Heliyon 10 (2024) e27664

Contents lists available at ScienceDirect

Heliyon

journal homepage: www.cell.com/heliyon

Research article

The mediating role of quality of work life and organizational commitment in the link between transformational leadership and organizational citizenship behavior

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ARTICLE INFO

Keywords:
Organizational citizenship behavior
Organizational commitment
Quality of work life
Transformational leadership

ABSTRACT

In this modern era, schools require Organizational Citizenship Behavior (OCB) of organization members as one of the determining elements for the smooth process of achieving school goals. Leadership can transform an organization's entire potential as a learning community towards better organizational change, which is needed to increase OCB. This article aims to analyze the direct and indirect relationship between transformational leadership (TL) and OCB with quality of work-life (QWL) and organizational commitment (OC) as mediators. Another aim is to analyze the role of QWL as a mediator of the relationship between TL and OC. The research sample was 165 permanent teachers from several high schools in Madiun City. Research data was collected through questionnaires, and Structural Equation Modeling (SEM) was used for data analysis. The data analysis results prove a significant direct relationship between TL, QWL, and OC with OCB in a positive direction. The results of testing the role of mediating variables contribute to the novelty of this research, namely: 1) QWL partially mediates the relationship between TL and OC, as well as the relationship between TL and OCB; 2) OC partially mediates the relationship between TL and OCB. The analysis results indicate that increasing teacher OCB can be done effectively through increasing transformational leadership practices, programs to improve the quality of work-life, and increasing teacher organizational commitment.

1. Introduction

Human Resources (HR) are essential in controlling, maintaining, and developing the organization to keep up with the times. HR plays an important role in sustainability [1]. Therefore, organizations must have good human resource (HR) management to survive competition and be sustainable. Good HRM is critical to success. Common good HRM is important in driving progress in achieving sustainable development goals (SDGs) in Sustainable [2]. HR problems that often arise in an organization are usually related to people's behavior, performance, and attitudes. In an organization, there are interactions between individuals and groups and with the organization, which are known and studied as organizational behavior. HR often uses organizational behavior to overcome problems in the workplace, such as work discipline, work quality, work results, motivation, work, work behavior in groups, and employee satisfaction at work [3].

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https://doi.org/10.1016/j.heliyon.2024.e27664
Received 21 March 2023; Received in revised form 9 February 2024; Accepted 5 March 2024
Available online 9 March 2024
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School leaders must pay attention to, maintain and develop school human resources professionally as an educational institution. HR in educational institutions needs to be developed continuously to catch up with the demands of a dynamic work role. HR capabilities are reflected in performance, and good HR will provide optimal performance. Good HR performance is capital for schools to achieve the school's vision and mission, so school leaders must pay serious attention to the quality of HR performance. If organizational goals can be achieved, good relations and synergy will be created between leaders and human resources [4].

As a form of prosocial behavior in organizations, organizational citizenship behavior (OCB) is an important foundation of every HR management, including schools. OCB contributes to the functioning and success of organizations by creating social capital, increased efficiency, and increased productivity [5,6]. OCB plays a fundamental role in improving school effectiveness [7]. In the era of Society 5.0, teachers face various challenges [8], and advances in communication technology and changes in society require teachers to demonstrate high OCB, because teachers have an important role in schools [9]. OCB is essential in the teaching profession [10]. OCB from teachers is demonstrated through helpful behavior towards colleagues, supervisors, and students who need help (including assistance with exam preparation practice) and contributing to the school (for example, providing recommendations for changes and improvements and suggestions that are useful for the school) [11]. Principal leadership can help improve teacher OCB at different levels [9]. One of the factors that predict OCB is leadership. One of the factors that predict OCB is leadership. Some choose the teaching profession for reasons of intrinsic and extrinsic motivation. For senior teachers, extrinsic motivation factors such as job stability, salary, and extended rest time reveal that most of their extrinsic motivation can come from the principal [12].

The success of a school organization in achieving its goals is inseparable from the role played by the principal. The principal is the primary driver of all administrative activities and practices in the school. The principal is also a source of change, improvement, and growth for schools by carrying out modern leadership following the demands of society. Transformational leadership (TL) is a leadership style still relevant today. TL results from environmental changes and is an interaction between leaders and subordinates. It focuses on transforming organizational culture and practices in dealing with social challenges and changes by influencing individual behavior to provide positive organizational results.

Many researchers on organizational leadership have become interested in TL theory over the last three decades. The relationship between teachers' perceptions of the principal's transformational leadership (TL) style and teachers' OCB is higher than that of principals who use a transactional leadership style [13]. TL is one of the best leadership styles that educational organizations can adopt in managing the challenges of restructuring schools. Empirical studies prove TL is more effective in carrying out school leadership functions [14]. Some empirical studies have documented an important relationship between TL and organizational operations [15]. TL is positively related to organizational citizenship behavior (OCB) [3,16–21]. Hidayat and Patras revealed that servant leadership is important in increasing teacher OCB, while Widodo et al. [22] revealed that visionary leadership is essential in increasing teachers' OCB.

Every school needs OCB to attract prospective students or parents to choose the related school. At the current level of competition in educational services, OCB is needed by HR to continuously attract prospective students to choose educational services in certain schools. HR is involved in delivering educational services, especially to teachers who are directly involved in students' learning process and guidance. OCB is essential for the success and continuity of educational organizations. Employees with OCB will work harder and want to go beyond their obligations [16]. A part from teachers' OCB, teacher welfare factors are one of the motivations for improving teacher quality and performance [23]. The Indonesian government's efforts to improve teacher competency and the quality of Indonesian teaching have been carried out since 2007 through teacher certification policies for civil and non-civil servant teachers. One form of improving teacher welfare is by obtaining teacher certification because by obtaining teacher certification, teachers receive a competency certificate in carrying out their role as a teacher and receive a professional allowance equal to one month's basic salary [24], so with this certification policy, it is hoped that the quality of work-life and teacher welfare will increase-efforts to increase QWL focus on improving employee welfare, an organizational effort to support SDGs. The SDGs set many important targets that aim to protect environmental sustainability and improve human welfare and are directly related to the quality of human life [25]. A teacher's QWL can be related to the teacher's feelings towards work or the profession as a teacher, and one aspect is satisfaction with work [26]. According to Els et al. [27], the quality of work-life can be interpreted as a personal view of professionalism, work environment, enjoyment, participation, involvement, work-life balance, and well-being in work and individual organizations.

Widodo et al. [22] revealed that visionary leadership, directly and indirectly, is the relationship between OCB with quality of work life and organizational commitment as mediation. Raflyzon et al. [19] showed that OCB increased significantly because TL and OCB mediate teacher performance at SMK Panjatek North Bekasi (West Java, Indonesia). The empirical studies by Hidayah and Hendarsjah [28] and Widodo et al. [22] showed that OCB could be improved through the quality of work life (QWL). QWL is an effort to create a sense of security and satisfaction in employees' work [28].

Increasing an individual's organizational commitment is critical in management studies [29]. Apart from that, the sense of employee ownership is also increasing, which is an important element for an organization, and this is influenced by leadership [30]. Burmansah et al. [31] revealed that the quality of work life is positively and significantly related to teachers' affective commitment in schools. Alzamel et al. [32] stated that OC is a form of loyalty to the company's beliefs and goals, dependency, and an ethical obligation to remain in the organization, where this OC can be improved through the QWL.

To prepare the younger generation to face the challenges of the times, school organizations need to make overall improvements, starting from objectives, learning processes, systems, and media. In efforts to reform schools, leaders are essential in providing guidance and solutions to improve the quality of student learning and develop teacher professionalism. The teachers' OC is crucial to school reform [33]. One strategy that can be applied in the practice of transformational leadership to improve the OC of teachers is to pay attention to the teachers' QWL. This is supported by the studies of AL Nababteh and Alkshali [34], which show that another positive impact of transformational leadership is improving the QWL.

QWL can be seen as a broad concept that includes satisfaction with work, management participation, and improving the work environment [35]. QWL can be achieved if organizational leaders condition QWL through the availability of physical and non-physical facilities for all organization members [36]. QWL is an effective way for HR to have resilience and satisfaction in the workplace so that HR is willing to contribute more amidst high competition between organizations [28]. An employee with a high QWL will have a positive attitude toward his organization, such as increasing the OC [3,37–39] and improving OCB [21,22,28,36,40].

Every organization, including educational organizations, faces the challenge of managing employee commitment to the organization where they work to ensure work sustainability. If the OC of the employees is low, they have a high desire to leave, so they eventually leave the organization. The resignation of a potential employee from an organization can cause harm to the organization. A high level of OC provides a clear focus for HRM because good and positive commitment can increase job performance [37]. HR in schools, which consists of principals, teachers, students, administrative staff, and other educational staff in the management of school organizations, is one of the resources that are relied upon to achieve the success of educational goals in schools. It is important for school leaders, both principals and deputy principals, to understand how the transformational leadership style works because it can increase teacher motivation to demonstrate OCB [7].

School culture is heavily influenced by school leadership [12]. TL can be said to be an effective leadership style in determining OC. If a leader can empower, mobilize, and motivate employees, this can affect the employee's commitment to the organization. An empirical study by Noraazian and Khalip [33] showed a significant positive correlation between transformational leadership and teacher organizational commitment in 40 New Deal elementary schools in Malaysia. Meanwhile, Widodo et al. [22] revealed that the OC of teachers in three provinces in West Java, Jakarta, and Banten can be improved through visionary leadership. Therefore, improving the OC of employees, including teachers, in educational organizations is one of the fundamental challenges and the main task of school management through leadership practices.

OCB can foster interdependence between each member of the work unit so that it can improve collective performance. Therefore, for OCB to increase, organizations need to know what causes it. Based on several previous empirical studies, the authors underline the strategic role of organizational leadership, such as TL, because it can foster QWL and OC, which impacts employee OCB. Those empirical studies indicated that TL, OC, and QWL are essential factors for forming OCB in an organization. OCB expresses concern, loyalty, and a high sense of belonging from organizational members. If each organization has many employees with high OCB, the organization can face challenges due to environmental changes. Based on the previous studies, it is indicated that studies on the role of QWL and OC in mediating the influence of TL on OCB in educational organizations are still relatively limited. Therefore, the study was carried out to fill this research gap by using high school teachers as research samples.

The problem formulation of this study is as follows.

1) Is transformational leadership positively and significantly linked to the quality of work life?
2) Is transformational leadership positively and significantly linked to the quality of work life?
3) Is transformational leadership positively and significantly linked to organizational commitment?
4) Is the quality of working life positively and significantly linked to organizational commitment?
5) Is the quality of working life positively and significantly linked to organizational citizenship behavior?
6) Is organizational commitment positively and significantly linked to organizational citizenship behavior?
7) Does the quality of work-life play a mediating role in the link between transformational leadership and organizational commitment?
8) Does the quality of work-life play a mediating role in the link between transformational leadership and organizational citizenship behavior?
9) Does organizational commitment play a mediating role in the link between transformational leadership and organizational citizenship behavior?

Referring to the problem formulation, this research aims to empirically test the direct link: 1) transformational leadership with organizational citizenship behavior; 2) transformational leadership with quality of work life; 3) transformational leadership with organizational commitment; 4) quality of work life with organizational commitment; 5) quality of work life with organizational citizenship behavior; 6) organizational commitment with organizational citizenship behavior. To fill the gap in previous research, this research also aims to examine the mediating role of 7) quality of work life in the link between transformational leadership and organizational commitment; 8) quality of work life on the link between transformational leadership and organizational citizenship behavior; 9) organizational commitment to the link between transformational leadership and organizational citizenship behavior.

2. Literature review

2.1. Transformational leadership (TL)

TL is a leadership approach that causes change at the individual and group levels. Transformational leaders help subordinates recognize their competencies and where subordinates can play an optimal role in helping the organization achieve organizational goals. A transformational leader is seen as a figure who can strongly influence followers, thereby inspiring followers to achieve organizational goals that exceed the leaders' expectations. This is possible because transformational leaders can generate a high sense of self-confidence, commitment and loyalty from their subordinates and develop their leadership spirit [38]. Transformational leaders are potentially able to gain high levels of trust, admiration, motivation, commitment, loyalty, and performance from their subordinates

(followers) [39], utilizing four dimensions: 1)individualized consideration, 2) intellectual stimulation, 3) Idealized influence, and 4) inspirational motivation.

Based on the Bass theory (1985) in Korejan and Shahbazi [40], variable TL in this study is linked to four factors, including individual consideration (IC), intellectual stimulation (IS), inspiration motivation (IM), and idealized influence (II). **IC** refers to the concept that the needs of team members are focused on and prioritized. Leaders serve as role models, counselors, organizers, and coaches to encourage employees to participate in team activities and demonstrate OCB. **IS** is a concept about leaders or managers who provide support and encouragement to organizational members until organizational members produce innovative ideas about how to change existing procedures or orders to produce effective results so that, in turn, it can increase the retention of organizational members. **IM** is about a leader's willingness to help followers or subordinates achieve goals through establishing and conveying the vision, mission, and organizational goals that must be achieved by subordinates or teams so that the team is inspired to achieve organizational goals. The leader provides assistance and training to team members or followers to achieve their respective tasks. **II** is a concept of leader behavior that provides practical examples of a leader by demonstrating the qualities of innovative thinking, honesty, trust, confidence, interest, pride, and effective communication.

2.2. Quality of work life (QWL)

QWL is the impact of human and organizational effectiveness, emphasizing participation in problem-solving and decision-making [41]. QWL is an organizational effort to realize organizational goals through promotion policies, democratic supervision, employee engagement, and safe working conditions for employees; 2) QWL is defined as an employee's perception of the employee's feelings of security and satisfaction with their work, as well as the employee's perception of growth and development as a human being.

Teacher work-life quality is defined as the integration of work roles and social roles so that the two can synergize effectively [31]. Efforts that school administrators can make to improve the quality of work life include developing programs that attract and retain competent teachers, improving school performance, creating healthy and safe working conditions, increasing teacher abilities, improving the balance of work and personal life aspects, increasing salaries and appropriate allowances, as well as regulating the balance of teachers' working hours.

QWL is one of the organization's efforts to improve an organizational culture that supports employee growth and development, which is related to job satisfaction and employee motivation, covering aspects of life-related to work such as salary and working hours, work environment, career prospects, benefits and services, and human relations [42]. QWL refers to organizational culture and workplace climate [43]. A good QWL is expected to provide positive results for employees and the organization [44], such as improving job satisfaction and job performance [45], improving job satisfaction and OCB [42]; improving organizational commitment and OCB [46]; positively relationship on the feeling of contribution to productivity [47]; improving job performance [43].

2.3. Organizational commitment (OC)

OC describes the relationship between employees and the organization [48]. An employee who is highly committed to the organization means being loyal to the organization so that the employee will try as much as possible to contribute to achieving organizational goals. OC includes employee attitudes and behavior regarding the organization and is often described as employee loyalty [37]. If an employee sides with the organization and the goals of the organization where the employee works and intends to maintain his membership, then it is also called OC [49]. conceptualized OC as an attitudinal approach, where OC is defined as 1) a strong desire to remain a member of the organization, 2) the desire to strive according to the wishes of the organization, 3) belief in and acceptance of the values and goals of the organization.

OC is the attitude and behavior of employees in an organization and is sometimes expressed as employee loyalty [37], which includes the three dimensions of commitment: affective commitment (AC), continuous commitment (CC), and normative commitment (NC). AC is the employee's perception of their emotional attachment to the organization; CC is the employee's perception of the costs associated with their decision to leave the organization; and NC refers to employees' perceptions of their obligations to their organization.

2.4. Organizational citizenship behavior (OCB)

OCB is conceptualized from two theoretical roots: Social Exchange Theory (SCT) and Fairness and Social Justice Theory. In the early 1980s, OCB emerged as a description of organizational employee behavior [50]. OCB is an employee behavior that describes an employee's willingness to work outside formal work responsibilities, which is highly desired and needed by the workplace organization [51]. OCB is an employee behavior aimed at improving organizational performance effectiveness without neglecting each employee's productivity goals. OCB is an employee behavior aimed at improving organizational performance effectiveness without neglecting each employee's productivity goals. OCB is "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that overall promotes the effective functioning of the organization" [52,53]. Conceptually, OCB can exist at three organizational levels, namely the individual level (e.g., donating behavior), the team level (e.g., cooperative behavior and sharing behavior), and the organizational level (e.g., volunteering for unpaid organizational tasks) [11].

Referring to previous studies confirm five dimensions of OCB: courtesy, conscientiousness, altruism, civic virtue, and sportsmanship [54], where courtesy is a person's efforts to prevent work-related problems with others; conscientiousness is discretionary behavior that goes beyond minimum job role requirements; altruism is the behavior of helping other organizational members with the

tasks or problems they face; civic virtue is the behavior of a person's willingness to participate responsibly in organizational life; and sportsmanship is behavior related to tolerance in less than desirable situations [55].

The dimensions of OCB by Organ [55,56,57] are as follows: Altruism, namely the voluntary behavior of employees helping other people (for example co-workers) who are in need related to work tasks; 2) Courtesy is employee behavior in maintaining good relations with co-workers to avoid interpersonal problems; 3) Conscientiousness is employee behavior that exceeds the minimum work role required by the organization, where this behavior involves punctuality and compliance with the rules, regulations and procedures applicable in the organization that tolerate less than ideal conditions in an organization without causing objections or complaints; 4) Sportsmanship is the behavior of employees who tolerate less than ideal organizational conditions without complaining and sacrificing their interests; 5) Civic Virtue is the responsible behavior of employees for the life of the organization and refers to the responsibility given by the organization to employees to improve the quality of their field of work, or the deep concern and active attention of employees towards the existence of the organization, such as providing development suggestions for the company.

3. Hypothesis development and research model

3.1. The link of transformational leadership between organizational citizenship behavior

All leadership styles (charismatic, transactional, and transformational) positively affect the subordinates' OCB [16]. The framework for the relationship between transformational leadership and OCB in employees is based on SCT [58,59]; OCB plays an important role for leaders to encourage followers to behave beyond the minimum job requirements [57]. TL inspires subordinates to perform better in innovation and large-scale change [14]. The TL is a leadership concept that aligns with the demands of change needed to improve employee performance. One of the factors that can influence the emergence of OCB in employees is transformational leadership. One of the factors that can influence the emergence of OCB in employees is transformational leadership [3,14,17,19–22,40,60,61].

The social exchange theory is a framework for understanding why transformational leadership behavior is associated with the OCB of the followers [56]. Transformational leadership theory emphasizes reciprocity in social exchange [62]. TL can increase employee morale at work and increase employees' willingness to do extra work that is more meaningful. Leaders who use transformational leadership demonstrate high levels of motivating behavior for subordinates so that subordinates internalize and prioritize organizational goals above the individual interests of subordinates and encourage subordinates to demonstrate OCB. An employee who is intrinsically motivated to fulfill the organization's vision without expecting personal gain is likely to contribute to achieving organizational goals. Likewise, a good relationship between the principal and teachers will result in teachers being willing to carry out their work and contributing to the school's progress beyond the formal role expectations required by the school. This shows the high level of OCB of teachers. This is evidenced in an empirical study by Majeed et al. [62], which shows TL's positive and significant relationship with the OCB of teachers in Pakistan's public sector higher education institutions. Furthermore, Davis [7] used transformational practices to increase teachers' OCB. OCB. Based on the description, the first hypothesis (H1) is formulated as follows.

H1. There is a positive link between the transformational leadership and the organizational citizenship behavior.

3.2. The link of transformational leadership between quality of work-life

Leader effectiveness is related to improving the quality of the work life of subordinates. The characteristics of the social exchange process in the workplace are shown in the relationship between transformational leadership and positive work attitudes from subordinates (such as job satisfaction and organizational commitment) due to the quality of employee work-life. This relationship can also be related to the concept of justice theory. Leaders play an important role in improving the quality of subordinates' work life through subordinates' perceptions of fairness in salary and benefits policies [59]. According to Leitão et al. [47], the main parts of QWL include appropriate wages, a conducive working environment, adequate occupational health services, and reasonable working hours. The SDGs set many important targets for environmental protection and human well-being and are directly related to quality of life. A transformational leader can increase QWL, and good QWL will lead to good cooperative relationships between leaders and subordinates.

Pio and Lengkong [36] spiritual leadership significantly improves the quality of employees' work-life. Effective transformational leadership practices will improve employee perceptions of life at work. Effective transformational leadership practices will improve employee perceptions of life at work. Individuals working in the operational and production parts believe that the quality of work-life relates to fair wages, conducive working conditions, and respect between workers and management [34]. Previous research shows the positive and significant influence of transformational leadership on the quality of work-life [34,62]. This indicates that elements of transformational leadership consisting of individual consideration, intellectual stimulation, inspiration, motivation, and idealized influence contribute to employees' work lives. In this research, it is hoped that transformational leadership practices in schools will be significantly related to improving the quality of teachers' work-life, so the second hypothesis (H2) in this study is formulated as follows.

H2. There is a positive link between transformational leadership and the quality of work-life

3.3. The link of transformational leadership between organizational commitment

Referring to social exchange theory (SET), building harmony between leaders and subordinates requires a transformational leadership (TL) approach [63]. In SET, transformational leadership is an important medium to encourage an affective organization [60]. Leadership is described as the leader's ability to inspire, promote, and enable subordinates to participate in achieving organizational success and competence. TL practices can improve OC and trust [30]. An example of the effectiveness of TL is to encourage the increased organizational commitment of employees [20]. Effective TL significantly impacts the organizational commitment of mining industry employees in Jakarta [61]. Leaders who behave consistently with the values taught can build commitment from subordinates to the values taught [62]. Suppose a leader can understand subordinates' needs, motivate subordinates, provide solutions and solve problems, and act as a mentor in educating subordinates to achieve achievement. In that case, it will foster employee commitment to the organization. However, if the leader is less responsive in previously mentioned matters, it will reduce employee organizational commitment. TL inspires subordinates to perform better in innovation and large-scale change [14].

Hermawanto et al. [64] and Xu et al. [30] showed that TL relationship positively and significantly organizational commitment. The results of an empirical study on hotel employees in China conducted by Ref. [60] show that TL is a strong predictor of affective commitment and job performance. The results of previous empirical research [3] establish a positive and significant relationship between TL and OC in ASN millennial employees of the Human Resources Development Training Unit of the Ministry of Law and Human Rights. Transformational leaders are believed to be able to build the organizational commitment of subordinates through efforts to empower and transform their subordinates. Furthermore, Widodo et al. [22] revealed that organizational commitment significantly increases due to visionary leadership practices. In this research, it is hoped that transformational leadership applied in schools is related to increasing teacher organizational commitment, so the third hypothesis (H3) is formulated as follows.

H3. There is a positive link between the transformational leadership and the organizational commitment.

3.4. The link of quality of work life between organizational commitment

QWL is a form of organizational attention to employee needs that is actualized in several ways, for example, providing opportunities for employees to participate in organizational processes, opening up opportunities for employees to be involved in decision-making, and improving the quality of work-life that is appropriate for employees. QWL and OC are essential and fundamental factors in the organization's current behavior [65]. QWL can significantly increase the OC of employees, revealing a positive and significant relationship between QWL and teachers' affective commitment. Abebe and Assemie [66] showed that quality of work-life was found to have a statistically significant and positive association with the organizational commitment of higher education teachers. High QWL can significantly increase employees' organizational commitment to the State Islamic Institute (IAIN) Kendari [67]. The high level of employee commitment to the organization can be seen from the positive behavior of employees towards the organization, such as high involvement in each task, the high willingness of employees to complete tasks, the seriousness of employees in maximizing their skills, the high willingness of employees to adapt to organizational policies, and high willingness to remain in the organization. Therefore, in this study, it is hoped that there will be an increase in organizational commitment from teachers due to the quality of work life felt by teachers, so the fourth hypothesis is formulated as follows.

H4. There is a positive link between the quality of work life and organizational commitment.

3.5. The link of quality of work life between OCB

Fulfilling a good quality of work-life for employees will motivate them to carry out their duties and work better, even if necessary. Employees will be willing to do work that is not their responsibility. Spector in Ref. [51] says that it is logical that satisfaction with the quality of work life should be the primary determinant of the OCB of an employee. Some things included in QWL are security in the workplace, aspects of fairness in the compensation system, appropriate and reasonable salaries, and opportunities to participate in increased productivity [67]. The results of an empirical study of employees in the Ministries of Agriculture, Education, and Finance in Osun State, Nigeria [68] show that QWL is a positive and significant predictor of the OCB of these employees. QWL is positively and significantly related to OCB [21,22,28,36,40]. In this research, it is hoped that there will be a positive and significant relationship between QWL perceived by teachers and teachers' OCB, so the fifth hypothesis (H5) in the research is formulated as follows.

H5. There is a positive link between the quality of work-life and OCB.

3.6. The link of organizational commitment between OCB

High organizational commitment makes employees focused on their work; it can give rise to social behavior in the workplace, such as helping each other in the work environment and providing good results for the organization. Organizational commitment (OC) can impact improving OCB [3,21,69]; Alshaabani et al. [70] revealed the positive impact of affective commitment on OCB. OC is defined as passive loyalty, including active ties of employees to participate more in the organization [3]. OCB is the behavior of individuals voluntarily, indirectly, and officially recognized in the reward system, which can affect the performance of the organization and the performance of the working group, as it helps people to cooperate. The results of empirical research by Ref. [71] show that OCB significantly mediates the relationship between OC and employee performance. This also shows a significant direct relationship

between OC and OCB. The results of an empirical study on Civil Servants at the Inspectorate General of the Ministry of Education and Culture in Jakarta conducted by Nurjanah et al. [17] show the relationship between OC and OCB. In this research, it is also significantly expected that teacher organizational commitment will have a positive and significant relationship with teachers' OCB, so the sixth hypothesis (H6) is formulated as follows.

H6. There is a positive link between organizational commitment and OCB.

3.7. The mediating role of work-life quality in the link between transformational leadership and organizational commitment

Conceptually, transformational leaders encourage subordinates to create a new perception of leadership with a new perspective through intellectual encouragement focusing on individual considerations and inspirational motivation to support and provide careers to subordinates [72]. One program that leaders can develop is a QWL improvement program. The QWL program is used by organizations to improve the work environment [65]. Meanwhile, Peng et al. [73] show that the level of organizational centralization moderates the indirect relationship of TL with affective commitment through perceived work impact. The characteristics of an effective transformational leadership style are generating inspirational motivation, showing charismatic behavior, providing intellectual stimulation, and paying individual attention to each subordinate. Suppose the organization's members' perceived quality of working life is high. In that case, the organization's members will feel pride in being members and have a high degree of persistence towards achieving organizational goals by being willing to contribute to the maximum to achieve organizational goals.

Results of previous investigations, such as [34,65], show a positive impact of TL on QWL, and QWL can be a positive predictor of employee OC [67]. [62] Their empirical studies found a relationship between transformational leadership and affective commitment through perceived work impact. TL is directly and indirectly related to OC through job satisfaction [61]. As a development of the results of previous studies, this study used the quality of work-life as a mediating variable on the indirect link of TL to organizational commitment. This empirical study also predicted the existence of QWL mediation in the relationship between TL and organizational commitment, so the seventh hypothesis (H7) in this study was formulated as follows.

H7. Quality of work life mediates the link between transformational leadership and organizational commitment.

3.8. The role of work-life quality mediation in the link between transformational leadership and organizational citizenship behavior

Several factors, such as transformational leadership, quality of work life, job satisfaction, and organizational commitment, are predictors of OCB from employees. Transformational leadership can also indirectly affect the OCB by mediating different variable roles. Leaders who apply TL tend to encourage subordinates to produce performance beyond what the organization expects through changing the vision, being a role model, and providing support by paying attention to the quality of employee work life and motivating employees to change their work for the better. TL practices can significantly improve the QWL [34,62], and the QWL can improve the OCB of the employees [3,37]. The QWL can meet employees' expectations of the organization; if they can be met, they will do their best for the organization. TL practices also give followers confidence, admiration, loyalty, and respect for their leaders, so employees will easily do more work than expected and be willing to perform extra roles for organizational interests. QWL is a method used by organizations to develop the organization by improving organizational functions by humanizing workplace employees, being more democratic through employee involvement in decision-making.

The results of an empirical study [20] prove that transformational leadership indirectly affects OCB through achievement and motivation as a mediation. In contrast, the empirical study [57] revealed that TL indirectly impacts OCB through job satisfaction as a perfect mediator. Another study in Pakistan found the indirect influence of TL practice on OCB in academia in Pakistan with psychological empowerment as a mediator [70]. Their empirical studies [72] showed that meaningful work partially mediates the influence of TL on OCB. Meanwhile, the results of other studies reveal that QWL mediates the influence of spiritual leadership on OCB [36].

Furthermore, the study by Widodo et al. [22] revealed that visionary leadership indirectly influences teacher OCB with QWL as a mediator. Furthermore, Phetsombat and Na-Nan [71] revealed that ethical leadership is indirectly related to teachers' OCB, partially mediating job stress and job satisfaction. Referring to several empirical results that have been carried out previously, several leadership styles are indirectly related to OCB through several different mediations, such as job satisfaction, psychological empowerment, QWL, and meaningful work. There is still limited research on the role of quality of work life in mediating the relationship between transformational leadership and organizational citizenship behavior. In this empirical research, testing the indirect relationship between transformational leadership and organizational citizenship behavior using quality of work-life as mediation was carried out as a form of novelty from previous research, so the eighth hypothesis (H8) was formulated as follows.

H8. Quality of work-life mediates the link between transformational leadership and OCB.

3.9. The role of organizational commitment mediation on the link between transformational leadership and OCB

Referring to the social exchange theory framework, transformational leadership can positively relate to employees' general work attitudes, such as job satisfaction and organizational commitment [74], contributing to increased OCB [58]. Transformational leaders usually motivate subordinates to commit to the organization, abilities, and the best and highest efforts employees possess [75]. Organizational commitment (OC) is a belief in which employees support the organization and organizational goals, intend to maintain

membership in the organization and demonstrate high loyalty to the organization. The employee's commitment to the organization is high, so the employee in question will not leave and remain in the organization. Empirical studies conducted by Nurjanah et al. [17] show that TL is significantly and positively related to OCB through organizational commitment. In contrast, the empirical study of Idris et al. [63] revealed that TL is indirectly related to OCB through learning culture as a **perfect mediator**. Furthermore, OC mediates the relationship between TL and OCB [3] and perfectly mediates the relationship between TL and OCB [69]. Widodo et al. [22] revealed that visionary leadership is a positive and significant predictor of teachers' OCB through organizational commitment as a mediator. The more TL practices increase in an organization, the more the level of OCB of its employees will increase. Referring to several previous research results, there is still limited study of the role of organizational commitment as a mediator of the relationship between transformational leadership and OCB with teachers as research objects. In this empirical research, a study was carried out on the role of organizational commitment variables in mediating the relationship between transformational leadership and teachers' OCB, so the ninth hypothesis (H9) was formulated as follows..

H9. Organizational commitment mediates the link between transformational leadership and OCB

An illustration of this research model can be seen in Fig. 1.

4. Research methods

4.1. Population and sampling techniques

The research approach is quantitative; the survey obtained the research data through questionnaires. The research population was permanent high school teachers in Madiun City, totaling 10 government-owned schools and 7 private schools. The sampling technique used purposive sampling, namely taking samples from favorite high schools in Madiun, and 6 high schools were obtained (see Table 1). The licensing process was carried out by sending a permission letter to the principal of the relevant school; however, one school did not permit the researcher to distribute the questionnaire, so the questionnaire was only carried out in five (5) schools. The size of the sample taken refers to Hair et al. [76], where the sample size is 5 x the number of measurement items, where the total measurement items for all research variables are 33 items (attached questionnaire), so the sample size is 5 x 33 = 165, people. The sample size is based on the proportion of permanent teachers in each school. The sampling technique used proportional random sampling, and respondents were determined in each school by drawing lots conducted by the public relations department of each school. Details of the number of respondents by school are presented in Table 1.

The Center for Scientific Journals and Publications, University of Dr. Soetomo, Surabaya, Indonesia, issued ethical approval for this research. All informed consent was also obtained from all respondents in this study.

4.2. Respondent overview

The data collection technique was by visiting the school directly and asking for permission from the school to submit a research proposal to the Public Relations Department or the Principal. Data collection was carried out after obtaining permission from each school principal, and the distribution of the questionnaire was assisted and coordinated by the school's community relations section. The duration of data collection for all schools that were the object of research was approximately six weeks. The survey was conducted before the Covid-19 pandemic entered Indonesia. A total of 165 full-time (permanent) teachers participated in the study; then, it can be broken down by age, gender, last education, and length of service in the high school where the teacher works. Based on primary data collected through the distribution of questionnaires, respondents' profiles by age were obtained, as shown in Table 2.

In Table 2 and it can be seen that the full-time (permanent) teachers who were respondents in this study were 83 people (50.30%) aged between 41 and 50 years; a total of 44 people (26.67%) were between the ages of 60 years; as many as 30 people (18.18%) aged between 31 and 40 years, and as many as eight people (4.85%) aged between 25 years and 30 years. Table 2 shows that 100 permanent teachers who were respondents (60.60%) were female, and as many as 65 people (39.40%) were male. Table 2 shows that 156

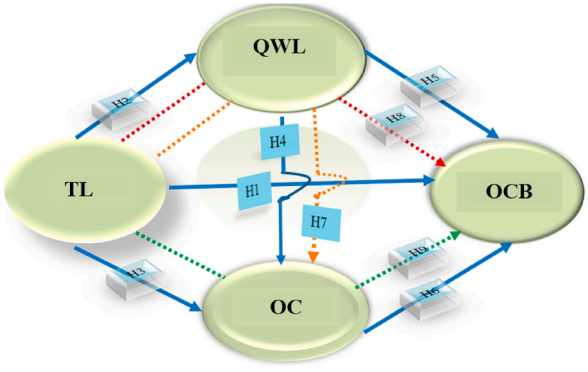

Fig. 1. Research model.

Table 1
Number of respondents per school.

School Name	Number of Respondents
State Senior High School 1	36
State Senior High School 2	45
State High School 4	38
Senior High School 6	28
St. Bonaventura Catholic High School	18
Total	165

Table 2
Profiles of respondents.

Age Group	Frequency	Percentage (%)
<25–30 years	8	4.85
31–40 years	30	18.18
41–50 years	83	50.30
51–60 years	44	26.67
Total	165	100
Gender	**Frequency**	**Percentage (%)**
Man	65	39.40
Female	100	60.60
Total	165	100
Level of Education	**Frequency**	**Percentage (%)**
Undergraduate (S1)	156	94.55
Masters (S2)	9	5.45
Total	165	100

permanent teachers (94.55%) had their last bachelor's education, and nine (5.45%) had a master's education.

4.3. Variable measurement

Transformational leadership was measured using a specific model of school leadership, referring to the four dimensions of transformational leadership measurement from the modified Multifactor Leadership Questionnaire (MLQ) [77]. The four dimensions are TL1-individual influence (two statement items), TL2-inspirational motivation (two statement items), TL3-intellectual stimulation (three statement items), TL4-individual consideration (two statement items), which is measured using a Five (5) Point Likert Scale, ranging from strongly disagree (1), disagree (2), quite agree (3), agree (4), and strongly agree (5). This questionnaire about transformational leadership practices was assessed by permanent teachers who were respondents (statement items attached).

The measurement of the quality of work life refers to Cascio [78], which summarizes **three dimensions**, namely QWL1-compensation (three statement items), QWL2-job design (three statement items), and QWL3-participation (three statement items), measured by a Five-Point Likert scale, ranging from strongly disagree (1), disagree (2), quite agree (3), agree (4), and strongly agree (5) (statement items attached).

The measurement of organizational commitment refers to Mugizi et al. [79], which uses the Three-Component Organizational Commitment measurement developed by Allen and Meyer in 1990 [80] with **three dimensions**: OC1-affective commitment (two statement items), OC2-continuation commitment (two statement items), OC3-normative commitment (two statement items). The measurement uses a five-point Likert scale, ranging from strongly disagree (1), disagree (2), quite agree (3), agree (4), and strongly agree (5) (statement items attached).

Organizational citizenship behavior is measured using measurements explicitly developed for the school environment by Dipaola and Tschannen-Moran [81], which were developed from OCB measurements by Organ, namely OCB1-altruism (two statement items), OCB2-conscientiousness & sportsmanship (three statement items), OCB3-Courtesy (two statement items), OCB4-civic virtue(two statement items). The measurement uses a five-point Likert scale, ranging from strongly disagree (1), disagree (2), quite agree (3), agree (4), and strongly agree (5) (statement items attached).

Testing of the questionnaire was carried out before the questionnaire was used to collect data at the target school. A pilot test was carried out on 30 samples to determine the validity of the statement items by carrying out a total item correction correlation (r) test and reliability testing by looking at Cronbach's alpha value. The software used is SPSS version 24. The results of the TL questionnaire consisting of 9 items show that the r value is between 0.446 and 0.822, and the alpha value is 0.905. The QWL questionnaire consists of 9 items, with an r-value between 0.646 and 0.724 and an alpha of 0.908. The OC questionnaire consists of 6 items, with an r-value between 0.445 and 0.530 and an alpha value of 0.687. The OCB measurement consists of 9 items, with r values between 0.434 and 0.618 and an alpha value of 0.822. All items have a corrected total item correlation coefficient (r) of > r table (0.131), and all variables have an alpha coefficient of >0.60, making them valid and reliable research instruments. A reliability value of 0.6–0.7 can be considered reliable [82]. The questionnaire used in this research is attached.

Table 3
Average value of variable measurements and correlation matrix.

Var	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
TL																
1	4.15	0.771	1													
2	4.37	0.700	0.662**	1												
3	4.01	0.688	0.525**	0.579**	1											
4	4.45	0.652	0.596**	0.616**	0.529**	1										
QWL																
5	3.81	0.743	0.469**	0.532**	0.398**	0.455**	1									
6	3.99	0.661	0.366**	0.330**	0.353**	0.310**	0.641**	1								
7	4.13	0.669	0.341**	0.407**	0.379**	0.336**	0.568**	0.603**	1							
OC																
1	4.29	0.669	0.240**	0.190**	0.225**	0.152*	0.197**	0.207**	0.332**	1						
2	4.13	0.875	0.131*	0.137*	0.283**	0.126*	0.198**	0.186*	0.038	0.277**	1					
3	4.27	0.663	0.194**	0.199**	0.166**	0.128*	0.122*	0.181*	0.152*	0.327**	0.374**	1				
OCB																
1	4.37	0.581	0.439**	0.445**	0.407**	0.329**	0.390**	0.241**	0.367**	0.280**	0.196**	0.198**	1			
2	4.05	0.578	0.242**	0.306**	0.331**	0.262**	0.267**	0.380**	0.354**	0.248**	0.208**	0.212**	0.381**	1		
3	4.05	0.637	0.277**	0.250**	0.254**	0.218**	0.344**	0.421**	0.340**	0.225**	0.275**	0.135*	0.334**	0.427**	1	
4	4.30	0.589	0.288**	0.247**	0.206**	0.269**	0.255**	0.359**	0.283**	0.184**	0.164**	0.150*	0.263**	0.375**	0.532**	1

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

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

4.4. Data analysis

The statistical analysis used is descriptive and Structural Equation Modeling (SEM). The *t*-test was used to determine the significance of the direct influence path coefficient, while the Sobel test was used to determine the significance of the indirect influence path coefficient [83]. Common Method Variance (CMV), descriptive, and correlational analyses were conducted with SPSS version 24, and SEM analyses with Smart PLS 3.

5. Results of research and discussion

5.1. Descriptive and common method variance (CMV) analysis

The study is a cross-sectional study where research data was collected through self-reported questionnaires, so the results may be influenced by common method bias. Therefore, a general method bias test is needed. CMV analysis is used in cross-survey-based studies [79]. CMV analysis in the study was used to ensure the consistency and validity of the results without common method bias [80]. The method used to assess CMV refers to Refs. [84–87] by looking at the method of evaluating the impact of CMV through latent variable correlation, where CMV is seen if there is a considerable correlation between the primary constructs ($r > 0.9$), and CMV will not be a problem in any study if the correlation between constructs is < 0.9. The results of the descriptive analysis of four (4) research variables and the correlation matrix based on the dimensions of each variable are presented in Table 3.

Respondents' responses to the TL (transformational leadership) measurement were overall good, with the lowest average value of the dimensions of the TL variable located in the TL3 (intellectual stimulation) dimension of 4.01 and the highest value in the TL4 dimension (individualized consideration) of 4.45. The overall average score for measuring quality of work life (QWL) is also good, with the lowest score being in the QWL1 dimension (compensation) at 3.81 and the highest score being in the QWL3 dimension (participation) at 4.13. Furthermore, respondents' responses to measuring organizational commitment (OC) as a whole were also good, with the lowest average score on the OC2 dimension (sustainable commitment) of 4.13 and the highest dimension score on OC1 (affective commitment) of 4.29. Likewise, in the Organizational Citizenship Behavior (OCB) measurement, the overall response of respondents was also good, in the OCB2 (conscientiousness & sportsmanship) and OCB3 (Courtesy) dimensions of 4.05, while the highest score was in the OCB1 (altruism) dimension of 4.37. Table 3 also shows that the standard deviation value of each dimension used to measure the research variables is smaller than the mean value of the dimensions. This shows that the research data is good [85]. Correlation analysis of all measurement dimensions of research variables also shows a significant relationship between measurement dimensions at $p < 0.01$ and $p < 0.05$, with a correlation value < 0.9; CMV is not a problem in this study. This also shows that all measurement dimensions are reciprocal [85].

5.2. Multicollinearity between latent variables

Before testing the structural model, checking multicollinearity between variables with Inner VIF is necessary. A VIF (variance inflated factor) value of less than 3 means no multicollinearity between variables that influence it.

The VIF evaluation results in Table 4 show that all VIF scores are <3, indicating no multicollinearity between exogenous constructs. This also shows no symptoms of multicollinearity between the independent variables.

5.3. Measurement model evaluation results

According to Hair et al. [88], the evaluation was carried out in two stages: evaluation of the measurement model, reflective indicators, and structural model evaluation. Assessment of the reflective measurement model includes indicator loading, internal consistency reliability, convergent validity, and discriminant validity.

The results of the validity and reliability constructs test on each latent variable can be seen in Fig. 2 and Table 5. Analysis of construct reliability was carried out to measure the construct reliability of latent variables, where the value considered reliable must be > 0.60. Construct reliability is the same as Cronbach's Alpha. Table 4 shows that the Cronbach's Alpha value for all variables tested is > 0.60, so it can be stated that all latent variables are reliable. The internal consistency reliability measurement used to assess this is composite reliability (CR), where this measurement is to determine the indicator's ability to measure its latent construct [89]. A composite reliability value > 0.7 is considered to have good reliability [90].

Outer loadings and average variance extraction (AVE) indicators test convergent validity. If the AVE value of all variables shows a score ≥ 0.50, it meets the convergent validity requirements [90]. The results of the convergent validity test show that three indicators

Table 4
Statistical collinearity (VIF).

Variable	OCB	OC	QWL	TL
OCB				
OC	1.104			
QWL	1.568	1.539		
TL	1.576	1.539	1.000	

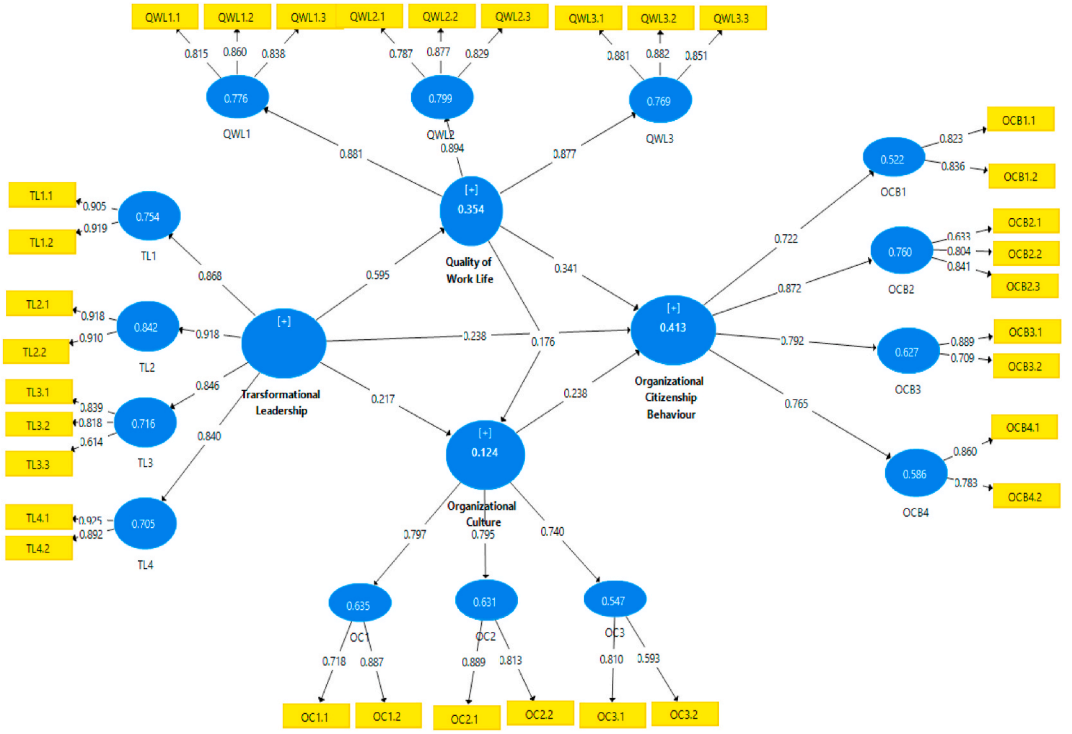

Fig. 2. Outer loading.

Table 5
Construct validity and reliability results.

Variables (Constructs)	Measurement	Outer Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Transformational Leadership	TL1.1	0.905			
	TL1.2	0.919			
	TL2.1	0.918			
	TL2.2	0.910	0.889	0.919	0.563
	TL3.1	0.839			
	TL3.2	0.818			
	TL3.3	0.614			
	TL4.1	0.925			
	TL4.2	0.892			
Quality of Work Life	QWL1.1	0.815			
	QWL1.2	0.860			
	QWL1.3	0.838			
	QWL2.1	0.787	0.901	0.920	0.560
	Q QWL2.2	0.877			
	QWL2.3	0.829			
	QWL3.1	0.881			
	QWL3.2	0.882			
	QWL3.3	0.851			
Organizational Culture	OC1.1	0.726			
	OC1.2	0.882			
	OC.2.1	0.900			
	OC.2.2	0.798	0.663	0.788	0.532
	OC3.1	0.722			
	OC.3.2	0.593			
Organizational Citizenship Behavior	OCB1.1	0.823			
	OCB1.2	0.836			
	OCB2.1	0.633			
	OCB2.2	0.804			
	OCB2.3	0.841			
	OCB3.1	0.889	0.881	0.857	0.504
	OCB3.2	0.709			
	OCB4.1	0.860			
	OCB4.2	0.783			

(TL3.3; OC3.2; and OCB2.1) have an outer loading value of <0.70. so that in the next test, it is excluded, while the other outer loading values (30 statement items) have a value of >0.7. These 30 indicators meet the requirements for convergent validity [91], and further analysis can be carried out. An outer loading value > 0.7 indicates that the construct can explain more than 50 percent of the indicator variance [92]. All AVE values in Table 4 meet convergent reliability requirements. An AVE value of 0.5 or more means the construct can explain 50 percent or more of the item variance [90].

Discriminant validity is used to determine whether a reflective indicator is a good measure of its construct based on the principle that each indicator should only be highly correlated with its construct. Discriminant validity is carried out to determine whether a reflective indicator is truly a good measure of its construct based on the principle that each indicator must only be highly correlated with its construct. Discriminant validity test uses cross-loadings, Fornell-Larcker Criterion, and Heterotrait-Monotrait (HTMT) values [93,94]. This study tested discriminant validity using the Fornell-Larcker Criterion and HTMT. A construct is valid by comparing the root value of the AVE (Fornell-Larcker Criterion) with the correlation value between latent variables. The model is declared good discriminant validity if the AVE square root value for each construct is > the correlation value between that construct and other constructs in the model. The discriminant validity test using the Fornell-Larcker Criteria is presented in Table 6.

Table 6 shows that all AVE roots for each construct are greater than the correlation with other variables, this means that the discriminant validity requirements are met. The next discriminant validity test was used by HTMT (Table 7). Henseler et al. [94] state that the threshold value for structural models with conceptual construction is 0.90.

All HTMT correlation average score values in Table 7 are smaller than 0.90, which indicates that they meet the requirements for discriminant validity.

5.4. Fit models

The model is declared to meet the model fit criteria, then the Standardized Root Mean Square Residual (SMSR) value must be less than 0.10 or 0.08 to be considered appropriate, and the Normed Fit Index (NFI) value > 0.95 [95]. SRMR is a suitable measure for PLS-SEM that can be used to avoid model specification errors [96].

Based on the SRMR value of 0.079 (<0.10), it can be stated that the model is fit, and the NFI value is 0.77 < 0.95, so the model is declared moderate. The results of this study's data processing provide an R^2 value, as shown in Table 9.

5.5. Hypothesis testing (inner model)

Fig. 3 and Table 10 are the results of testing the hypothesis of a direct relationship between transformational leadership and Organizational Citizenship Behavior, Quality of Work Life, and Organizational Commitment; direct linkage of quality of work life with organizational commitment and organizational citizenship behavior; and the direct link between organizational commitment and organizational citizenship behavior.

The results of the test for the direct relationship between the independent variable and the dependent variable are presented in Table 10.

Direct linkage test results, summarized in Table 7, show that the six hypotheses proposed were accepted. For indirect linkage testing, online Sobel test software is used (http://quantpsy.org/sobel/sobel.htm). The following Table 11 summarizes the variable mediation test with the Sobel test.

The results of testing the role of QWL as a mediator in the relationship between transformational leadership and OC (H7), were accepted. Likewise, the results of testing the hypothesis of the role of QWL as a mediator between the relationship between transformational leadership and OCB (H8), and the role of OC as a mediator between the relationship between transformational leadership and OCB (H9), were accepted.

6. Discussion

6.1. The link of transformational leadership between OCB

Theoretically, it is said that the more transformational the leadership style in an organization, the better the OCB of employees. Table 10 support the theory that TL is proven to be positively and significantly related to OCB. This empirical finding is consistent with several previous studies which showed a positive and significant relationship. The findings in this empirical study show results that align with several previous studies that show a positive and significant influence of TL on OCB [3,16,17,19–22,40,60,61,69].

The level of progress of an organization, including a school organization, depends largely on how well the leader (in this study, the

Table 6
Validity discriminant.

Variabel	OCB	OC	QWL	TL
OCB	**0.769**			
OC	0.376	**0.750**		
QWL	0.570	0.269	**0.882**	
TL	0.530	0.278	0.592	**0.862**

Table 7
HTMT evaluation results.

Variabel	OCB	OC	QWL	TL
OCB				
OC	0.526			
QWL	0.687	0.349		
TL	0.619	0.361	0.677	

Table 8
Model fit.

The GoF Index	Cut off Value	Result	Meaning
SRMR	0.08-0.10	0.079	Good
NFI	>0.95	0.77	Moderate

Table 9
R-Square.

Model	R^2	Meaning
QWL	0.354	Moderate
OC	0.132	Weak
OCB	0.416	Moderate

The value of R^2 in Table 9 indicates that all values of $R^2 > 0$. Chin [91] provides criteria for R2 values of 0.67, 0.33, and 0.19 as strong, moderate, and weak predictions, so the model is categorized as having moderate predictive power in this study.

principal) plays their role in leadership so that the organization survives and continues to grow. This is because the principal is the coordinator who will bring the school to success. Transformational leadership is a leadership style believed to balance new thought patterns and paradigms in the current global era. School principals who implement transformational leadership can pay attention to teachers' self-development needs and raise teacher awareness of the problems they face in innovative ways. The principal can please and inspire the teachers to work hard and be willing to do more than the usual duties of the teachers who will perform beyond the organization's expectations to achieve common goals.

From the demographic aspect (Table 2), the majority of teachers are women (60.60 percent) who are indicated to be related to OCB [88]. showed that gender moderates the negative influence of OCB on turnover intention, where the effect is more potent in females than males. There is a view that altruism, courtesy, and conscientiousness are considered feminine OCBs, while sportsmanship and civic virtue are considered masculine OCBs [89]. This means that organizational behaviors such as helping colleagues, being friendly, and cooperating with others are more commonly practiced by women than men. In other studies, there were also significant differences in the OCB level of female and male employees [90].

6.2. Results of testing the relationship between transformational leadership and quality of work-life

The results of testing **the second hypothesis** (H2) Table 10 shows that transformational leadership (TL) is positively and significantly related to quality of work life (QWL). Transformational leaders provide employees with material and moral rights, encourage employees to adopt certain values and beliefs, direct employees towards different behaviors, and attract highly qualified employees to continue working and not leave work. TL style works by assessing employee motives and striving to meet employee needs based on employee motivation. At its core, TL treats employees as fully human beings [97] to improve employees' quality of work-life.

This finding is the development of an empirical study by Akter et al. [98], which shows a positive and significant relationship between managers who apply transformational leadership and the QWL. Similarly, AL Nababteh and Alkshali [34] emphasized that TL and its characteristics are directly related to the increase in QWL, where QWL is seen in job design, capacity development, career advancement, compensation, and social integration.

6.3. Results of testing the relationship between transformational leadership and organizational commitment

The third hypothesis (H3) test results in Table 10 show that transformational leadership (TL) has a direct positive and significant relationship with organizational commitment (OC). The results of this research support several previous empirical studies that essentially emphasize that good transformational leadership practices can be positively and significantly related to organizational commitment [30,68,69,73].

This means that the transformational leader has a character such as an individual influence on subordinates that makes subordinates loyal to work and organizations and has a high emotional bond with the organization in which they work. A sign that a leader

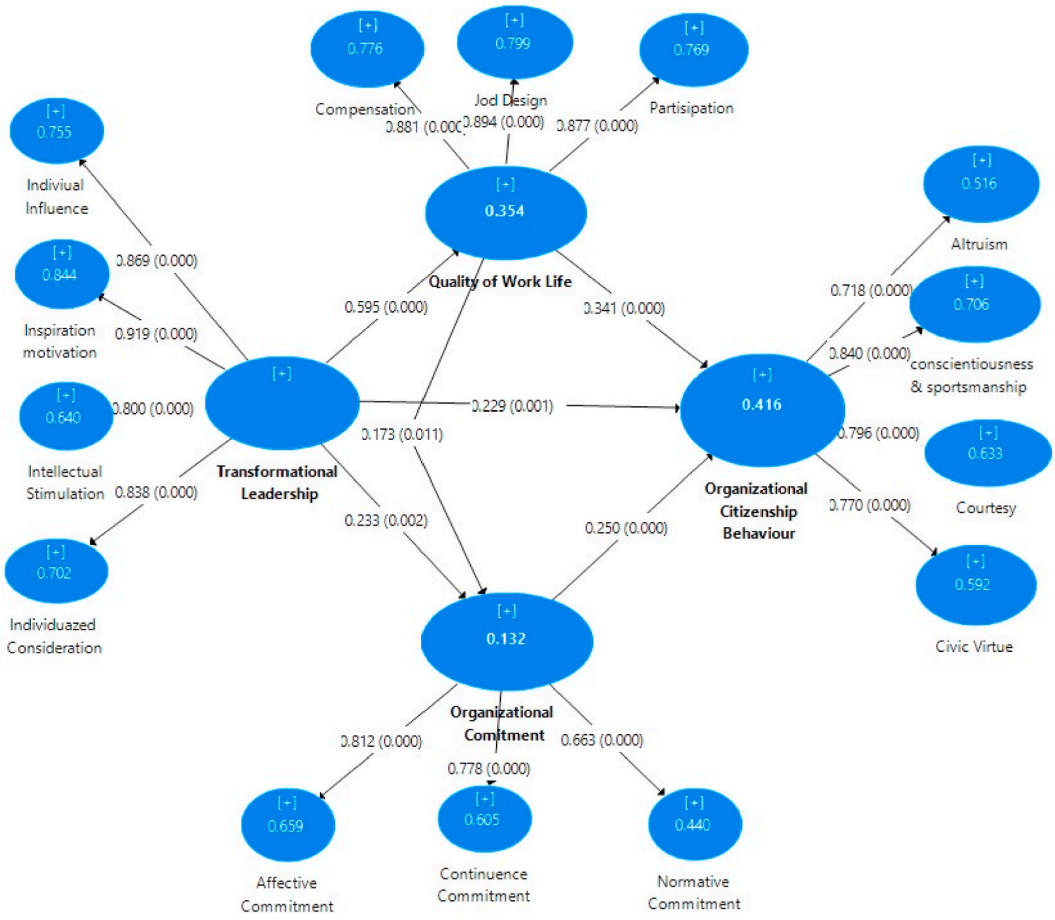

Fig. 3. Hypothesis testing.

Table 10
Summary of direct relationship test results.

Path	*Standardized Coefficients* Beta	C.R. (t-count)	Std. Error	T table	P value	Meaning
TL→ OCB	0.229	3.018	0.076	1.9745	0.001***	Significant, H1 accepted
TL→ QWL	0.595	10.647	0.056	1.9745	0.000***	Significant, H2 accepted
TL→ OC	0.233	2.972	0.078	1.9745	0.002***	Significant, H3 accepted
QWL→ OC	0.173	2.304	0.075	1.9745	0.011**	Significant, H4 accepted
QWL → OCB	0.341	4.740	0.072	1.9745	0.000***	Significant, H5 accepted
OC→OCB	0.250	4.548	0.043	1.9745	0.000***	Significant, H6 accepted

***P < 0.01; **P < 0.05; *P < 0.1.

Table 11
Results of the mediating variable influence test with the sobel test.

Path	Test statistic	Std. Error	p-value	Meaning
TL→ QWL→ OC	2.254	0.045	0.024**	H7 accepted
TL→ QWL→ OCB	4.325	0.046	0.000***	H8 accepted
TL→ OC → OCB	2.656	0.021	0.007***	H9 accepted

***P < 0.01; **P < 0.05; *P < 0.1.

has an idealized influence is that, in reality, followers highly respect the leader, and followers are highly motivated by the relationship of followers with the leader. Leaders then act as coaches and advisors to help followers achieve their goals [97]. TL enhances continuity commitment through leaders' ability to help subordinates advance their careers or involve them in training programs [99]. Transformational leaders can increase the organizational commitment of followers through inspirational motivation, namely by helping to increase team morale and focusing the efforts of team members to achieve more than followers do for the personal benefit of the followers themselves. TL is the leader in creating, communicating, and exemplifying a shared vision for employees, which will positively affect employee confidence to stay in the organization because that is the right thing and should be done by employees in an organization that has supported employees to meet employee needs.

6.4. Results of testing the relationship between quality of work- life and organizational commitment

Fourth hypothesis (H4) testing results (Table 10) show that QWL has a direct positive and significant relationship with organizational commitment (OC). QWL practices have a strong connection with teachers' OC. When teachers have confidence in the organization and understand that the organization pays attention to their well-being, offers autonomy of work in the workplace, provides sufficient opportunities to express themselves, and their ideas are valued, the teachers feel psychologically empowered, which in turn will increase their commitment to the organization and have an impact on the decision of the teachers to continue membership with the organization.

The results of this study support the opinion of Afsar [100], who states that an employee with a higher quality of work life will have a positive attitude towards his organization, which will show a high commitment behavior to the organization. This empirical research also supports several previous studies showing that QWL is positively and significantly related to OC [3,22,28,37–39,69]. Organizational commitment can be improved through the quality of work-life factors such as employee development, participation, compensation, supervision, and work environment [101].

When viewed from the profile of respondents, most of the teachers are over 40 years old, the majority are female, and most have a service life of 11 years and above; this condition may also be the cause of the formation of a high organizational commitment of teachers to the institution where they work. Female teachers tend to OC [102]. The difference in age and sex as a component of diversity plays an essential role in the quality of manager-employee relationships within an organization, including how it impacts employees' commitment to the organization.

6.5. Results of testing the relationship between quality of work-life and OCB

Testing **the fifth hypothesis** (H5) in Table 10 shows that quality of work-life is positively and significantly related to q OCB. The results of this study support Spector's opinion [54], which states that satisfaction with the quality of work-life is the primary determinant of OCB. The concrete evidence of improving employees' quality of work life in an organization is the provision of benefits other than the basic salary each receives [37]. QWL measurements in this study use indicators such as employee participation, equitable compensation, a sense of pride in the agency (pride), a sense of security towards work (job security), the safety of the work environment (save the environment), wellness, career development, conflict resolution, and communication, were shown to have an impact on increasing OCB from teachers. The results of this study are in line with the findings [37], which state that employees who get a good quality of work-life, namely rewards that follow applicable standards, a conducive work environment, applicable regulations, and opportunities for employees to get challenging jobs and more opportunities for self-development will be able to act following existing norms.

This research results follow several previous empirical studies that show a positive and significant relationship between QWL and OCB [21,22,28,36,40]. Ojo et al. [22]. [98] suggest that organizational managers prioritize the quality of work life that can increase OCB characteristics, such as altruism, conscience, civic virtue, sportsmanship, and courtesy, because they can encourage employees to behave well. Perform better and demonstrate a willingness to achieve organizational goals.

6.6. Results of testing the relationship between organizational commitment and OCB

A good organizational commitment to employees will make it easier for organizational leaders to mobilize existing human resources to achieve their objectives through the OCB that the employees showed. The results of testing the **sixth hypothesis** in Table 10 show that organizational commitment is positively and significantly related to OCB. These results indicate that organizational commitment is essential in shaping OCB's actions or attitudes in organizing. The results of this study support previous studies [17,71], which found that organizational commitment is a positive and significant predictor of OCB.

Organizational commitment is an attitude that reflects employee loyalty to the organization and the ongoing process by which employees express their concern for the organization, organizational success, and continuous progress. Employees with a high commitment will accept tasks and carry them out responsibly, and those employees will also be happy to help colleagues perform tasks outside the office. In this study, the attachment and concern of teachers to schools are very supportive of teachers' behavior voluntarily and sincerely in completing work, including helping colleagues who need help without expecting compensation.

6.7. Results of testing the relationship between transformational leadership and organizational commitment through quality of work-life

The results of **the seventh hypothesis (H7)** testing with the Sobel test shown in Table 11 show that quality of work life mediates

the link between transformational leadership and organizational commitment. This means TL is indirectly related to OC, through QWL as **partial mediation**. The findings reveal that transformational leadership practices do not necessarily increase teachers' organizational commitment but can improve the quality of teachers' work life and, in turn, can impact teachers' commitment to the school.

The research results also show that a good transformational leadership style in school principals can have a direct positive relationship with teacher loyalty to the organization without going through the quality of work life felt by teachers. School leaders who are willing to understand or help teachers overcome work problems faced by teachers will provide a sense of security and comfort to each teacher, thus enabling teachers to work normatively according to the psychological contract and have high attachment and loyalty to the organization. These findings fill the gap in previous research, which was still limited in examining the role of QWL in mediating the relationship between transformational leadership and organizational commitment. Previous empirical findings are the mediating role of job satisfaction on the relationship between transformational leadership and organizational commitment [68].

6.8. Results of testing the relationship between transformational leadership and OCB through quality of work-life

Testing the **eighth hypothesis** (H8) presented in Table 11 proved that quality of work life mediates the link between transformational leadership and organizational citizenship behavior. This refers to Ref. [103] regarding the terms mediating variables and types of mediation. Suppose you look at the coefficient value of the relationship between the independent variable (TL) and the dependent variable (OCB) before and after the mediating variable (QWL) is included in the model; the relationship is still significant. In that case, this shows that the role of the quality of the work-life variable is **partial mediation**. This study's results align with [22], which revealed that visionary leadership significantly affects OCB through QWL. Thus, the results of this study fill the gap in previous research, which was still limited in examining the role of QWL in mediating the influence of TL on OCB.

QWL plays an important role in running work activities, where there are agreements between leaders and subordinates in implementing activities. QWL is a management system approach in the organization that aims to improve employees' quality of life in the work environment simultaneously and continuously. Transformational leaders can maintain a good quality of work life by providing security, respect, and growth and development to increase employees' dignity.

6.9. Results of testing the relationship between transformational leadership and OCB through organizational commitment

Several factors can improve OCB, such as transformational leadership, quality of work life, job satisfaction, and organizational commitment. Employee characteristics, task characteristics, organizational characteristics, and leadership behavior positively correlate with a person's OCB level [104]. The results of **the ninth hypothesis** (H9) testing shown in Table 8 show that OC acts as a partial mediating role in the influence of TL on OCB since the influence of TL on OCB before and after OC is included in the regression equation remains significant. It can be said that the role of organizational commitment is partial mediation. This study's results align with the findings of Nurjanah et al. [17], which show that TL has a significant and positive effect on OCB through OC in Civil Servants. This study's results align with Widodo et al. [22], which revealed that visionary leadership significantly affects OCB from teachers through OC. The results of this study are different from the results of research by Hermawanto et al. [69], which revealed that OC **fully mediates** the relationship between TL and OCB from hotel employees.

The **partial mediating** role of OC in the relationship between transformational leadership and OCB means that increasing teacher OCB can be done directly through good school transformational leadership but can also be linked to the teacher's strong commitment to the school. Leaders who apply this type of transformational leadership tend to encourage subordinates to produce performance beyond what is expected by changing the vision, being role models, providing support, and encouraging employees to change for the better. Followers have confidence, admiration, loyalty, and respect for their leader, so they will easily do more work than expected and commit to work and organization.

7. Conclusion

Overall, it can be concluded that the results of research conducted on permanent teachers of high schools in the city of Madiun are no different from studies from other countries, but some new findings can be a reference for the development of further research. The results of hypothesis testing are summarized as follows: 1) transformational leadership has a significant positive relationship with OCB; 2) transformational leadership is related to the quality of work-life; 3) transformational leadership has a significant positive relationship with organizational commitment; 4) quality of work-life has a significant positive relationship with organizational commitment; 5) quality of work-life has a significant positive relationship with OCB; 7) quality of work-life partially mediates the relationship between transformational leadership and organizational commitment; 8) Organizational commitment partially mediates the relationship between transformational leadership and OCB; 9) Quality of work-life partially mediates the relationship between transformational leadership and OCB.

The mediating role of QWL in the relationship between transformational leadership and organizational commitment, as well as the role of QWL in mediating the relationship between transformational leadership and teacher OCB, is an exploration of new mediating variables due to the limitations of previous research. Likewise, the results of testing the mediating role of OC in the relationship between transformational leadership and teacher OCB are new findings in exploring mediating variables in the relationship between transformational leadership and OCB.

Limitations

This study was conducted with the object of teachers in high schools in Madiun City, while teachers in vocational high schools in Madiun City have not been used as objects of empirical studies. This can be an opportunity for future research to expand the object of research on teachers at Vocational High Schools in Madiun City or by expanding to other areas in East Java, Indonesia.

Many variables form OCB, as evidenced by the contribution of other variables outside research, which is still 0.416 percent (100 percent- R^2 of 58.5 percent). This opens up opportunities for future research to include other variables so that empirical studies of OCB determinants become more complete. Therefore, this variable must be combined with other variables such as organizational climate variables, personality, learning in organizations, organizational culture, and others. For research objects with government employee status, further research can link OCB with the core values that characterize government institutions in Indonesia, which are abbreviated as "BerAKHLAK" which consists of 7 values: Service Oriented, Accountable, Competent, Harmonious, Collaborative, Adaptive, and Loyal.

The cross-sectional method used in this research cannot describe changes that occur in the variables studied in a certain time, for example, the period after the Covid-19 pandemic, considering that this research was conducted before the Covid-19 pandemic entered Indonesia and this can be a limitation. In understanding the dynamics of change in the population or sample studied. Therefore, research with the same object can be carried out by improving the measurement of variables, especially for the quality of work-life variables.

Research implications

It is hoped that the results of this research can provide good information for high school administrators in Madiun City and other researchers regarding variables related to improving organizational citizenship behavior from teachers. Three variables are studied from among the many that relate directly or indirectly to organizational citizenship behavior. However, the findings are quite interesting and provide a new contribution to researching positive behavior in educational organizations. This research emphasizes the importance of transformational leadership from the Principal as a significant predictor in improving the quality of work-life, organizational commitment, and OCB of teachers.

In the context of employee behavior, OCB will increase if transformational leadership practices in schools are higher, because transformational leadership from school principals can also encourage improvements in the quality of work-life and commitment of teachers to the school, and subsequently grow OCB from teachers. Hence, management needs to pay more attention to the effectiveness of transformational leadership practices in the school environment. An interesting finding in this research is the partial mediating role of quality of work-life on the relationship between organizational commitment and transformational leadership, as well as organizational citizenship behavior. Transformational leadership is suitable to be used as an effective alternative leadership style because the transformation system is deep knowledge and more permanent so that it can impact teachers' quality of work life, commitment, and OCB. so it is hoped that the performance of educational services from teachers will increase.

Teachers in Madiun City, in particular, are expected to continue to improve their commitment to their organization. Senior High School Administrators are expected to be able to develop human resource management programs to improve the quality of work life of teachers, for example, in terms of the opportunity to issue opinions related to improving the quality of work life and be considered in strategic decisions and to be involved in making important decisions.

The principal is expected to foster high morale through the provision of autonomy, job feedback, and recognition from the leadership of the teacher's work performance. It is also possible to increase the teachers' emotional bond and sense of belonging to the school where they work, better known as affective commitment. The management of high schools in Madiun City, in particular, is expected to further increase teachers' commitment to their organization by communicating the vision and mission of the school as a basis for organizational values and attitudes, promoting teamwork patterns to maximize organizational commitment and OCB, and trying to give confidence to teachers to increase teacher loyalty to their organization.

CRediT authorship contribution statement

Yustinus Budi Hermanto: Writing – review & editing, Validation, Supervision, Resources, Methodology, Funding acquisition, Conceptualization. **Veronika Agustini Srimulyani:** Writing – original draft, Project administration, Investigation, Formal analysis, Data curation. **Didik Joko Pitoyo:** Writing – original draft, Visualization, Validation, Software, Investigation, Formal analysis.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.heliyon.2024.e27664.

Appendix. : Questionnaire

No.	Measurement items	SD	D	M	A	SA
I. Transformational Leadership						
	TL1 (Idealized influence)					
1	Head School grow believe self teachers through rules/behavior.					
2	The principal builds self-confidence teachers while doing their work.					
	TL 2 (Inspirational motivation)					
3	The Principal gave encouragement to teachers in achieving goals.					
4	The principal helps and motivates the teachers.					
	TL 3 (Intellectual stimulation)					
5	Principals work together to solve problems.					
6	The principal gives instructions to the teachers.					
7	The principal practices/gives examples for each teaching					
	TL 3 (Individualized consideration)					
8	The principal pays attention and moral support.					
9	The principal treats and appreciate teachers.					
II. Quality of Work Life						
	QWL1 (Compensation)					
10	In this institution, the compensation capabilities provided increase the work enthusiasm of the teachers.					
11	In this institution, there are compensation adjustments based on situations and conditions.					
12	In this institution, there are adequate social guarantees and benefits.					
	QWL2 (Job design)					
13	In this institution, there is autonomy in carrying out their duties for teachers.					
14	In these institutions, there is variation in the completion of assignments by teachers.					
15	In this institution, there is feedback on the results of the work of the teachers.					
	QWL 3 (Participation)					
16	In this institution, there is involvement of teachers in decision making.					
17	At this institution, there is an opportunity to express feedback and suggestions for teachers._					
18	In this institution, there is recognition by the principal of the role (participation) of teachers.					
III. Organizational Commitment						
	OC 1 (Affective Commitment)					
19	I have an emotional attachment to this institution.					
20	In this institution, I get good treatment.					
	_					
	OC 2 (Continuence Commitment)					
21	I consider for still work at this institution.					
22	I consider all the losses if I stop working from this institution.					
	OC 3 (normative commitment)					
23	Loyalty that I show as a moral obligation.					
24	I rejected offers of other types of work elsewhere.					
IV. Organizational Citizenship Behavior						
	OCB1 (Altruism)					
25	I am willing to help colleagues who are busy (work is overloaded).					
26	I am willing to spend time helping others with work problems.					
	OCB2 (Conscientiousness) and Sportmanship					
27	I am willing to work beyond the specified time					
28	I obey school rules even though no one is watching me.					
29	I don't like complaining at work					
	OCB 3 (Courtesy)					
30	I maintain relationships to avoid interpersonal problems with colleagues and superiors.					
31	I consider the impact of my actions on co-workers.					
	OCB 4 (Civic Virtue)					
32	I always follow information, for example organizational announcements, memos.					
33	I attend and am involved in every activity at school					

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