Critical Analysis of Cooperative Learning in Organizations: With Special Emphasis on Employee Satisfaction

Abdul Latif[1], Roman Ullah[2], Nasir Iqbal[3] and Jamshid ur Rehman[4]

https://doi.org/10.62345/jads.2024.13.2.88

Abstract

The study determines the influence of employee autonomy and organizational climate on cooperative learning and its ultimate effect on employee satisfaction and work performance. In organizations, problems arise frequently, which makes creativity and teamwork mandatory. The sample size includes 127 experts in information system development and 34 managers and customers in software development companies in the regions of Islamabad and Peshawar. The LISREL software is used for statistical data analysis because of the study's structure equation model. Relative chi-square, standardized RMSR, GFI, AGFI, NFI, CFI, Cronbach alpha, t-value, factor loading, and path-coefficient explain the relationship among variables. The results signify that employee autonomy and a favorable organizational climate support cooperative learning, and the produced tacit knowledge enhances work satisfaction and creates a state of synergy. The study's findings are specifically more spirited for the practitioners working in the challenging environment of software houses. Moreover, the survey findings encourage innovation and create new ideas, essential for enhancing organizational productivity.

Keywords: Employee Autonomy, Organizational Climate, Cooperative Learning, Teamwork.

Introduction

The management of knowledge and its transformation are the key factors in the organizational change and development model (Politis, 2003). Through shared knowledge and experience, the employees would encourage and develop a culture of cooperation to enhance performance. Knowledge management is an important area that has not been researched enough so far (Janz & Prasarnphanich, 2003). The literature shows that research on the relationship between organizational learning and performance is almost unavailable (Jashapara, 2003). The research study of (Molina et al., 2007) confirms that only some research studies discuss the knowledge transfer technique. At the same time (Tarricone & Luca, 2002) valued teamwork for improving business performance.

Knowledge exists and is buried in the individual mind, but now it has to be unburied and shared. The creation of knowledge, its sharing, transferring, and integration will create mass knowledge

[1]*Lecturer, Department of Management Sciences, Khushal Khan Khattak University, Karak.*
Email: Abdul.latif@kkkuk.edu.pk
[2]*Lecturer, Department of Management Sciences, Khushal Khan Khattak University, Karak.*
Email: Roman.khan@kkkuk.edu.pk
[3]*Deputy Director, Quality Enhancement Cell, Khushal Khan Khattak University, Karak.*
Email: Nasiriqbal190@gmail.com
[4]*Assitant Director, Quality Enhancement Cell, Khushal Khan Khattak University, Karak.*
Email: Dr.Jamshid@kkkuk.edu.pk

Compliance with ethical standards: There are no conflicts of interest (financial or non-financial). This study did not receive any funding.

(Zarraga & Manuel, 2003). The current research study struggles to unbury the knowledge regarding cooperative learning, its origination, and the consequences of collaborative learning in the organization.

This study is the inspirational result of Zarraga & Manuel (2003) and Janz and Prasarnphanich's (2003) work. A cooperative learning model was created based on the first developed CTI concept (knowledge creation, transfer, and integration). This study tried to associate both ideas. It shows how organizational climate and employee autonomy generate cooperative learning, which ultimately encourages or discourages organizational performance, employee satisfaction, and synergy. The study efforts on Janz and Prasarnphanich's (2003) work were conducted in the United States of America and verified in Pakistan. Janz and Prasarnphanich (2003) questionnaire is adopted in this paper.

Literature Review

Scarnati (2001) introduces the following five obstacles to teamwork achievement.

1. An individual performance-centered structure should be in place of a team performance-centered structure.
2. Unproductive communication.
3. There is a nonexistence of resources.
4. Absence of trust and reliance.
5. Incorrect usage of a team approach.

He also shares the five factors responsible for team success introduced by Johnson et al. (2000), including attitude, uniqueness, communication, creativity, and play (fun).

Tarricone and Luca (2002) detailed that profit is a standard to measure business success, but cash generation is not the only profit. Excellent and positive relations with clients and colleagues are also included in profit. There are visible and invisible attributes responsible for business success. Managerial and technical skills are visible, while the team and generic skills are invisible. Warm feelings, caring, friendliness, support, and encouraging team members include invisible skills. Ordinary employees may work on visible skills, but extraordinary employees require invisible skills. Burkink (2002) stated that the frequency of communication, especially two-way communication and interactive relations among team members, enhances knowledge, which positively affects organizational performance.

Employee behaviors can be changed with cooperative learning, enhancing work-life satisfaction, improving retention, and decreasing departure rates (Janz & Prasarnphanich, 2003). Further, they share that the organization's decision-making power, organizational support, warmth, reward culture, and risk affordability are directly proportional to cooperative learning. The same factors are responsible for creating and transferring implicit knowledge into explicit knowledge, as per Zarraga & Manuel (2003) statement. Politis (2003) added that tacit knowledge could be changed into explicit knowledge when organizations provide a culture where employees share the skills and knowledge they possess.

Knowledge is an individual asset buried in their mind. If individuals consider it an obligation to hand over and share with others after generating, the amalgamation of individuals' created knowledge will build a mass knowledge (Zarraga & Manuel, 2003). Choy and Suk (2005) first introduced eleven critical factors of knowledge management implementation and then explained the significant position of those factors (Chong, 2006). The factors are:

1. Employee empowerment
2. Team working

3. Employee involvement
4. Employee training
5. Top management leadership & commitment
6. Information systems infrastructure
7. Performance measurement
8. knowledge-friendly culture
9. Benchmarking
10. Knowledge structure
11. Elimination of organizational constraints

Jashapara (2003) illuminates that supportive organizational cultures and double-loop learning encourage performance, while single-loop learning adversely affects the organization's performance. Jashapara's model presumed that cooperative and competitive culture affects learning, ultimately changing performance. Under the umbrella of quality management, knowledge can be divided into internal and external. Internal knowledge comes from autonomy, teamwork, and control processes, while external knowledge comes from customers and suppliers. Quality management and the above two types of knowledge help transfer knowledge and enhance the capabilities and compatibilities of organizational resources (Molina et al., 2007).

Abu Khadra and Rawabdeh (2006) specified that sharing information, learning, a recognition system, and rewards improve team and organizational performance. Interactive learning (code development and training) enlarges the capacity of product development and improves the culture of discussion, sharing, and transfer of knowledge (internalized learning), which again progresses the product development capability (Huang & Chu, 2010).

Variables, Hypotheses & Theoretical Framework

In this paper, five variables are used. Group process, promotive interaction, and positive interdependence are the dimensions of the central variable of cooperative learning. Employee autonomy has three dimensions, i.e., Autonomy associated with people, planning, and the process. The third variable is organizational climate; its dimensions are warmth, support, risk, and reward. Growth satisfaction and general job satisfaction explain the variable work satisfaction. Employee work performance is the fifth variable, and timeliness, effectiveness, and efficiency are the scopes.

Variables

Autonomy

According to Tao et al. (2018), providing autonomy to employees means shifting decision-making power from upper-level employees to lower-level knowledge workers. That fulfills the basic psychological needs of the employees and maximizes the level of attachment to the organization. Gil-Arias et al. (2020) introduce a hybrid model where a feeling of responsibility and power of autonomous decision provide enjoyment and create the ability to tackle tactical tasks.

Zarraga and Manuel (2003) stated that an organisation needs creative employees for a competitive edge. Creativity is always a risk, and taking a risk without autonomy is unsafe for an employee's career. Similarly, Alcalá et al. (2019), Uslu and Durak (2022), and Elsetouhi et al. (2023) also suggested autonomy for ensuring cooperative learning. So, autonomy is mandatory for getting a competitive edge. In the current paper, autonomy relates to people, planning, and process. People-related autonomy means the team leader can make decisions like hiring, firing, and rewarding the best player. The team members can share things with other members and evaluate each other. The team leader should be allowed to plan team objectives, make a schedule, develop a budget,

determine training needs, etc. The autonomy-related process means the team leader will select the tools, methods, procedures, and systems to achieve the objective.

H1: Autonomy positively affects cooperative learning.

Organizational Climate

A fertile organizational climate that encourages creativity, transferability, and knowledge integration has two significant dynamics. First, high care, mutual trust, support, soft judgment, and empathy. Second, daring and clear organizational objectives. Fair treatment of employees, informing them about policies, and minimizing communication gaps increase employee commitment (Zarraga & Manuel, 2003). Stavrou-Costea (2005) points out that successful organizations are always sensitive about their employees' relations, customs, values, and attitudes. Harris (2004) defines teamwork as the total effort, cooperation, and coordination of all the members struggling to achieve a shared objective. Lick (2006) stated that cooperation in teamwork enables the team member to produce more than his routine production, and the term synergy is used for this phenomenon. Cooperative learning demands that in an organizational culture, strong interrelationships of team members, a risk-taking environment, and financial and non-financial rewards are considered. Apart from that, organizational management and team member relationships (formal and informal), the warm support of management, employees' careers, and individual outcomes are also considered (Karakus & Toremen, 2008).

H2: Organizational Climate positively affects cooperative learning.

Cooperative Learning

Pan et al. (2023) explain the importance of cooperative learning with their study title, "Three heads are better than one". They tried to illustrate its value scientifically by examining the "neural mechanisms of learning" (brain activities).

Hall and Weaver (2001) cited that teamwork harmony will spoil if a team member tries to work independently. Zarraga and Manuel (2003) noted that knowledge creation, transfer, and integration are the steps of cooperative learning, and strong communication encourages this process. Group process, positive interdependence, and promotetive interaction are the three dimensions of the current study.

Janz and Prasarnphanich (2003) explain that the periodic evaluation of teamwork is a group process whose purpose is to stop repeating mistakes, discourage inefficient processes, and encourage the best. Bronstein (2003) explains that all team members are interdependent on one another and move in the same direction to achieve a specific objective. The team members are like a chain where one member depends on others to be part of and succeed. Axelrod (2002) believed team members should argue, laugh, celebrate, learn, and move together irrespective of feats and defeats.

Haycock-Stuart and Houston (2005) thought that encouragement, sharing, and transferring among team members are promotive interactions. Positive and self-criticism rubs the individual and enhances their knowledge and capabilities. According to Molyneux (2001), enhancing team members' enthusiasm gives them a perception of equal treatment and makes communication healthy. Mendo-Lázaro et al. (2022) are of the view that cooperative learning should be used as a tool to create new knowledge and skills. Further, they claim that this tool can be polished by providing autonomy to the team members.

McTighe and Emberger (2006) stated that collaboration is significant in specialized learning. Møgelvang et al. (2023) move on steps forward by introducing digital cooperative learning and its linkage with confidence, skills development, and a sense of belongingness.

Crichton (2005) argues that the duties and responsibilities must be realized and shared. It will encourage cooperative learning, which will further improve the level of motivation, satisfaction, and work performance (Cecchini et al., 2019).

Work Satisfaction and Performance

Work satisfaction is the worker's perception of their job. It is the state of mind of how he looks and observes their job. It is the difference between what the worker provides and what the job returns (Luthan, 1973).

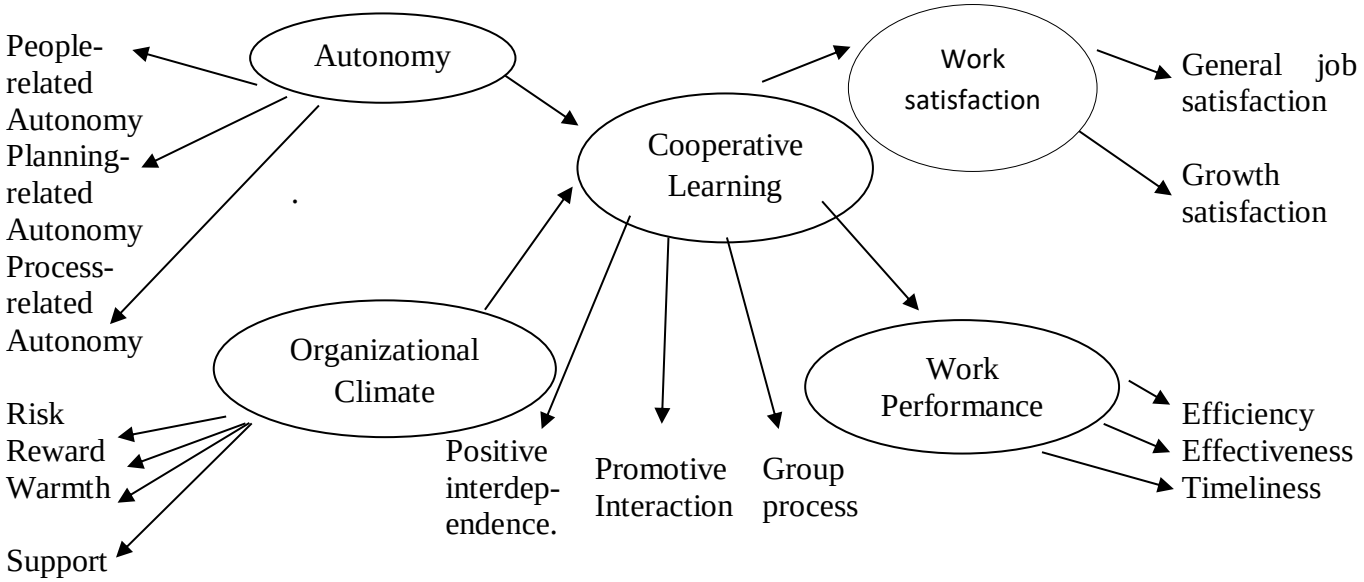
Politis (2003) wrote that team performance measurement has become the most discussed issue, and its importance must always be addressed. Cook and Crossman (2004) mentioned that individual performance is the factor of personal satisfaction and enhances organizational performance. Powell et al. (2006) noted that organizations need help to improve their performance and are trying to enhance employee satisfaction. Teamwork results in better performance and high satisfaction. Seidler-de Alwis and Hartmann (2008) stated that timeliness, feedback, and best communication guarantee team performance and satisfaction. Employees' productive interaction and knowledge sharing improve team performance and play an essential role in attaining a competitive edge.

This paper explains how cooperative learning influences work satisfaction and performance. Growth and General work satisfaction are the two dimensions of variable work satisfaction, while timeliness, effectiveness, and efficiency are facets of work performance in the present paper.

H3: Cooperative learning has positive effects on work satisfaction.

H4: cooperative learning has positive effects on work performance.

Figure 01: Theoretical Framework



Janz & Prasamphanich's (2003) model

Research Methodology

The current paper is quantitative in nature. It uses a pre-tested tool of Janz and Prasarnphanich, (2003).

The inquiry form is described in Table 01.

Table 01: Variables, indicators, number of items & the scales used

Variables.	Indicators.	Items.	Likert Scale.
Autonomy		14.	
	Planning-related autonomy.	05.	Strongly Disagree. = 01➔ Strongly Agree. = 07
	Process-related autonomy.	05.	Strongly Disagree. = 01➔ Strongly Agree. = 07
	People-related autonomy.	04.	Strongly Disagree. = 01➔ Strongly Agree. = 07
Organizational Climate		14.	
	Support.	04.	Strongly Disagree. = 01➔ Strongly Agree. = 07
	Warmth.	03.	Strongly Disagree. = 01➔ Strongly Agree. = 07
	Reward.	04.	Strongly Disagree. = 01➔ Strongly Agree. = 07
	Risk.	03.	Strongly Disagree. = 01➔ Strongly Agree. = 07
Cooperative learning		17.	
	Group Process.	03.	Strongly Disagree. = 01➔ Strongly Agree. = 07
	Promotive interaction.	05.	Strongly Disagree. = 01➔ Strongly Agree. = 07
	Positive interdependence.	09.	Strongly Disagree. = 01➔ Strongly Agree. = 07
Work Satisfaction		09.	
	Growth Satisfaction.	04.	Extremely Dissatisfied. = 01 ➔ Extremely Satisfied = 07
	General job satisfaction.	05.	Strongly Disagree. = 01➔ Strongly Agree. = 07
Work Performance		09.	
	Timeliness.	03.	Strongly Disagree. = 01➔Strongly Agree. = 07
	Effectiveness.	03.	Extremely Low. = 01 ➔ Extremely High = 07
	Efficiency.	03.	Extremely Low. = 01 ➔ Extremely High = 07

Survey Administration

The survey form (questionnaire) was refurnished with minute linguistic changes. Some questions were reversed and converted into positive ones in the exploration phase. Janz and Prasarnphanich, (2003) discuss the following causes for collecting the data from software houses.

1. Organizations that develop information systems face firsthand problems repeatedly; for this reason, tacit knowledge is more important for their employees (Janz & Prasarnphanich, 2003).
2. Employees of software houses usually deal with difficult assignments, and need to work in a team.
3. The technology is changing quickly, and the knowledge workers need to update their skills.

Questionnaires were distributed to twenty organizations (software houses) in Islamabad and Peshawar regions. Fifteen to twenty employees were found in those organizations. More or less ten staff were chosen randomly from every single organization. Managers observe knowledge management's implementations as they are well informed about it (Choy, 2006). Stakeholders' views are equally important to actual team members for analyzing the behavior and performance (Janz & Prasarnphanich, 2003).

Therefore the questionnaire has been apportioned into two parts. The first part relates to team members only, and the second belongs to work performance evaluations. The team members filled out both parts, while customers and managers filled out the work performance evaluation part. Questionnaires were circulated on the basis of the ratio among two hundred software developers and forty customers and managers. The response rate was 63.5% (127 respondents) and 85% (34 respondents). The accumulative response rate is 67% (161 respondents). Anderson and Gerbing (1988) recommend sample size of 150. The data collection tools reliability was re-insured with reliability tests. A value of Cronbatch alpha of more than 0.60 is acceptable (Janz & Prasarnphanich, 2003). The items' reliability values can be observed in Table 02, which are higher than the required value.

Analytical Procedures & Fitness of the Model

A statistical software package LISREL is used in the current paper because of its speciality for Structural Equation Model (SEM). The parent paper (Janz & Prasarnphanich, 2003) used the same package. In this paper, for measuring the model Standardized Root Means Square Residual (SRMSR), Relative Chi-Square (Chi-Square/degree of freedom), Adjusted Goodness of Fit Index (AGFI), Goodness of Fit Index (GFI), Comparative Fit Index (CFI), and Normed Fit Index (NFI) tests were used. The results were satisfactory.

The model was tested with the above mentioned tests, and the fitted results are shown in Table 02. CFI and NFI tests are incremental, while AGFI, GFI, Chi-Squared test, SRMSR, and RMSR come in absolute fit area indices. Relative chi-square is used for its sensitivity to sample size, and its recommended value is between 2 to 5. GFI recommended value is 0.08 while its range is 00 to 01. The model is considered perfect when its value reach to 00. Hooper, Coughlan and Mullen (2008) prefer to use AGFI because of GFI sensitivity toward the degree of freedom, and AGFI adjusts its biasedness. AGFI recommended value and range are the same as GFI. Sample size affects NFI results; in some cases, its value increases from 01, which is the upper range, while the acceptable value is 0.80 or 0.90. The CFI is the most reliable and trustworthy goodness of fit test; its range is 00 to 01, like NFI. It is not sensitive to sample size. The more its value is nearer the upper range, the more the model is considered fit.

The overall model is tested for goodness of fit. The value of the chi-square is 351.63, the value of the degree of freedom is 95, the value of the relative chi-square is 351.63/95=03.71, and the value of GFI is 0.69, AGFI is 0.61, RMSR is 0.019, NFI value is 0.85 while CFI is 0.88. All the mentioned value confirms the model's fitness.

Table 02: Measurements of Model Fitness and Indicators Reliability

Indicators\Construct.	Standardize Alpha.	Relative chi-square.	GFI.	AGFI.	NFI.	CFI.	RMSR.
Autonomy		03.12	00.89	00.81	00.79	00.85	00.042
Process	0.715						
Planning	0.707						
People	0.703						
Organizational Climate		03.70	00.97	00.85	00.98	00.95	00.008
Support	0.703						
Warmth	0.711						
Reward	0.728						
Risk	0.725						
Cooperative-Learning		02.75	00.86	00.78	00.80	00.86	00.041
Group-process	0.749						
Promotive-interaction	0.787						
Positive inter-dependence	0.798						
Work-satisfaction		06.41	00.92	00.75	00.74	00.77	00.038
Growth-satisfaction	0.738						
General job-satisfaction	0.772						
Work-performance		02.76	00.92	00.86	00.87	00.91	00.05
Timeliness	0.701						
Effectiveness	0.739						
Efficiency	0.762						

Validity means that a construct or indicator measures the phenomena that are supposed to be measured to the required level (Škrinjar et al., 2007). Factor analyses are used to confirm the validity of the indicators. Factor loading values in Table 03 validate all the constructs at 0.01 significant values.

Table 03: Factors-Loading and t-value		
Indicators	Factor-Loading.	T-value.
Autonomy		
Process related	00.53	06.22
Planning related	00.72	10.01
People related	00.77	11.40
Organizational-Climate		
Support	00.60	07.84
Warmth	00.79	06.79
Reward	00.82	10.01
Risk	00.67	07.84
Cooperative-Learning		
Group-Process	00.48	15.92
Promotive-Interaction	00.61	06.88
Positive-Interdependence	00.60	06.85
Work-Satisfaction		
Growth-Satisfaction	00.73	09.28
General job-Satisfaction	00.72	09.22
Work-Performance		
Efficiency Timeliness	00.72	08.01
Effectiveness	00.72	07.95
Efficiency	00.75	08.31

Structural Model

Appendix-A (correlation matrix) shows the correlation of all the indicators and constructs used in the current study. The results are significant at 0.05 or 0.01 (two-tail). As per the correlation matrix, warmth and performance-effectiveness have the lowest (0.202), and cooperative learning and work satisfaction have the highest (0.792) correlation at a significant level of 0.01.

Hypotheses are scanned with a structural analysis model, and its result can be viewed in Figure 2. All the path coefficients' significance levels are 0.01.

The path coefficient (0.370) and its T-value (4.648) for autonomy and CL in Figure 2 demonstrate that autonomy positively affects cooperative learning, and the first hypothesis is supported and the level of impact is 37%.

H1: Autonomy positively affects cooperative learning.

Likewise the Figure 2 show, the coefficient value of 0.447 with a t-value of 5.614 for OC and CL at a significance level guides that the second hypothesis of this paper is also supported with the strength of 44%.

H2: Organizational Climate positively affects cooperative learning.

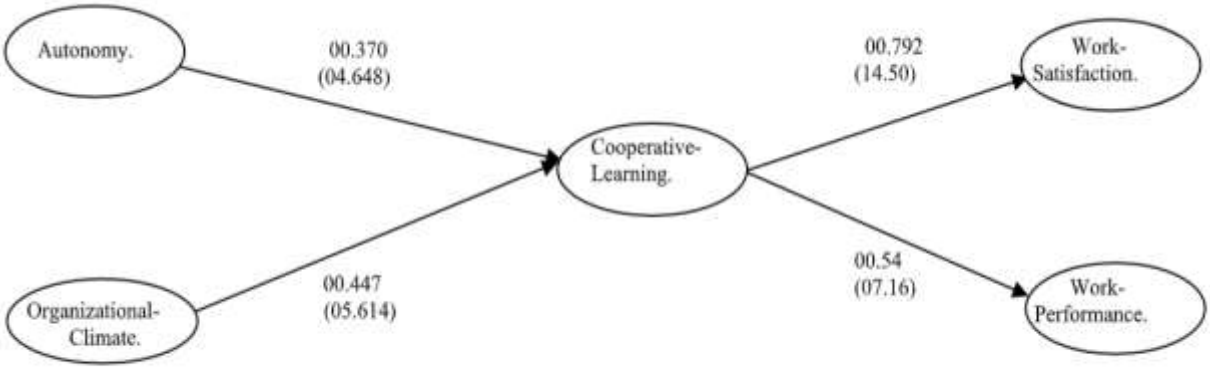
Next it was found the CL affects work satisfaction by 79%, and the path coefficient and t-value of 14.50 confirm the supportedness of the third hypothesis as well.

H3: Cooperative learning has positive effects on work satisfaction.

Finally the relationship of the CL and WP and supportedness of H4 was observed and found with the Beta value 0.54, path coefficient value of 0.54 and t-value of 7.16 at a significance level of 0.01. All the values are satisfactory.

H4: Cooperative learning has positive effects on work performance.

Figure 02: Structural Model Analyses (Path coefficients and subsequent t-values of SEM)



Significance level: 0.01.

Conclusion

The findings of this study are expressively more important for organizations than academics. Administrations are always in search of techniques to enhance performance and productivity. The expectation theory explains that employees and organizations (owners) work together to fulfill one another's needs. So, to achieve organizational objectives, employee satisfaction is an essential factor. The literature confirms that employee satisfaction and work performance have solid relations and that teamwork can produce synergy.

This paper concluded that an organizational climate is one where employees are rewarded for their performance and support creativity. Similarly, it encourages a climate to promote one another, affords the risk of creativity, and gives employees a free hand to choose the way and resources to achieve the super objectives, generating new world knowledge (tacit). They find easy excess to the most challenging target. They always enjoy a win-win situation.

This study combines the CTI concept (Zarraga & Manuel, 2003) with the (Janz & Prasarnphanich, 2003) model. Autonomy directs the knowledge workers to find their way, as there is no highway toward the target. Therefore, they have to create the knowledge. In the model, organizational climate shows the flexibility and support of organizations for the creations and innovations. Thus, the autonomy and organizational climate of the model is responsible for knowledge creation (C of CTI), which is also endorsed by Mendo et al. (2022). The statistic in figure 02 shows that favorable employee autonomy and organizational climates generate cooperative learning. The definition of collaborative learning and its dimensions (Group process, promotive interaction, and positive interdependence) indicate that the transfer of knowledge (T of CTI) is the function of collaborative learning. These findings are also endorsed by the literature (Alcalá et al., 2019; Cecchini et al., 2019; Uslu & Durak, 2022). The results are shown in Figure. 02 further deduced that cooperative learning enhances work performance and employee satisfaction. When discovered, knowledge is shared/transferred, it enhances performance, creates synergy, and improves employee satisfaction, as shown in the model of this paper. The stakeholders' trust and reliability enhanced the created knowledge's capability. Then, organizations and employees use such knowledge and share it ahead of time with possible improvements. At this point, the integration of tacit knowledge (I of CTI) completes and converts into explicit knowledge.

The path coefficient in figure 02 shows that organizational climate (0.447) is more responsible for cooperative learning than employees' autonomy (0.370), and collaborative learning enhances employees' satisfaction (0.792) higher than work performance (0.54). Here, the literature shows that employee satisfaction improves work performance.

The data analyzed in this paper and the parent study was collected from information system development organizations where tacit knowledge, creativity, and teamwork are mandatory. They provide autonomy and a feasible environment, and the results are almost the same and favorable. This study suggests that in organizations where tacit knowledge and creativity might not be their daily requirement, teamwork may not be their routine, but they should follow the model. It is anticipated that employees' satisfaction and work performance will improve considerably.

References

- Abu Khadra, M. F., & Rawabdeh, I. A. (2006). Assessment of development of the learning organization concept in Jordanian industrial companies. *The learning Organization*, *13*(5), 455-474.
- Alcalá, D. H., Río, J. F., Calvo, G. G., & Pueyo, Á. P. (2019). Comparing effects of a TPSR training program on prospective physical education teachers' social goals, discipline and autonomy strategies in Spain, Chile and Costa Rica. *Physical Education and Sport Pedagogy*, *24*(3), 220-232.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, *103*(3), 411.
- Axelrod, B. N. (2002). Validity of the Wechsler abbreviated scale of intelligence and other very short forms of estimating intellectual functioning. *Assessment*, *9*(1), 17-23.
- Bronstein, L. R. (2003). A model for interdisciplinary collaboration. *Social work*, *48*(3), 297-306.
- Burkink, T. (2002). Cooperative and voluntary wholesale groups: channel coordination and interfirm knowledge transfer. *Supply Chain Management: An International Journal*, *7*(2), 60-70.
- Cecchini Estrada, J. A., González González-Mesa, C., Llamedo, R., Sánchez Martínez, B., & Rodríguez Pérez, C. (2019). The impact of cooperative learning on peer relationships, intrinsic motivation and future intentions to do sport. *Psicothema*, *31*.
- Choy, C. S., & Suk, C. Y. (2005). Critical factors in the successful implementation of knowledge management. *Journal of knowledge management practice*, *6*(1), 234-258.
- Choy, C. S. (2006). KM critical success factors: a comparison of perceived importance versus implementation in Malaysian ICT companies. *The Learning Organization*, *13*(3), 230-256.
- Cook, J., & Crossman, A. (2004). Satisfaction with performance appraisal systems: A study of role perceptions. *Journal of managerial psychology*, *19*(5), 526-541.
- Crichton, M. (2005). Attitudes to teamwork, leadership, and stress in oil industry drilling teams. *Safety Science*, *43*(9), 679-696.
- Elsetouhi, A. M., Mohamed Elbaz, A., & Soliman, M. (2023). Participative leadership and its impact on employee innovative behavior through employee voice in tourism SMEs: The moderating role of job autonomy. *Tourism and Hospitality Research*, *23*(3), 406-419.
- Gil-Arias, A., Claver, F., Práxedes, A., Villar, F. D., & Harvey, S. (2020). Autonomy support, motivational climate, enjoyment and perceived competence in physical education: Impact of a

hybrid teaching games for understanding/sport education unit. *European Physical Education Review, 26*(1), 36-53

- Hall, P., & Weaver, L. (2001). Interdisciplinary education and teamwork: a long and winding road. *Medical education*, *35*(9), 867-875.
- Haycock-Stuart, E. A., & Houston, N. M. (2005). Evaluation study of a resource for developing education, audit and teamwork in primary care. *Primary Health Care Research & Development*, *6*(3), 251-268.
- Hooper, D., Coughlan, J., & Mullen, M. (2008, September). *Evaluating model fit: a synthesis of the structural equation modelling literature. In 7th European Conference on research methodology for business and management studies* (Vol. 2008, pp. 195-200).
- Huang, Y. T., & Chu, W. (2010). Enhancement of product development capabilities of OEM suppliers: inter-and intra-organisational learning. *Journal of Business & Industrial Marketing*.
- Janz, B. D., & Prasarnphanich, P. (2003). Understanding the antecedents of effective knowledge management: The importance of a knowledge-centered culture. *Decision sciences*, *34*(2), 351-384.
- Jashapara, A. (2003). Cognition, culture and competition: an empirical test of the learning organization. *The Learning Organization*.
- Johnson, D. W., Johnson, R. T., & Stanne, M. B. (2000). *Cooperative learning methods: A meta-analysis.* University of Minnesota.
- Karakuş, M., & Töremen, F. (2008). How our schools can be more synergic: Determining the obstacles of teamwork. Team Performance Management: *An International Journal, 14*(5/6), 233-247.
- Lick, D. W. (2006). A new perspective on organizational learning: Creating learning teams. *Evaluation and Program Planning*, *29*(1), 88-96.
- Luthans, F. (1973). The contingency theory of management: A path out of the jungle. *Business Horizons, 16*(3), 67-72.
- Mendo-Lázaro, S., León-del-Barco, B., Polo-del-Río, M. I., & López-Ramos, V. M. (2022). The impact of cooperative learning on university students' academic goals. *Frontiers in Psychology*, *12*, 787210.
- McTighe, J., & Emberger, M. (2006). Teamwork on assessments creates powerful professional development. *The Learning Professional*, *27*(1), 38.
- Møgelvang, A., Vandvik, V., Ellingsen, S., Strømme, C. B., & Cotner, S. (2023). Cooperative learning goes online: teaching and learning intervention in a digital environment impacts psychosocial outcomes in biology students. *International Journal of Educational Research*, *117*, 102114.
- Molina, L. M., Lloréns-Montes, J., & Ruiz-Moreno, A. (2007). Relationship between quality management practices and knowledge transfer. *Journal of operations management*, *25*(3), 682-701.
- Molyneux, J. (2001). Interprofessional teamworking: what makes teams work well? *Journal of interprofessional care*, *15*(1), 29-35.
- Pan, Y., Cheng, X., & Hu, Y. (2023). Three heads are better than one: cooperative learning brains wire together when a consensus is reached. *Cerebral Cortex, 33*(4), 1155-1169.
- Politis, J. D. (2003). The connection between trust and knowledge management: what are its implications for team performance. *Journal of knowledge management*.

- Powell, A., Galvin, J., & Piccoli, G. (2006). Antecedents to team member commitment from near and far: A comparison between collocated and virtual teams. *Information Technology & People*, *19*(4), 299-322.
- Scarnati, J. T. (2001). On becoming a team player. *Team Performance Management: An International Journal*.
- Seidler-de Alwis, R., & Hartmann, E. (2008). The use of tacit knowledge within innovative companies: knowledge management in innovative enterprises. *Journal of knowledge management*.
- Škrinjar, R., Štemberger, M. I., & Hernaus, T. (2007). *The impact of business process orientation on organizational performance*. *Business Process Management Journal*.
- Stavrou-Costea, E. (2005). The challenges of human resource management towards organizational effectiveness: A comparative study in Southern EU. *Journal of European industrial training*, *29*(2), 112-134.
- Tao, W., Song, B., Ferguson, M. A., & Kochhar, S. (2018). Employees' prosocial behavioral intentions through empowerment in CSR decision-making. *Public Relations Review*, *44*(5), 667-680.
- Tarricone, P., & Luca, J. (2002). Employees, teamwork and social interdependence–a formula for successful business? *Team Performance Management: An International Journal*, *8*(3/4), 54-59.
- Uslu, N. A., & Durak, H. Y. (2022). Predicting learner autonomy in collaborative learning: The role of group metacognition and motivational regulation strategies. *Learning and Motivation*, *78*, 101804.
- Zarraga, C., & Manuel García-Falcón, J. (2003). Factors favoring knowledge management in work teams. *Journal of knowledge management*, *7*(2), 81-96.

Appendix A. Correlation Matrix

Indicators	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. People related Autonomy.	1.														
2. Planning related Autonomy.	0.669**	1.													
3. Process related Autonomy.	0.555**	0.558**	1.												
4. Risk.	0.359**	0.317**	0.355**	1.											
5. Reward.	0.385**	0.384**	0.475**	0.591**	1.										
6. Warmth.	0.408**	0.468**	0.515**	0.540**	0.595**	1.									
7. Support.	.0623**	0.651**	0.502**	0.328**	0.507**	0.537**	1.								
8. Positive-Interdependence.	0.566**	0.512**	0.513**	0.464**	0.534**	0.489**	0.665**	1.							
9. Promotive-Interdependence.	0.406**	0.419**	0.493**	0.306**	0.395**	0.374**	0.441**	0.504**	1.						
10. Group-Process.	0.405**	0.330**	0.437**	0.437**	0.423**	0.358**	0.424**	0.445**	0.362**	1.					
11. General-Satisfaction.	0.504**	0.416**	0.481**	0.353**	0.452**	0.431**	0.535**	0.586**	0.657**	0.507**	1.				
12. Growth-Satisfaction.	0.443**	0.408**	0.524**	0.288**	0.451**	0.438**	0.477**	0.558**	0.409**	0.568**	0.525**	1.			
13 Efficiency.	0.294**	0.247**	0.237**	0.357**	0.307**	0.209*	0.236**	0.337**	0.257**	0.277**	0.220*	0.211*	1.		
14. Effectiveness.	0.413**	0.266**	0.411**	.395**	.390**	.202*	0.278**	0.424**	0.347**	0.471**	0.333**	0.433**	0.632**	1.	
15. Timeliness.	0.461**	0.470**	0.369**	.468**	.440**	.396**	0.391**	0.414**	0.251**	0.423**	0.238**	0.349**	0.381**	0.426**	1.

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).