



E-ISSN: 3108-4192

APSSHS

Academic Publications of Social Sciences and Humanities Studies

2023, Volume 3, Page No: 79-88

Available online at: <https://apsshs.com/>

Asian Journal of Individual and Organizational Behavior

The Outcomes of Emotional Intelligence and Teamwork among Vietnamese Students

Thi Hao Nguyen¹, Van Hau Nguyen^{1*}, Hong Hanh Vo¹, Ngoc Thong Le¹, Thi Thu Phuong Nguyen¹, Hong Kien Vo²

1. Faculty of Political Theory, National Economics University, Hanoi, Vietnam.
2. Faculty of Development Economics, National Economics University, Hanoi, Vietnam.

Abstract

This study examines how emotional intelligence directly influences teamwork performance and the intermediary role played by individual goals and team structures in this relationship, particularly among university students in Vietnam. The study uses a combination of comprehensive interviews and widespread surveys conducted across several universities in Hanoi's economic region. A total of 372 valid student responses were analyzed to understand both the indirect and direct effects of emotional intelligence on teamwork performance. The data underwent various statistical procedures, including Cronbach's alpha reliability check, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modeling (SEM) using SPSS and AMOS software. The findings confirm a direct relationship between emotional intelligence and teamwork performance, as well as the significant mediation of individual goal-setting and self-organized teams in this relationship. This study provides practical suggestions for university students, faculty, and administrators to improve teamwork outcomes.

Keywords: Vietnam, Emotional intelligence, Individual goals, Teamwork, Forms of grouping

How to cite this article: Nguyen TH, Nguyen VH, Vo HH, Le NT, Nguyen TTP, Vo HK. The Outcomes of Emotional Intelligence and Teamwork among Vietnamese Students. Asian J Indiv Organ Behav. 2023;3:79-88. <https://doi.org/10.51847/YzWph6rswU>

Received: 29 August 2023; **Revised:** 27 November 2023; **Accepted:** 04 December 2023

Corresponding author: Van Hau Nguyen

E-mail ✉ [nvhou@neu.edu.vn](mailto:nvhau@neu.edu.vn)

Introduction

A team is more than just a group of individuals working together or under a leader's guidance; it represents a collective of people with complementary skills, united by a common goal and a shared sense of responsibility [1]. This dynamic requires team members to collaborate closely, engaging with both each other and the leader, while leveraging each other's expertise to accomplish their tasks. Teamwork is integral in numerous real-world scenarios, and research consistently highlights its benefits for university students [2]. First, group assignments offer students valuable opportunities to develop skills relevant to future professional environments. Second, positive associations between teamwork and student learning outcomes, motivation, and attitudes toward learning have been well-documented [3-5]. Due to its advantages, teamwork has been an essential element in higher education [6, 7].

Numerous studies indicate that various factors impact teamwork performance. Emotional intelligence, in particular, has been shown to directly influence team performance [8, 9]. Additionally, the indirect effects of emotional intelligence on teamwork have been explored, with mediators such as individual goals—both positive and negative [10, 11]—and team structures like self-managed and cross-functional teams [12-14].



© 2023 The Author(s).

Copyright CC BY-NC-SA 4.0

The current study is guided by three primary objectives. First, to examine the direct impact of emotional intelligence on the teamwork performance of Vietnamese university students. Second, to explore the mediating roles of individual goals and team structures in the relationship between emotional intelligence and teamwork abilities among these students. Lastly, to offer insights and practical recommendations to university students, instructors, and administrators for enhancing collaboration and teamwork performance.

Theoretical framework and hypotheses

Direct impact of emotional intelligence on teamwork effectiveness

The concept of emotional intelligence was first introduced by Salovey and Mayer [15], drawing inspiration from Gardner's [16] theory of multiple intelligences. Over time, various scholars have provided their definitions of emotional intelligence. According to Mayer and Salovey [17], emotional intelligence is described as “the ability to accurately perceive, assess, and express emotions; the ability to generate emotions to assist in thought processes; the understanding of emotions and emotional knowledge; and the ability to regulate emotions to enhance emotional and intellectual growth.” Goleman [18] defined it as the ability to recognize one’s own emotions and the emotions of others, using this awareness to guide decision-making. In their 2004 work, Mayer *et al.* [19] outlined emotional intelligence as “the ability to (a) perceive emotions, (b) use emotions to facilitate thought, (c) understand emotions, and (d) manage emotions to promote intellectual and emotional development.” Goleman [20] further described it as “the ability to recognize and regulate one’s emotions in various situations.” Issah [21] also recently identified the 5 components of emotional intelligence: self-awareness, self-regulation, empathy, self-motivation, and social skills.

The framework for this research is based on the four-branch model of emotional intelligence proposed by Mayer and Salovey [17]. They suggest that emotional intelligence consists of four interconnected but distinct dimensions: (a) emotional awareness, (b) emotional utilization, (c) emotional understanding, and (d) emotional regulation.

Teamwork, on the other hand, has been recognized as a crucial element for learning within organizational settings [22, 23]. Harris and Harris [24] define teamwork as a work unit in which members form mutually supportive relationships to achieve shared objectives. Teamwork performance refers to the extent to which a team meets its goals in terms of quantity, quality, and timeliness [1]. This broad definition aligns with the context of university students and is therefore used in this study.

A substantial body of research has confirmed the connection between emotional intelligence and teamwork performance. For example, Gujral and Ahuja [14] highlighted that emotional intelligence significantly influences how individuals collaborate when working together towards common objectives. According to McCallin and Bamford [25], effective teamwork is centered around the core competencies of emotional intelligence: self-awareness, self-management, social awareness, and social skills. Stephens and Carmeli [26] argued that emotional intelligence enhances communication, receptivity to diverse perspectives, and the ability to use emotions to improve team performance and decision-making [27]. Brackett and Mayer [28] also emphasized a relationship between emotional intelligence and students' teamwork abilities. Their studies, particularly in medical and health education, suggest that emotional intelligence allows students to reflect on and effectively implement teamwork skills during practical exercises. Individuals with high emotional intelligence can regulate negative behaviors, foster a positive environment conducive to collaboration, and improve decision-making and team outcomes, thereby making emotional intelligence a crucial asset in group settings [29].

Based on these findings, we propose the following hypothesis: H1: Emotional intelligence positively impacts the teamwork performance of university students.

The Impact of Emotional Intelligence on Teamwork Performance: Indirect Influences

According to Locke and Latham [30], individual goals represent desired outcomes that team members aim for, with clear and ambitious goals leading to better performance compared to vague or imprecise ones.

In this paper, individual goals are classified into two categories: positive and negative. Positive individual goals, as defined by Volet and Mansfield [31], refer to goals that focus on improving performance, learning, and also building social connections. For students working in teams, positive goals involve achieving high-quality group outcomes, working efficiently, and fostering team unity. In contrast, negative individual goals, as described by the same authors, are those that don't contribute to group success, often rooted in personal interests or disengagement with the group's objectives. These can lead to delays, conflicts, and a lack of collaboration, ultimately harming the team's overall performance.

Earlier research by Martinez-Pons [10] highlights how emotional intelligence plays a role in shaping individual goal-setting behaviors within team environments. Sushil [32] further argues that when individuals adjust their goals to align with those of the team, it enhances overall teamwork. In line with this, Stajkovic *et al.* [33] affirmed that personal goal alignment positively influences team performance.

Building on these insights, we propose the following hypotheses:

H2: Emotional intelligence positively influences students' positive individual goals.

H3: Positive individual goals improve students' teamwork performance.

H4: Emotional intelligence has a negative effect on students' negative individual goals.

H5: Negative individual goals negatively impact teamwork performance.

H6: Positive individual goals mediate the relationship between emotional intelligence and teamwork performance.

H7: Negative individual goals mediate the relationship between emotional intelligence and teamwork performance.

Self-managed teams are recognized as groups that operate with a high degree of autonomy, where each member has the responsibility for specific tasks or functions [34]. According to Zafft *et al.* [35], these teams consist of individuals who manage their activities, including scheduling, planning, performance evaluation, and continuous improvement. This type of team structure emphasizes interdependence among members, with everyone having the authority to make decisions regarding their tasks, working methods, and time management [36]. Based on this understanding, a self-managed team in a university context refers to students who are interdependent, where they collaboratively determine the assignment of tasks, the approach to their completion, and the overall scheduling of their work.

Cross-functional teams, on the other hand, are composed of individuals from diverse fields within an organization, collaborating to achieve specific objectives [37]. These teams are widely used for various purposes, such as product development [38], organizational transformation [39, 40], and accelerating market access [41]. In the context of university students, a cross-functional team refers to a group of students from various academic backgrounds who work together on a common goal, often sharing leadership responsibilities based on their area of expertise.

In self-managed teams, emotional intelligence plays a crucial role in fostering effective communication, maintaining motivation, and navigating team dynamics [42]. Gujral and Ahuja [14] found a stronger link between emotional intelligence and self-managed teams compared to cross-functional teams, suggesting that self-managed teams tend to exhibit greater emotional and intellectual cohesiveness, leading to enhanced performance. This finding is further supported by Kirkman and Rosen [12], who identified that self-managed teams contribute to improved productivity. On the other hand, Horwitz [43] notes that cross-functional teams benefit from the diversity of knowledge and perspectives that enhance decision-making and overall performance.

From these findings, the following hypotheses can be proposed:

H8. Emotional intelligence positively influences the performance of self-managed teams among university students.

H9. The effectiveness of self-managed teams positively impacts the teamwork performance of university students.

H10. Emotional intelligence has a positive influence on cross-functional teams among university students.

H11. The teamwork performance of university students is positively affected by cross-functional teams.

H12. Self-managed teams act as a mediator in the relationship between emotional intelligence and teamwork performance among university students.

H13. Cross-functional teams serve as a mediator in the relationship between emotional intelligence and teamwork performance among university students.

Materials and Methods

Sample

The research began with an analysis of secondary data, followed by semi-structured interviews conducted with two distinct groups: (i) five university professors, and (ii) five students. These interviews were designed to better understand key scales such as emotional intelligence, teamwork performance, individual goals, and the different group structures present in Vietnamese universities. Based on the findings from the in-depth interviews and a review of previous research, specific questions were crafted to guide the study. The scales used in the research model were adapted from existing studies, incorporating observed variables.

To collect primary data, surveys were distributed between July and October 2020 at several universities in Hanoi, including the National Economics University, University of Economics, Banking Academy, National University, Foreign Trade University, Academy of Finance, and the University of Commerce. The sampling approach used was convenience sampling, and the survey was divided into two parts. The first section gathered respondents' views on emotional intelligence, teamwork performance, individual goals, and team structures, while the second section collected demographic information such as gender, academic year, and frequency of team involvement.

A total of 385 surveys were initially collected from university students, with 372 questionnaires deemed suitable for analysis after a thorough screening process. Surveys that were incomplete or unreliable were excluded. According to **Table 1**, just over half of the respondents were male, making up 50.8% of the sample. The largest group of respondents were third-year students, comprising 44.6% of the total. Additionally, 71.0% of the students reported regularly working in teams, while 25.8% said they sometimes collaborated in teams.

Table 1. Descriptive statistics of sample demographics

Demographic information		Frequency	Percent	Mean	Standard deviation
Gender	Female	182	48.9	1.513	0.5058
	Male	189	50.8		
Year of students	1st	52	14.0	2.605	0.9271
	2nd	101	27.2		
	3rd	166	44.6		
	4th	48	12.9		
	Other	5	1.3		
	Never	2	0.5		
Frequency of teamwork	Rarely	10	2.7	3.672	0.5543
	Sometime	96	25.8		
	Usually	264	71.0		

Procedure

A structured questionnaire was employed to gather data from students at various economics universities in Vietnam, focusing on emotional intelligence, teamwork performance, individual goals, and team structures. The researchers approached students in common areas such as classrooms, libraries, dormitories, and cafeterias. Before completing the survey, respondents were given a brief overview of the study's objectives, which helped them respond more accurately to the questions (**Figure 1**).

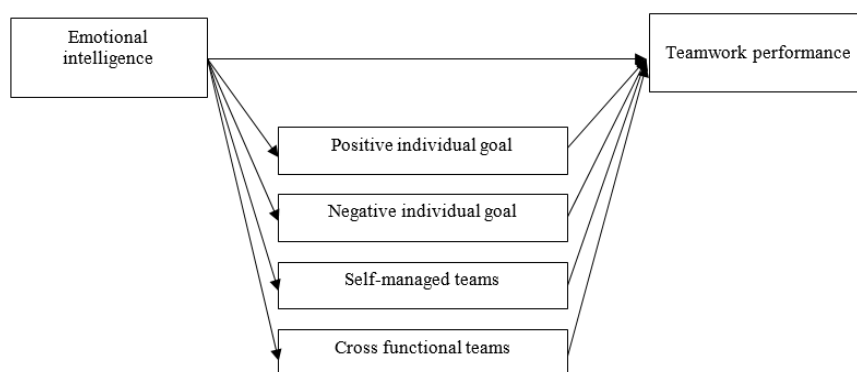


Figure 1. The conceptual model

Measures

Emotional Intelligence (EI): To evaluate emotional intelligence across four key dimensions—emotional awareness (EA), utilizing emotions (USE), understanding emotions (UDE), and emotion regulation (ME)—the researchers employed an 18-item scale derived from Mayer and Salovey [17], Bar-On [44], and Goleman [45]. The reliability coefficients for each dimension were reported as 0.865, 0.817, 0.888, and 0.849, respectively. For instance, an item in the scale is: “I can recognize my emotions when interacting with others.” Respondents rated each item on a scale from 1 (strongly disagree) to 5 (strongly agree). Upon evaluating the item-total correlation, the item USE1 was removed as it correlated 0.3. A confirmatory factor analysis (CFA) was performed to test the model's adequacy, yielding satisfactory results: $\chi^2 = 256.666$, $df = 113$, $P = 0.000$, $CMIN/df = 2.271$, $CFI = 0.959$, $SRMR = 0.057$, $RMSEA = 0.059$, $PClose = 0.068$, indicating the model's fit.

Teamwork Performance (TP): Teamwork performance was assessed using a 6-item scale developed by Hackman (1990), which had a reliability coefficient of 0.876. An example item from this scale is: “Our team worked collaboratively to complete tasks quickly.” Respondents rated the items on a 1-5 scale, with 1 indicating strong disagreement and 5 indicating strong agreement.

Individual Goals (IG): The concept of individual goals was divided into two categories: positive individual goals (PIG) and negative individual goals (NIG). These were measured using scales developed by Volet and Mansfield [31], with Cronbach's alpha values of 0.888 and 0.913, respectively. Items PIG2, PIG4, NIG1, and NIG5 were excluded because their item-total correlation was below 0.3. An example of a positive individual goal item is: “I aim to achieve good grades and improve my skills in a team setting.” Responses were scored from 1 (strongly disagree) to 5 (strongly agree).

Forms of Grouping (FG): Grouping forms, including self-managed teams (SMT) and cross-functional teams (CFT), were measured based on scales developed by Goodman *et al.* [36] and Webber [37], with reliability coefficients of 0.949 and 0.786, respectively. A sample item for self-managed teams is: “I am willing to share my opinions even when they differ from those of my teammates.” Respondents rated each statement on a scale from 1 (strongly disagree) to 5 (strongly agree).

Results and Discussion

Validity analyses (Common method bias)

A confirmatory factor analysis (CFA) was conducted to evaluate discriminant validity across the constructs. The results of the CFA indicated that the model was consistent with the data: $\chi^2 = 1187.950$, $df = 704$, $P = 0.000$, $CMIN/df = 1.687$, $CFI = 0.949$, $SRMR = 0.049$, $RMSEA = 0.043$, and $PClose = 0.997$, demonstrating that there were no significant issues with common method bias.

To assess convergent validity, the study examined standardized factor loadings, average variance extracted (AVE), and composite reliability (CR). The standardized estimates for all constructs ranged from 0.603 to 0.963 and were statistically significant. The AVE values ranged from 0.507 to 0.791, and the CR values ranged from 0.800 to 0.950. According to Hair *et al.* [46], these results indicate that the constructs exhibit sufficient convergent validity, confirming the robustness of the model (Appendix).

Descriptive statistics and correlations

The means, standard deviations, and correlations for all variables are presented in **Table 2**. Emotional intelligence showed significant positive correlations with teamwork performance ($r = 0.514$), positive individual goals ($r = 0.555$), and self-managed teams ($r = 0.489$), all significant at $P < 0.01$. Teamwork performance also showed significant positive correlations with both positive individual goals ($r = 0.600$) and self-managed teams ($r = 0.625$), and a negative correlation with negative individual goals ($r = -0.240$, $P < 0.01$).

Table 2. Means, standard deviations, and correlations among the related variables

	Mean	Std. deviation	EI	TP	PIG	NIG	SMT	CFT
EI	3.6382	0.52391	1					
TP	3.7531	0.56482	0.514**	1				
PIG	3.9887	0.69560	0.555**	0.600**	1			
NIG	2.8100	0.95311	0.011	-0.240**	-0.165**	1		
SMT	3.8511	0.70629	0.489**	0.625**	0.469**	-0.129*	1	
CFT	3.7829	0.63672	0.007	0.057	0.061	-0.102*	0.092	1

Notes: $n = 372$; * $P < 0.05$; ** $P < 0.01$

Testing of hypotheses

Structural equation modeling (SEM) analysis indicated that the proposed model was a good fit for the data ($\chi^2 = 1272.477$, $df = 727$, $P = 0.000$, $CMIN/df = 1.750$, $CFI = 0.943$, $SRMR = 0.060$, $RMSEA = 0.045$, $PClose = 0.979$), meeting the criteria set by Kettinger *et al.* [47] and Hu and Bentler [48]. The model examined the relationships between six variables: emotional intelligence, teamwork performance, positive individual goals, negative individual goals, self-managed teams, and cross-functional teams.

The results, presented in **Figure 2** and **Table 3**, include standardized path coefficients. The hypotheses H1, H2, H3, H5, H8, and H9 were validated. Emotional intelligence was found to have a significant positive impact on teamwork performance, positive individual goals, and self-managed teams ($\beta = 0.167$, 0.737 , and 0.660 , respectively). Positive individual goals and self-managed teams showed a positive effect on teamwork performance ($\beta = 0.252$ and 0.309 , respectively). Conversely, negative individual goals negatively affected teamwork performance ($\beta = -0.084$).

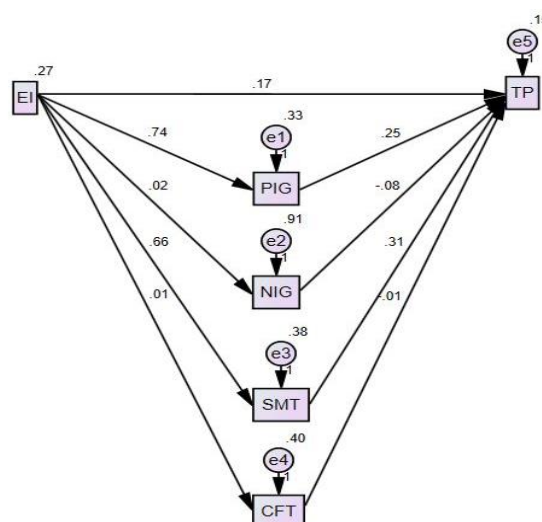


Figure 2. Results of a structural equation modeling

Table 3. The results of the path analysis among variables with standardized regression weights

Relationships	Estimate	S.E	C.R	P-value	Results
EI → TP	0.167	0.050	3.325	***	Supported
EI → PIG	0.737	0.057	12.858	***	Supported
PIG → TP	0.252	0.034	7.322	***	Supported
EI → NIG	0.021	0.094	0.220	0.826	Rejected
NIG → TP	-0.084	0.021	-4.049	***	Supported
EI → SMT	0.660	0.061	10.806	***	Supported
SMT → TP	0.309	0.032	9.567	***	Supported
EI → CFT	0.009	0.063	0.140	0.888	Rejected
CFT → TP	-0.011	0.031	-0.362	0.718	Rejected

The mediation test results, processed with Hayes' PROCESS v3.5, are presented in **Table 4**. It was found that emotional intelligence had a significant effect on teamwork performance through the influence of positive individual goals ($\beta_{\text{positive}} = 0.2721$, $P < 0.05$), which supports the hypothesis H6 that positive individual goals mediate the relationship between emotional intelligence and teamwork performance among university students. Additionally, self-managed teams played a mediating role in the connection between emotional intelligence and teamwork performance ($\beta_{\text{positive}} = 0.2587$, $P < 0.05$), confirming H12. However, the analysis showed no mediating effect from negative individual goals or cross-functional teams in this relationship, leading to the rejection of H7 and H13.

Table 4. Mediation test: positive individual goal, negative individual goal, self-managed teams, and cross-functional teams

	Inpositive effects	SE	95% confidence interval	
			LLCI	ULCI
Emotional intelligence → positive individual goal → teamwork performance	0.2721*	0.0351	0.2048	0.3410
Emotional intelligence → negative individual goal → teamwork performance	-0.0030	0.0122	-0.0285	0.0205
Emotional intelligence → self-managed teams → teamwork performance	0.2587*	0.0395	0.1849	0.3411
Emotional intelligence → cross-functional teams → teamwork performance	0.0004	0.0037	-0.0082	0.0080

Note: Results are based on trimmed scales; LLCI: lower level of a confidence interval, ULCI: upper level of a confidence interval, and SE: standard errors; * $P < 0.05$.

Consistent with recent research [8, 14, 49-53], this research highlights the positive association between emotional intelligence and teamwork performance. Specifically, Gujral and Ahuja [14] emphasize the critical role of emotional intelligence in fostering collaboration, particularly when team members unite around a common mission and goal. The ability to leverage social intelligence and process emotional information enhances students' adaptability to the dynamics of the work or study environment. Students who can manage emotions effectively, by recognizing, understanding, and controlling them, are better able to benefit from peer interactions and engage more effectively with instructors. This improved emotional and social competence contributes to their overall academic and professional growth, positioning them for success in the future.

Prior research [31, 54] has also underscored the positive relationship between emotional intelligence and positive individual goals among university students. Such goals, which promote motivation and a strong work ethic, are essential for driving students to work towards self-improvement, build better relationships, and achieve success in both academic and professional contexts. Students who exhibit higher emotional intelligence, particularly in recognizing and understanding emotions, tend to approach their individual goals more purposefully and with greater enthusiasm, resulting in more effective teamwork and smoother task completion. In this study, emotional intelligence emerged as a significant driver of positive individual goals ($\beta = 0.737$), suggesting that enhancing emotional intelligence can substantially improve students' ability to meet their individual goals within a team setting.

The influence of positive individual goals on teamwork performance is widely supported in the literature, including work by Boekaerts [55] and Grant *et al.* [54]. Volet and Mansfield [31] further demonstrated that shifts in individual goals can affect team dynamics and productivity. Personal aspirations such as achieving success, building relationships, and developing valuable skills all contribute to better teamwork performance.

The relationship between negative individual goals and teamwork performance has been acknowledged by Volet and Mansfield [31], who argue that goals focused solely on short-term achievements or grades can be detrimental. For optimal team outcomes, students and leaders should prioritize positive, long-term goals and avoid limiting their motivation to just external rewards.

The findings also reveal that emotional intelligence significantly influences self-managed teams, with a strong path coefficient ($\beta = 0.660$) observed in these teams. This aligns with the research of Gujral and Ahuja [14], who found that self-managed teams, which are responsible for specific tasks within an organization, benefit from clear goals and alignment with the organization's objectives. In such teams, emotional intelligence helps members to understand and control their emotions, fostering greater trust, reducing conflict, and enhancing knowledge sharing. As a result, students in self-managed teams with higher emotional intelligence tend to perform better.

Finally, the study confirms the impact of self-managed teams on teamwork performance. This finding supports earlier research by Cohen and Ledford [56], Goodman *et al.* [36], Kirkman and Rosen [12], and Trist [57], which highlighted the effectiveness of self-managed teams in achieving high productivity and performance. Promoting self-managed teams among university students is essential to improving their overall teamwork performance.

Theoretical implications

1. The study enhances existing models of emotional intelligence and collaborative success by confirming the relationships between these concepts. It also offers valuable insight into both the direct and indirect connections involving emotional intelligence and teamwork performance, with mediation playing a crucial role.
2. The research highlights the impact of individual goals and team structures on the dynamic between emotional intelligence and teamwork performance. The authors suggest that adjusting these factors could lead to an improvement in teamwork outcomes.
3. This research primarily explores the connection between emotional intelligence and the teamwork performance of university students. As such, it provides valuable contributions to the understanding of how emotional intelligence theories can be applied in the specific context of university settings.

Practical implications

Traditional educational methods still dominate in Vietnamese universities [58]. Additionally, challenges like underdeveloped infrastructure, limited funding, and a lack of effective communication among faculty, administrators, and students have made it difficult to prepare students for the competitive demands of the labor market [59, 60]. The lack of essential skills is a key factor preventing students from securing jobs after graduation [61]. The main goal of this study is to leverage the relationships identified in the research model to offer practical suggestions for enhancing student performance by fostering teamwork and improving essential skills.

To enhance teamwork performance, students are advised to consider the following recommendations:

First, students must recognize the importance of emotional intelligence in fostering successful interpersonal interactions. By actively engaging in team activities and forming emotional bonds, students can enhance their emotional awareness and learn how to manage and channel their emotions effectively. Participating in diverse readings and experiences will support their emotional growth, allowing them to better understand and navigate their feelings.

Second, it is essential to cultivate a positive and collaborative team environment based on mutual agreement and alignment of individual and group goals. Achieving consensus within teams is crucial for fostering strong relationships and cooperation. The team leader plays a vital role in facilitating consensus by developing strategies that align both team and individual objectives.

Third, students must set clear personal goals and identify effective methods of achieving them within the context of teamwork. Individual goals serve as key motivators in a university setting, guiding students toward focused and purposeful actions. These goals are broader than mere academic scores; they might include aspirations like obtaining a top degree or pursuing further education abroad.

Fourth, it is the responsibility of the team leader to establish collective goals that consider the capabilities and aspirations of all team members. Striking a balance in setting team goals is critical, as overly high or low targets can impact individual efforts and motivation. By considering the preferences and abilities of the team members, the leader can optimize the group's performance.

Lastly, students should adopt self-managed teams, where members have the authority to make decisions on task assignments, methods, and timelines. This approach empowers students and significantly boosts team performance.

For university managers and lecturers, the following strategies are suggested:

First, the physical and educational environment plays a significant role in student outcomes. According to Fisher [62] and Lizzio *et al.* [63], a well-designed learning space can enhance student performance. Hillyard *et al.* [64] also emphasized that effective teamwork requires more than just the efforts of lecturers—it necessitates an improved university environment. Thus, universities should focus on fostering collective activities and creating inclusive spaces for teamwork, which will build students' confidence and a sense of responsibility within their teams.

Second, motivating students through creativity and rewarding individual achievements in academic subjects can encourage students to reflect on their personal goals and seek efficient methods to achieve them.

Finally, organizing seminars or workshops focused on personal emotional regulation, goal setting, and developing team goals can significantly enhance students' teamwork capabilities.

Study limitations

This study presents several limitations that should be addressed in future research.

First, the developed model examining the relationship between emotional intelligence and teamwork performance, both directly and indirectly, is focused on university students, limiting its applicability to other groups.

Second, the research only considers a limited set of scales influencing the emotional intelligence and teamwork performance link, suggesting that future research should explore additional factors that may play a role.

Third, the demographic characteristics of the university students studied were not fully explored to assess how these differences might affect emotional intelligence and teamwork performance.

Lastly, the study used a convenience sampling method from universities in Hanoi, meaning the findings may not be generalizable to all undergraduate students across Vietnam.

Conclusion

Through a combination of qualitative and quantitative analysis, the authors explored the direct and indirect connections between emotional intelligence and teamwork performance, considering the influence of individual goals and team structures. The findings highlight that emotional intelligence positively impacts teamwork performance, along with positive individual goals and self-managed teams. Furthermore, positive individual goals and self-managed teams also contribute positively to teamwork performance, while negative individual goals exhibit an adverse effect. Additionally, positive individual goals and self-managed teams serve as mediating factors in the relationship between emotional intelligence and teamwork performance among university students. Drawing from these results, the authors have proposed several recommendations to improve teamwork performance at universities in Vietnam by focusing on factors linked to enhanced team performance.

Acknowledgments: This study was supported by the National Economics University in Hanoi, Vietnam.

Conflict of interest: None

Financial support: None

Ethics statement: None

References

1. Hackman MZ, Walker KB. Instructional communication in the televised classroom: the effects of system design and teacher immediacy on student learning and satisfaction. *Commun Educ.* 1990;39(3):196-206.
2. Marin-Garcia JA, Lloret J. Improving teamwork with university engineering students. The effect of an assessment method to prevent shirking. *WSEAS Trans Adv Eng Educ.* 2008;5(1):1-11.
3. Gatfield T. Examining student satisfaction with group projects and peer assessment. *Assess Eval High Educ.* 1999;24(4):365-77.
4. Holtham CW, Melville RR, Sodhi MS. Designing student group work in management education: widening the palette of options. *J Manag Educ.* 2006;30(6):809-17.
5. Kalliath T, Laiken M. Use of teams in management education. *J Manag Educ.* 2006;30(6):747-50.
6. Bacon DR, Stewart KA, Silver WS. Lessons from the best and worst student team experiences: How a teacher can make the difference. *J Manag Educ.* 1999;23(5):467-88.
7. O'Doherty DM. Working as part of a balanced team. *Int J Eng Educ.* 2005;21(1):113-20.
8. Brackett MA, Mayer JD, Warner RM. Emotional intelligence and its relation to everyday behavior. *Pers Individ Differ.* 2004;36(6):1387-402.
9. Peterson CH. Building the emotional intelligence and effective functioning of student work groups: evaluation of an instructional program. *Coll Teach.* 2012;60(3):112-21.
10. Martinez-Pons M. The relation of emotional intelligence with selected areas of personal functioning. *Imagin Cogn Pers.* 1997;17(1):3-13.
11. Ali M, Alhajjaji A, Kurdi A, Faqeh S, Alansari S, Abdulaziz A, et al. Returning in 'new normal' – a thematic analysis of Twitter chat by pharmacy students. *J Adv Pharm Educ Res.* 2021;11(1):53-62. doi:10.51847/tIFAwAb

12. Kirkman BL, Rosen B. Beyond self-management: antecedents and consequences of team empowerment. *Acad Manag J.* 1999;42(1):58-74.
13. Lovelace K, Shapiro DL, Weingart LR. Maximizing cross-functional new product teams' innovativeness and constraint adherence: a conflict communications perspective. *Acad Manag J.* 2001;44(4):779-93.
14. Gujral HK, Ahuja JAYA. Impact of emotional intelligence on teamwork—A comparative study of self-managed and cross-functional teams. *Int J Multidiscip Res.* 2011;1(6):178-85.
15. Salovey P, Mayer JD. Emotional intelligence. *Imagin Cogn Pers.* 1990;9(3):185-211.
16. Gardner H. *Frames of mind: the theory of multiple intelligences.* New York: Basic Books; 1983.
17. Mayer JD, Salovey P. What is emotional intelligence. *Emotion develop emotion intel: Educ Imp.* 1997;3:31.
18. Goleman D. *Working with emotional intelligence.* New York: Bantam Books; 1998.
19. Mayer JD, Caruso DR, Salovey P. Emotional intelligence: theory, practice, and implications. *Psychol Inq.* 2004;15(3):197-215.
20. Goleman D. What makes a leader? *Harv Bus Rev.* 2004;82(1):82-91.
21. Issah M. Change Leadership: The role of emotional intelligence. *SAGE Open.* 2018;8(3):2158244018800910.
22. Yost CA, Tucker ML. Are effective teams more emotionally intelligent? Confirming the importance of effective communication in teams. *Delta Pi Epsilon J.* 2000;42(2):101.
23. Van Offeenbeek M. Processes and outcomes of team learning. *Eur J Work Organ Psychol.* 2001;10(3):303-17.
24. Harris PR, Harris KG. Managing effectively through teams. *Team Perform Manag: Int J.* 1996;2(3):23-36.
25. McCallin, ANTOINETTE, Bamford A. Interdisciplinary teamwork: is the influence of emotional intelligence fully appreciated? *J Nurs Manag.* 2007;15(4):386-91.
26. Stephens JP, Carmeli A. The positive effect of expressing negative emotions on knowledge creation capability and performance of project teams. *Int J Proj Manag.* 2016;34(5):862-73.
27. Clarke N. Emotional intelligence and its relationship to transformational leadership and key project manager competencies. *Proj Manag J.* 2010;41(2):5-20.
28. Brackett MA, Mayer JD. Convergent, discriminant, and incremental validity of competing measures of emotional intelligence. *Pers Soc Psychol Bull.* 2003;29(9):1147-58.
29. Arfara C, Samanta I. The impact of emotional intelligence on improving team-working: the case of Public Sector (National Centre for Public Administration and Local Government-NCPALG). *Procedia Soc Behav Sci.* 2016;230:167-75.
30. Locke EA, Latham GP. Building a practically useful theory of goal setting and task motivation: a 35-year odyssey. *Am Psychol.* 2002;57(9):705.
31. Volet S, Mansfield C. Group work at university: Significance of personal goals in the regulation strategies of students with positive and negative appraisals. *High Educ Res Dev.* 2006;25(4):341-56.
32. Sushil S. Motivation and retention: HR strategies in achieving quality of work life. *Glob J Manag Bus Stud.* 2013;3(7):763-8.
33. Stajkovic AD, Lee D, Nyberg AJ. Collective efficacy, group potency, and group performance: meta-analyses of their relationships, and test of a mediation model. *J Appl Psychol.* 2009;94(3):814.
34. Moravec M, Johannessen OJ, Hjelmås TA. The well-managed SMT. *Manag Rev.* 1998;87(6):56-9.
35. Zafft CR, Adams SG, Matkin GS. Measuring leadership in self-managed teams using the competing values framework. *J Eng Educ.* 2009;93(3):273-82.
36. Goodman PS, Devadas R, Hughson TL. Groups and productivity: analyzing the effectiveness of self-managing teams. *Prod Organ.* 1988:295-327.
37. Webber SS. Leadership and trust facilitating cross-functional team success. *J Manag Dev.* 2002;21(3):201-14.
38. Bunduchi R. Implementing best practices to support creativity in NPD cross-functional teams. *Int J Innov Manag.* 2009;13(4):537-54.
39. Tabrizi BN. *Rapid Transformation: A 90-day Plan for Fast and Effective Change.* Boston, MA: Harvard Business School Publishing; 2007.
40. Korotaeva MS. The development of personal self-regulation of the cadets. *J Adv Pharm Educ Res.* 2021;11(1):91-104. doi:10.51847/YZIHPh
41. Griffin A. The effect of project and process characteristics on product development cycle time. *J Mark Res.* 1997;34(1):24-35.
42. Lehner JA. Teamwork, Emotional Intelligence, and the Skills Organizations Need Now. *Adv Libr Adm Organ.* 2020;41:143-56.
43. Horwitz SK. The compositional impact of team diversity on performance: theoretical considerations. *Hum Resour Dev Rev.* 2005;4(2):219-45.
44. Bar-On R. BarOn emotional quotient inventory. Multi-health systems; 1997.

45. Goleman D. An EI-based theory of performance. The emotionally intelligent workplace: How to select for, measure, and improve emotional intelligence in individuals, groups, and organizations, 2001;1(1):27-44.
46. Hair JF, Anderson RE, Tatham RL, Black WC. Confirmatory factor analysis. In Multivariate data analysis 7th Ed, Upper Saddle River: Pearson Prentice Hall; 2010.
47. Kettinger WJ, Lee CC, Lee S. Global measures of information service quality: a cross-national study. *Decis Sci.* 1995;26(5):569-88.
48. Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct Equ Modeling.* 1999;6(1):1-55.
49. Goleman D. Emotional intelligence: why it can matter more than IQ. New York: Bantam Books; 1995.
50. Verona G. A resource-based view of product development. *Acad Manag Rev.* 1999;24(1):132-42.
51. Tucker ML, Sojka JZ, Barone FJ, McCarthy AM. Training tomorrow's leaders: enhancing the emotional intelligence of business graduates. *J Educ Bus.* 2000;75(6):331-7.
52. Cherniss C. Emotional intelligence and organizational effectiveness. In Cherniss C, Goleman D, eds. *The Emotionally Intelligent Workplace*, Jossey Bass, San Francisco, CA; 2001. p. 3-12.
53. Troth AC, Jordan PJ, Lawrence SA. Emotional intelligence, communication competence, and student perceptions of team social cohesion. *J Psychoeduc Assess.* 2012;30(4):414-24.
54. Grant OM, Davies MJ, Johnson AW, Simpson DW. Physiological and growth responses to water deficits in cultivated strawberry (*Fragaria× ananassa*) and in one of its progenitors, *Fragaria chiloensis*. *Environ Exp Bot.* 2012;83:23-32.
55. Boekaerts M. Bringing about change in the classroom: strengths and weaknesses of the self-regulated learning approach—EARLI Presidential Address, 2001. *Learn Instr.* 2002;12(6):589-604.
56. Cohen SG, Ledford Jr GE. The effectiveness of self-managing teams: a quasi-experiment. *Hum Relat.* 1994;47(1):13-43.
57. Trist E. A concept of organizational ecology. *Aust J Manag.* 1977;2(2):161-75.
58. Nguyen THV, Dong VH. The solutions for improving the education quality of university in Vietnam. *World Wide J Multidiscip Res Dev.* 2017;3(7):235-8.
59. Dapice D, Perkins D, Nguyen XT, Vu TTA, Huynh TD, Pincus J, et al. *Choosing success: the lessons East and Southeast Asia and Vietnam's future*. Cambridge: Harvard University; 2008.
60. Tran J. Vietnamese higher education and the issue of enhancing graduate employability. *J Teach Learn Grad Employab.* 2012;3(1):2-16.
61. Tran TT. Limitation on the development of skills in higher education in Vietnam. *High Educ.* 2013;65(5):631-44.
62. Fisher K. Research into identifying an effective learning environment. *Evaluating Quality in Educational Facilities*. Paris: Organisation for Economic Co-operation and Development Programme on Educational Building; 2005. p. 159-67.
63. Lizzio A, Wilson K, Simons R. University students' perceptions of the learning environment and academic outcomes: implications for theory and practice. *Stud High Educ.* 2010;27(1):27-52.
64. Hillyard C, Gillespie D, Littig P. University students' attitudes about learning in small groups after frequent participation. *Act Learn High Educ.* 2010;11(9):9-20.