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The Effect of Innovative Behavior, Knowledge Sharing, and Engagement on Student Academic Achievement throught Knowledge Management

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ABSTRACT

This study aims to analyze the relationship between knowledge management, knowledge sharing, innovative behavior and student's academic achievement using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. From the result of the analysis, all constructs of the research model have good validity and reliability, and the values of the loading factors, composite stability (CR), and average variance extracted (AVE) are expected to meet the criteria. The data normality test shows that the data distribution is mostly in accordance with normal standards, although there are small deviations that do not significantly affect the results of the analysis. The main result show that knowledge management has a positive effect the results of the analysis. The main results show that knowledge management has a positive effect on students' innovative behavior and knowledge sharing acts as a moderator that strengthens the relationsip. In addition, innovative behavior has been shown to have a positive impact on students' academic achievement, with more innovative students tending to have better academic achievement. These results highlight the importance of developing a culture that supports knowledge sharing and innovative behavior in educational institutions to improve academic achievement. Educational institutions are expected to create an environment that supports student collaboration, innovation, and creativity through activities such as group discussions, seminars, and joint projects.

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INTRODUCTION

In the era of globalization and rapid technological advancement, education must develop talents capable of competing globally. Universities play a crucial role in preparing students for international competition, with academic achievement serving as a key indicator. Academic success reflects intellectual capability, adaptability to change, and effective information management. Enhancing academic outcomes can be achieved through knowledge management, which involves acquiring, organizing, and sharing knowledge. This process supports decision-making, learning strategies, and academic planning, enabling students to effectively access and apply knowledge. Factors influencing effective knowledge management include innovative behavior, knowledge sharing, and student engagement. Innovative behavior, defined as generating and implementing new ideas (De Jong, 2010), helps students adapt and solve problems creatively. Knowledge sharing, described as interactions to support self development (Yusup, 2012), fosters collaborative learning and improves organizational skills (Tobing, 2007).

Student engagement, encompassing behavioral, emotional, and cognitive involvement (Fredricks, 2012), plays a vital role in academic success. Engaged students maintain motivation, achieve better results, and overcome challenges like boredom or dropout risks. Academic achievement, as Mediawati (2010) states, demonstrates learning outcomes effectively, while Simamora (2014) highlights its measurability through assessments. Creativity and innovation are interconnected, with creativity producing ideas and innovation focusing on their implementation (Rank, 2009). Creativity transforms ideas into practical solutions (West, 2009), while innovative work behavior enhances performance incrementally (De Jong, 2010). Supported by technology, knowledge sharing improves performance, productivity, and creativity (Jiang, 2019). It also reduces costs and enhances organizational outcomes (Kleine, 2019). Knowledge management facilitates exchanging information and ideas, fostering understanding and innovation (Usmanova, 2020).

The learning process is crucial for academic achievement. Effective learning, as Slameto (2010) note, addresses cognitive, affective, and psychomotor domains. Appropriate teaching methods (Baker, 1992) and competent lecturers (Pujasari & Nurdin, 2008) significantly impact student performance. Students possess intellectual abilities and opportunities to learn in universities, colleges, or polytechnics (Damar, 2012). Engagement, defined as time and effort devoted to learning activities (Kuh, 2003), fosters skill development, emotional enrichment, and performance (Handelsman, 2005). Active involvement in education ensures lasting benefits for academic success (Rochana, 2021).

LITERATURE RIVIEW

Innovative Work Behavior

Innovative behavior encompasses any business that focuses on creating or implementing positive new ideas, methods, or service qualities within a good system or organization. Ivancevich (2006) could use innovative beads to increase the marking association with the winner's perception, while Winardi (2002) wanted to concentrate on beads that could be achieved. Rogers (1976) innovative solutions are based on new ideas, while this

according to Drucker (1985) is related to productivity with the idea of new solutions. George (2001) reported about Gefahren, but Men Exploring Innovative Technologies, Creative Ideas and Serta-Penetration. Ibrahim (1988) has proposed an innovative approach to the field of pesticides as a method for identifying problems or concerns. Miles (1973) together with Schaefer (1986) consider that innovation in culture is something new. Robbins (1997) describes the lack of innovative uses for new ideas, products or methods that were developed.

Innovative behavior in students involves the creation and implementation of new ideas to improve the quality of learning and contribute to the field of education. Scott (1994), this behavior focuses on finding innovative solutions to improve efficiency in the work environment. Asbari (2021) highlighted that students with an innovative mindset tend to think creatively and find new solutions to overcome challenges in the learning process. Sopa (2020b) emphasized that innovation results from collaboration between lecturers and students to create positive changes in learning and scientific development. Purwanto (2022) explained that innovation includes the creative use of technology and adapting to change to support individual development and academic progress. Therefore, student involvement in innovative behavior plays an important role in fostering a dynamic learning environment and increasing competitiveness.

Innovative Work Behavior (IWB) refers to actions aimed at introducing and implementing new ideas, methods, products, or procedures to benefit an organization. De Jong and Hartog (2008) identified four key dimensions of IWB : seeking opportunities, generating ideas, defending those ideas, and implementing them. The process starts with identifying opportunities or problems, followed by creating innovative solutions. Championing involves convincing others of the value of the proposed idea.

Knowledge Sharing

Knowledge sharing involves exchanging information and collaborating to enhance individual and organizational performance. Nonaka and Takeuchi (1995) explain that it includes the transformation between tacit and explicit knowledge through socialization, externalization, combination, and internalization. Nonaka and Konno (1998) highlight the need for a collaborative space (Ba) to create new knowledge. Feng (2012) emphasized that knowledge sharing supports innovation and learning through collaboration.

Feng (2012) emphasized that knowledge sharing supports innovation and learning through collaboration. Gurteen (as cited by Yusup, 2012) sees it as communication that fosters growth for individuals and organizations. In education, Daryanto (2013) and Khoyrudin (2020) stress the importance of knowledge sharing for improving capabilities through both formal and informal dialogue. Komariah (2019; 2020) views it as a communication form that enhances efficiency and provides references. Therefore, knowledge sharing is crucial for improving adaptability, innovation, and performance in organizations (Adiprabowo 2019 and Almah, 2013).

Knowledge sharing, as highlighted by Bock (2005), involves individuals willingly exchanging knowledge and experiences within an organization. Cyr (2010) and Ling (2009) describe it as open communication across organizational levels, while Sharratt and Usoro (2003) see it as the structured exchange of information. Xue (2011) emphasize its role in fostering business opportunities and improving performance. Swift and Hwang

(2013) outline three core aspects: sharing knowledge willingly, interacting openly, and exchanging information freely without barriers.

Student Engagement

Student engagement, as defined by Kuh (2007), refers to participation in effective educational practices inside and outside the classroom that lead to measurable outcomes. Similarly, Krause and Coates (2008) describe it as the extent to which students engage in activities associated with high-quality learning outcomes. Hu and Kuh (2001) emphasize engagement as the quality of effort students invest in educational activities, directly influencing their intended outcomes.

In contrast, the HEFCE (2008) views engagement as the process by which educational institutions and the private sector actively involve and empower students to shape their learning experiences. Kuh (2009a) synthesizes these perspectives, defining student engagement as the time and effort students dedicate to activities linked to higher education outcomes, coupled with institutional efforts to promote such participation (Kuh, 2001, 2003, 2009a).

Coates (2007) defines engagement as a broad construct encompassing both academic and non-academic aspects of the student experience, highlighting five core elements: active learning and collaboration, challenging academic activities, formative communication with academic staff, enriching educational experiences, and institutional support for student involvement. These elements form the foundation of the National Survey of Student Engagement (NSSE). In the Australasian Survey of Student Engagement (AUSSE), a sixth element workplace integrated learning was added, emphasizing the integration of work experiences into study programs (Coates, 2009).

Student engagement is crucial for fostering meaningful learning interactions and outcomes. Li (2023) highlights that high engagement positively influences higher order thinking skills. Shcheglova (2019) found that classroom participation significantly impacts critical thinking, a key element of higher-level cognitive abilities. Engagement can be assessed through three dimensions: cognitive, emotional, and behavioral involvement.

Knowledge Management

Fernandez and Sabherwal (2001) explain that knowledge results from reflection and experience, inherently tied to individuals or groups. Knowledge is embedded in language, regulations, procedures, and concepts. Gloet and Terziovski (2004), knowledge management is the ability to apply skills to build organizational capabilities. Beckman (1999) highlights that knowledge expands through education and experience, while Coleman (1999) emphasizes its importance for organizational success, supported by quality human resources.

Knowledge management involves tools, strategies, and methods to maintain, analyze, organize, share, and improve knowledge within an organization. Its goal is to enhance efficiency, preserve knowledge, and encourage collaboration. This system enables employees to gain insights for better business operations. Organizations promote a culture of communication and knowledge sharing, increasing core competencies and utilizing information technology for effective management. Armstrong (2021) defines knowledge management as creating, capturing, sharing, and using knowledge to optimize learning and organizational performance. Horwitch and Armacost, as well as Sopiah and Sangadji (2018), describe it as the process of transferring and accessing knowledge to improve decision-making and business strategies. It contributes to organizational success by creating, storing, and reusing knowledge, fostering better learning experiences and employee performance.

Knowledge management aims to document and distribute knowledge efficiently, supporting better understanding and accessibility. Widayana (2005) and Zhou & Fink (2003), it involves organizing processes for creating, storing, and reusing knowledge. This structured effort enhances collaboration, innovation, and organizational competitiveness. Explicit knowledge is documented, while tacit knowledge resides in individuals. Knowledge management ensures intellectual assets are effectively utilized, supporting decision-making, strategic planning, and operational efficiency. Nonaka (1995) define it as a systematic approach to manage and apply knowledge, creating value and competitive advantage.

Student Academic Achievement

Academic achievement is reflected in students' learning patterns, influenced by internal and external factors. Internal factors include physical and psychological aspects, such as ethics, intelligence, interests, talents, independence, personality, and motivation. External factors include the social environment, available facilities, and weather conditions (Jaya, 2019: 16). Sugiharto (2007: 130), academic achievement is measured through numbers or statements that reflect a person's mastery of subject matter.

Winkel (2004: 173) defines academic achievement as the learning process leading to improvements in knowledge, understanding, application, analytical skills, and evaluation. Suryabrata (2006: 6) describes it as the result of completing formal education, evaluated numerically. Poerwadarminta (2006: 915) states it reflects knowledge or skills from a subject, typically shown as grades. Academic achievement is considered crucial as it reflects the results of the educational process, although it does not always guarantee high education quality. Mediawati (2010) defines academic achievement as the tangible result of effort and learning, evaluated through tests or teacher assessments (Simamora, 2014). It is often assessed using grades or the Cumulative Achievement Index (GPA), which reflects performance during education (Steinmayr 2011).

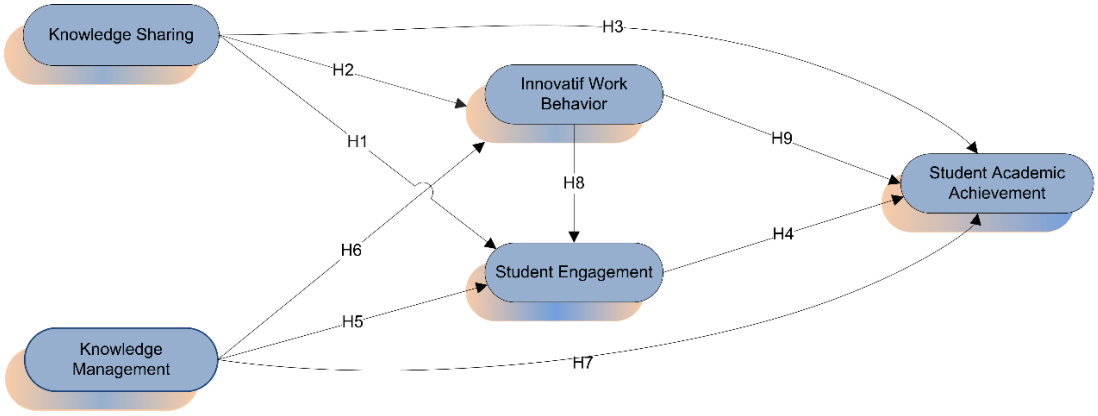

Figure 1. Research Model

The GPA is a key indicator of higher education quality, calculated from final grades that include attendance, assignments, and exam scores (Moore 2009). Evaluations use letters (A, B, C, E), percentages, or behavioral descriptions, with GPA reflecting the average grades divided by total credits taken.A pre-research survey revealed social media

use can decrease academic performance, affecting 12.4% of students (Ali, 2018). Excessive social media usage negatively impacts learning abilities for 83% of students (Talaue et al., 2018). While 77% believe social media benefits their social life, it does not contribute positively to education (Barus et al., 2021).

METHODS

This study uses a quantitative approach, as described by Sugiyono (2013), where variable relationships are analyzed through tools that generate numerical data for statistical analysis (Hirose & Creswell, 2023). The theoretical framework, as outlined by Kuncoro (2009), guides the research focus and supports data analysis. The research applies the Partial Least Square-Structural Equation Modeling (PLS-SEM) technique to analyze variable relationships and validate the research model. The study investigates factors influencing academic achievement, such as innovative behavior, knowledge sharing, and student engagement, emphasizing the role of knowledge management. It aims to contribute to theory and offer practical strategies to enhance learning effectiveness and student competitiveness through knowledge management in the digital era, where innovation and collaboration are crucial but underexplored in relation to academic performance.

The questionnaire consists of two parts: demographic information and 41 items across five constructs. These include Innovative Work Behavior (10 items) by Lukes, (2017), Knowledge Sharing (10 items) by Castaneda, (2014), Student Engagement (10 items) by (Carter, 2012), Knowledge Management (10 items) by Paliszkiewicz, (2015), and Academic Achievement (1 item) by Fauzi, 2024). This study used quantitative methods with surveys and questionnaires to collect data. The analysis was conducted with PLS-SEM using SmartPLS to test the moderator effect on a model with five variables and nine paths. PLS-SEM was chosen because it can handle complex models and is not affected by data distribution, suitable for exploratory research. SmartPLS 3 facilitates data analysis through a user-friendly graphical interface.

FINDINGS AND DISCUSSION

FINDINGS

Description of Research Data

Based on the data, the number and contribution of students from each university to the total of 219,439 students are as follows: Jambi University has 37,129 students, representing 0.16% of the total number of students. Padang State University has the highest number of students, namely 46,017 people, with a contribution of 0.0018%. The Sumatra Institute of Technology recorded 25,749 students with a contribution of 0.0014%, while Lampung University has 39,231 students with a contribution of 0.0005%. UIN STS Jambi has a total of 12,000 students, contributing 0.0036%. Furthermore, Poltekkes Kemenkes Jambi recorded 4,000 students (0.0005%), Batang Hari University has 2,768 students (0.0023%), and Dinamika Bangsa University recorded 5,000 students (0.0018%).

Table 1. Demographic data

Data Demografi		N	%
Gender	Male	112	27.7%
	Farmale	293	72.3%
Level of Education	Semester 3	205	50.6%
	Semester 5	116	23.6%
	Semester 7	65	16%
	S1	19	4,7%
University	Universitas Jambi	348	0.16%
	Universitas Negeri Padang	4	0,18%
	Universitas Nurdin Hamzah	4	0,18%
	Universitas Islam Indragiri	1	0,05%
	Instiut Teknologi Sumatra	3	0,14%
	UIN STS Jambi	8	0,36%
	Poltekes Kemenkes Jambi	4	0,05%
	Stikes harapan ibu	1	0,05%
	Universitas Sriwijaya	14	0,64%
	Universitas Muhammadiyah	1	0,05%
	Universitas Dinamika Bangsa	4	0,18%
	Universitas Adiwangsa Jambi	3	0,14%
	Universitas Lampung	1	0,05%
	Universitas Batang Hari	5	0,23%
	UniversitasPutra Indonesia	1	0,05%
	Stikes Garuda Putih Jambi	1	0,05%
	Universitas Baiturrahman	1	0,05%
	Politeknik Negeri Padang	1	0,05%
	Total	405	100%

Several other universities also made quite significant contributions. Harapan Ibu Health Science College Jambi has 11,988 students (0.0005%), followed by Putra Indonesia University "YPTK" Padang which also has 11,988 students (0.0005%). Padang State Polytechnic recorded 7,412 students (0.0005%). Meanwhile, Nurdin Hamzah University has 720 students (0.0018%), Adiwangsa University Jambi recorded 1,000 students (0.0014%), and Muhammadiyah University Jambi has 2,020 students (0.0005%). In addition, Indragiri Islamic University has 2,097 students (0.0005%), Baiturrahman University recorded 1,500 students (0.0005%), and Garuda Putih Health College Jambi has 2,000 students (0.0005%).

These data show that Padang State University has the largest number of students compared to other universities, followed by Jambi University, Lampung University, and the Sumatra Institute of Technology. On the other hand, Nurdin Hamzah University has the smallest number of students, which is 720 people. In terms of contribution, Jambi University has the largest percentage of contribution among other universities, while several universities, such as Poltekkes Kemenkes Jambi, Muhammadiyah University of Jambi, and Lampung University, recorded a smaller contribution, which is 0.0005%.

Measurement model

Using the CFA-based PLS algorithm, external loading values between 0.802 and 0.955 indicate strong validity for each construct, exceeding Hair's recommended value (0.708). Rho-A values between 0.883 and 1.000 indicate adequate internal consistency, with values greater than 0.95 indicating the presence of redundant items that can damage validity. Cronbach's Alpha values for all constructs are above 0.7 (the lowest is 0.873), indicating good reliability and suitability of the internal consistency of the model.

In SmartPLS, the measurement model is evaluated by ensuring AVE is at least 0.5 and composite reliability is above 0.7 for internal consistency. Factor loading analysis ensures indicator values are at least 0.5, while discriminant validity is tested using Fornell-Larcker or HTMT. The results of CFA with the PLS algorithm provide an overview of the reliability and validity of the model.

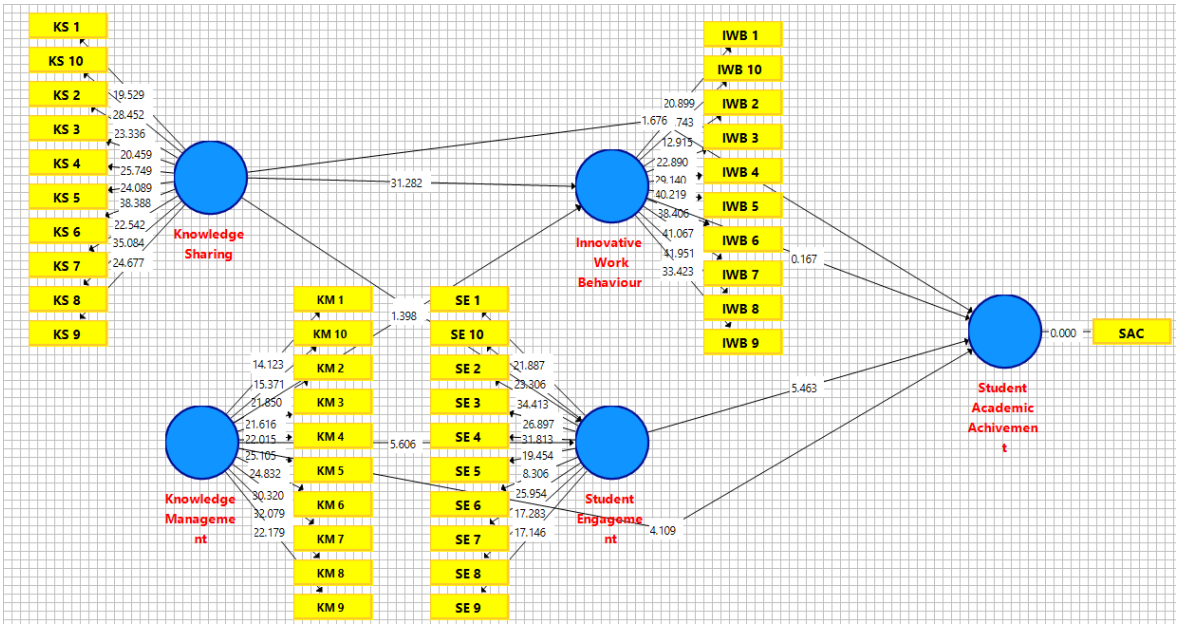

Figure 2. CFA and R-Square values in PLS

Internal Consistency, Reliability, and Validity

Internal consistency, reliability, and validity analysis were conducted using the CFA-based PLS algorithm to evaluate the external loading value of each item. The external loading results ranged from 0.802–0.955, exceeding the minimum limit of 0.708 (Hair), proving the validity of all variables. The Rho-A value showed stable internal reliability with a range of 0.883–1.000, reflecting very good consistency, although values above 0.95 may indicate the risk of item redundancy. In addition, Cronbach's Alpha, with the lowest value of 0.873, met the minimum standard of 0.7, ensuring the reliability of the concept used. The combination of Rho-A and Cronbach's Alpha values (0.7–0.95) showed adequate internal fit according to the standard.

Table 2. Cronbach alpha, CR, AVE, and Rho-A values for internal consistency reliability and validity analysis

Construct	Cronbac's Alpha	Rho- A	Composite Reliability	Averafe Variane Extracted (AVE)
SAC	1.000	1.000	1.000	1.000
IWB	0.913	0.916	0.928	0.564
KM	0.895	0.900	0.914	0.516
SE	0.873	0.883	0.897	0,500
KS	0.885	0.886	0.907	0.521

This study evaluates reliability and validity through values such as Cronbach's Alpha, Rho-A, Composite Reliability, and Average Variance Extracted (AVE) to ensure the consistency of each construct. The results show that the Academic Achievement construct has very high reliability with all indicators reaching a value of 1,000, indicating its

superiority. The Innovative Behavior construct also shows good internal reliability, with a Cronbach's Alpha value of 0, Rho-A 0.913, Composite Reliability 0.928, and AVE 0.564, which meets the minimum standard.

Knowledge Management shows strong internal consistency with Rho-A 0.895, Composite Reliability 0.914, and AVE 0.516. Although convergent validity is met, the AVE value is not optimal. For Student Engagement, the Cronbach's Alpha value of 0.873 and Composite Reliability of 0.897 indicate good reliability, but the AVE value of 0.469 is lower than the minimum standard of 0.5, so further analysis is needed.

The Knowledge Sharing construct has a high reliability value with Rho-A of 0.886, Composite Reliability of 0.907, and AVE of 0.521, meeting the convergent validity standard. Overall, the majority of constructs meet the reliability and validity standards, except for Student Engagement which needs further attention.

Based on the explanation, it can be concluded that the AVE value of 0.500 is considered the minimum threshold to guarantee convergent validity. Therefore, a value below 0.500, such as the AVE on Student Engagement of 0.469, indicates the need for further analysis. In this context, a value below 0.500 can be interpreted as a "warning" or indicator that convergent validity has not been fully met

Table 4. Fornell–Larcker criterion value of smart PLS software.

	KS	SE	KM	IWB	SAC
KS	0.710				
SE	0.450	0.685			
KM	0.450	0.506	0.718		
IWB	0.776	0.424	0.309	0.751	
SAC	-0.087	0.180	-0.087	0,040	1.000

Structure Model

Hair (2016) the evaluation of the structural model begins by checking collinearity, followed by relationship analysis using path coefficients, t-values, and p-values. The effectiveness of the model in explaining student participation, innovative behavior, knowledge management, and knowledge sharing on academic achievement is evaluated through the coefficient of determination (R^2), effect size (F^2), and predictive relevance (Q^2). Academic achievement is also analyzed.

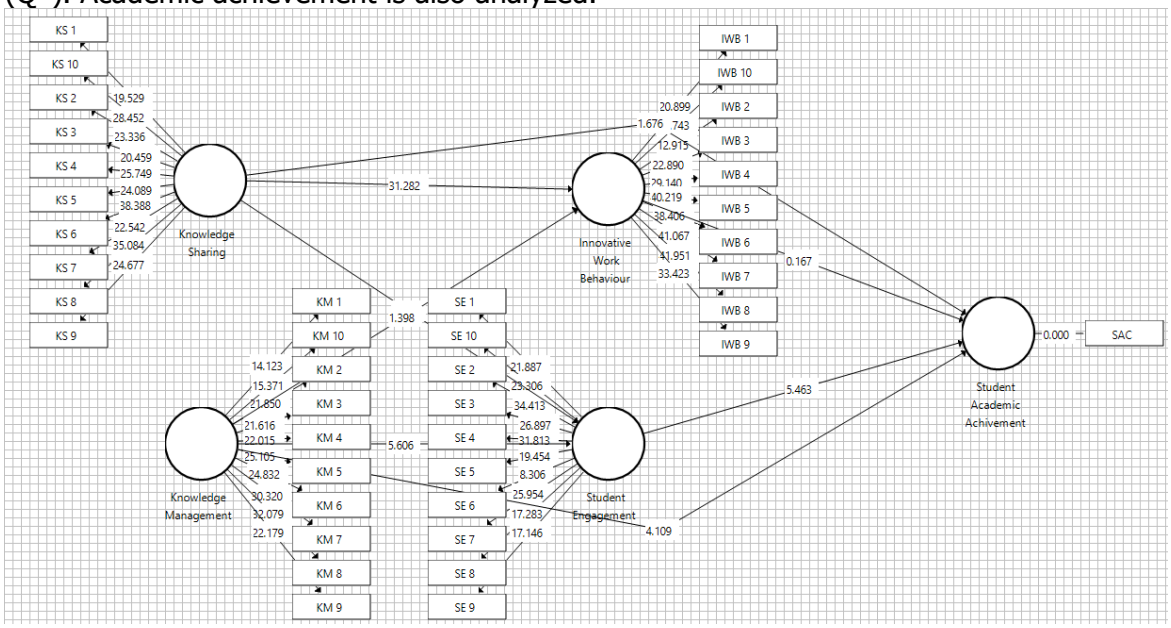

Figure 3. Final model with R square and path coefficient.

Colinealitas

Collinearity between latent variables is tested using the Variance Inflation Factor (VIF) value. If the VIF exceeds 5, there is a collinearity problem. Based on the results, all VIF values in this model are below 5, such as KS1 (1.525), KS7 (1.712), and 1WB8 (2.698), indicating no significant collinearity problem.

Table 5. Variance Inflation Factor (VIF) value.

Construct	Statement	VIF Value
	Innovative Work Behavior	
IWB1	I try new ways of completing academic assignments or projects on campus.	1.607
IWB2	When facing problems in academic activities, I look for different and innovative solutions.	1.523
IWB3	I look for new ideas from friends or lecturers to improve my work.	1.868
IWB4	I'm interested in how students in other places are doing things to implement it on this campus.	2.099
IWB5	When I have a new idea, I try to convince my friends about it.	2.300
IWB6	I try to involve classmates or lecturers in realizing my ideas.	2.369
IWB7	I make appropriate plans and schedules to implement new ideas on campus.	2.356
IWB8	When facing obstacles in implementing an idea, I try not to give up until the goal is achieved.	2.698
IWB9	I feel happy when my ideas are successfully implemented and bring benefits to the campus environment.	2.202
IWB10	I often contribute to improving or improving things on campus through my ideas.	1.928
	Knowledge Sharing	
KS1	I share my experiences in handling difficult situations that I face on campus with my friends.	1.525
KS2	I share my understanding of how certain concepts can have different meanings according to the context.	1.784
KS3	I share effective ways or procedures to complete academic tasks.	1.718
KS4	I share ideas to improve the way my group works on campus.	1.800
KS5	I share ideas to help my friends improve their work results.	1.621
KS6	I share my experiences on successful ways to complete an assignment on campus.	2.053
KS7	I share solutions to problems that I have faced in academic assignments or projects.	1.712
KS8	I share technical knowledge that I have learned from recent books or references with my friends.	2.052
KS9	I share lessons that I have learned from my previous mistakes or experiences.	1.855
KS10	I share information about upcoming academic activities or professional events on campus.	1.893
	Student Engagement	
SE1	Professors at this campus are fair to me most of the time.	1.954
SE2	Professors at this campus care about my academic needs.	1.950
SE3	My professors are available to help me when I have academic difficulties.	1.734
SE4	Other students at this campus care about my well-being.	2.073
SE5	I feel that my friends at this campus are always ready to help me when needed.	1.812
SE6	I have good relationships with my friends at this campus.	1.416
SE7	I believe that my education is important to achieving my future goals.	1.653
SE8	Education at this campus provides many opportunities to realize my	1.785

Construct	Statement	VIF Value
	dreams.	
SE9	I feel that the education I receive at this campus is relevant to my future needs.	1.446
SE10	I am optimistic that my academic experience at this campus will help me achieve a bright future.	1.640
	Knowledge Management	
KM1	My campus has a clear development plan that is communicated to students.	1.530
KM2	Important information about academic activities or campus facilities is communicated effectively to students.	1.879
KM3	I feel that the steps to achieve my academic goals on campus are well planned.	1.901
KM4	I see each faculty or study program carrying out its duties according to the schedule and available resources.	1.959
KM5	My campus regularly evaluates the effectiveness of the academic programs being run.	1.946
KM6	The results of the evaluation from the campus are used to improve the quality of academic activities and student services.	2.155
KM7	Meetings or forums on campus provide opportunities for students to provide input on academic policies or activities.	1.981
KM8	Lecture materials taught are often updated based on collaboration between lecturers and students.	1.968
KM9	Students are given the opportunity to contribute to the development of learning policies through discussions or surveys.	1.833
KM10	Students are given the opportunity to contribute to the development of learning policies through discussions or surveys.	1.662
	Student Academic Achievement	
SAC	What is your Grade Point Average (GPA) for this semester	1.000

The results of the analysis show that several relationships are not significant, as indicated by the red P-Values. First, the relationship between Knowledge Sharing → Student Engagement has a P-value of 0.264, which means that knowledge sharing does not have a direct effect on student engagement. Furthermore, the relationship between Knowledge Management → Innovative Behavior is also not significant with a P-value of 0.168, so that knowledge management does not directly encourage innovative behavior. Finally, the relationship between Innovative Behavior → Academic Achievement has a P-value of 0.858, indicating that innovative behavior does not have a direct effect on academic achievement. With these results, the hypotheses on these pathways are stated to be unsupported by the data.

Table 6. Results of initial hypothesis testing and path estimation.

Hypothesis	O	Mean	STDEV	T Statistisc	p- Values
KS – SE	0.097	_0.088	0.087	1.119	0.264
KS – IWB	0.799	0.800	0.026	31.297	0.000
KS – SAC	0.145	0.144	0.085	1.719	0.086
SE – SAC	0.350	0.357	0.064	5.503	0.000
KM – SE	0.392	0.401	0.067	5.587	0.000
KM – IWB	0.051	0.050	0.037	1.382	0.186
KM – SAC	0.194	0.199	0.047	4.145	0.000
IWB – SE	0.227	0.232	0.071	3.218	0.000
IWB – SAC	0.016	0.019	0.088	0.180	0.858

Coefficient of Determination (R2)

The coefficient of determination (R2 is used to assess the predictive quality of the dependent variable. Student Engagement (R^2 0.339) and Innovative Behavior (R^2 0.605) have moderate predictions, while Academic Achievement is weak (R^2 0.093). The prediction of Academic Achievement needs to be improved.

Table 7. Coefficient of determination (R2).

Construct	R Square	Interpretation
SE	0,339	Moderate
IWB	0.605	Moderate
SAC	0.093	Weak

Predictive Relevance (Q2)

Q^2 prediction value is used to evaluate the predictive relevance of each variable. Referring to Hair et al. (2016), Q^2 above 0.35 indicates high relevance, 0.15–0.35 moderate relevance, and 0.02 – 0.15 low relevance. The results show that Student Engagement has moderate relevance (Q^2 0.294), Innovative Behavior has high relevance (Q^2 0.598), while Academic Achievement is not predictively relevant (Q^2 0.000). This shows that the model is stronger in predicting innovative behavior than academic achievement.

Table 8. Q2 Value

Constract	RSME	MAE	Q^2-predict
SE	0.844	0.654	0.294
IWB	0.637	0.502	0.598
SCA	1.005	0.899	0.000

Effect Size (F2)

The results of the effect size (F^2) test in Table 10 show that Knowledge Sharing has the greatest influence on Innovative Behavior with an F^2 of 1.287, indicating a very significant influence. Knowledge Management has a moderate impact on Student Engagement (F^2 0.245), while several relationships such as Student Engagement to Academic Achievement (F^2 0.028) and Knowledge Sharing to Student Engagement (F^2 0.000) show a small influence. The relationship between Innovative Behavior and Academic Achievement does not even show a significant influence (F^2 0.000). Overall, Knowledge Sharing is the variable with the most dominant influence, especially on Innovative Behavior, while the influence of other variables varies from small to moderate.

The red table shows that Knowledge Sharing has the most dominant influence on Innovative Behavior with an effect size (F^2) value of 1.287, making it the most influential variable in this study. On the other hand, Knowledge Management has a moderate influence on Student Engagement (F^2 = 0.185) and a small influence on Student Academic Achievement (F^2 = 0.028). Meanwhile, other relationships, such as Knowledge Sharing on Student Academic Achievement (F^2 = 0.008) and Knowledge Management on Innovative Behavior (F^2 = 0.005), have very small influences. Thus, Knowledge Sharing plays a key role in enhancing innovative behavior, while the influence on other variables ranges from small to moderate.

Table 9. Value of effect size.

Constract	KS	SE	KM	IWB	SAC
KS		0.005		1.287	0.008
SE					0.089
KM		0.185		0.005	0.028
IWB		0.031			0.000
SAC					

Discussion

This study comprehensively discusses the relationship between knowledge management, knowledge sharing, innovative behavior, student engagement, and academic achievement. Using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method, this study shows that each construct in the research model has high validity and reliability. The validity of the indicators is measured through the loading factor, composite stability (CR), and average variance extracted (AVE), all of which indicate that the research instrument consistently reflects the specified variables. Data distribution analysis also revealed that most of the data followed a normal pattern, although there were some outliers that did not have a significant impact on the overall results. Therefore, this study is worth continuing, although it is recommended to use a more robust distribution approach in the future. Regarding the relationship between various factors, the test results show that knowledge management has a significant influence on students' tendency to innovate.

Knowledge management includes the process of collecting, storing, and distributing knowledge obtained from students in an academic environment. Thus, improving students' ability to manage their knowledge can utilize innovative skills. Effective knowledge sharing also strengthens the relationship between knowledge management and students' innovative behavior. The more active students are in sharing knowledge with peers and teachers, the greater the positive influence of knowledge management on their innovative behavior. Students' creative behavior also has a significant influence on academic achievement, where students who use innovative approaches in learning tend to achieve higher achievement. By implementing new learning methods or incorporating creative ideas into assignments, students can optimize their learning potential. Therefore, educational institutions need to create a culture of knowledge sharing and support students' innovative behavior. This can be done through group discussions, workshops, collaborative projects, and programs that encourage the growth of student creativity.

This study concluded that knowledge sharing has a positive influence on student engagement (H1), innovative behavior (H2), and academic achievement (H3). Through knowledge sharing, students can increase motivation, active participation, access to creative ideas, and a deeper understanding of learning materials. Student engagement was also found to contribute positively to academic achievement (H4), where students who are more active in the learning process tend to achieve better results. Furthermore, knowledge management has a positive impact on student engagement (H5), innovative behavior (H6), and academic achievement (H7). Good knowledge resource management helps students access information efficiently, increases motivation, and encourages innovation. Innovative behavior was also found to have a positive effect on student engagement (H8) by making the learning process more interesting, and on academic achievement (H9) through developing critical thinking skills and creative problem solving. Overall, this study suggests that knowledge sharing, knowledge management, and innovative behavior play an important role in enhancing student engagement and academic achievement.

CONCLUSION

This study highlights the significant impact of knowledge management, knowledge sharing, and innovative behavior on students' academic achievement. Knowledge management enhances innovative behavior, while knowledge sharing strengthens this connection. Promoting a culture of collaboration and innovation is crucial for improving learning quality and academic success. Educational institutions should implement policies supporting seminars, group discussions, and joint projects to foster creativity and help students realize their potential.

REFERENCES

Adiprabowo, H.N., Yusup, P.M., & Anwar, R.K. (2019). *Jurnal Kajian Informasi & Perpustakaan*, 7(2).

Ali, L. (2018). The Influence of InformationTechnology on Student's Behavioural Nature in the Class Room. *Asian Journal of Education and Training*, 4(2), 102-107.

Almah, H. (2013). Khizanah Al Hikmah, 1(2). and Automation, http://sersc.org/journals/index.php/LJCA/article/view/5732

Armstrong, M. (2021). *Armstrong's Handbook of Human Resource Management Practice*. London: Kogan Page.

Asbari, M., Prasetya, A. B., Santoso, P. B., & Purwanto, A. (2021). From Creativity to Innovation: The Role of Female Employees Psychological Capital. *International Journal of Social and (IJOSMAS)*, 02(02), 66-77. ManagementStudies https://ijosmas.org/index.php/ijosmas/article/view/18

Barus, I. R. G., Simanjuntak, M. B., & Resmayasari, I. (2021). READING LITERACIES THROUGH EVIETA- BASED LEARNING MATERIAL: STUDENTS PERCEPTIONS (Study Case Taken from Vocational School-IPB University). *JOURNAL OF ADVANCED ENGLISH STUDIES*, 4(1), 15-20

Beckman, T. J. (1999). *The current state of knowledge management*. In Knowledge Management Handbook (pp. 1-22). CRC Press.

Bock, Gee-Woo et al., 2005. *Behavioral Intention formationin Knowledge Sharing: Examining The Roles Of Extrinsic Motivators, Social-psychological Forces, and Organizational Climate*. MIS Quartely. Vol.29 No.1 pp. 87-111.

Bond, M. (2020). Facilitating student engagement through the flipped learning approach in K-12: A systematic review. *Computers and Education*, 151. https://doi.org/10.1016/j.compedu.2020.10381 BPS. (2021). BPS.

Carter, C. P., Reschly, A. L., Lovelace, M. D., Appleton, J. J., & Thompson, D. (2012). Measuring student engagement among elementary students: Pilot of the Student Engagement Instrument—Elementary Version. *School Psychology Quarterly*, 27(2), 61.

Castaneda, D., Pardo, C., & Toulson, P. (2014, October). A Knowledge Sharing Instrument Validation: A Broader Perspective for Global Organizations. In ICICKM2014-Proceedings of the 11th International Conference on Intellectual Capital, Knowledge Management and Organisational Learning: ICICKM2014 (p. 101). *Academic Conferences Limited*.

Coates, H. (2007). *Model keterlibatan mahasiswa secara online dan berbasis kampus*. Penilaian & Evaluasi dalam Pendidikan Tinggi , 32 (2), 121-141.

Coates, H. (2008) Development of the Australasian Survey of Student Engagement Commitment, Communication Climate Use On Knowledge Sharing. *Journal of Knowledge Management*, 8 (6), 117-130. Knowledge Sharing in Context

Coates, H. (2009) Engaging Students for Success - 2008 *Australasian Survey of Student Engagement*. Victoria, Australia: Australian Council for Educational Research.

Coleman, D. (1999). *Groupware: Collaborative strategies for corporate LANs and intranets*. Prentice Hall PTR.

Cyr, Sylvio dan Chun Wei Choo, 2010. The individual and socialdynamics of knowledge sharing: an exploratory study. *Journal of Documentation*. Vol.66 No. 6, pp. 824-846

Damar Adi Hartaji, R. (2012). *Motivasi berprestasi pada mahasiswa yang berkuliah dengan jurusan pilihan orang tua*.

Daryanto. (2013). *Konsep Dasar Manajemen Pendidikan Sekolah*. Gava Media.

De Jong, J., & Den Hartog, D. (2010). *Mengukur perilaku kerja inovatif. Manajemen kreativitas dan inovasi* , 19 (1), 23-36.

De Jong, J., & Den Hartog, D., (2008). Measuring inovative work behavior. *Journal of Creativity And Inovation Management,* 19, (1), 23 – 36.

De Jong, J., & Den Hartog, D., (2010). Measuring inovative work behavior. *Journal of Creativity And Inovation Management*, 19, (1), 23-36.

Drucker, P.F. (1985). Innovation and Entrepreneurship. New York: Harper & Collins. Engagement. *Journal of College Student Development*. 50 (6), pp. 683–706.

Fauzi, M., Darwis, M., & Nasrullah, M. (2024). The Influence of Student Participation in Student Organizations on Academic Achievement. *Pinisi Journal of Education and Management*, 90-101.

Feng, J., Zhang, J., Mu, Y., Sui, Z., & Tang, H. (2012). *International Conference on Innovation and Information Management*.

Fernandez, I. B., & Sabherwal, R. (2001). Organizational knowledge management: A contingency perspective. *Journal of Management Information Systems*, 18(1), 23–55.

Fredricks J. (2012). *Measuring student engagement in upper elementary through high school: a description of 21 instruments*. IES. 098:1–77. Funding Council for England.

George, J.M., & Zhou, J. (2001). *Journal of Applied Psychology*, 86(3), 513–524.

Gloet, M., & Terziovski, M. (2004). Exploring the relationship between knowledge management practices and innovation performance. *Journal of Manufacturing Technology Management*, 15(5), 402–409.

Gurteen (dalam Yusup, P.M.). (2012). *Perspektif Manajemen Pengetahuan*. Rajawali Pers.

Hair, J.; Black, B.; Babin, B.; Anderson, R.E.; Tatham, R.L. *Multivariate Data Analysis*, 6th ed.; Prentice Hall: Hoboken, NJ, USA, 2006.

Hair, J.F.; Hult, G.T.M.; Ringle, C.; Sarstedt, M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*; SAGE Publications: Thousand Oaks, CA, USA, 2016.

Handelsman, M. M. (2005). A measure pf college student engagement. *The Journal Of Educational Research*, 93,3, 184-191.

HEFCE (2008) *Tender for a Study into Student Engagement*. Bristol: Higher Education

Hirose, M., & Creswell, J. W. (2023). Applying Core Quality Criteria of Mixed Methods Research to an Empirical Study. *Journal of Mixed Methods Research*, 17(1). https://doi.org/10.1177/15586898221086346

Hu S, Kuh GD. Being Dis) *Engaged in Educationally Purposeful Activities: The Influences of Student and Institutional Characteristics*. Research in Higher Education. 1 Oktober 2002;43(5):555–75.

Hu, S. and Kuh, G.D. (2001) Being (Dis) *Engaged in Educationally Purposeful Activities: The Influences of Student and Institutional Characteristics*. Paper presented at the American Educational Research Association Annual Conference. Seattle, WA, 10–14 April.

Ibrahim, H. (1988). *Inovasi Pendidikan*. Jakarta: Departemen Pendidikan dan Kebudayaan.

Jaya, F. (2019). Pengaruh Motivasi Belajar dan Pemanfaatan Perpustakaan Terhadap Prestasi Belajar. PERKORIS J*urnal Pendidikan, Ekonomi, dan Bisnis*. Vol 4, No. 1. Hal. 1323. Diakses dari http://openjournal.unpam.ac.id/index.php/Pekobis/article/view/2765/2149 pada tanggal 31 Desember 2019

Jiang, Z., Jiang, Y., & Nielsen, 1. (2019), Workplace thriving in China. *International Journal of Manpower*, 40(5), 979-993. https://doi.org/10.1108/LJM-08-2018-0256

Khar Kheng, Y., June, S., & Mahmood, R. (2013). *The determinants of innovative work behavior in the knowledge intensive business services sector in Malaysia*. Asian Social Science, 9(15), 1–15. https://doi.org/10.5539/ass.v9n15p47

Khoyrudin, M., Komariah, N., & Rizal, E. (2020). Kegiatan berbagi pengetahuan sebagai upaya peningkatan kompetensi guru di SMKN 4 Bandung. *Jurnal Pustaka Budaya*, 7(1), 33-40.

Kleine, A. K., Rudolph, C. W., & Zacher, H. (2019). Thriving at work: A meta-analysis, *Journal of Organizational Behavior*, 40(9-10), 973-999, https://doi.org/10.1002job.2375

Komariah, N. (2019). *Knowledge Sharing dalam Komunikasi Organisasi Sekolah.*

Komariah, N. (2020). *Knowledge Sharing Sebagai Komunikasi Organisasi Sekolah*.

Krause, K. L., & Coates, H. (2008). *Students' engagement in first-year university: Development of an assessment instrument*. Assessment & Evaluation in Higher Education, 33(1), 1-17.

Kuh, G. D. (2003). *What we're learning about student engagement from NSEE benchmark for effective educational practices change*, 24-32

Kuh, G.D. (2009a) *What Student Affairs Professionals Need to Know about Student*

Kuh, G.D., Kinzie, J., Buckley, J.A., Bridges, B.K. and Hayek, J.C. (2007) *Piecing Together the Student Success Puzzle: Research, Propositions, and Recommendations*. ASHE Higher Education Report, Vol 32, No 5.

Kuh, G.D., Palmer, M. and Kish, K. (2003) "*The Value of Educationally Purposeful Out-of-Class Experiences*." In: Skipper, T.L. and Argo, R. (eds.) Involvement in Campus Activities and the Retention of First Year College Students. The First-Year Monograph Series No 36. Columbia, SC: University of South Carolina, National Resource Center for the First Year Experience and Students in Transition, pp. 19–34.

Li, W., Huang, J. Y., Liu, C. Y., Tseng, J. C. R., & Wang, S. P. (2023). *A study on the relationship between student' learning engagements and higher-order thinking skills in programming learning*. Thinking Skills and Creativity, 49(July), 101369. https://doi.org/10.1016/j.tsc.2023.101369

Ling, Chen Wai et al., 2009, Knowledge. sharing in an American multinational company based in Malaysia. *Journal of Workplace Learning*. Vol. 21 No. 2, pp. 125-142.

Lukes, M., & Stephan, U. (2017). Measuring employee innovation: A review of existing scales and the development of the innovative behavior and innovation support inventories across cultures. *International Journal of Entrepreneurial Behavior & Research*, 23(1), 136-158.

Mediawati, E. (2010). *Pengaruh Motivasi Belajar Mahasiswa Dan Kompetensi Dosen Terhadap Prestasi Belajar Dinamika Pendidikan*, 5(2) https://doi.org/10.15294/DP.V512 4922

Miles, B. (1973). *Innovation in Education*. New York: Teacher College Columbia University.

Moore, C., & Shulock, N. (2009). *Student progress toward degree co Lessons learned from the research literature*. Institute for Higher Leadership & Policy, September, http://www.csus.edu/ihelp/PDFs/R_Student_Progress_Toward_Degre etion.pdf

Nonaka, 1., & Takeuchi, H. (1995). *The Knowledge-Creating Company*. New York: Oxford University Press.

Nonaka, I., & Konno, N. (1998). *Knowledge Enabling*.

Nonaka, I., & Takeuchi, H. (1995). *The Knowledge-Creating Company*. Oxford University Press.

Paliszkiewicz, J., Gołuchowski, J., & Koohang, A. (2015). Leadership, trust, and knowledge management in relation to organizational performance: Developing an instrument. *Online Journal of Applied Knowledge Management*, 3(2), 19-35.

Poerwadarminta, W.J.S. (2006). *Kamus Besar Bahasa Indonesia*. Jakarta: Balai Pustaka.

Pujasari, D., & Nurdin, M. (2008). Pengaruh kompetensi dosen terhadap kinerja akademik mahasiswa. *Jurnal Pendidikan dan Pengajaran*, 41(2), 119-130.

Purwanto, A., Novitasari, D., & Asbari, M. (2022). Tourist Satisfaction and Performance of Tourism Industries: How The Role of Innovative Work Behaviour, Organizational Citizenship Behaviour? *Journal of Industrial Engineering & Management Research*, 3(1),1-12. https://jiemar.org/index.php/jiemar/article/view/246

Rank, J., Nelson, N. E., & Allen, T. D. (2009). Creativity and innovation in the workplace: Current practices and future research. *Journal of Organizational Behavior*, 30(2), 227–247. https://doi.org/10.1002/job.582

Robbins, S.P. (1997). *Managing Today*. New Jersey: Prentice Hall, Inc.

Rochana, R., Darajatun, R. M., & Ramdhany, M. A. (2021). Pengaruh implementasi kebijakan kampus merdeka terhadap minat dan keterlibatan mahasiswa. *Journal of Business Management Education (JBME)*, 6(3), 11-21.

Rogers, E.M. (1976). *Communication in Organizations*. New York: The Free Press.

San Francisco: Jossey-Bass. Krause, K. and Coates, H. (2008) *Students' Engagement in First-Year University*. Assessment and Evaluation in Higher Education. 33 (5), pp. 493–505.

Schaefer, R.T., & Lamm, R.P. (1986). *Sociology*. New York: McGraw-Hill.

Scott, S., & Bruce, R. (1994). Determinants of innovative behavior: a path model of individual innovation in the workplace. *Academy of Management Journal*, 37(3), 580-607. https://doi.org/10.1049/iet-rsn:20080009

Sharratt, M., & Usoro, A. (2003). Knowledge sharing and knowledge management in a collaborative environment: A case study of two academic institutions. *Journal of Knowledge Management*, 7(4), 13-22.

Shcheglova, I., Koreshnikova, Y., & Parshina, O. (2019). *The Role of Engagement in The Development of Critical Thinking in Undergraduates*. Voprosy Obrazovaniya / Educational Studies Moscow, 2019(1), 264–289. https://doi.org/10.17323/1814-9545-2019-1-264-289

Simamora, B. (2014). Pengaruh Disiplin Dan Kompetensi Dosen Terhadap Prestasi Mahasiswa Program Studi Penerbitan, *Jurnal Publipreneur*, 2(4), 98-113

Slameto. (2010). *Belajar dan Faktor-Faktor yang Mempengaruhinya*. Jakarta: Rineka Cipta.

Slatten, T. (2020). The impact of leadership on innovative work behavior: A systematic review. *Journal of Organizational Behavior*, 45(3), 145–165.

Sopa, R., et al. (2020). Inovasi sebagai hasil kolaborasi antara dosen dan mahasiswa untuk menciptakan perubahan positif dalam pembelajaran dan pengembangan ilmu pengetahuan. *Jurnal Pendidikan dan Pembelajaran*, 10(3), 1-15.

Sopiah, & Sangadji, E. M. (2018). *Manajemen Sumber Daya Manusia: Pendekatan Mikro dan Makro*. Jakarta: Bumi Aksara.

Steinmayr, R., et al. (2011). The role of academic achievement in educational success. *Journal of Educational Psychology*, 103(4), 975-989.

Steinmayr, Ricarda, Bipp, Tanja., Spinath, Birgit. 2011. *Goal orientations predic performance beyond intelligence and personality*, Learning and Individual D Volume 21, Issue 2, April 2011, Pages 196-200

Subagyo, H. 2007. *Modul Pelatihan Knowledge Management*. Makasa Bursa Pengetahuan Kawasan Indonesia Timur (BaKTI).

Sugiharto. (2007). *Pengukuran dan Penilaian dalam Pendidikan*. Jakarta: Penerbit Akademika.

Sugiyono. (2013). *Metode Penelitian Kombinasi (Mixed Methods)*. Alfabeta.

Suryabrata, S. (2006). *Psikologi Pendidikan*. Jakarta: Rajawali Press.

Swift, Peter E. Alvin Hwang. 2013. *The Impact of affective and cognitive trust on knowledge sharing organizationallearning*. and The Learning Organization. Vol. 20 No. 1,pp.20-37

Talaue, G. M., AlSaad, A., AlRushaidan, N.,AlHugail, A., & AlFahhad, S. (2018). The impact of social media on academic performance of selected college students. *International Journal of Advanced*. Information Technology, 8(4/5), 27-35.

Tobing, Paul Lumban. 2007. *Knowledge Managemen konsep, arsitektur dan implementasi*. Yogyakarta Graha Ilmü

Tohidinia,Zahra dan Mosakhani, Mohammad. 2010. *Knowledge Sharing Bevaiour and its Predictors*. Industrial Management and Data systems. Vol. 110 Issue: 4, pp.611-631.

Usmanova, N., Yang, J., Sumarliah, E., Khan, S. U., & Khan, S. Z. (2020). Impact of knowledge sharing on job satisfaction and innovative work behavior: the moderating role of motivating language. *VINE Journal of Information and Knowledge Management Systems*, 51(3), 515-532. https://doi.org/10.1108/VJIKMS-

West, M. A., & Farr, J. L. (2009). *Innovation and creativity at work: Psychological and organizational strategies.* In Rank, J., Nelson, N. E., & Allen, T. D. (Eds.), Creativity and Innovation in Organizations (pp. 53-82). Routledge.

Widayana, I. M. (2005). *Manajemen Pengetahuan: Konsep, Proses, dan Aplikasinya*. Jakarta: Penerbit Buku Universitas.

Winardi, J. (2002). *Motivasi dan Pemotivasian dalam Manajemen*. Jakarta: PT Raja Grafindo Persada.

Xue, Yaijong. John Bradley. Hulgang Liang. 2011 Team Climate, Empowering Leadership, and Knowledge Sharing. *Journal of Knowledge Management*. Vol.15. No. 2 299-312,

Yusup, P. M. (2012). *Perspektif Manajemen Pengetahuan Informasi, Komunikasi, Pendidikan, dan Perpustakaan*. Rajawali Pers.

Zhou, H., & Fink, L. (2003). Knowledge Management: A Strategic Approach to Organizational Success. *Journal of Knowledge Management*, 7(3), 15-30