doi: 10.36689/uhk/hed/2023-01-044

Knowledge Sharing among University Students: Current Practice and Perspectives

Tereza MICHALOVÁ*, Vladimíra HOVORKOVÁ VALENTOVÁ and Kateřina MARŠÍKOVÁ

Technical University of Liberec, Liberec, the Czech Republic; tereza.michalova@tul.cz; vladimira.valentova@tul.cz; katerina.marsikova@tul.cz

* Corresponding author: tereza.michalova@tul.cz

Abstract: Knowledge management and the process of knowledge-sharing gained even greater importance last few years due to the distance cooperation environment. A specific area within the topic is sharing of knowledge between university students as this approach and experience can be further reflected in their future employment. The paper aims to bring a literature review to analyse university students' knowledge-sharing behaviours and patterns and to test the findings on primary data of a selected group of university students. For the data collection, the online and paper questionnaire survey method was used, and descriptive statistics and selected tested hypotheses were used for their analysis. The paper also highlighted tools for knowledge sharing among students. The paper's major findings revealed that students are open to knowledge sharing in class and a study group. They are used to using online tools for knowledge sharing, and they have mainly one preferred. What motivates students the most to share knowledge is belongingness to the group. The study concludes that it is essential to support a knowledge-sharing environment at universities and encourage students to knowledge-sharing as it is a vital factor for their employment.

Keywords: knowledge sharing; learning; online environment; questionnaire survey; university students

JEL Classification: A22; D83; I23

1. Introduction

Knowledge management literature focused on knowledge sharing mainly discusses this topic among employees or organisations' members. Only a limited number of studies have investigated the knowledge-sharing practices of higher education students.

The importance of encouraging knowledge-sharing among students for employability and quality assurance is supported by the fact that students are an essential segment of society and the main driver of future growth and development. Therefore, there is a need to develop a better understanding of this topic by undertaking dedicated research on knowledge-sharing among university students. Furthermore, understand the multiple rationalities underlying these arrangements (Gamlath & Wilson, 2017; Yuen & Majid, 2007). For higher educational institutions, it is of the essence to encourage a collaborative learning environment to support learners' performance and promote knowledge acquisition. Collaborative learning (CL) is an educational teaching and learning approach involving learners working together to solve a

problem, complete a task, or create a product (Smith & MacGregor, 1993). This helps to develop a culture and attitude of knowledge sharing among university students. E-learning as an online environment has changed the learning approach by offering students and academics the ability to acquire and disseminate knowledge anytime and anywhere (Al-Emran & Teo, 2020; Salloum et al., 2019). Students' active and voluntary sharing is vital to successful collaborative learning. It means fostering a positive culture of knowledge sharing among students is essential. The trend of using social media in the education context is growing fast, particularly in student collaboration, as social media has the potential to increase users' knowledge through a facilitated knowledge-sharing environment (Rasheed et al., 2020). Students have been using social media for several purposes, mainly for collaborating, interacting with others, and searching for information.

Even though knowledge-sharing is known to positively affect both the holder and the recipient, sharing is sometimes not easy as various knowledge-sharing barriers exist (Ong et al., 2011). Students may adopt a mentality of knowledge hoarding because they consider such a practice a competitive advantage over other students. This is especially true if good academic performance has been accompanied by little academic rewards (e.g., scholarships), better job opportunities, or even the possibility of continuing higher education at more reputable universities in the future (Chin Wei et al., 2012). Moreover, university students will often be the future leaders in knowledge. As (Kalu et al., 2019) pointed out, knowledge sharing in the university environment incentivises further employees to share their knowledge to improve the group's performance and competitive advantage. Identifying factors that lead to not sharing with others would help to understand better and effectively manage the knowledge-hiding behaviour of students (Garg et al., 2021). The paper aims to map the current knowledge-sharing situation in higher education from the literature review and demonstrate findings in the behaviour of university students in a case of a selected sample of business students in the Czech Republic.

2. Literature Review

According to Fullwood et al. (2013) and Gamlath and Wilson (2022), universities play a crucial role in the knowledge economy by creating knowledge through research. They transmit it by teaching activities, disseminating research findings, and collaborations between industry and government. Knowledge generation and learning processes at both individual and organisational levels has transformed the university into a knowledge-intensive organisation. The supply of higher education graduates should respond to the global labour market needs (Bratianu et al., 2011; Brouwer and Jansen, 2019). According to Castaneda and Cuellar (2021), problem-solving, creative thinking, teamwork, decision-making, communication, negotiation, critical thinking, leadership, and creativity are some of the most essential skills in business education that can be developed through knowledge sharing.

The knowledge management (KM) is known as recognising, sharing, using, and practising knowledge within an organisation (Choi et al., 2020; Xuan, 2020). Another author identifies knowledge management as the creation, transfer and application of knowledge (Spender, 1996). Knowledge management depends on a number of core competencies, including

knowledge acquisition and storage, knowledge application, knowledge sharing, and knowledge creation (Alavi & Leidner, 2001).

Knowledge sharing (KS) is the process by which team members share task-related ideas, information, improvements, and suggestions with one another (Eze et al., 2013). Based on Han et al. (2022), knowledge sharing is a complex social interaction process that draws on formal and informal and mutual learning processes between individuals. It is a behaviour of giving knowledge to others and receiving it from others. Doing so requires the student or group of students to interact with each other through face-to-face or non-physical contact means (Chin Wei et al., 2012). Knowledge sharing is an everyday activity of students because they tend to exchange information through daily personal interactions with their peers and academic instructors (Ong et al., 2011).

As Gamlath and Wilson (2022, p. 6) stated: Recent advances in technology and the increase in the importance of online and blended approaches to learning and teaching have made possible the design of innovative approaches to knowledge sharing within the curriculum. Collaborative learning through group projects and peer assessment is one of the ways universities have integrated knowledge sharing into their curricula. The knowledge that students create and share through these collaboratively based curricular activities is directly related to the unit's learning objectives, program goals, and graduate attributes and is, therefore very much explicit (Gamlath & Wilson, 2022). In addition, there are concerns about dysfunctional behaviour in groups and student concerns about the fairness of group assessments. Group assessment tasks are a particular case because they often involve working together with students with different motivation levels and abilities. Assigning a common grade to all group members encourages high-achieving students to take on a non-proportional share of the task load while encouraging group members who are not sufficiently engaged in the topic (Hannaford, 2017). Students' ability to share knowledge is linked to the corporate world's interest in recruiting employees who can communicate information to others in a clear form (Begoña & Carmen, 2011; Ghadirian et al., 2014). Moreover, knowledge sharing is an essential aspect of universities' graduate skills and employability strategy, where the employability of graduates is a significant determinant of a university’s success (Collet et al., 2015).

Knowledge sharing behaviour of university students has been examined in several studies. Hassandoust et al. (2011) examined behavioural factors concerning virtual knowledge sharing among Malaysian Multimedia University students. Findings of the study showed that trust, expected reciprocal relationship and willingness to share knowledge are significant indicators of an individual's intention to share knowledge. Moreover, students who participated in the virtual knowledge-sharing activity were motivated to contribute knowledge to others due to their positive attitude towards knowledge-sharing and institutional factors. Brouwer and Jansen (2019) investigated various determinants of knowledge sharing and their effects on knowledge-sharing among Dutch`s university psychology students. Results of the study showed that altruism, trust, and belongingness indirectly influence the personal benefits of knowledge sharing through social interaction.

Other authors have examined the impact of various social networking tools, including chat and discussion, content creation, file sharing and entertainment on knowledge sharing. They concluded that chatting, discussions, and file sharing were significant predictors of knowledge-sharing, whilst content creation and entertainment had a marginal effect on knowledge-sharing (Eid & Al-Jabri, 2016). Castaneda and Cuellar (2021) stated in their study that knowledge sharing in business education is a growing research topic and identifying the best tools for sharing and building knowledge in the education process of business education students is ongoing. In the results chapter there are described the most used online tool by Czech students on the example of the Faculty of Economics. Table 1 summarises selected studies that pay attention to knowledge-sharing among university students.

Table 1. Knowledge sharing among university students – secondary data examples (own elaboration based on Brouwer and Jansen (2019), Dezdar (2017), Eid and Al-Jabri (2016), Hassandoust et al. (2011), Kalu et al. (2019), Ngoc Hoi (2021), and Yuen and Majid (2007))

Author and year of the research	Respondents	Key findings
Yuen and Majid (2007)	180 undergraduate students from three public universities in Singapore	Respondents indicated positive attitude towards knowledge sharing and appreciated its importance in peer learning.
Hassandoust et al. (2011)	250 students from various faculties of the Cyberjaya campus of Multimedia University Malaysia	Trust, expected reciprocal relationship and willingness to share knowledge are significant indicators of an individual's intention to share knowledge.
Eid and Al-Jabri (2016)	308 tertiary students of the University in Saudi Arabi	Chatting and discussions and file sharing were significant predictors of knowledge sharing.
Dezdar (2017)	160 postgraduate students in Iranian public universities	Humility, interpersonal trust, reputation, self-efficacy and enjoyment of helping others are factor influencing knowledge-sharing of the students.
Brouwer and Jansen (2019)	183 Dutch university students of the first-year psychology	Altruism, trust, and belongingness indirectly influence the personal benefits of knowledge sharing
Kalu, Useido, Chidi-Ka;u (2019)	27 students of Electrical/Electronic Engineering Technology Students	Social media channels are the most effective for knowledge sharing, trust motivates students in sharing knowledge. Low self-esteem and illiteracy are the barriers.
Ngoc Hoi (2021)	399 higher education students at university in Southern Vietnam	Facebook has pedagogical potential and provides the pedagogical resources students need to engage in knowledge sharing

3. Methodology

The authors of the paper present the topic of knowledge-sharing in the university environment in the literature review and primary data of a selected Czech university students. The data used for research and further analysis was collected through an online questionnaire in Survio. We used a combination of CAWI method (Computer-Assisted Web Interviewing) and printed questionnaires to map the topic of knowledge sharing among university students. The population consisted of all students of the Faculty of Economics of the Technical University of Liberec, the Czech Republic. The survey was conducted among students studying for bachelor's and master's degrees. The presented results concern only full-time students.

The questionnaire was created based on systematic literature review findings and a pilot qualitative survey done as a semi-structured interview. It consisted of 28 questions, which were available either electronically in the Survio platform or physically during selected lessons. The total number of participating students was 379, and the overall return rate was 57.3%. The survey was conducted during the months of May and June 2021.

Descriptive statistics were used to analyse the data, and selected hypotheses were tested. The data were tabulated into frequency tables and graphically portrayed. Each response scale was also characterised using selected characteristics of the central tendency (mode, median, arithmetic mean) and variability (standard deviation, coefficient of variation). These characteristics are presented, for example in Hindls et al. (2018). Spearman's test of independence was used to test the presented hypotheses, which is suitable for examining relationships between ordinal variables. The value of the Spearman coefficient can be calculated according to (Pecáková, 2011):

$$r_S = 1 - \frac{6\sum_i^n d_i^2}{n(n^2-1)} \quad (1)$$

where $\boldsymbol{d_i^2}$ are the differences of the ordinal numbers of the ordered values of the variable X1 and the variable X2, n is the sample size.

The null hypothesis of the Spearman test assumes that the two ordinal variables are independent. IBM SPSS Statistics Base statistical program was used to test the observed hypotheses.

4. Results

The results of the analyses that arose from the analysis of the questions relevant to the topic discussed in the introduction of this paper are presented in this chapter. First, the authors focus on the individual questions of the questionnaire, and in the next section, the hypotheses are evaluated. In the introduction, it is also necessary to explain some of the terms that appeared in the questionnaire. ”Year of study” (in other words “class” means a group of students who have started the current study program together with the respondent). ”Study group” indicates one or more students with whom the respondent cooperates during the study. Within the group, the respondent cooperates, complements each other, and works on a common result. The study group does not have to be the same people during the entire study program or in all studied courses.

4.1. Main Outcomes of the Questionnaire Survey

There were several statements in the questionnaire. The overview of them is given in the Tables 2 and 3. The first statement analysed (marked as 6_1) is: "My study program facilitates knowledge sharing between students". The responses for this and all the other statements are Likert scale values, where 1 means strongly disagree, and 5 means strongly agree. As seen in Table 2, the largest number of students chose a neutral answer of 3. However, a larger proportion of students strongly or rather agree with the statement (40.4%) than those who strongly or rather disagree (22.7%). It can therefore be concluded that the study programmes are well adapted to knowledge sharing.

Table 2. Frequency table for the analysed statements – relative frequencies in %

Scale	6_1	7_1	7_2	7_3	10_1	11_1	11_2	11_3	12_1	13_1	13_2	15_1	15_2	15_3	15_4	15_5	15_6
1	4.5	5.5	4.2	8.2	4.7	4.5	2.9	3.4	8.7	6.9	6.1	8.2	10.0	8.7	19.5	22.2	15.0
2	18.2	8.2	11.3	15.8	11.3	8.4	9.0	14.0	4.5	11.6	5.5	10.6	18.2	16.1	21.6	21.4	26.9
3	36.9	15.0	23.5	29.8	24.8	9.5	14.2	24.8	4.7	24.3	15.6	25.9	25.9	26.6	30.1	27.2	28.8
4	30.6	29.8	32.5	27.2	39.6	25.1	28.5	33.2	17.2	27.2	23.7	31.1	24.3	25.1	15.0	15.3	16.9
5	9.8	41.4	28.5	19.0	19.5	52.5	45.4	24.5	64.9	30.1	49.1	24.3	21.6	23.5	13.5	14.0	12.4

Table 3. Values of selected descriptive statistics for the analysed statements

Statement	Arithmetic mean	Mode	Median	Std. deviation
6_1	3.23	3.0	3.0	1.003
7_1	3.93	5.0	4.0	1.177
7_2	3.70	4.0	4.0	1.123
7_3	3.33	3.0	3.0	1.187
10_1	3.58	4.0	4.0	1.070
11_1	4.13	5.0	5.0	1.160
11_2	4.04	5.0	4.0	1.102
11_3	3.61	4.0	4.0	1.101
12_1	4.25	5.0	5.0	1,264
13_1	3.62	5.0	4.0	1.217
13_2	4.04	5.0	4.0	1.188
15_1	3.53	4.0	4.0	1.198
15_2	3.29	3.0	3.0	1.267
15_3	3.39	3.0	3.0	1.245
15_4	2.82	3.0	3.0	1.290
15_5	2.78	3.0	3.0	1.328
15_6	2.85	3.0	3.0	1.230

The next statement was "I am willing to share knowledge within my year of study (class)" (marked as 7_1). The range of responses is the same as in the previous case. As can be seen in Table 2, the highest proportion of responses is recorded for answer 5, which indicates strong agreement (41.4%) and 29.8% of students rather agreed. Thus, in summary, 71.2% of students indicated agreement with the statement, which means that most of them are willing to share knowledge within the class.

Another statement (marked as 7_3) was focused on finding out whether the class environment made students share their knowledge more with other students. As we can see in Tables 2 and 3, the most common response was neutral 3 (29.8%). However, if we look at the

proportion of those who gave some degree of agreement with the statement, we can see that there are significantly more of them than those who chose some degree of disagreement as their response (46.2% vs. 24.0%). Thus, the class's learning environment appears to be some motivator to share knowledge, although not significantly.

The most frequently occurring answer for the statement "My study programme facilitates group work" (marked as 10_1) is 4 - rather agree (39.6%). The answer 5 is also quite well represented; together with 4, it makes up 59.1% of the total number of answers (compared to 1+2, which is 16.0%). Thus, we can summarise that most students believe that their study programme supports or rather supports group work.

For the statement "I am willing to share my knowledge in my group" (marked as 11_1), the most frequent answer was 5 - strongly agree (52.5%). Together with answer 4, it makes up a significant 77.6% of the total responses. Thus, students are strongly willing to share knowledge within their study group. Let's compare these results with the willingness to share knowledge within the class. This willingness to share knowledge is much higher within the smaller study group than within the large group, which is the class - the difference can be seen in Figure 1 below.

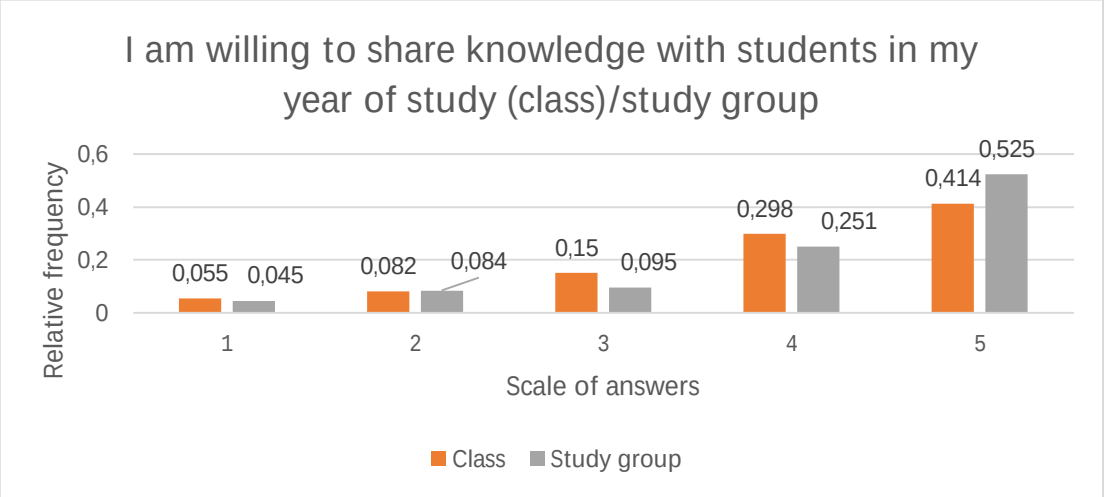

Figure 1. Comparison of willingness to share knowledge within a class/study group

The statement "In my group, it is common to share knowledge" (marked as 11_2) was the one that students completely agreed with most (45.4%). If we add to this the proportion of those who rather agreed, we get a respectable 73.9%. Again, most examined students are used to sharing knowledge with each other within their study groups. The other statement is "My group environment has made me increase my knowledge sharing" (marked as 11_3). The most frequent answer is 4 - rather agree. Together with answer 5, it makes up 57.7% of the responses. Thus, a supermajority of students has an environment within their study group that motivates them to share knowledge.

For the statement "I am willing to share knowledge with students I know well" (marked as 12_1), the most frequent answer is 5 - strongly agree (64.9%). Together with the value of 4 (rather agree), it represents 82.1% of the answers. Thus, the great majority of students are

willing to share their knowledge with those students with whom they are well-known. The median and arithmetic mean values are very high, as shown in Table 3.

The other two statements focused on determining whether it is common for a student to share knowledge within his/her class/group (marked as 13_1 and 13_2). The most frequent answer in both cases is 5, i.e. I strongly agree with the statement "I usually share knowledge with students within my class/group". The median value in both cases is 4. A slight difference between the perception of the class and the group can be observed in the value of the arithmetic mean, where the mean response for the class is 3.62, whereas for the group, it is 4.04. The differences in the responses for the two statements are shown in Figure 2. It can also be seen from the frequency distribution table (see Table 1), wherein a cumulative way, the answer 4+5 for the class makes up 57.3% of the responses. At the same time, for the group, it is 72.8%.

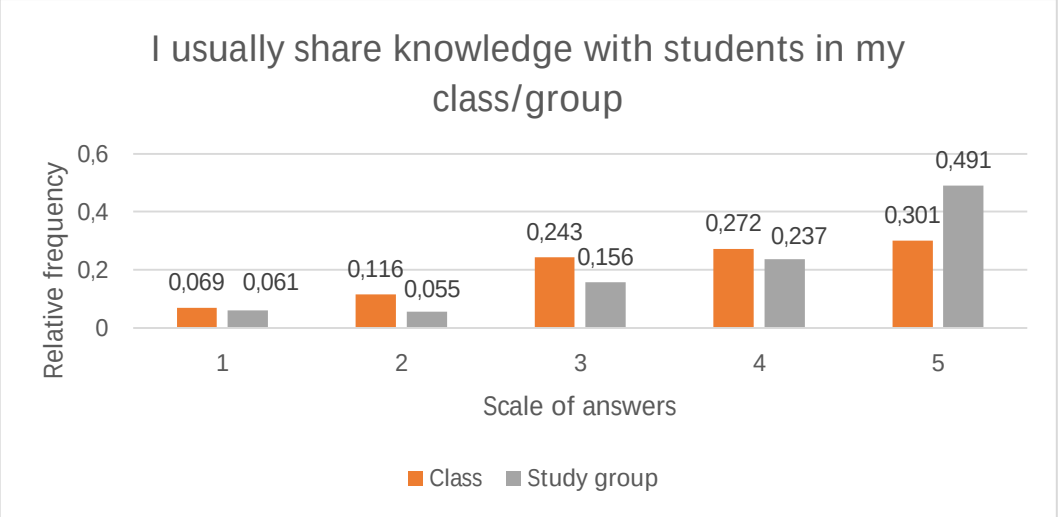

Figure 2. Comparison of knowledge sharing habits within a class/study group

The following six statements relate to the willingness to share knowledge during a coronavirus crisis. The first of these statements says: "My study program facilitated knowledge sharing during the corona situation" (marked as 15_1). The largest number of students chose to answer 4 (I rather agree – 31.1%). A total of 55.4% of the respondents somewhat agreed with the statement. Thus, more than half of the students felt that their study programme rather or completely supported knowledge sharing during the coronavirus crisis.

The most frequently occurring response for the statement “It is more knowledge sharing in my class during the corona situation" (marked as 15_2) is 3. The median value is 3, and the arithmetic mean is slightly greater than 3. This could be interpreted as that in some aspects of the study, the coronavirus situation has caused more intensive knowledge sharing; in others, knowledge sharing was already occurring before, and the coronavirus situation has not affected anything new. The third statement in this group is, "It is more knowledge sharing in my group during the corona situation" (marked as 15_3) we can see that the most frequent answer here is also 3, the median is also 3, and the arithmetic mean is 3.39. This means that, again, in some aspects, there was a real increase in knowledge sharing within the group; in

others, there was no change. However, a higher proportion of those who agreed or rather agreed with the statement (48.6%) than those who disagreed or rather disagreed (24.8%).

The fourth statement in this group is the statement, "The corona situation has changed my intention for knowledge sharing in my class" (marked as 15_4). It is also interesting to note that here the cumulative proportion of those who disagreed or strongly disagreed with the statement (41.2%) exceeds those who strongly or strongly agreed (28.7%). The result can be explained in a similar way to the previous statements. In some cases, the willingness to share one's knowledge with students changed over the class; in others, there was no change.

The penultimate statement in this group is the statement, "The corona situation has changed my intention for knowledge sharing in my group" (marked as 15_5). The response that is recorded most frequently is again 3. The results for this statement replicate quite well the results for the previous statement, which relates to sharing knowledge with students in the class. Thus, no significant difference in responses is seen here. The statement "After the corona situation, I prefer to do my study work more individually" (marked as 15_6) had the most frequent response of 3. However, it is interesting to note that total disagreement or some disagreement with the statement is recorded by 42% of respondents. In contrast, complete or partial agreement with the statement is recorded by only 29.3% of respondents.

Another analysed question focused on the frequency of use of different online communication tools in the study context. Here, the response scale for each tool was set so that 1 meant using the tool daily, value 2 meant using the tool quite often, value 3 meant using the tool sometimes, value 4 meant using the tool rarely, and value 5 meant not using the tool at all. The percentage of responses for each online communication tool is shown in Table 4, and a list of selected descriptive statistics for each online communication below further supplements the information.

Table 4. Frequency table for the question on frequency of use of different online communication tools – relative frequencies in %

Scale of Answers	Google Meet	MS Teams	Zoom	E-mail	Social Networks	Skype	Slack	Instant Messaging
Daily	48.0	3.4	1.8	53.6	71.0	2.4	0.8	2.9
Quite Often	31.7	6.3	4.2	25.6	17.2	1.1	0.5	1.3
Sometimes	7.1	7.9	7.7	14.8	4.0	4.5	1.6	1.3
Rarely	6.9	46.4	60.7	1.6	3.4	69.1	76.5	74.3
I do not use it at all	6.3	35.9	25.6	4.5	4.5	23.0	20.6	20.1

The presented data show that the most used online communication tool is social networks (WhatsApp, Messenger, etc.), followed by email and then Google Meet. For all the remaining tools, an average answer greater than 4 is recorded, meaning use rarely or not. Using of Google Meet also originates from the university's online communication culture. Google tools were selected during the Covid-19 pandemic as a common platform for communication for respondents.

4.2 Verification of the Hypotheses Presented

Selected analysed statements were further tested, and results are presented in this subchapter. As mentioned above, one of the research team's hypotheses was that the more the study programme facilitates collaboration, the more students feel affiliated with their class or group. To test these hypotheses, the statements "My study programme is facilitating knowledge sharing among students" and " I feel a strong sense of belonging with my class/group" were used. The responses for both statements are Likert scale values – thus, both can be classified as ordinal variables.

First, the hypothesis concerning belonging to the class (year of study) was tested. The Spearman's rank correlation coefficient was calculated, which is 0.36, and its significance was tested. The p-value was less than 0.01 (specifically 5.0361·10-13). Therefore, the hypothesis of independence of the two scales was rejected. The value of Spearman's coefficient proves that the more the study programme facilitates collaboration, the more students feel an affiliation with their class. However, this dependence is rather weaker.

If we look at the test that concerns the study group, here the P-Value is also less than 0.01 (specifically 2.7759·10-20). Therefore, we also reject the null hypothesis of no relationship between the variables analysed. The value of Spearman's coefficient here is 0.450, indicating a moderately strong relationship. Thus, here too, we can conclude that the claim that the more the study programme facilitates collaboration, the more students feel an affiliation with their group has been proven. This dependence is stronger than in the case of belonging to the class. In fact, this trend is evident in all the responses related to the class and the group.

5. Discussion and Conclusions

Kalu et al. (2019) state that thanks to knowledge-sharing, students could learn to formulate ideas and opinions more effectively by communicating them with others. This helps to prepare students for their future careers. Therefore, it is important to pay attention to the knowledge-sharing and supportive environment at universities to effectively prepare future graduates to manage and share their knowledge in their future jobs.

The more the students feel cohesiveness with the class or group, the more they are willing to share their knowledge. The collaborative learning approach within the class even more supports it. Presented data confirmed that students feel a sense of belonging when the study program is set up for collaboration and supports it. There is more belonging in the study group than in the study year, and the belongingness and willingness to share are much stronger with the group. Online tools were confirmed as frequently used by students, and the choice of the tool depends on the university environment and culture. Therefore, the most preferred tool by respondents was identified as Google tools.

Overall, knowledge-sharing was tested for the Faculty of Economics, and the results confirmed the findings. However, the authors are aware of the limitations of the study. Results can only be generalised for the other university students except for the population of students from the Faculty of Economics, TUL. The data show that if they can manage and share knowledge already during their education, they will be better prepared for cooperation in the company. Moreover, if the students feel a sense of belonging to the group and study year, this

could also help deepen the relationship with the university. It is essential to support a knowledge-sharing environment at universities and encourage students to knowledge-sharing. The topic gives the potential for further research, and the authors extend their work and data collection to the international environment.

Acknowledgments: This paper was supported by the Internal Grant Competition of the Faculty of Economics of Technical University of Liberec under project called "International comparison of the knowledge-sharing process among students of selected universities using appropriate statistical methods ".

Conflict of interest: none.

References

Al-Emran, M., & Teo, T. (2020). Do knowledge acquisition and knowledge sharing really affect e-learning adoption? An empirical study. *Education and Information Technologies*, *25*(3), 1983–1998. https://doi.org/10.1007/s10639-019-10062-w

Alavi, M., & Leidner, D. (2001). Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. *MIS Quarterly*, *25*(1), 107–136. https://doi.org/10.2307/3250961

Begoña, M.-F., & Carmen, P.-S. (2011). Knowledge construction and knowledge sharing: A Wiki-based approach. *Procedia - Social and Behavioral Sciences*, *28*, 622–627. https://doi.org/10.1016/j.sbspro.2011.11.118

Bratianu, C., Miclea, A., Orzea, I., & Agoston, S. (2011). Inter-generational learning dynamics in universities. In *Proceedings of the European Conference on Knowledge Management, ECKM*.

Brouwer, J., & Jansen, E. (2019). Beyond grades: Developing knowledge sharing in learning communities as a graduate attribute. *Higher Education Research & Development*, *38*(2), 219–234. https://doi.org/10.1080/07294360.2018.1522619

Castaneda, D., & Cuellar, S. (2021). Knowledge Sharing in Business Education. *Sustainability*, *13*(7), 3657. https://doi.org/10.3390/su13073657

Chin Wei, C., Siong Choy, C., Geok Chew, G., & Yee Yen, Y. (2012). Knowledge sharing patterns of undergraduate students. *Library Review*, *61*(5), 327–344. https://doi.org/10.1108/00242531211280469

Choi, J., Ramirez, R., Gregg, D., Scott, J., & Lee, K.-H. (2020). Influencing Knowledge Sharing on Social Media: A Gender Perspective. *Asia Pacific Journal of Information Systems*, 30, 513–531. https://doi.org/10.14329/apjis.2020.30.3.513

Collet, C., Hine, D., & du Plessis, K. (2015). Employability skills: Perspectives from a knowledge-intensive industry. *Education + Training*, *57*(5), 532–559. https://doi.org/10.1108/ET-07-2014-0076

Dezdar, S. (2017). Promoting knowledge sharing in academic environments using non-monetary factors. *Library Review*, *66*(8/9), 595–611. https://doi.org/10.1108/LR-11-2016-0092

Eid, M. I. M., & Al-Jabri, I. M. (2016). Social networking, knowledge sharing, and student learning: The case of university students. *Computers & Education*, 99, 14–27. https://doi.org/10.1016/j.compedu.2016.04.007

Eze, U., Goh, G., Goh, C. Y., & Tan, T. (2013). Perspectives of SMEs on knowledge sharing. *VINE*, *43*(2). https://doi.org/10.1108/03055721311329963

Fullwood, R., Rowley, J., & Delbridge, R. (2013). Knowledge sharing amongst academics in UK universities. *Journal of Knowledge Management*, *17*(1), 123–136. https://doi.org/10.1108/13673271311300831

Gamlath, S., & Wilson, T. (2017). *Knowledge Sharing among University Students: A Review of Current Practices* (SSRN Scholarly Paper ID 2962616). Social Science Research Network. https://doi.org/10.2139/ssrn.2962616

Gamlath, S., & Wilson, T. (2022). Dimensions of student-to-student knowledge sharing in universities. *Knowledge Management Research & Practice*, *20*(4), 542–556. https://doi.org/10.1080/14778238.2020.1838961

Garg, N., Talukdar, A., Ganguly, A., & Kumar, C. (2021). Knowledge hiding in academia: An empirical study of Indian higher education students. *Journal of Knowledge Management*, *25*(9), 2196–2219. https://doi.org/10.1108/JKM-10-2020-0783

Ghadirian, H., Fauzi Mohd Ayub, A., Daud Silong, A., Binti Abu Bakar, K., & Mohammad Hossein Zadeh, A. (2014). Knowledge Sharing Behaviour among Students in Learning Environments: A Review of Literature. *Asian Social Science*, *10*(4). https://doi.org/10.5539/ass.v10n4p38

Han, S., Grace Oh, E., & "Pil" Kang, S. (2022). Social Capital Leveraging Knowledge-Sharing Ties and Learning Performance in Higher Education: Evidence from Social Network Analysis in an Engineering Classroom. *AERA Open*, 8, 23328584221086664. https://doi.org/10.1177/23328584221086665

Hannaford, L. (2017). Motivation in group assessment: A phenomenological approach to post-graduate group assessment. *Assessment & Evaluation in Higher Education*, *42*(5), 823–836. https://doi.org/10.1080/02602938.2016.1195787

Hassandoust, F., Logeswaran, R., & Kazerouni, M. F. (2011). Behavioral factors influencing virtual knowledge sharing: Theory of reasoned action. *Journal of Applied Research in Higher Education*, *3*(2), 116–134. https://doi.org/10.1108/17581181111198665

Hindls, R., Arltová, M., Hronová, S., Malá, I., Marek, L., Pecáková, I., & Řezanková, H. (2018). *Statistika v ekonomii*. Professional Publishing.

Kalu, C. O., Usiedo, B. A., & Chidi-Ka, E. I. (2019). *Knowledge Sharing Behaviours and Patterns Among Academic Students: A Case Study of Electrical Engineering Technology Students of National Institute of Construction Technology (NICT), Uromi, Edo State*.

Ngoc Hoi, V. (2021). Augmenting student engagement through the use of social media: The role of knowledge sharing behaviour and knowledge sharing self-efficacy. *Interactive Learning Environments*, 1–13. https://doi.org/10.1080/10494820.2021.1948871

Ong, H.-B., Yeap, P.-F., Tan, S.-H., & Chong, L.-L. (2011). Factors Influencing Knowledge Sharing among Undergraduate Students: A Malaysian Perspective. *Industry and Higher Education*, *25*(2), 133–140. https://doi.org/10.5367/ihe.2011.0035

Pecáková, I. (2011). *Statistika v terénních průzkumech* (2nd ed.). Professional Publishing.

Rasheed, M. I., Malik, M. J., Pitafi, A. H., Iqbal, J., Anser, M. K., & Abbas, M. (2020). Usage of social media, student engagement, and creativity: The role of knowledge sharing behavior and cyberbullying. *Computers & Education*, 159, 104002. https://doi.org/10.1016/j.compedu.2020.104002

Salloum, S. A., Al-Emran, M., Shaalan, K., & Tarhini, A. (2019). Factors affecting the E-learning acceptance: A case study from UAE. *Education and Information Technologies*, *24*(1), 509–530. https://doi.org/10.1007/s10639-018-9786-3

Smith, B., & MacGregor, J. (1993). What is Collaborative Learning? *Wash Cent News*, 7.

Spender, J.-C. (1996). Organizational knowledge, learning and memory: Three concepts in search of a theory. *Journal of Organizational Change Management*, 9, 63–79. https://doi.org/10.1108/09534819610156813

Xuan, V. N. (2020). Factors affecting knowledge sharing in enterprises: Evidence from small and medium enterprises in Vietnam. *Management Science Letters*, *10*(2), 469–478. https://doi.org/10.5267/j.msl.2019.8.023

Yuen, T., & Majid, S. (2007). Knowledge-sharing patterns of undergraduate students in Singapore. *Library Review*, 56, 485–494. https://doi.org/10.1108/00242530710760382