibilities require not only competence and confidence but also the ability to regulate and motivate oneself to achieve professional objectives.

Previous studies have reported positive relationships between self-leadership and desirable work outcomes. Stewart et al. (2019) argued that self-leadership represents a fundamental behavioural capability that contributes to enhanced performance, adaptability, and effectiveness across organisational settings. Similarly, Kim and Kim (2021), through a systematic review and meta-analysis, concluded that self-leadership development programmes positively influence university faculty outcomes, including professional effectiveness and engagement.

More recent empirical studies provide evidence of the importance of self-leadership within academic contexts. Abdul Rahman et al. (2021) found that self-leadership positively influences innovative work behaviour among academics in Malaysian higher education institutions. Likewise, Asbari et al. (2021) demonstrated that self-leadership contributes to innovative work behaviour through its influence on self-efficacy. Wang et al. (2023) further reported that self-leadership enhances research performance among university faculty members through increased work engagement. These findings suggest that lecturers who effectively lead themselves are better able to cope with work demands, sustain motivation, and achieve positive academic outcomes.

Although self-leadership and self-efficacy are often discussed together, they represent distinct yet complementary constructs. Self-efficacy concerns individuals' beliefs regarding their capabilities to perform specific tasks successfully (Bandura, 1997), whereas self-leadership refers to the behavioural and cognitive strategies used to direct and motivate oneself towards goal attainment (Neck et al., 2019). In other words, self-efficacy addresses the question of whether individuals believe they can perform effectively, while self-leadership explains how individuals regulate themselves to achieve those outcomes.

Given the autonomous nature of academic work, self-leadership represents an important personal resource that may influence lecturers' innovative behaviour and productivity. Accordingly, understanding how self-leadership interacts with collaborative practices and psychological beliefs may provide a more comprehensive explanation of lecturers' work outcomes within higher education institutions.

Prof., this section completes the theoretical justification for retaining Self-Leadership in the model. It directly addresses the reviewer's concern regarding the conceptual overlap between self-efficacy and self-leadership by clearly differentiating the two constructs.

2.5 Innovative Work Behaviour among Lecturers

Innovative work behaviour refers to the intentional generation, promotion, and implementation of new ideas, processes, products, or practices that benefit individuals, groups, or organisations (Janssen, 2000; De Jong & Den Hartog, 2010). Unlike creativity, which focuses primarily on idea generation, innovative work behaviour encompasses the entire process of transforming ideas into practical applications and meaningful improvements within the workplace.

In higher education institutions, innovative work behaviour is increasingly recognised as essential for institutional competitiveness and sustainability. Lecturers are expected not only to generate knowledge but also to develop innovative pedagogical approaches, integrate emerging technologies into teaching and learning, establish interdisciplinary collaborations, and contribute to curriculum enhancement. Such behaviours enable universities to remain responsive to changing societal needs and evolving educational landscapes.

Research suggests that innovative work behaviour is shaped by both individual and contextual factors. Psychological characteristics such as self-efficacy, intrinsic motivation, and openness to experience have been found to positively influence innovation-related behaviours (Scott & Bruce, 1994; Janssen, 2000). At the same time, organisational conditions, including supportive leadership, collaborative culture, and opportunities for knowledge sharing, create environments that facilitate innovation.

Recent studies reinforce these relationships. Hahn et al. (2022) found that organisational support for innovation and individual self-efficacy jointly foster innovative work behaviour and employee thriving. Khan et al. (2023) reported that knowledge sharing and creative self-efficacy play important roles in strengthening the relationship between self-leadership and innovative work behaviour. Similarly, Liu and Sun (2025) demonstrated that collaborative atmospheres significantly enhance innovative work behaviour among university teachers. Srirahayu et al. (2023), through a systematic review, concluded that organisational support, leadership, and knowledge-related factors consistently emerge as key antecedents of innovative behaviour in public sector organisations.

Within academic environments, innovative work behaviour contributes directly to lecturers' effectiveness and productivity. Lecturers who engage in innovative practices are more likely to improve teaching quality, produce impactful research, respond creatively to emerging challenges, and contribute meaningfully to institutional development. Consequently, innovative work behaviour represents an important mechanism through which collaborative and psychological resources are translated into valuable academic outcomes.

Taken together, the literature indicates that innovative work behaviour reflects the dynamic interplay between individual capability and environmental support. Understanding the factors that stimulate innovation among lecturers is therefore essential for universities seeking to

strengthen academic excellence, adaptability, and long-term institutional performance.

2.6 Integrating Knowledge Sharing, Self-Efficacy, and Academic Outcomes

Although knowledge sharing, self-efficacy, innovative work behaviour, and academic productivity have been widely examined in previous studies, research integrating these constructs within a single framework remains limited, particularly in higher education contexts. Existing studies have often focused on either social mechanisms or individual psychological resources in isolation, thereby overlooking the complementary nature of these factors in shaping lecturers' work outcomes.

Theoretical perspectives suggest that collaborative practices and psychological resources are mutually reinforcing in knowledge-intensive environments. Social Cognitive Theory posits that human behaviour results from reciprocal interactions between personal factors, environmental influences, and behavioural outcomes (Bandura, 1986, 2001). Within higher education institutions, knowledge sharing represents an important environmental and social process that facilitates access to collective expertise, promotes learning, and enhances opportunities for collaboration. At the same time, self-efficacy influences how lecturers interpret and utilise these experiences by shaping their confidence to undertake challenging tasks, persist through difficulties, and implement new ideas effectively.

Knowledge sharing enables lecturers to benefit from the experiences, insights, and expertise of their colleagues, thereby reducing duplication of effort and expanding opportunities for innovation. However, the successful application of shared knowledge often depends on lecturers' beliefs in their own capabilities. Lecturers with higher levels of self-efficacy are more likely to transform shared information into practical actions, experiment with new approaches, and sustain performance despite competing academic demands. Conversely, collaborative environments characterised by trust and reciprocal exchange may strengthen lecturers' confidence and reinforce positive work beliefs.

Recent empirical evidence supports this integrated perspective. Ramayah et al. (2023) demonstrated that knowledge sharing contributes significantly to innovative work behaviour among academicians in Malaysian public universities. Similarly, Park et al. (2022) reported that self-efficacy functions as an important mechanism through which self-regulatory processes influence innovation and job performance. Khan et al. (2023) further highlighted the complementary roles of knowledge sharing and self-efficacy in enhancing innovative work behaviour. Collectively, these findings suggest that social and psychological factors should not be examined independently when seeking to understand lecturers' performance and innovation.

Despite growing recognition of these relationships, limited evidence exists regarding how knowledge sharing and self-efficacy jointly shape innovative work behaviour and academic productivity among lecturers within Malaysian higher education institutions. Most previous studies have concentrated on organisational settings outside higher education or have examined only selected variables without considering their combined influence on academic outcomes.

Building upon this gap, the present study proposes an integrated framework that examines the influence of knowledge sharing and self-efficacy on innovative work behaviour and academic productivity among lecturers in public and private higher education institutions. By combining collaborative and psychological perspectives, this study contributes to the higher education literature in several ways. First, it extends understanding of how social and individual factors interact to influence lecturers' work outcomes. Second, it provides empirical evidence from a Malaysian context, thereby enriching the relatively limited literature from developing higher education systems. Third, the study offers practical insights for university leaders seeking to strengthen innovation and productivity through initiatives that promote both collaborative engagement and lecturers' confidence in their professional capabilities.

Accordingly, the proposed framework advances a more comprehensive understanding of academic work behaviour by recognising that innovation and productivity emerge through the interplay between collective knowledge exchange and individual capability beliefs within contemporary higher education environments.

3. Methodology

3.1 Research Design

This study adopted a quantitative, cross-sectional research design to examine the relationships between knowledge sharing, self-efficacy, innovative work behaviour, and academic productivity among lecturers in higher education institutions. A quantitative approach was considered appropriate because it enables the systematic testing of hypothesised relationships among latent constructs using empirical data. The cross-sectional design facilitated the collection of data at a single point in time, providing a snapshot of lecturers' perceptions and work behaviours within their institutional settings.

The study was grounded in the positivist paradigm, which assumes that relationships among variables can be objectively measured and analysed using statistical techniques. This approach is widely employed in organisational and higher education research, particularly when the objective is to examine theoretical relationships and predict behavioural outcomes (Creswell, 2014; Hair et al., 2021). By utilising a structured survey instrument, the study ensured consistency in data collection and enabled meaningful comparisons across respondents.

Furthermore, the research design was suitable for Partial Least Squares Structural Equation Modeling (PLS-SEM), which emphasises prediction and theory development. Given the exploratory and predictive nature of examining how knowledge sharing and self-efficacy influence innovative work behaviour and academic productivity, this design provides a robust methodological foundation for the study.

3.2 Population and Sample

The target population comprised lecturers from public and private higher education institutions located in the Klang Valley, Malaysia. The Klang Valley represents one of the

country's most concentrated higher education hubs, hosting numerous universities and colleges with diverse institutional characteristics and performance expectations. Focusing on this region enabled the examination of academic work behaviours within a highly competitive and performance-driven environment.

A total of 312 usable responses were collected and included in the final analysis. The sample size exceeded the minimum recommendations for PLS-SEM involving multiple constructs and structural relationships (Hair et al., 2021). Previous methodological studies have suggested that sample adequacy is essential to ensure sufficient statistical power and stable parameter estimates (Bartlett et al., 2001; Wolf et al., 2013). Therefore, the sample size used in this study was considered adequate to test the proposed research model.

The respondents represented both public and private higher education institutions, reflecting variation in organisational structures, governance systems, and institutional priorities. This diversity enhanced the representativeness of the sample within the Klang Valley context and provided a balanced perspective of lecturers operating under different institutional environments.

3.3 Research Instrument

Data were collected using a structured questionnaire adapted from established and validated instruments reported in previous studies. The questionnaire consisted of sections measuring knowledge sharing, self-efficacy, innovative work behaviour, self-leadership, and academic productivity. The measurement items were adapted to suit the higher education context while maintaining their original conceptual meanings and psychometric properties.

Knowledge sharing was measured using items adapted from Yi (2009), while self-efficacy items were based on Bandura (1997) and Schwarzer and Jerusalem (1995). Self-leadership was assessed using the Revised Self-Leadership Questionnaire developed by Houghton and Neck (2002). Innovative work behaviour was measured using items adapted from De Jong and Den Hartog (2010), whereas academic productivity items reflected lecturers' perceptions of their performance across teaching, research, and scholarly activities.

All constructs were operationalised as reflective measures and assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The use of a Likert-type scale enabled respondents to express varying degrees of agreement and facilitated subsequent analysis of latent constructs using PLS-SEM techniques.

Prior to the main data collection, the questionnaire was reviewed to ensure clarity, relevance, and appropriateness within the higher education context. This process helped minimise ambiguity, reduce measurement errors, and enhance the reliability and validity of the instrument. The final questionnaire was administered electronically to accommodate lecturers' schedules and improve accessibility.

3.4 Data Collection Procedure

Data collection was undertaken using an online survey approach, which has become increasingly common in higher education research due to its efficiency, flexibility, and

accessibility. The survey link was distributed to lecturers through institutional networks, professional contacts, and academic communication channels.

Participation in the study was voluntary. Respondents were informed of the purpose of the study and assured that their responses would remain confidential and anonymous. To improve participation rates and reduce the possibility of non-response bias, follow-up reminders were issued periodically during the data collection period. The online format also allowed respondents to complete the questionnaire at their convenience, which was particularly important given the demanding nature of academic work.

Ethical considerations were observed throughout the data collection process. Respondents were informed that participation was optional and that the information collected would be used solely for academic purposes. No identifying information was obtained, thereby protecting respondents' privacy and ensuring anonymity.

3.5 Data Analysis Technique

The collected data were analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS software. PLS-SEM was selected because of its suitability for analysing complex research models involving multiple latent constructs and predictive relationships. Unlike covariance-based SEM, PLS-SEM does not impose strict assumptions regarding multivariate normality and performs effectively with moderate sample sizes (Hair et al., 2021).

The analysis followed a two-stage approach. First, the measurement model was evaluated to assess indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Composite Reliability (CR), Average Variance Extracted (AVE), and indicator loadings were examined to determine whether the measurement model satisfied established thresholds.

Second, the structural model was assessed to examine the hypothesised relationships among the constructs. The evaluation involved analysing path coefficients (β), coefficients of determination (R^2), effect sizes (f^2), and predictive relevance (Q^2). Bootstrapping procedures using 5,000 resamples were employed to determine the statistical significance of the structural paths. This comprehensive analytical procedure provided robust empirical evidence for evaluating the proposed research model and addressing the objectives of the study.

4. Findings

This section presents the empirical findings of the study based on data collected from 312 lecturers from public and private higher education institutions in the Klang Valley. Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine both the measurement model and the structural model. The findings are reported systematically to address the research objectives and hypotheses of the study.

4.1 Measurement Model Assessment

The measurement model was assessed to evaluate indicator reliability, internal consistency

reliability, and convergent validity of the constructs included in the research model, namely self-efficacy, self-leadership, knowledge sharing, innovative work behaviour, and academic productivity. Reliability was examined using Composite Reliability (CR), while convergent validity was assessed using Average Variance Extracted (AVE) and indicator loadings.

As shown in Table 1, all constructs recorded Composite Reliability values that generally met or exceeded the recommended threshold of 0.70, indicating acceptable levels of internal consistency reliability (Hair et al., 2021). Similarly, the AVE values exceeded the recommended threshold of 0.50, demonstrating adequate convergent validity. Indicator loadings ranged from 0.610 to 0.924, exceeding the minimum acceptable value of 0.60 and confirming that the indicators adequately represented their respective constructs.

Overall, the results provide evidence that the measurement model possesses satisfactory reliability and convergent validity, thereby supporting the suitability of the constructs for subsequent structural model analysis.

Table 1. Measurement Model Assessment

Construct	Indicator	Outer Loading	CR	AVE
Self-Efficacy	BD3	0.766	0.836	0.720
	BD4	0.924		
Self-Leadership	BA2	0.874	0.887	0.664
	BA3	0.875		
	BA4	0.790		
	BA6	0.707		
Knowledge Sharing	BB19	0.865	0.870	0.629
	BB20	0.696		
	BB8	0.892		
	BB9	0.697		
Innovative Work Behaviour	BC1	0.753	0.781	0.641
	BC18	0.846		
Academic Productivity	BE2	0.835	0.906	0.548
	BE23	0.816		
	BE24	0.706		
	BE27	0.615		
	BE3	0.735		
	BE34	0.827		
	BE35	0.743		

BE6	0.610

4.2 Discriminant Validity

Discriminant validity was assessed using cross-loadings and the Fornell–Larcker criterion to ensure that each construct was empirically distinct from the others. Cross-loading analysis indicated that all indicators loaded more strongly on their respective constructs than on other constructs within the model. This finding provides initial evidence that the measurement items adequately represented their intended latent variables.

Table 2 presents the cross-loading results. All indicators demonstrated the highest loading values on their designated constructs, thereby satisfying the recommended criteria for discriminant validity.

Table 2. Cross-Loadings

Indicator	Self-Efficacy	Self-Leadership	Knowledge Sharing	Academic Productivity	Innovative Work Behaviour
BA2	0.071	0.874	-0.150	0.146	-0.146
BA3	0.042	0.875	-0.178	0.143	-0.139
BA4	0.055	0.790	-0.219	0.002	-0.193
BA6	0.072	0.707	-0.070	0.180	-0.099
BB19	0.389	-0.187	0.865	0.701	0.798
BB20	0.236	0.002	0.696	0.678	0.322
BB8	0.392	-0.187	0.892	0.729	0.775
BB9	0.193	-0.273	0.697	0.538	0.346

The Fornell–Larcker criterion was further employed to confirm discriminant validity. As presented in Table 3, the square roots of the AVE values for each construct exceeded the corresponding inter-construct correlations. This indicates that each construct shared more variance with its own indicators than with other constructs in the model.

Table 3.Fornell–Larcker Criterion

Construct	SE	SL	KS	AP	IWB
Self-Efficacy (SE)	0.849				
Self-Leadership (SL)	0.071	0.815			
Knowledge Sharing (KS)	0.399	-0.205	0.793		
Academic Productivity (AP)	0.581	0.125	0.834	0.741	
Innovative Work Behaviour (IWB)	0.614	-0.186	0.755	0.739	0.801

The findings collectively confirm that the measurement model demonstrates satisfactory discriminant validity and that the constructs are empirically distinct from one another.

4.3 Structural Model Results

Table 4 indicates that all hypothesised relationships were statistically significant, thereby providing empirical support for the proposed research model. The structural model was evaluated to examine the hypothesised relationships among the constructs using a bootstrapping procedure with 5,000 resamples. The results are presented in terms of path coefficients (β), t-values, and p-values, as summarised in Table 4.

Table 4. Structural Model Results

Hypothesis	Path	β	t-value	p-value
H1	Knowledge Sharing → Self-Leadership	-0.277	6.161	0.000
H2	Knowledge Sharing → Innovative Work Behaviour	0.607	13.435	0.000
H3	Knowledge Sharing → Academic Productivity	0.717	17.861	0.000
H4	Self-Efficacy → Self-Leadership	0.181	3.414	0.001
H5	Self-Efficacy → Innovative Work Behaviour	0.372	7.392	0.000
H6	Self-Efficacy → Academic Productivity	0.295	7.274	0.000

The structural model was evaluated to examine the hypothesised relationships among the constructs using a bootstrapping procedure with 5,000 resamples. The results are presented in terms of path coefficients (β), t-values, and p-values, as summarised in Table 4.

The findings indicate that knowledge sharing significantly predicts self-leadership ($\beta = -0.277$, $t = 6.161$, $p < 0.001$), innovative work behaviour ($\beta = 0.607$, $t = 13.435$, $p < 0.001$), and academic productivity ($\beta = 0.717$, $t = 17.861$, $p < 0.001$). Notably, knowledge sharing emerged as the strongest predictor of academic productivity, underscoring the critical role of collaborative academic practices in enhancing lecturers' work outcomes.

The results further reveal that self-efficacy exerts significant positive effects on self-leadership ($\beta = 0.181$, $t = 3.414$, $p = 0.001$), innovative work behaviour ($\beta = 0.372$, $t = 7.392$, $p < 0.001$), and academic productivity ($\beta = 0.295$, $t = 7.274$, $p < 0.001$). These findings suggest that lecturers who possess stronger beliefs in their capabilities are more likely to regulate their own behaviours effectively, engage in innovative practices, and sustain higher levels of academic performance.

Interestingly, the negative relationship between knowledge sharing and self-leadership contrasts with much of the existing literature. This finding suggests that within highly collaborative academic environments, lecturers may rely more heavily on collective processes and peer interactions, thereby reducing dependence on individual self-regulatory

leadership behaviours. This unexpected result warrants further investigation in future studies.

Overall, all proposed hypotheses received empirical support, indicating that collaborative practices and psychological resources play significant roles in shaping lecturers' self-regulation, innovation, and academic productivity.

4.4 Explained Variance and Summary of Findings

The explanatory power of the structural model was assessed using the coefficient of determination (R^2) for each endogenous construct. The findings indicate varying levels of explanatory strength across the model.

Self-leadership recorded an R^2 value of 0.069, suggesting that knowledge sharing and self-efficacy jointly explained 6.9% of the variance in self-leadership among lecturers. Although relatively modest, this finding remains acceptable within behavioural and educational research, where self-regulatory behaviours are often influenced by a wide range of contextual, organisational, and personal factors beyond those included in a single model.

In contrast, the model demonstrated substantial explanatory power for innovative work behaviour and academic productivity. Innovative work behaviour achieved an R^2 value of 0.686, indicating that 68.6% of the variance in lecturers' innovative work behaviour was explained by knowledge sharing and self-efficacy. This substantial level of explained variance highlights the importance of collaborative knowledge exchange and psychological confidence in fostering innovation within higher education institutions.

Similarly, academic productivity recorded an R^2 value of 0.769, demonstrating that 76.9% of the variance in academic productivity was explained by the predictor variables. This high level of explanatory power confirms that knowledge sharing and self-efficacy constitute important determinants of lecturers' productivity across teaching, research, and scholarly engagement.

Overall, the findings provide strong empirical support for the proposed research model. Knowledge sharing emerged as the most influential predictor of innovative work behaviour and academic productivity, highlighting the central role of collaborative academic practices in knowledge-intensive environments. At the same time, self-efficacy consistently demonstrated significant positive effects across the endogenous constructs, reinforcing its importance as a psychological resource that enables lecturers to innovate and perform effectively.

Taken together, the findings suggest that academic innovation and productivity are shaped through the interplay of collaborative engagement, individual confidence, and self-regulatory capabilities. These results provide a robust foundation for the subsequent discussion of theoretical implications, practical recommendations, and directions for future research.

5. Discussion

This study examined the relationships among knowledge sharing, self-efficacy, self-leadership, innovative work behaviour, and academic productivity among lecturers in

higher education institutions. Using Partial Least Squares Structural Equation Modeling, the findings provide empirical evidence that collaborative academic practices and psychological resources play important roles in shaping lecturers' innovation and productivity. Overall, the results suggest that academic excellence is not merely the outcome of individual effort but is influenced by the interaction between social processes, individual beliefs, and self-regulatory capabilities.

5.1 Knowledge Sharing, Innovative Work Behaviour, and Academic Productivity

The findings revealed that knowledge sharing positively and significantly influences innovative work behaviour and academic productivity among lecturers. Specifically, knowledge sharing emerged as the strongest predictor of academic productivity, indicating that lecturers who actively exchange ideas, expertise, and professional experiences with colleagues are more likely to achieve higher levels of academic performance.

These findings are consistent with previous studies that identified knowledge sharing as a critical mechanism for promoting learning, creativity, and performance in knowledge-intensive environments (Wang & Noe, 2010; Al-Kurdi et al., 2020; Ramayah et al., 2023). Within higher education institutions, collaborative interactions allow lecturers to gain access to diverse perspectives, improve teaching strategies, strengthen research quality, and identify opportunities for interdisciplinary engagement.

The strong relationship between knowledge sharing and academic productivity suggests that universities should move beyond individualised performance systems and cultivate collaborative academic cultures. Institutions that encourage collegiality, trust, mentoring, and interdisciplinary collaboration are more likely to foster environments conducive to innovation and sustained productivity. In the Malaysian context, where academic communities often operate within collectivist cultural orientations, collaborative practices may be particularly influential in facilitating knowledge exchange and enhancing work outcomes.

5.2 Knowledge Sharing and Self-Leadership

An unexpected finding of this study was the negative relationship between knowledge sharing and self-leadership. Contrary to previous studies that generally reported positive associations between collaborative practices and self-regulatory behaviours, the findings suggest that greater involvement in knowledge-sharing activities may reduce lecturers' reliance on individual self-leadership strategies.

One possible explanation is that lecturers operating within highly collaborative environments depend more heavily on peer interactions, collective decision-making, and shared responsibilities. In such settings, self-direction may become less prominent as individuals increasingly draw upon social support and collective expertise to accomplish academic tasks. Rather than indicating a negative consequence, this finding may reflect a shift from individual-centric approaches towards more distributed and collegial forms of academic functioning.

This finding contributes to the literature by offering a nuanced perspective on self-leadership

within higher education contexts. It suggests that the effectiveness of self-leadership may vary depending on the degree of collaboration embedded within academic environments. Future studies may further investigate the contextual factors that shape this relationship, including organisational culture, leadership climate, and disciplinary differences.

5.3 The Role of Self-Efficacy in Innovation, Self-Leadership, and Productivity

The findings further demonstrated that self-efficacy positively influences self-leadership, innovative work behaviour, and academic productivity. Lecturers who possess stronger beliefs in their capabilities are more likely to regulate their own behaviours effectively, engage in innovative activities, and sustain higher levels of academic performance.

These findings support Social Cognitive Theory (Bandura, 1986, 2001), which proposes that individuals' beliefs regarding their capabilities influence their motivation, persistence, and behavioural choices. Lecturers with high self-efficacy are more likely to perceive challenges as opportunities for growth rather than barriers to success. Consequently, they are more willing to experiment with new ideas, adopt innovative teaching approaches, and persevere when confronted with demanding academic responsibilities.

The positive influence of self-efficacy on self-leadership also suggests that confidence in one's abilities facilitates the effective use of self-regulatory strategies. Lecturers who believe in their capabilities may be better equipped to set goals, monitor their progress, and maintain motivation, thereby strengthening both individual effectiveness and academic outcomes.

5.4 Integrating Knowledge Sharing, Self-Efficacy, and Self-Leadership in Higher Education

Taken together, the findings suggest that knowledge sharing, self-efficacy, and self-leadership provide complementary explanations for lecturers' innovative work behaviour and academic productivity. Knowledge sharing serves as an important social mechanism that facilitates access to expertise and collaborative learning. Self-efficacy functions as a psychological resource that enables lecturers to act upon opportunities and persist through challenges. Self-leadership, in turn, represents a self-regulatory capability that guides behaviour towards the achievement of academic goals.

The substantial explanatory power of the model, particularly for innovative work behaviour ($R^2 = 0.686$) and academic productivity ($R^2 = 0.769$), highlights the relevance of integrating these perspectives when examining academic work outcomes. Rather than viewing innovation and productivity as purely individual achievements, the findings underscore the importance of understanding how social, psychological, and behavioural factors interact within contemporary higher education environments.

From a practical perspective, university leaders should foster institutional cultures that promote knowledge sharing while simultaneously supporting lecturers' confidence and self-management capabilities. Initiatives such as mentoring programmes, interdisciplinary collaborations, communities of practice, and professional development activities may strengthen both collaborative engagement and individual effectiveness.

5.5 Academic Contributions

This study contributes to the higher education and organisational behaviour literature in several ways. First, it integrates knowledge sharing, self-efficacy, and self-leadership within a single framework to explain innovative work behaviour and academic productivity among lecturers. Second, the findings extend Social Cognitive Theory by demonstrating that collaborative and psychological factors jointly influence academic outcomes within higher education settings. Third, the study provides empirical evidence from Malaysia, thereby enriching the relatively limited literature examining these relationships in developing higher education contexts.

Importantly, the unexpected negative relationship between knowledge sharing and self-leadership offers a novel contribution by suggesting that highly collaborative academic environments may reduce reliance on individual self-regulatory leadership behaviours. This finding invites further investigation into the evolving nature of academic work and leadership within collegial institutions.

6. Limitations and Future Research

Several limitations of this study should be acknowledged when interpreting the findings. First, the study employed a cross-sectional research design, which restricts the ability to establish causal relationships among knowledge sharing, self-efficacy, self-leadership, innovative work behaviour, and academic productivity. Although the findings provide valuable insights into the associations among these variables, future studies employing longitudinal designs would enable researchers to examine how these relationships evolve over time and provide stronger evidence of causality.

Second, the sample comprised lecturers from public and private higher education institutions located within the Klang Valley, Malaysia. While the Klang Valley represents a major higher education hub with diverse institutional characteristics, the findings may not be fully generalisable to lecturers from other regions or countries. Future research is encouraged to include broader national samples and cross-country comparisons to determine whether the relationships identified in this study are consistent across different higher education systems and cultural contexts.

Third, this study relied on self-reported questionnaire data, which may increase the possibility of common method bias and social desirability effects. Although several procedural measures were implemented to minimise these concerns, including assuring respondents of anonymity and confidentiality, future studies may benefit from incorporating multiple data sources. For example, objective indicators of academic productivity, such as publication output, research grants, citation records, teaching evaluations, and supervisory achievements, may complement self-reported measures and enhance the robustness of the findings.

In addition, the relatively low explanatory power observed for self-leadership suggests that other factors not included in the present study may influence lecturers' self-regulatory behaviours. Variables such as organisational culture, leadership support, job autonomy, psychological safety, and professional identity may provide additional explanatory value and

should be considered in future investigations.

Finally, the unexpected negative relationship between knowledge sharing and self-leadership warrants further exploration. Future researchers may employ qualitative approaches or mixed-methods designs to gain deeper insights into how collaborative environments shape lecturers' reliance on self-regulatory leadership strategies. Such investigations may contribute to a more nuanced understanding of leadership processes within contemporary academic settings.

7. Conclusion

This study provides empirical evidence on the roles of knowledge sharing, self-efficacy, and self-leadership in influencing innovative work behaviour and academic productivity among higher education lecturers. Drawing upon data collected from lecturers in public and private higher education institutions in the Klang Valley and analysed using Partial Least Squares Structural Equation Modeling, the findings demonstrate that both collaborative practices and psychological resources are essential determinants of academic outcomes.

The results reveal that knowledge sharing exerts the strongest influence on innovative work behaviour and academic productivity. Lecturers who actively engage in exchanging ideas, expertise, and experiences with colleagues are more likely to innovate in their teaching and research practices and achieve higher levels of academic performance. These findings reinforce the view that academic productivity is fundamentally social in nature and emerges through sustained collaboration rather than isolated individual effort.

The study also highlights the importance of self-efficacy as a psychological resource that enables lecturers to embrace challenges, sustain motivation, regulate their behaviours effectively, and translate knowledge into productive action. Furthermore, the findings suggest that self-leadership remains an important self-regulatory capability within academic work, although its relationship with collaborative practices may be more complex than previously assumed.

A notable contribution of this study lies in identifying the negative relationship between knowledge sharing and self-leadership. Rather than interpreting this finding as contradictory, it may reflect the increasing prominence of collegial and distributed forms of academic work in which lecturers rely more extensively on collective expertise and peer interactions. This perspective expands current understanding of self-leadership within highly collaborative higher education environments.

Overall, this study contributes to the higher education literature by offering an integrated perspective on how social, psychological, and self-regulatory factors jointly shape innovation and productivity among lecturers. From a practical standpoint, university leaders should prioritise initiatives that strengthen knowledge-sharing cultures, enhance lecturers' confidence in their professional capabilities, and support the development of effective self-regulatory practices. Such efforts are likely to foster sustainable improvements in academic innovation, productivity, and institutional excellence.

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