Knowledge-Sharing Behavior Among Higher Education Students

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ABSTRACT

Mastery of knowledge is a determining factor for student success in achieving excellent academic performance. One of the most important supporting activities in determining whether a student's academic achievement is excellent or not is knowledge-sharing behavior. This study was conducted to analyze factors influencing the knowledge-sharing behavior of students from individual, class, technology, and cultural factors. These factors include willingness to share, ability to share, lecturer support, degree of competition, technology support, individualism, and collectivism. The sample was selected using a purposive sampling method with the criteria of students from the Management study program. Data were collected through an online survey. By involving 111 students and using multiple regression analysis techniques, the study found that there are three factors that influence knowledge-sharing behavior, namely the ability to share, lecturer support, and collectivism. Meanwhile, willingness to share, degree of competition, technological support and individualism have no significant effect.

Keywords: personal factors, classroom factors, technology factors, cultural factors, knowledge-sharing behavior.

1. INTRODUCTION

Knowledge is a critical success asset for both individuals and organizations, especially for students in determining academic performance during the teaching and learning process (Anatan *et al*., 2022; Espita & Guhao, 2022). Nonaka and Takeuchi (1995) define knowledge as belief, commitment, and action that distinguish knowledge from information. Knowledge has specific, relational, and contextual meanings which can be classified into two types of knowledge, namely tacit and explicit knowledge. Tacit knowledge is a type of knowledge that cannot be easily expressed and communicated either verbally or visually since it is subjective, specific, and difficult to capture properly. Whereas explicit knowledge is objective and can be communicated verbally and visually well and can be codified more easily.

According to the knowledge-based view, knowledge is a source of sustainable competitive advantage and can be obtained through the process of knowledge transfer and knowledge sharing (Islam *et al*., 2013). Both have different concepts as explained by Tseng (2017). Knowledge sharing refers to communication as well as the distribution of information, whereas knowledge transfer refers to the transfer of knowledge between universities, departments, and organizations. Several researchers provide various definitions related to knowledge sharing. Connelly (2020) defines knowledge sharing as an exchange of knowledge or behavior related to the knowledge that benefits the organization in relation to another knowledge. Willet (2002) defines knowledge sharing as an

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information exchange activity that occurs not neutrally but has an important role in the process of power distribution, work relations, influence models, and how individuals identify their duties and responsibilities at work.

Knowledge sharing is an important process in managing the knowledge of an organization through the process of transforming knowledge into valuable organizational assets (Bock & Kim, 2002). Not only organizations and companies in general, however, knowledge activities also have an important and significant role for academic institutions in particular, therefore research topics on knowledge sharing are interesting and important in the management of academic institutions, both at the organizational and individual levels. Through knowledge-sharing activities, both organizations and individuals can provide information to each other through cooperation in solving problems faced by organizations and individuals, developing new ideas in responding to changes and developments faced, and implementing policies and procedures within the organization (Wang & Noe, 2010). Knowledge sharing might occur through correspondence either directly or in writing through involvement in a network that involves experts and through the process of documenting knowledge with other partners.

Ipe (2003) suggests that knowledge sharing is a process of communicating knowledge in a group of people which can consist of people who are bound in an institution or between colleagues in a work environment. Knowledge sharing might also occur between friends in a study group consisting of a minimum of two people through interaction between both parties involved. At the individual level, knowledge sharing can be defined as knowledge possessed by a person which is converted into a form to be shared with other parties so that this knowledge can be understood and utilized properly by other parties (Ipe, 2003). The success of the knowledge-sharing process and its implementation is highly dependent on how the individual's motivation and attitude are also influenced by various aspects which are the antecedent factors. Individual motivation and attitudes in responding to knowledge-sharing activities in this study were identified as knowledge-sharing behavior.

This research was conducted to analyze several factors that were thought to influence knowledge-sharing behavior which included individual factors, classroom factors, technological factors, and cultural factors. The research model and instruments in this study modify research conducted by Yogeesha and Krishna (2013) and Al Kurdi *et al*. (2018) by adding cultural factors as variables that influence knowledge-sharing behavior. Individual factors consist of two dimensions, namely willingness to share and ability to share. Classroom factors in this study consist of two dimensions, namely lecturer support and degree of competition (Wangpipatwong, 2009; Yogeesha & Krishna, 2013; Al Kurdi *et al*., 2018). Technology factor is measured through technical support, while cultural support consists of two dimensions which include individualism and collectivism. Each of these factors will be partially tested and hypothesized to find out which factors have a significant effect on knowledge-sharing behavior.

Several research questions that will be answered in this study include, willingness to share, ability to share, lecturer support, degree of competition, technology support, individualism, and collectivism affect knowledge-sharing behavior. Al Kurdi *et al*. (2018) argue that studies on knowledge-sharing behavior are no stranger to being found in organizational knowledge-sharing literature, however, there is still little research on related issues conducted in higher education settings, which incidentally are knowledge worker communities. This study is expected to provide a significant contribution to the development of knowledge and insight for other researchers in understanding the conceptual and empirical literature related to knowledge-sharing behavior. In addition, this

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study is expected to provide insight as a consideration for decision-makers in managing knowledge through knowledge-sharing activities.

2. LITERATURE REVIEW

2.1. Previous Studies on Knowledge-Sharing Behavior

Several studies related to knowledge-sharing behavior have been carried out both in literature reviews and empirical research. Kathiravelu *et al*. (2013) conducted a literature review to identify the factors that influence knowledge-sharing behavior. According to the results of the literature review, it was found that demographic variables such as gender, age, education level, position in an organization or company, place of work, and length of service have no significant effect on the knowledge-sharing behavior of employees. However, organizational factors such as organizational culture, peer support, rewards, technology, and commitment have a significant role in encouraging knowledge sharing, especially in service companies in general.

Ghadrian *et al*. (2014) conducted a literature review to identify what factors influence knowledge-sharing behavior among students in a learning environment. Data sources were collected from Academic Search Premier based on empirical studies that have been conducted. The articles are classified into four study focuses which include theoretical frameworks, study contexts, predictive variables, and conceptualization of knowledge sharing and its dimensions. The literature review concludes that articles on knowledge-sharing behavior are related to organizational and business settings. It can be explained by the policies related to online learning in the knowledge-sharing process that can be measured through student interaction and participation during the online learning process. However, knowledge-sharing activities are fundamentally different from the processes of interaction and participation, even more, complex than the two, therefore it cannot be easily concluded that knowledge-sharing can be measured through the frequency of interaction and participation in the learning process.

Al Kurdi *et al*. (2018) conducted a literature study on knowledge-sharing behavior in tertiary institutions with the aim of identifying the determinants of knowledge-sharing behavior in the related research. In the identification process, the researcher profiled related literature based on research trends, theories used to explain knowledge-sharing behavior, and possible research opportunities in the future. By using the systematic literature review method and involving 73 articles published in peer-reviewed journals, it can be concluded that the contribution of research on knowledge-sharing behavior in education is considered to be lacking when compared to other sectors. Nonetheless, knowledge-sharing activities are proven to make a significant contribution to improving organizational performance.

The results of a systematic literature review classify the determinants of knowledge-sharing behavior in higher education into four classifications including individual, organizational, technological, and cultural factors. In particular, researchers suggest that trust and motivation are antecedent factors for knowledge-sharing behavior. Organizational culture also has an important role in encouraging knowledge-sharing activities within an organization, however organizational culture itself without being supported by other factors such as communication, and technology will not be able to facilitate knowledge-sharing activities properly.

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Isika *et al*. (2013) conducted research to examine factors influencing the knowledge-sharing behavior of postgraduate students at the University of Malaya during the research conducted. Specifically, the study was also conducted to identify differences in knowledge-sharing behavior between postgraduate students and the behavior of employees who work in organizations or companies. The results of the study prove that there are differences in knowledge-sharing motivation between postgraduate students and employees who work in an organization or company. Extrinsic factors such as giving rewards have no effect on knowledge transfer behavior in postgraduate students.

Islam *et al*. (2013) conducted an empirical study to measure knowledge-sharing behavior in three important areas of higher education which include teaching, research, and community service. Teaching in this study refers to teaching materials, teaching methods, experience, and knowledge. Research refers to the publication of articles, books, and research projects both personally and collaboratively which might encourage the increasing interest and concern of colleagues regarding the importance of conducting research for academics. Community service in this study focuses on academic membership, professional membership, membership in scientific journal management committees, and participation as a reviewer in a scientific journal. The results of the study show that there is a significant relationship between academic attitudes toward knowledge sharing and the intention to share knowledge.

Skaik and Othman (2014) conducted a study to investigate how knowledge-sharing is implemented between academics in higher education and examine the relationship between knowledge-sharing behavior and predictor variables determined based on the Theory of Planned Behavior. The importance of the university's role in creating and distributing knowledge and the role of academics in creating, exchanging, and disseminating knowledge has motivated researchers in conducting this study. The results of the study show that the intention in this study is influenced by attitudes, subjective norms, and self-efficacy has a significant effect on knowledge-sharing behavior. The results of the study also show something contrary to the theory used in this study controllability does not have a significant effect on intention.

Yeon *et al*. (2016) conducted a study to investigate what factors influence knowledge-sharing intention and behavior. The study involved 286 members of the Biology Research Information Center (BRIC), a research and development (R&D) center in Korea. This study provides a significant contribution through the implementation of theory regarding the context of knowledge sharing at a national research and development center established by the Korean government, hosted by higher education, and managed by the community. The study shows that cognitive capital and relational capital play an important role in knowledge-sharing activities on research objects. Specifically, it can be explained that intrinsic and extrinsic motivation also affect individual intentions in sharing knowledge. However, structural capital does not affect individual intentions in sharing knowledge, even though in the virtual context of R&D, the majority of individuals in the research and development center have high confidence in their level of mastery of knowledge and capabilities to be able to contribute to determining intentions to share knowledge. Table 1. summarizes several previous conceptual and empirical studies related to knowledge-sharing behavior.

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Table 1. Previous Studies on Knowledge-Sharing Behavior

Researchers	The objective of the study	Result of the study	Type of the study
Kathiravelu *et al*. (2013)	To identify factors that influence knowledge-sharing behavior	Demographic variables do not affect the knowledge-sharing behavior of employees. Organizational factors become the driving force for knowledge sharing	Conceptual Study
Ghadirian *et al*. (2014)	To investigate knowledge-sharing behavior between students in a learning environment	Knowledge-sharing behavior is related to organizational and business settings, it can be explained by policies related to online learning in the knowledge-sharing process can be measured through interaction and participation	Conceptual Study
Al Kurdi *et al*. (2018)	To identify the determinants of knowledge-sharing behavior in related research	The determinants of knowledge-sharing behavior in higher education are classified into four factors which include individual, organizational, technological, and cultural factors.	Conceptual Study
Isika *et al*. (2013)	To identify differences in knowledge-sharing behavior between students and employees	There are differences in knowledge-sharing motivation between postgraduate students and employees, where rewards do not affect knowledge transfer behavior among postgraduate students.	Empirical Study
Islam *et al*. (2013)	To measure knowledge-sharing behavior in the areas of teaching, research, and community service	There is a significant relationship between academic attitudes toward knowledge sharing and the intention to share knowledge.	Empirical Study
Skaik and Othman (2014)	To investigate how the application of knowledge sharing between academics	The results of the study show that intention influences knowledge-sharing behavior. Meanwhile, controllability does not affect knowledge intention.	Empirical Study
Yeon *et al*. (2016)	To investigate what factors influence knowledge-sharing intention and behavior	The results of the study show that cognitive capital and relational capital affect individual intentions in sharing knowledge, meanwhile. structural capital is not	Empirical Study

Source: Author Collaboration

2.2. Hypotheses Development

Individual Factors

Several researchers suggest that individual factors have an important role in determining the success of knowledge-sharing activities and how individual behavior is in carrying out knowledge-sharing activities or better known as knowledge-sharing behavior (Watpipatpong, 2009; Bulan & Sensuse, 2012; Yogeesha & Krishna, 2013).

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Communication both verbally and non-verbally or in writing is one of the individual factors that influence knowledge-sharing behavior (Watpipatpong, 2009; Yogeesha & Krishna, 2013). The ability to communicate both verbally and in writing is an indicator of an individual's ability to determine the success of knowledge-sharing activities with other individuals.

Bulan and Sensuse (2012) suggest that motivation and desire to share are important individual factors that influence knowledge-sharing behavior. The motivation to share knowledge is important, specifically when the knowledge shared is tacit knowledge, since tacit knowledge is more difficult to share than explicit knowledge (Gagne, 2009). Likewise, the desire to share that is owned by an individual will have a positive influence on knowledge-sharing activities (Hooff *et al*., 2004). The desire and ability of individuals to share have a significant influence on knowledge-sharing behavior so in this study, it is hypothesized:

H1: Willingness to share influences knowledge-sharing behavior
H2: Ability to share influences knowledge-sharing behavior

Classroom Factors

Another factor that supports knowledge-sharing activities and influences a person's knowledge-sharing behavior is organizational factors which in this study specifically refer to class factors (Moon & Sensuse, 2012). Class factors are related to lecturer support and the level of competition that occurs in the class (Yogeesha & Krishna, 2013). Lecturer support has a significant influence on students' knowledge-sharing behavior. The lecturer's role is to create a healthy learning environment and process through a strong attachment to students during the learning process. Strong engagement will motivate students to be involved in knowledge-sharing activities during the learning process, especially during discussions. In other words, the lecturer's ability to manage lectures will affect how students behave during the learning process or influence student knowledge-sharing behavior.

Another determining factor is the level of competition in the class which has a negative influence on knowledge-sharing behavior. There is a tendency, for a student not to want and does not willing to share knowledge since he is afraid that he will be competed or even lose when compared to another student. Knowledge is an intellectual asset and a source of competitive advantage for the individual (Yogeesha & Krishna, 2013). The individual's competitive advantage becomes the determining factor of whether a person will have superior performance compared to others. Both lecturer support and the level of competition between students have an influence on knowledge-sharing behavior, so in this study, the hypothesis is as follows:

H3: Lecturer support influences knowledge-sharing behavior
H4: Degree of competition influence knowledge-sharing behavior

Technological Factor

Several researchers suggest that technology is a determining factor for the success of knowledge-sharing activities (Bekele *et al*., 2011; Siddique *et al*., 2011; Tsai *et al*., 2013). Technology, specifically referring to information and communication technology is a mediator in knowledge-sharing activities. Information and communication technology is an important channel that connects one individual to another. Information and communication technology are also important in facilitating the interaction of data and

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processes in knowledge-sharing activities. In addition, information and communication technology also play a role in the process of solving problems and making decisions in an organization (Bekele *et al*., 2011; Tsai *et al*., 2013).

The study conducted by Siddique *et al*. (2011) aims to investigate the role of information technology, beliefs, and culture in supporting knowledge-sharing activities and the study results prove that information and communication technology has a significant influence on knowledge-sharing activities. Hooff *et al*. (2003) argued that information and communication technology has a significant contribution to facilitating connectivity between individuals. The connectivity referred to in this study is the ability of individuals as members of a social system to interact and construct direct contact with other individuals. In addition, information and communication technology has an important role as a facilitator who can provide support and encouragement to increase knowledge-sharing activities and make these activities easier and more effective (Riege, 2005). In the end, the ease and effectiveness will affect individual knowledge-sharing behavior, so in this study, the hypothesis is as follows:

H5: Technological support influences knowledge-sharing behavior.

Cultural Factors

Al-Alawi *et al*. (2007) define culture as the assumptions that form the basis and are shared within the organization through the learning process. Culture plays an important role in the organization to deal with changes in the internal and external environment of the organization. In addition, culture also plays an important role in the process of solving problems faced by the organization through internal integration within the organization so that members of the organization can obtain effective and appropriate problem-solving.

In relation to knowledge-sharing activities in organizations, culture also has a significant role in supporting the success of knowledge-sharing activities and influencing how individuals behave in knowledge-sharing activities. Yu (2014) conducted an empirical study on the influence of culture on knowledge-sharing behavior. Culture in this study is identified as individualist and collectivist behavior. In an individualistic culture, individuals behave based on personal interests and preferences, individuals tend to be independent and self-fulfillment and self-sufficiency become important things. In contrast, in a collectivist culture, group interests take precedence over individual interests.

The study conducted by Yu (2014) shows that both individualism and collectivism orientations have a significant positive effect on knowledge-sharing behavior. The study findings show that collectivism-oriented individuals have a greater tendency to share knowledge than individualism-oriented individuals, therefore this study develops the following hypothesis:

H6: Individualism influences knowledge-sharing behavior
H7: Collectivism influences knowledge-sharing behavior

3. METHODOLOGY

Purposive sampling method with the criteria students of the Management program as the target respondents is used to select the sample. Data collection was carried out through the online survey method using Google form and the data collected was cross-sectional data, namely research data conducted at a certain time involving many respondents.

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Independent variables consist of individual factors (willingness to share and ability to share), class factors (lecturer support and degree of competition), technological factors (technology support), and cultural factors (individualism and collectivism). The dependent variable in this study is knowledge-sharing behavior. The research instrument was adopted from studies conducted by Wangpipatwong (2009), Yogeesha & Krishna (2013), and Al Kurdi *et al*. (2018) with a measurement scale using a 5-point Likert Scale, where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

Validity and reliability testing was carried out to determine the research instrument quality. An instrument is said to be good or valid if it can measure the data studied appropriately (Hair *et al*., 2006). The validity test in this study was carried out using Product Moment Correlation. Reliability testing to determine the consistency of the test results under different conditions for each statement item in this study used Cronbach's Alpha with a Rule of thumb > 0.6 (Hair *et al*., 2006; Sekaran, 2003).

Hypothesis testing is carried out using multiple linear regression analysis to predict the effect of several independent variables (X) on the dependent variable (Y). Before testing the hypothesis with multiple linear regression methods, testing for violations of classical assumptions includes heteroscedasticity tests, multicollinearity tests, and normality tests.

4. FINDINGS

4.1. Respondent Profile

The respondent's profiles involved in this study are summarized in Table 2. Based on the results of data analysis, information was obtained that the majority of respondents in this study were 61 male students (55%) and 45 female students (45%). Current student status based on place of residence can be identified as follows: 62 students still live at their parent's house (55.9%), and 38 students live in a boarding house (34.2%). The majority of students involved in this study were 15-20 years old with a total of 75 students (66.7%) and 37 students aged between 21-35 with a total of 37 students (33.3%). Based on preferences for information channels, 99 students (88.3%) said they preferred the internet, 1 student (0.9%) library literature, 8 students (7.2%) lecturers, and 4 students (3.6%) from friends.

Regarding the more desirable information channels, 88 students (79.35%) prefer face-to-face, 18 students (16.2%) prefer online conversations, 3 students (2.7%) prefer email, and 2 students (1.8 %) voted by telephone. Regarding the time sharing of information and knowledge carried out by students, 79 students (71.2%) answered when doing assignments with fellow classmates, 5 students (4.5%) answered when working on group assignments with group members, 20 students (18%) answered on during class discussions, and 7 students (6.3%) answered others but there was no explanation in more detail. Based on the motivation of students to do knowledge sharing, 69 students (61.3%) confirmed they shared with each other, 34 students (30.6%) confirmed they helped each other, 7 students (6.3%) confirmed they were self-satisfied, 1 student (0.9%) confirmed they accepted rewards or rewards, and 1 student (0.9%) stated otherwise. Based on obstacles, 32 students (28.8%) confirmed they were afraid of being considered a show-off, 65 students (58.5%) confirmed they were afraid of giving wrong information, 10 students (9%) confirmed they lacked confidence, and 4 students (3.6%) confirmed they did not know what to share.

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Table 2. Respondent Profile

Characteristics	Criteria	Frequencies	Percentage
Gender	Male	61	55
	Female	50	45
Status of Residential	Lives with parents	62	55.9
	Boarding house	38	34.2
	Apartments	4	3.6
	Own house	2	1.8
	Others	5	4.5
Age	15-20 years old	74	66.7
	21-25 years old	37	33.3
Information Preferences	Internet	99	88.4
	Library Literature	1	0.9
	Lecturer	8	7.2
	Friends	4	3.6
Information Channel	Face to face	88	79.4
	Online conversation	18	16.2
	Email	3	2.7
	Telephone	2	1.8
Communication Time	When working on assignments with fellow friends	78	71.2
	When working on group assignments with group members	5	4.5
	During discussions in class or laboratory	20	18
	Others	7	6.3
Motivation	Learn from each other	69	61.3
	Help each other	34	30.6
	Self-satisfaction	7	6.3
	Receiving rewards or rewards	1	0.9
	Others	1	0.9
Barrier	Fear of being considered a show-off	32	26.8
	Fear of giving wrong info	65	58.5
	Lack of self-confidence	10	10
	Don't know what to share	4	4

Source: Processed Data

4.2. Statistic Descriptive

Table 3 summarizes the characteristics of the respondents' answers to each statement item that measures each research variable. Based on the results of data processing using descriptive statistics, it was obtained information on the average answers given by respondents for the variables of willingness to share (3.74-3.95), ability to share (3.49-3.58), and lecturer support (3.77-4.03). degree of competition (2.82-3.32), technology support (4.23-4.35), individualism (3.12-3.59), collectivism (3.60-4.15), and knowledge sharing behavior (3.57-4.00).

Table 3. Descriptive Statistics

Variables	Mins	Max	Mean Range
Willingness to share	3	5	3.74 - 3.95
Ability to share	1	5	3.49 - 3.58
Lecturer Support	2	5	3.77 – 4.03
Degree of Competition	1	4	2.82 - 3.32
Technology Support	1	5	4.23 - 4.35
Individualism	1	5	3.57 – 4.00
Collectivism	1	5	3.26 - 3.59
Knowledge Sharing Behavior	2	5	3.60- 4.15

Source: Processed Data

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4.3. Validity and Reliability Testing

Table 4 summarizes the results of validity and reliability testing. Based on the results of validity testing with Pearson Correlation and reliability testing with Cronbach Alpha, it can be concluded that there are three statement items, 1 question each from the degree of competition (I feel my classmates are my competitors), collectivism (my friend's success is very important to me) and knowledge sharing behavior (I freely share information that will improve the academic performance of my classmates). The results of the loading factor for each variable are as follows: willingness to share (0.775 - 0.862), ability to share (0.757 - 0.809), lecturer Support (0.829 - 0.896), degree of competition (0.383 - 0.940), technology support (0.837 - 0.849), individualism (0.358 -0.413), collectivism (0.520 - 0.827), and knowledge sharing behavior (0.500 - 0.827). While the Cronbach Alpha values for each variable are as follows: willingness to share (0.673), ability to share (0.753), lecturer support (0.810), degree of competition (0.623), technology support (0.784), individualism (0.695), collectivism (0.768), and knowledge sharing behavior (0.678).

Table 4. Validity and Reliability Testing

Variables	R count	Exclude	Cronbach Alpha
Willingness to share	0.775 - 0.862	0	0.673
Ability to share	0.757 - 0.809	0	0.753
Lecturer Support	0.829 - 0.896	0	0.810
Degree of Competition	0.383 - 0.940	1	0.623
Technology Support	0.837 - 0.849	0	0.784
Individualism	0.358 -0.413	0	0.695
Collectivism	0.520 - 0.827	1	0.768
Knowledge Sharing Behavior	0.500 – 0.827	1	0.678

Source: Processed Data

4.4. Hypotheses Testing

Table 5 summarizes the results of testing the hypothesis regarding the effect of willingness to share, ability to share, lecturer support, degree of competition, technology support, individualism, and collectivism on knowledge-sharing behavior. Prior to testing the hypothesis, testing of violations of the classical assumptions which included normality tests, multicollinearity tests, and heteroscedasticity tests had been carried out on the research model. The normality test was carried out using the normal probability plot and the points are close to the diagonal line, so it can be concluded that the residual data is normally distributed. Multicollinearity testing to test whether the independent variables have a relationship or not with each other.

Table 5. Hypotheses Testing

Model	Coef. Std. Error	Std. Coef. Beta	t	t-sign	F	F-sign	Adj. R^2
Constant	.152	.478	.319	.751	11.407	.000	.398
Willingness to share	.069	-080	.862	.391			
Ability to share	.190	.065	2.936	.004			
Lecturer Support	.187	.076	2.472	.015			
Degree of Competition	.009	.054	.172	.864			
Technology Support	.078	.085	.923	.358			
Individualism	-.029	.065	-.452	,652			
Collectivism	.421	.105	4.021	.000			

Source: Processed Data

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The test results show that the VIF value is below 10 with a tolerance value of <0.1 which indicates that the independent variables in this study have no relationship with each other, therefore it can be concluded that the regression model does not have multicollinearity. The heteroscedasticity test was carried out to test whether the regression model has similar or unequal variances between one observation and another. The test results with the scatterplot show that the points spread randomly and are scattered both above and below zero on the Y-axis so it can be concluded that there is no heteroscedasticity in this research model.

To investigate the effect of each, a partial test was carried out which was seen from the t value and t significance, if the test results had a significance value <0.05, it could be concluded that was accepted. The results of hypothesis testing with multiple linear regression showed that of the six hypotheses tested in this study, only three hypotheses were supported, namely ability to share (t-sign=.004), lecturer support (t sign=.015), and collectivism (t -sign=.004) has a significant effect on knowledge sharing behavior. While the other four hypotheses, namely willingness to share (t sign=.391), degree of competition (t sign=.864), technology support (t sign=.358), and individualism (t sign=.652) have no significant effect on knowledge-sharing behavior.

Based on the simultaneous test results, the value of F = 11,407 is obtained with a significance level of = .000 so that it can be concluded that the independent variables include willingness to share, ability to share, lecturer support, degree of competition, technology support, individualism, and collectivism simultaneously influence knowledge sharing behavior. The results of the test for the coefficient of determination indicated by the adjusted R2 value of .398 means that 39.8% of knowledge-sharing behavior can be explained by the variables in the model, while the remaining 61.2% is explained by other factors outside the research model.

4.5. Discussion

The results of hypothesis testing indicate that the variables of willingness to share, lecturer support, and collectivism have a significant influence on knowledge-sharing behavior. This finding supports previous studies such as those conducted by Wangpipatwong (2009), Yogeesha & Krishna (2013), and Al Kurdi *et al*. (2018). The willingness to share knowledge variable is influencing knowledge-sharing behavior among students since without the desire to share knowledge-sharing activities between students, it will be difficult to achieve.

During the period of online learning during the Covid-19 pandemic when students had limitations in the interacting face to face, the motivation to carry out knowledge-sharing activities certainly became higher and the desire to increase knowledge-sharing activities also increased. Likewise, the role of lecturers in the knowledge-sharing process such as through giving group assignments, individual assignments, and class discussions will encourage students to increase knowledge-sharing activities. Related to cultural aspects, collectivism is a characteristic of Indonesian society compared to individualism. That's why in this study collectivism has a significant influence on knowledge transfer behavior. On the other hand, individualism has no significant effect on knowledge-sharing behavior.

The results of the hypothesis testing regarding the ability to share do not have a significant effect on knowledge-sharing behavior and contradict the results of previous studies. It can be explained by the answers given by respondents regarding the obstacles in their knowledge-sharing activities. Based on the results of data processing, it can be concluded that fear of giving wrong information, fear of being seen as a show-off, fear of

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giving wrong information, and not knowing what to share are the most common obstacles experienced by students. Those answers are consistent with the statements regarding the ability to share related to the following questions: I feel it is not easy to convey thoughts using words, I have the confidence to convey knowledge to classmates, and I have confidence that the knowledge I have sharing can increase the knowledge of classmates has an average answer of 3.49 - 3.58 which can be considered quite low.

The degree of competition variable has an average answer between 2.82-3.32 indicating that more respondents disagree with the statement items used to measure the level of competition between students. Some of the items asked included the following questions: I feel my study results depend on the relative performance of my classmates, I feel my classmates have the potential to perform better academically than me, and I feel my classmates are my competitors. Based on the characteristics of the answers given by the respondents, it can be concluded that students see classmates more as collaborative partners than as competitors, especially in the learning process. Learning in groups with collaborative partners allows students to grow with the help of their classmates' strengths (Inada, 2023). It is also in line with the results of tests on cultural variables that collectivism has a significant effect on knowledge-sharing behavior, while individualism has no effect.

Technology support in this study has no significant effect on knowledge-sharing behavior and contradicts the findings of previous studies. It can be explained as follows: during the data collection period when students faced an online distance learning system due to the enactment of large-scale social restrictions and social distancing policies to suppress the rate of spread of the Covid-19 virus, problems of access to technology, connectivity, and mastery of technology became the most common problems encountered during the learning process. The location where students live is a determining factor for smooth access and connectivity during the learning process.

5. CONCLUSION

Based on the results of data processing, it can be concluded that there are three supported hypotheses, namely willingness to share, lecturer support, and collectivism which have a significant influence on knowledge transfer behavior. While the other four hypotheses including the ability to share, degree of competition, technology support, and individualism do not have a significant effect on knowledge-sharing behavior with several explanations as discussed in the discussion section.

This research has limitations, especially related to the respondents in this study who were dominated by students in one study program in one faculty so the research results cannot be generalized considering the large population of public and private tertiary institutions in Indonesia. Regarding the policy aspect, to encourage knowledge-sharing activities between students, it is necessary to have a reward policy such as appreciation or awards for students who have good academic achievements. students to engage in knowledge-sharing activities.

The results of the coefficient of determination testing are still quite low, therefore future research might add other research variables that affect knowledge-sharing behavior, for example, organizational knowledge capabilities, attitude, or motivation. Future research is expected to broaden the scope of research by involving a more varied sample involving several study programs, faculties, or universities in Indonesia.

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