Factors Affecting University Students' Group Work Results

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Abstract: In the 21st century, working in groups is considered a basic yet essential aspect of higher education as it allows students to use expertise in solving issues; experience, improve efficiency, motivation, and attitude toward studying; enhance skills to prepare for future careers. This study aims to examine the determinants influencing university students' group work results. The research was conducted 372 students in different Economics Universities in Hanoi showed that Emotion Intelligence (EI), knowledge-sharing, organizing self-managed teams, internal conflict, and trust play a remarkable role in the group's final result, following by surveys and in-depth interviews. The study also reveals that Emotion Intelligence and knowledge-sharing determine the success of the group's work, while internal conflict is a factor that undermines efficiency.

Keywords: students' group work results, knowledge-sharing, Emotion Intelligence, self-managed teams, internal conflict, trust.

I. INTRODUCTION

A group is a combination of two or more than two interactive individuals [1] depending on each other to achieve common objectives [2]. With group members having the following characteristics [3, 4]: (1) have a shared collective identity; (2) have common objectives; (3) are interdependent in terms of their assigned tasks or outcomes; (4) have distinctive roles within the group; (5) are part of a larger organizational context that influences their work and that they, in turn, can influence.

Through positive interdependence, personal responsibility, which leads to the improvement in motivation. Students working in groups exhibit higher learning outcomes than students working alone [5–8]. Therefore, working in groups then becomes a central teaching aspect in niversity education [9].

Through the benefits in many practical contexts was the importance of Group working proved. Furthermore, many documents also confirm the advantages of working in groups[7]. Firstly, working in groups let students handle the work relating to using expertise, evaluating knowledge in order to solve a specific issue [10, 11]. Secondly, students shall have an opportunity to experience and acquire skill sets that they shall need in the future not only for their career but also for their daily lives. Thirdly, the positive effects of working in groups show directly to students' performance, motivation, and attitude in school [12, 13].

Researches in recent years increasingly focused on cooperation among students in classes[14, 15]. Initiated from the fact approved by researchers and teachers that efficiency in the students' group work result is affected by many different factors. The result is based on the efficiency, dependence, and satisfaction of group members [16, 17]. With the above analysis, this study is carried out to focus on two purposes. The first purpose is to analyze determinants influencing university students' group work results. The second purpose is to give recommendations for administrators, lecturers, and students to maximize the effectiveness of group working in Viet Nam's universities.

II. THEORETICAL FOUNDATION

2.1. Emotion Intelligence - EI

Originated from Gardner's multi-intellectual theory (1983)[18], Salovey& Mayer (1990) primitively formed the definition and term of Emotion Intelligence, which is the ability to process emotions corresponding to the set goals such as adapting to requirements and pressure from workplaces[19], understanding emotions to facilitate the development in emotions and intelligence[20], enhancing one's self, balancing relationships and inner emotions[21]. The conceptual framework being the foundation for this study is based on the work of Mayer &Salovey (1997)[20] relating to

possibilities based on four branches in the Emotion Intelligence model: (1) emotional awareness; (2) emotion's usage; (3) emotional understanding; (4) emotional control.

Previous researches also verified the role of EI in improving communication capability among members in a group[22] to increase the group efficiency's value [35], to boost the cooperation to achieve common objectives[24], to create a chance for students to use and evaluate group skills in practical situations[25]. Therefore, the following hypothesis is formulated:

H1: Emotion Intelligence positively affects students' group work results.

2.2. Knowledge-sharing - KS

Knowledge-sharing is a progression of transferring knowledge[26], obtaining and spreading knowledge[27]. Knowledge-sharing is the act of voluntarily providing insight and experience to group members[28]. Knowledge used in sharing may be based on one's experience or accumulated during studying and working[29], during discussions, seminars, internships, and meetings[27]. Knowledge-sharing also helps to develop members' qualifications in Group working for the common efficiency [30–32]. Therefore, the following hypothesis is formulated:

H2: Knowledge-sharing positively affects students' group work results.

2.3. Self-managed team - SMT

A self-managed team is defined as a working group without decentralization responsibility[33], individuals shall adjust their behaviors in group's objectives [8,18], and are responsible for several activities such as making plans, setting up schedules, assessing performance, and improving continually[36]. Working as self-managed teams shall accelerate the efficiency, and improve the final result[37]. According to the idea, efficiency in group working includes high productivity[35, 38], good customer service [39]; group work's result includes good quality[38, 39]; satisfaction in work[38, 40], organization's commitment[37, 41]. Therefore, the following hypothesis is formulated:

H3: Self-managed team positively affects students' group work results.

2.4. Internal conflict - TC

Members in groups should be aware of such negative acts may impact the efficiency and the success of their groups and projects [42]. Solving conflict skill is the ability of the groups' members to deal with incurred issues [42] since emotions do play a vital role in the groups' success. As a matter of fact, internal conflict leads to incompatibility among members, making them disbelieve in each other and creating the tendency of limiting contact and communication to protect their ideas [43]. Therefore, the following hypothesis is formulated:

H4: Internal conflict negatively affects students' group work results.

2.5. Trust - T

Trust in a group is the faith in members about expectation and completion of individual and group tasks in a consistent, efficient, and connected manner with the link in ideologies among groups' members [44, 45], trust among members influences the project's efficiency [46, 47].Therefore, the following hypothesis is formulated:

H5: Trust positively affects students' group work results.

Fig 1. Research model
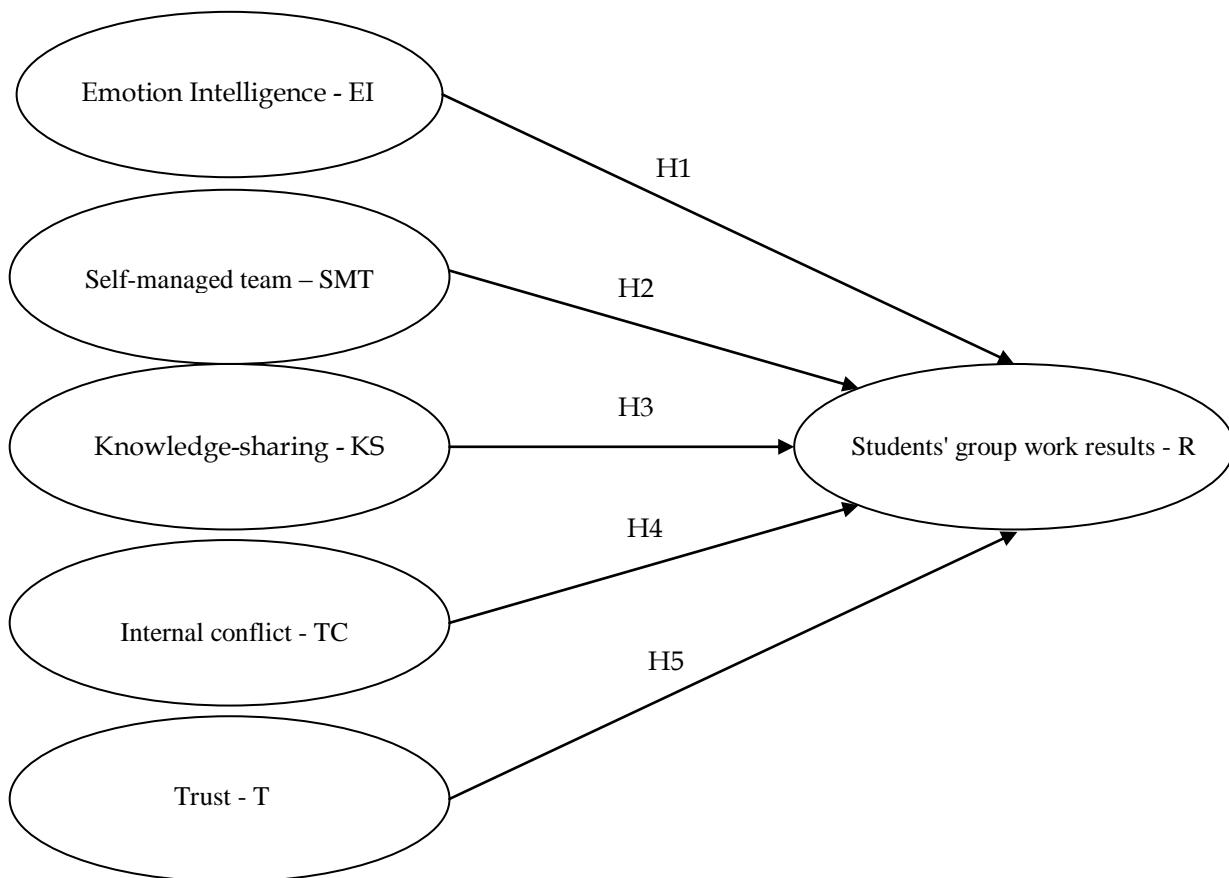
III.   RESEARCH METHODOLOGY

3.1. Survey and sample

The authors clarify the scales: Emotion Intelligence, knowledge-sharing, internal conflict, self-managed team, trust, and students' group work results through the process of in-depth interviewing with the subjects are university students conducted within one hour in a designated location chosen by the interviewers.

Based on the result of the in-depth interview and the general basis of the research inherited from previous studies can the researchers create a questionnaire for examinations. Surveys used questions from the form are distributed and acquired from July to October of 2020. The content of the questionnaire is divided into two parts: the first part is to investigate the rate of agreement from the respondents about statements relating to Emotion Intelligence, knowledge-sharing, internal conflict, self-managed team, trust, and students' group work results; the second part is to get to know more about respondents' information such as gender, frequency of joining and working in a group.

The authors also focused on universities having Economics as their primary major, including National Economics University, Foreign Trade University, University of Commerce, Economics University - National University, Academy of Banking. With 385 responses from university students, of which 372 later used for the study.

The responses between genders do not differ significantly, respectively 50.8% and 49.2%. In terms of study time, Junior students account for the highest percentage of 44.6%, and most of the students also maintain the regular frequency of group working of 71.0% as shown in Table 1.

Table 1: Characteristics of the sample

Demographic information	Frequency	Number of respondents	Percentages (%)
Gender	Female	183	49.2
	Male	189	50.8
Year of students	1st	52	14.0
	2nd	101	27.2

	3rd	166	44.6
	4th	48	12.9
	Other	5	1.3
Frequency of Group working	Never	2	0.5
	Rarely	10	2.7
	Sometimes	96	25.8
	Usually	264	71.0

3.2. Analyses

After collecting the responses from the questionnaire, the authors initiated analyzing data with three main steps. Firstly, assessing the scale's reliability using Cronbach's alpha coefficient. Secondly, examining Explorative factor analysis (EFA) to evaluate variables' reliability. Thirdly, inspecting Confirmatory factor analysis (CFA) to determine the model and the scale. Finally, making regression analysis to investigate hypotheses, influence, and to making use of SPSS 22.0 and AMOS 22.0 for statistical analysis.

3.3. Measures

Emotional Intelligence (EI): The 18-item scale designed by Mayer &Salovey, (1997), Bar-On (1997), and Goleman (2001) [19–21] is used to review four scales: Emotional Awareness - EA, Emotion's Usage - EU, Emotional Understanding - EUS, and Emotional Control - EC (respectively with α's = 0.865, 0.817, 0.888, and 0.849). With EA, EU, EUS scales, the authors inherited and developed each one with a 5-sentence assessment and 3 for EC. Specifically, leading to two self-evaluation samples about "The ability to solve issues, to some extends, depends on moods (the happier, the faster can one work, and vice versa." (EU3 - 0.599), and "Knowing when to express one's personal concerns to other." (EUS1 - 0.658). In particular, the first observation is excluded due to the item-s correlation is less than 0.3.

Knowledge-sharing (KS): Knowledge-sharing (α's = 0.856) proposed by (Lin, 2007; Bock et al., 2006) [23, 36] with six assessments such as this self-evaluation sample: "One is willing to cooperate with other members to share one's insight." (KS4 - 0.574).

Self-managed Team (SMT): Self-managed team (α's = 0.949) is evaluated by five questions (Erez et al., 2002) [48] such as "Did one's fair share of the work on the team's task." (SMT 3 – 0.886).

Internal Conflict (TC): Internal conflict (α's = 0.834) is based on six questions (Pelled et al., 1999) [49] such as "How much are personality clashes evident in one's team?" (IC4 – 0.624). In particular, the first and the seventh observation is excluded because of the item-sum correlation less than 0.3.

Trust (T): Trust (α's = 0.840) includes three scales (Hsu, 2006; Bock et al., 2006) [50, 51] such as a self-evaluation sample "Each member has trust in each other's expertise." (T2 - 0.826).

Student's Group Work Result (R): Student's group work result (α's = 0.876) is assessed by six questions[52] "The teams work together to accomplish tasks promptly." (R1 - 0.711).

IV.   RESULTS

4.1. Explorative Factor Analysis - EFA

Having the scales' reliability evaluated by the Cronbach's alpha method, 36 sections can be used in inspecting explorative factors. The result of the scales' reliability by explorative factor test shows that KMO = 0.890; Sig. (Barlett's test) = 0.000 < 0.005. The final result of the explorative factor analysis is shown in Table 2.

Table 2. The results of exploratory factor analysis (EFA)

	Component							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SMT2	0.882							
SMT3	0.856							
SMT4	0.829							
SMT5	0.792							
SMT1	0.783							
KS3		0.757						

Item	1	2	3	4	5	6	7
KS1	0.731						
KS5	0.722						
KS2	0.717						
KS4	0.686						
KS6	0.659						
EUS2		0.882					
EUS3		0.839					
EUS1		0.759					
EUS5		0.739					
EUS4		0.720					
IC3			0.825				
IC2			0.778				
IC5			0.761				
IC4			0.756				
IC6			0.738				
EA5				0.802			
EA2				0.752			
EA4				0.729			
EA3				0.681			
EA1				0.583			
EU4					0.885		
EU3					0.780		
EU2					0.770		
EU5					0.719		
EC3						0.847	
EC1						0.814	
EC2						0.738	
T1							0.871
T2							0.826
T3							0.742
Cumulative = 70.026%							
Total Variance Explained = 1.428							

4.2. Confirmatory Factor Analysis - CFA

From the result of the EFA inspection, five main factors are used in the study's model to show the result in Figure 2.

The result of CFA from the model with CFI = 0.926 > 0.9; PCLOSE = 0.596 ≥ 0.05; CMIN/df = 1.906 ≤ 2; RMSEA = 0.049 ≤ 0.08. The result shows that the model's statistics meet the requirement and are fit with the research data [53].

Fig2. Confirmatory Factor Analysis(CFA)- standardized estimates
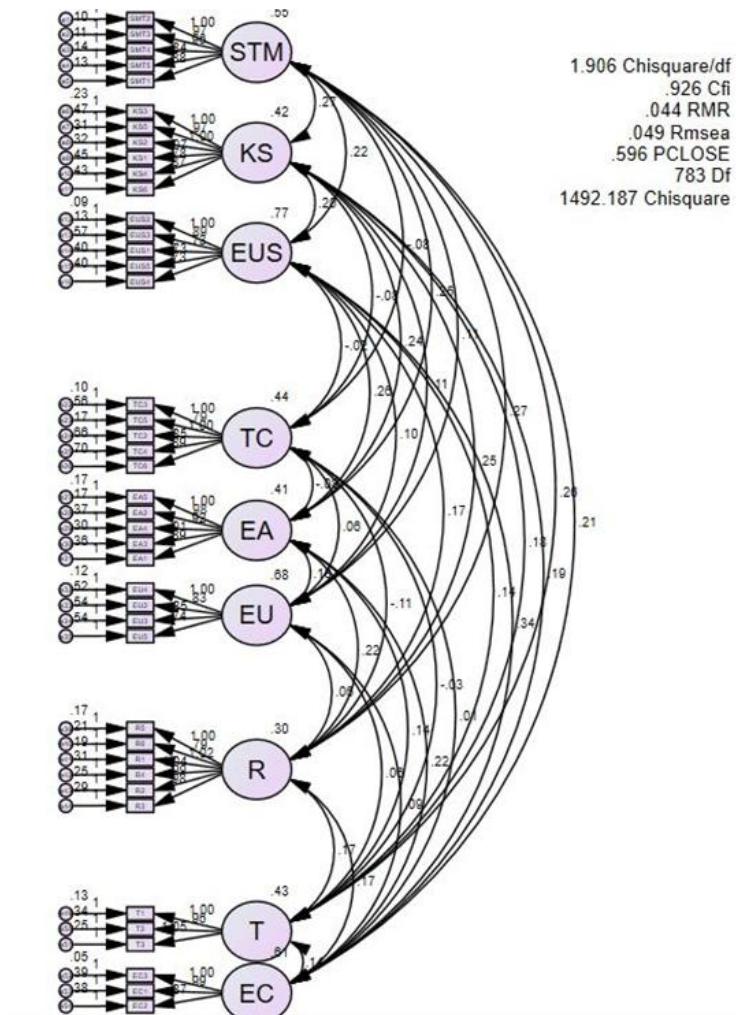
4.3. Linear regression analysis

The linear regression analysis (Table 3) shows that:

Adjusted R Square 0.549 means independent variables influence 54.9% of the dependent variables' adjustment, 45.1% is formed due to irrelevant variables out of the model and random error.

Durbin - Watson (DW) = 1.889. Attaching to the DW value bar, the result shows 1.817 < 1.889 < 2.183. Thus, in this model, there is no correlation in the transcendent string.

Table 3. Model summary

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.745a	0.555	0.549	0.37921	1.889

Source: Data analysis results by SPSS 22.0

The linear regression analysis (Table 4 and Figure 2) shows that:

Knowledge-sharing (KS) with a beta of 0.309 has the strongest positive impact on the students' group work results (R); internal conflict (TC) with a beta of -0.170 has the strongest negative impact on students' group work results (R).

Self-managed team (SMT) with the second-highest beta, which is close to knowledge-sharing with a beta of 0.305.

Emotion Intelligence (EI) and trust (T) have a positive effect on students' group work results (R) with a beta of 0.163 and 0.088. Thus, hypotheses H1, H2, H3, H4, and H5 are accepted.

Table 4. Standardized regression coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.272	0.192		6.616	0.000
EI	0.176	0.046	0.163	3.839	0.000
KS	0.266	0.037	0.309	7.110	0.000
IC	-0.138	0.029	-0.170	-4.712	0.000
T	0.069	0.032	0.088	2.169	0.031
SMT	0.244	0.037	0.305	6.640	0.000
Dependent Variable: R					

Source: Data analysis results by SPSS 22.0

V. DISCUSSION AND CONCLUSION

5.1. Discussion

Discoveries in studies of Stephens &Carmeli (2016), Mattia et al. (2001), Kirkman& Rose (1999), Liu et al. (2004) [22, 27, 37, 42] showed that Emotion Intelligence, knowledge-sharing, trust, and organizing self-managed teams have a positive relationship with students' group work result. Moreover, Pelled et al. (1999) also show that internal conflict negatively impacts students' group work results [49].

In preceding researches, Sveiby& Simons (2002), Pérez López et al. (2004), Shin et al. (2016), Willard Grace et al. (2014), Xue et al. (2011), Jamshed&Majeed (2019) confirmed the relationship between knowledge-sharing and students' group work results [30–33, 54, 55]. Jamshed&Majeed (2019) furthermore pointed out that in order to work effectivelyfor the groups, group members should look for methods for knowledge-sharing, plus make use of their insight to improve their competence in Group working, as well as the efficiency. In this study, knowledge-sharing is the most essential factor in students' group work results (β = 0.309) compared to the rest. Hence, educational administrators, students should promote knowledge-sharing in many ways to achieve the best results.

The results confirm the impact of self-managed team management on students' group work results. As many studies also showed similarities in outcomes, such as Cohen & Ledford (1994), Goodman et al. (1988), Kirkman& Rosen (1999), Wellins et al. (1990), Cordery et al. (1991)[35, 37–39, 39, 41]. The group self-management factor has the second most potent influence on group work results with the standardized estimate of 0.305.

Internal conflict strongly affects students' group work results, agreed by Shamsul et al. (2013), Harris et al. (2000), Liu et al. (2004) [42, 43, 55]. The research team then obtained the SPSS analysis result from the survey to determine the negative impact on students' group work results (β = -0.170). Therefore, each student should take action to reduce internal conflict, as well as increasing groups' cohesion and productivity.

The SPSS analysis from the research shows that Emotion Intelligence affects students' group work results (β = 0.163). The outcome almost matches other results in studies of Mayer &Salovey (1997), Bar-On (1997), Goleman (2001)[19–21]. Emotion Intelligence plays a vital role in how group members cooperate and collaborate during the completion of common outset objectives. Hence, in order for a group to operate in high efficiency to achieve good results, each member must focus on factors determining Emotion Intelligence.

Under the results from previous studies from Hoegl and Gemuenden (2001), De Jong et al. (2016), Sy et al. (2006), Pelled et al. (1999) suggest that trust has an impact on student's group work result[46, 47, 49, 56]. Using SPSS analysis for this study shows that trust affects student's group work result with a standardized coefficient of 0.088. Though trust does not have a strong impact as the mentioned factors, group members need to build trust with each other to get the highest efficiency.

5.2. Theoretical implications

Firstly, the author's study contributes to reinforcing the model of factors influencing students' group work results. The conclusion also helps clarify the relationship among factors that impact the outcomes.

Secondly, the authors point out that knowledge-sharing and organizing self-managed teams bring the most stimulating effect to students' group work results. Accordingly, once a group can take advantage of these factors, by all means, the best result shall be achieved.

Thirdly, this study focuses on university students, who often spend their time studying and working in groups, and through group working to evaluate their learning outcomes. Therefore, the study's result also promotes the idea of group working in university for the best efficiency.

5.3. Practical implications

For the students, the authors suggest the ideas of improving the effectiveness in Group working as follow:

Firstly, students should be aware of their capability of knowledge-sharing and mutual collaboration as those direct determinants play a critical role in a group's success. Knowledge-sharing is not simply as an individual affirming their comprehension of issues, events but an opportunity for them to obtain and manage more experience and knowledge from other members due to the diversity in perspectives, ideologies, and amount of knowledge.

Secondly, students need to participate in discussions and seminars to enlarge their sense of knowledge for themselves, aside from the mentored knowledge at their university. This aims at determining group members' ability to distribute their knowledge and experience for the sake of the group.

Thirdly, the groups must create an open and comfortable environment based on trust. Notably, the group leaders have to work toward decency and publicity of all information related to the group's objectives. This minimizes suspicions, conflicts, incompatibilities among members. Besides, group members should listen to opinions proposed by other members, as if an individual finds themselves and their ideas not appreciated, they shall no longer put their trust in the group and other members.

Fourthly, it is exceptional to encourage and give praises to members for their creativeness and experience in contributing to the group. But for most university students, getting compliments in private and being endorsed as the most dedicated member in front of other members are the two approaches they prefer.

Finally, students need to measure their Emotion Intelligence indicators by taking an online test, or by conducting an in-depth interview. Thanks to this measurement, students may set appropriate goals and approaches to improve their Emotion Intelligence, thereby create an applicable setting using connection and teamwork among members for improving and practicing Emotion Intelligence.

For educational administrators and university lecturers, the authors suggest the ideas of improving the effectiveness in group working as follow:

Firstly, attending collective activities and extracurricular activities in schools, classes to create a dynamic and inclusive environment for students. These activities allow students to participate, express themselves, and voluntarily take charge of their responsibilities working in groups.

Secondly, having an online Emotion Intelligence assessment system set up for students is crucial in collecting and analyzing data to come up with a proper plan to meet the human resources requirements in business. In the meantime, lecturers may create an opportunity for students to work and experience working environments with competent groups in enterprises.

Finally, university lecturers should initiate peer-to-peer discussions after finishing a video or reading exercise using a classroom management system. Extroverted students usually have the upper hands in group exchanges and presentations, lecturers should consider alternating the online discussion to encourage students who have difficulty sharing their viewpoints through classroom management systems such as Blackboard, Canvas, Moodle. This method also helps lecturers collect ideas from their students quickly and indirectly.

5.4. Limitations

In this study, although the authors have managed their best, there are still some limitations:

Firstly, the research team only started the survey only for universities including Economics majors in Hanoi. The result, therefore, does not represent all universities in Vietnam.

Secondly, the study's model aims to inspect the relationships among direct determinants influencing university students' group work results including Emotion Intelligence, knowledge-sharing, organizing self-managed teams, internal conflict, and trust.

Finally, in this study, the authors only used several fundamental scales in collecting and analyzing data. Thus, other influencing factors shall be scrutinized to facilitate the interpretations and calculations in the next studies.

5.5. Conclusion.

The authors determined the influencing factors and used qualitativeand quantitative methods to clarify that Emotion Intelligence, knowledge-sharing, organizing self-managed teams, and trust have a positive impact on the results, while internal conflict and students' group work results have a negative relationship. Moreover, the authors give advantageous recommendations for educational administrators, lecturers, and university students in Vietnam to develop efficiency in group working.

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