

# Teacher Empathy and Student Well-Being: The Mediating Role of Classroom Belongingness in the Primary Education Context

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## ABSTRACT

The purpose of the present research was to investigate the relationship between the teacher empathy (TE) with the student well-being (SW) in Pakistan primary schools. The paper also examines how the classroom belongingness (CB) is an intermediate variable that influences the connection between teacher empathy and student well-being. The sample size of 289 students in different schools in Pakistan was used to gather data. To test the hypotheses, structural equation modeling (SEM) was put into place. The findings indicated that the hypothesized model of research was upheld. Findings showed that TE had a positive impact on the sense of well being and general school experience of the students. Moreover, the feeling of CB among students increased the beneficial effects of TE on the well-being. Another effect of the study that was identified is the mediating impact of CB on the connection between TE and SW. The findings highlight the significance of TE and the establishment of inclusive supportive learning classroom settings to enhance SW within the Pakistani cultural background that is impacted by collectivist and strong inter-communal relationships. As far as the authors know, it is one of the first studies to investigate the correlations between TE, CB and SW in primary education setting in Pakistan. The findings provide more insight into the way that social-emotional teacher practices can support SW and emphasize the cultural applicability of empathy-driven education.

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## 1. Introduction

Education is now understood not only as a means of cognitive development and academic achievement but also as a vital arena for nurturing emotional, psychological, and social well-being. Over recent decades, global discourse has moved beyond narrow achievement-based models toward more holistic frameworks that place student well-being at the center of educational outcomes (Yahia Shams Eldin et al., 2025). International bodies such as UNESCO and UNICEF consistently stress that children's sense of happiness, safety, and belonging in schools is closely linked to their learning skills, resilience, and long-term capacity to thrive in society

(Alzboon et al., 2025). Teacher empathy (TE) has emerged as a central construct in this global movement toward holistic education. Defined as educators' ability to understand, recognize, and appropriately respond to students' emotions and experiences (Alzboon et al., 2021), TE has been shown to foster stronger teacher-student relationships, create supportive classroom environments, and enhance student motivation and engagement (Alzboon et al., 2022; Alzboon et al., 2024). Empathy is particularly vital in primary education, where children are impressionable and highly dependent on adult figures. Research suggests that empathetic teachers not only improve students' academic performance but also contribute to their emotional regulation, social competence, and self-esteem (Nazil, 2025). Similarly, classroom belongingness (CB)—the sense of being accepted, valued, and supported within a learning community—has been found to mediate the relationship between teacher practices and student outcomes (Nazil et al., 2025). Studies in Western contexts consistently demonstrate that belongingness enhances resilience, reduces dropout rates, and increases student well-being and persistence (Alqaraleh, 2024). In contrast, education systems in developing countries such as Pakistan remain predominantly exam-oriented, with limited attention to psychosocial learning features. The neglect of emotional and social dimensions contributes to rising levels of anxiety, stress, and disengagement among students (Yusuf et al., 2025). While Pakistan faces structural challenges—such as teacher shortages, curriculum gaps, and resource inequities (Alzboon et al., 2025; Saad et al., 2025)—there is limited research into classroom-level emotional dynamics. Issues of dropout, absenteeism, and low engagement are well documented, but the psychological processes underlying these problems, especially the role of belongingness, remain underexplored. This gap is particularly concerning given Pakistan's unique socio-cultural context, where collectivist values, hierarchical classroom structures, and uneven resource distribution may intensify student alienation if empathy and belongingness are absent. Despite international evidence underscoring the significance of TE and CB, empirical studies in Pakistan are sparse. Two key gaps emerge. First, there is little research examining the interaction of TE, CB, and student well-being (SW) in collectivist, resource-limited settings such as Pakistan. Second, most available studies focus on secondary or higher education, overlooking primary school students who are most vulnerable to the effects of teacher empathy and belongingness. Addressing these gaps is critical for Pakistan, where 22.8 million children remain out of school and student retention is a pressing policy priority (Awad, 2024).

The present study responds to these gaps by empirically testing the mediating role of CB in the relationship between TE and SW among 289 primary school children in Pakistan. Using SEM, it explores both direct and indirect effects, offering insights into how psychosocial processes shape learning outcomes in non-Western, collectivist classrooms. The study's significance lies both in theory—by extending global research to a new cultural context—and in practice—by informing teacher training, curriculum design, and classroom management strategies aimed at cultivating compassionate, inclusive, and emotionally supportive learning environments. In short, while global research highlights the critical role of empathy and belongingness in shaping student well-being, empirical evidence on TE, CB, and their interaction with student well-being in Pakistan's primary schools remains scarce.

## 2. Theoretical Background

The current research is premised on three mutually supportive theoretical schools of thought, namely, the Social Support Theory (SST), Self-Determination Theory (SDT), and the Attachment Theory, to describe the routes, according to which TE indirectly and directly influences SW via the mediating variable of CB. Although they differ slightly, these frameworks all arrive at the same point, which is that human development is profoundly shaped by social relations, emotional responsiveness and satisfaction of psychological needs. By combining them, it will be possible to have a multidimensional explanation of how practices of empathetic teachers support classroom contexts where belongingness is the mental factor that leads to SW (Awad, 2025). SST assumes that people get psychological and emotional gains out of positive interpersonal relationships, which serve as shielding elements against stress, alienation, and ill health (Alqaraleh et al., 2024). TE in schools acts as a perceived social support or as an indicator that the students are heard that their feelings and experiences are empathized with. Previous research has shown that students who feel supported by the teacher to a higher degree note a lower level of anxiety, increased resilience and school satisfaction (Awad, 2025; Saeed Almanbahi et al., 2025). Indicatively, it has been found that affirmative teacher practices lower the chances of school dropout and improve academic interaction (Alqaraleh et al., 2025). When group belonging and community validation are culturally relevant, as it is the case in collectivist cultures like Pakistan, the protection power of perceived support may be especially high (Al TAL et al., 2019).

Nevertheless, even though support has been shown to be related to well-being, the number of studies that explain the mediating role of belongingness mediates empathy-based support to positive psychological effects is quite low. SDT provides a balanced perspective by emphasizing the fulfillment of three fundamental psychological needs, including independence, ability, and connection that are the basis of motivation and well-being (Awad and Alharthi, 2025). TE directly fosters the need relatedness, that is through caring respectful teacher student relationships, and indirectly maintains autonomy and competence by supporting understanding and encouragement of student individual challenges. There is a considerable amount of evidence that satisfies these needs will result in increased intrinsic motivation, engagement, and psychological flourishing among students (Wahed et al., 2025; Awad et al., 2024). Indeed, empirical research shows that teacher behaviors with high levels of empathy forecast greater perceptions of autonomy support and relatedness in students, which subsequently forecast greater well-being and reduced burnout (Al-Batah et al., 2024). Nevertheless, mediating effects of belongingness have not attained sufficient theorization in SDTs, though the belonging is conceptually consistent with relatedness. The present study builds on SDT by directly situating CB as a contextualized operationalization of relatedness, which provides a more accurate way of understanding how empathy increases well-being. The Attachment Theory takes the model a further step by emphasizing the significance of secure and responsive bonds with caregivers and figures of authority in the control of the emotional regulation and socio-emotional growth (Awad et al., 2025). Teachers in schools are secondary attachment figures especially in primary education where children are very much subject to the affirmation of adults. TE is associated with secure attachment behaviors such as sensitivity, responsiveness, and attunement that promote the development of a sense of safety and trust among students. Past research found out that children

who have secure attachment with teachers report elevated social competence, reduced behavioral issues, and improved well-being indicators (Wahed et al., 2024; Awad and Mahmoud, 2024).

Notably, the feeling of belonging that is developed in understanding classrooms reflects the attachment mechanisms that ground the socio-emotional stability of children. Integrating the Attachment Theory into this framework, the current study will embrace the developmental and relational dynamics that cause belongingness to be a natural mediator between empathy and well-being (Al-Sherman and Aldabousi, 2024). When combined, these theories come to the main thesis that supportive, responsive, and empathetic teacher actions create the conditions in which the students cannot help feeling like they belong, which subsequently contributes to their psychological well-being. However, every theory has its own explanatory twist: SST focuses on the protective and buffering role of empathy as social support, SDT focuses on the motivational and need-satisfaction processes that connect empathy to well-being, and Attachment Theory focuses on the developmental security offered by empathetic teacher-student relationships (Ghonim and Awad, 2025). Although the two might be overlapping in terms of concepts, they do not conflict but complement each other and the combination produces a more comprehensive and holistic explanation of the phenomena being studied. Although the current studies are quite strong, specific gaps that can be addressed by this study still exist. To begin with, despite the fact that many studies carried out by international researchers support the value of empathy, belongingness, and well-being as separate constructs, there are much fewer studies that investigate how these constructs interact (Muhyeeddin et al., 2024). Second, in Pakistan, academic success, training of teachers, or structural education issues have been of most concern, with little focus on psychosocial pathways that form the foundation of SW (Ghonim & Awad, 2025). Third, the mediating influence of CB has hardly been theoretically formulated in such frameworks which does not answer the question of how empathy is converted into well-being in cultural settings where group membership and social approval have a high level of normative significance. Setting the belongingness as the point of convergence of SST, SDT, and Attachment Theory, the given study addresses both the gaps in the empirical literature and the theoretical synthesis, providing a culturally applicable and developmentally responsive model of empathy-based well-being in primary schools.

### ***2.1 The empathy of teachers and student well-being.***

The connection between TE and SW has received much reinforcement in the current educational psychology, with the ability of teachers to perceive and react to the emotions of students becoming a prominent pillar of a good pedagogy. According to the empirical results, teacher behaviors associated with empathy, including active listening, perspective-taking, and supportive communication, prove to be genuinely effective in fostering the perception of psychological safety and emotional stability in students (Awad & Aldabousi, 2024). In the classes where empathy stands out as a distinctive characteristic of the teacher-student relations, students experience less stress, anxiety, and loneliness and more happiness, optimism, and life satisfaction (Aldabousi, 2023; Aldabousi, 2022). Another set of studies has also found that teacher empathy helps create an inclusive and respectful environment that legitimizes the feelings of students and

helps them develop resilience in their emotions and enjoy their academic experience (Wahed et al., 2025; Hussain, 2022). It is also possible to say that, as teachers engage in empathetic practices, students are more likely to become fruitful in their self-concepts and enhanced interpersonal abilities, which are highly connected to holistic well-being (Al-Ramahi et al., 2024). Studies conducted both in the Western and Asian setting support the fact that the presence of empathetic teacher behaviors decreases emotional distress and enhances flourishing although the effect size seems especially relevant in collectivist societies where interpersonal harmony and supportive relationships are highly regarded (Hussain et al., 2023; Mahmoud et al., 2025). Notably, the research that is specifically concerned with younger pupils indicates that empathy in primary schools has long-term developmental consequences, with children being particularly vulnerable to relational communication by adults; empathic educators, therefore, play a central role in promoting socio-emotional growth and developmental pathways (Al-Ramahi et al., 2024). Put together, following hypothesis formulated.

*H1: TE has a positive and significant effect on SW in the primary education context.*

## **2.2 Teacher empathy and classroom belongingness**

The empathetic actions of teachers do not affect only the emotional status of students but also determine the development of their sense of belonging in a classroom significantly. Active listening, showing empathy, and addressing the emotional and academic needs of students help the teachers to foster a sense of belonging and respect in students (Hussain, 2022). Previous research indicates that attentive teacher-student relationships are always accompanied by trust, intimacy, and positive relationships that subsequently promote the attachment of students to the classroom environment (Khan et al., 2024; Ghonim et al., 2025). Studies have also found out that understanding teachers make students feel that they are treated fairly, inclusively, and accepted, factors that lead to the growth of a high sense of belonging (Muhyeeddin et al., 2024). Conversely, students will feel alienated, disengaged, and excluded by their peers and teachers when they lack empathy (Nader Abdulrehim Ismail Awad, 2025). Empirical data also emphasizes that practices based on empathy, which include recognition of different opinions and legitimizing personal encounters, develop an inclusive culture that contributes directly to belongingness (Nazil et al., 2025; Nazil, 2025). It seems especially important in collectivist cultures such as Pakistan, where social harmony, group belonging, and validation of communities are the highly valued elements of cultural values; in such a setting, TE will offer the relational space on which students will build their identity in the classroom (Awad and Alharthi, 2024). Thus, basing on such findings, hypothesis formulated.

*H2: TE has a positive and significant effect on CB in the primary education context.*

## **2.3 Classroom belongingness and Student well-being**

The feeling of belonging among classroom students is an emerging literature that indicates that the well-being of learners is highly predicted by this factor. CB is the degree of student perception that they are welcomed, supported, and related to teachers and others and this sense of

belonging has been associated with favorable psychological results many times over (Hussain et al., 2023). The researchers in the empirical research have established that elevated levels of belonging are linked to happiness among the students, lowering stress, and greater resilience to tackle both academic and personal challenges (Obeidat et al., 2024). It has also been anticipated that a high level of self-esteem, motivation, and a general improvement in attitude towards school which are part of well-being are a contributor to belongingness (Yusuf et al., 2025). Conversely, learners who are not made to feel belonging to the classroom stand higher chances to acquire anxiety, depression, disengagement, and poor health outcomes (Alghizzawi et al., 2025). The longitudinal research demonstrates that the effects of belonging do not involve just temporary emotional levels but it also assists in explaining the long-term socio-emotional stability and academic perseverance (Al-Sherman and Aldabousi, 2024). The belongingness role is aggravated in collectivist cultural backgrounds such as Pakistan whereby the normative importance of group identity and social cohesion is quite high and the students get much of their self-esteem and mental security when they realise that they are welcome in their classroom groups (Awad and Ghonim, 2025). Taken together, these findings make it possible to conclude that CB is among the significant mechanisms through which educational settings can affect SW.

*H3: CB has a positive and significant effect on SW in the primary education context.*

#### **2.4 Mediating role of Classroom belongingness**

Although TE has a direct impact on SW, growing evidence indicates that the impact does not assume a simple linear type of relationship but is introduced by significant psychosocial processes of which CB occupies a prominent role. The teacher practices that promote the creation of an inclusive classroom environment, including recognizing the perspectives of the students, their emotional validation, and providing one-on-one support, are expressive of empathetic teacher behaviors that enable students to feel included and valued in the classroom (Aldabousi, 2023). It is this sense of belonging that offers the psychological basis that allows empathy to become more profound in its outcomes of well being. Previous research has demonstrated that the belongingness is a crucial mediating variable between teacher practices and student adjustment, which is why students who have empathetic teachers are more likely to report higher levels of self-esteem, optimism, and emotional stability (Aldabousi, 2022). As an example, it was shown that although TE improves trust and safety in classrooms, it is the consequent feeling of belonging that directly decreases stress and positively affects affect (Aldabousi, 2022). On the same note, there is also evidence that empathy-based support enhances academic engagement due to the fact that students have enhanced classroom inclusion perceptions (Awad & Ghonim, 2025). Such a mediating process is specifically relevant to collectivist cultures, like Pakistan, where the degree of identity and well-being can be closely associated with the level of acceptance to the group; in such cultural backgrounds, belongingness can be an important channel to correlating relational teacher qualities with the psychological outcome of students (Aldabousi, 2024). Although this is the case, there is a gap in theoretical and empirical research on the explicit modeling of belongingness, which is a critical gap. By solving this, the current study aims at elucidating the way empathy has its effects, which provides a more delicate comprehension of the processes behind SW.

H4: *CB mediates the relationship between TE and SW in the primary education context.*

### 3. Methods

#### 3.1 Sample and Data Collection Procedure

The current study sample data were gathered through primary schools in Pakistan based on purposive convenience sampling that is often used in the research of social sciences when the specific target groups should be reached (Ghonim et al., 2025). The experiment involved the collection of data within a period of four months (February to May 2025). In a bid to access it, we first sent emails to school principals and school heads in both public and private schools in the Punjab province via professional and academic circles to request them to participate. After the schools consented to take part, we presented the nature of the research to the schools, distributed information sheets and invitation letters to the parents or guardians of the students, making it voluntary and informed consent. Students who received the permission of their parents and were ready to take part received the paper based surveys that were conducted at regular school hours. The involvement was not compulsory and no rewards were provided and students could pull out at any stage. All in all, 400 survey forms were sent to primary school students in various schools. Out of these, 312 were returned, which is a 78 percent response rate. The data was screened to exclude missing information and thoughtless responses (e.g. the same answer to all questions), and a total of 289 usable responses were then measured in the analysis, surpassing the recommended minimum sample size in SEM (;). The data set was checked in line with the existing guidelines (Nazil, 2025; Al-Ramahi et al., 2024) to determine the presence of univariate and multivariate outliers, normality, and multicollinearity, making it strong enough to proceed with the analysis. Table 1 provides a summary of the demographic traits of the sample. The gender ratio was comparatively equal and it consisted of boys (52.2) and girls (47.8). Most of the students (64.7) were in the public schools and only 35.3% were in the private schools. The majority of respondents (41.9%) belonged to Grade 5 with the rest of Grade 4 (31.5%), and Grade 3 (26.6%). The age bracket was between 8 and 12 years; the highest percentage was between 10 and 11 years old (53.6%).

**Table 1.** Demographic Profile of Respondents (N = 289)

Characteristics	Category	N	%
<b>Gender</b>	Male	151	52.2
	Female	138	47.8
<b>School Type</b>	Public	187	64.7
	Private	102	35.3
<b>Grade Level</b>	Grade 3	77	26.6
	Grade 4	91	31.5
	Grade 5	121	41.9
<b>Age (Years)</b>	8–9	58	20.1
	10–11	155	53.6
	12	76	26.3

### **3.2 Measures**

Since the instruments had been designed in English in the first place, they were translated into Urdu in order to make them culturally and linguistically acceptable to the Pakistani primary school learners. In line with the customary procedure, a forwardbackward translation method was used to provide conceptual and semantic precision (Awad & Aldabousi , 2024). The scales were firstly translated into Urdu as translated by two bilingual education experts and then another group of bilingual experts independently translated the translated Urdu back into English. Differences between the original and the back-translated version were thoroughly looked at, deliberated and polished until there was equality between them. The updated Urdu version was then again screened by two cultural specialists to make sure that the context is sensitive and that the language is appropriate in terms of age. Lastly, a pilot test involving a small number of primary students was carried out to ensure that there was clarity, understanding, and reliability of responses. According to the pilot response, slight modifications on the words were offered to make it easier to read. To form an agreement around all constructs in a child friendly and reliable format, a five point Likert scale was adopted with 1 (strongly disagree) to 5 (strongly agree).

The adapted form of TE Scale was used to measure TE, which was initially validated in the Western setting but later tested in other educational settings and supported by high psychometrics (Hussain et al., 2023; Mahmoud et al., 2025). The scale evaluates the ability of the teachers to know the mind of the students, to be sensitive towards the needs of students and to offer emotional support to the students. The previous research has shown that this instrument has a high level of internal consistency, and the estimates of Cronbach's alpha are above 0.80 in various cultural settings (Alazaidah et al., 2024; Aldabousi, 2022). One of such representative items is, My teacher attempts to know how I feel when I am in a bad mood. The short version of the Psychological Sense of School Membership (PSSM) scale by Awad and Alharthi (2025) was used to assess CB on the shortened and age-appropriate version. The measure has been utilized extensively in educational research in both Western and non-Western contexts with a high level of construct validity and reliability where alpha coefficients are mostly between 0.75 and 0.85 (Aldabousi, 2025; Awad and Mahmoud, 2024). The tool measures the level of acceptance, inclusion, and value of students in their classroom community. One such sample item is; I feel like I belong to my class. The Student Subjective Well-Being Questionnaire (SSWQ) was used to measure SW and has been proven to be valid in various cultural and school settings (Awad and Mahmoud, 2024; Al-Batah et al., 2024). The SSWQ is a measure that measures various areas such as school connectedness, academic efficacy and general life satisfaction in schools. The tool has shown good psychometric qualities, whereby the Cronbachs alpha values have been reported to be above 0.80 in studies that have been done both in the western and Asian settings (Alqaraleh et al., 2024; Al-Batah et al., 2024). One of the sample items is, I am happy when I am at school.

### **3.2 Data Analysis**

The SPSS version 29 and AMOS were used to analyze the data collected in this study. Initially, the descriptive statistics was calculated to highlight the demographic profile of the study. SEM was used in order to test the proposed research framework and hypotheses. The reason why SEM was

considered suitable was the possibility to measure many relationships between variables at once and investigate direct and mediation effects within one model (Al TAL et al., 2019). The analysis was performed in two steps. The constructs were valid and reliable in the sense that the measurement model was estimated and assessed based on suggested fit indices like CFI, TLI, RMSEA, and  $\chi^2/df$  (Awad, 2024). After having attained an acceptable model fit, structural model was tested to test the hypothesized path relationships between TE, CB and SW, including the mediating mechanism. Since self-reported data were used to measure all variables and the respondents were the same, the potential of common method bias (CMB) was also taken into account. To reduce this risk, a number of procedural solutions were used when collecting data based on the recommendations of Alqaraleh (2024). The participants were guaranteed the right to anonymity and confidentiality, they were not told there were no correct and incorrect answers and were encouraged to give the honest answers. The survey design also split various scales using section breaks to minimize priming of the responses. A single-factor test was applied to test the existence of CMB statistically by applying the exploratory factor analysis as developed by Harman. The findings showed that none of the factors explained most of the variance and the first factor could explain the total variance less than 40, which implied that CMB was not a serious issue. This result can be compared to the recent claims that common method variance can be less problematic in behavioral studies than it was previously believed (Saad et al., 2025; Alzboon et al., 2025). Further reliability and validity of the constructs were measured. Cronbachs alphawas used to test internal consistency, and the results showed that all the scales had values greater than the acceptable alpha level of 0.70, which indicates good reliability. The convergent and discriminant validity were determined using standardized factor loadings, average variance extracted (AVE), and composite reliability and square root of AVE and inter-construct correlations respectively, respectively. These analyses combined provided evidence that the measurement instruments were robust. Table 2 contains the descriptive statistics, estimates of correlation between the variables, and reliability estimates. The findings show that TE, CB and SW have significant positive correlations with each other thus giving some initial evidence to the hypothesized model.

**Table 2.** Descriptive Statistics, Reliabilities, and Correlations of Constructs (N = 289)

<b>Variables</b>	<b>M</b>	<b>SD</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>TE</b>	3.92	0.54	(0.89)		
<b>CB</b>	3.85	0.57	0.63**	(0.87)	
<b>SW</b>	4.01	0.59	0.58**	0.66**	(0.91)

\*Notes: \*Correlation is significant at the 0.01 level. M = Mean; SD = Standard Deviation; values in parentheses represent Cronbach's alpha.

Source: Authors' own work

## 4. Results

### 4.1 Measurement Model

The alpha of Cronbach was determined to evaluate the internal consistency of three constructs namely TE, CB, and SW. The satisfactory reliability is verified because all constructs surpassed the suggested threshold of 0.70 (Ghonim and Awad, 2025) (see Table 2). Then a measurement model was defined that contained three latent variables, where the observed indicators of the latent variables were the observed indicators. Confirmatory factor analysis (CFA) revealed that the measurement model fits well:  $\chi^2 = 196.47$ ,  $df = 58$ ,  $p = 0.01$ ; Comparative Fit Index (CFI) = 0.97; Goodness-of-Fit Index (GFI) = 0.93; Tucker-Lewis Index (TLI) = 0.96; Root Mean Square Residual (RMSEA) = 0.05; and Standardized Root Mean Square Residual (SRMR) = 0.04. The indicators demonstrated strong loadings on their constructs and the standardized loadings fell within the range of 0.64 to 0.88 ( $t$ -values = 7.9212.86,  $p < 0.05$ ). Calculations of composite reliabilities (CRs) were made to further prepare the internal consistency of the constructs with the values of between 0.79 and 0.93, which is far beyond the acceptable level of 0.70 level. The values of the average variance extracted (AVE) were 0.53 to 0.74, which fulfilled convergent validity as every construct had over half of the variance in its indicators (Muhyeeddin et al., 2024). The discriminant validity was also determined because the square root of the AVE of each construct was greater than the square correlations of the constructs with each other implying that the constructs were not the same. The highest correlation was observed between CB and SW ( $r = 0.66$ ), which is also theoretically consistent with the previous studies that define the importance of belonging in improving the psychological performance of students.

### 4.2 Structural Model

The findings of the structural model are in Table 3. The model fit indices showed the excellent fit to the data:  $\chi^2 = 842.56$ ,  $df = 318$ ,  $p < 0.01$ ; CFI = 0.96; NFI = 0.95; TLI = 0.95; RMSEA = 0.05; SRMR = 0.04. These values are within recommended ranges, and it proves that the structural model is adequate. The squared multiple correlations ( $R^2$ ) indicated that the model accounted 42.8 percent and 56.2 percent of the variance in CB and SW respectively. This evidence implied that the data were explained by the model in its proposed form to a significant extent of variance in the key outcomes, which further supported the strength of the theoretical background of the framework.

The significance of structural path coefficients was used to determine the research hypotheses. The TE-SW (H1) connection was significant (0.41) and positive, which means that the higher students perceived their teachers to be empathetic, the higher the levels of well-being were. The TE to CB (H2) path was also of significance (0.67,  $p < 0.001$ ) indicating that empathetic teacher behavior strongly contributed towards enhancing the feeling of belonging in classroom among students. In line with H3, CB had a positive correlation with SW (0.32,  $p = 0.001$ ), indicating that students who perceived themselves to be included and valued in their classrooms had a better psychological wellbeing. Lastly, a mediating effect of CB was also tested (H4). The indirect relationship between TE and SW mediated by CB was significant ( $\beta = 0.21$ ,  $p < 0.001$ ). This finding

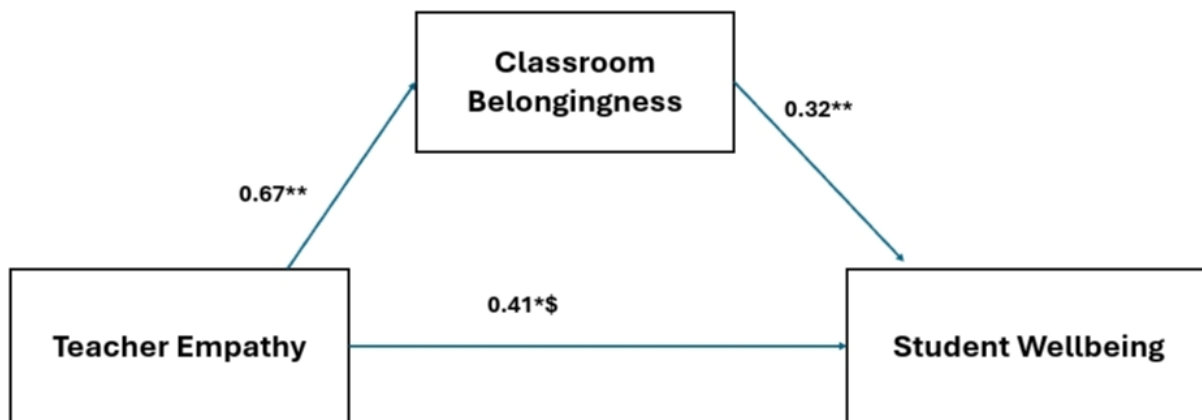
proves that CB mediated the relationship between TE and SW to some extent. Stated differently, though empathetic teacher actions had a direct positive impact on SW, they also indirectly affected SW by promoting a sense of belonging in the classroom environment. Combined with the findings, they strongly support the idea that TE is a significant determinant of student outcomes, both directly and indirectly via its impact on CB. Figure 1 illustrates the estimated relationships of the study and its hypothesized relationships.

**Table 3.** Structural Path Estimates

Path	Path estimate (t value)	Hypothesis testing
(H1) TE → SW	0.41 (10.87)	Supported
(H2) TE → CB	0.67 (16.42)	Supported
(H3) CB → SW	0.32 (7.96)	Supported
(H4) TE → CB → SW	0.21 (8.34)	Supported

Source: Authors' own work

**Figure 1.** Hypothesis Results



## 5. Discussion

The objective of the existing study was to cover the direct and indirect impact of TE on SW and mediate the relationship through CB within the settings of Pakistani schools. These results were a good indication of an operationalized model that TE has a significant contribution to SW with considerably stronger significance, developing CB, and that belongingness as such has a positive contribution to the well-being with mediation of empathy. Taken together, these findings corroborate the notion that TE is not a lone idiosyncratic feature but a social force that supports

classroom processes and gradually develops students in a holistic manner. The positive direct relationship between TE and SW confirms and expands a tremendous stream of academic studies on the international level. To provide an illustration, Mahmoud et al., (2025) and Nazil (2025) emphasized that emphatic teachers do not only stimulate emotional safety and resilience but also Hussain et al., (2023) and Khan et al., (2023) found out that empathy reduced stress and provided trust in students. They are in agreement with the existing findings, which show that empathy is a protective variable of SW. Secondly, the results correspond with those of Ghonim and Awad (2025) and Alghizzawi et al., (2025), who found teacher care to be predictors of high student motivation and positive affect and emotional attunement. The same result was identified by Al-Sherman and Aldabousi (2024) who suggested empathetic practices by teachers to create beneficial climates which mitigated psychological distress. The strength of the direct way in this study is thus a supportive concept that TE is at the center of well-being under different circumstances.

The other result that was reached was that empathy was a robust foreboding of CB signifying that where educators are helpful, insightful, and caring, the students will experience a greater bond and will be esteemed and felt as a part and parcel of the peer group and classroom society. This observation is consistent with the emotions expressed by Awad and Ghonim (2025) whose paradigm study has observed that belongingness is fundamental to academic and emotional success. Similarly, Aldabousi et al., (2025) and Alazaidah et al., (2024) found that, teacher support will never diminish the students sense of belonging to the school and the findings of Awad and Aldabousi (2024) also revealed that empathy based teacher behaviors promote positive peer connectedness. The present findings also coincide with the findings made by Alazaidah et al., (2024) who came to the conclusion that students who have an idea that teachers are understanding and respectful have an opportunity to report greater rates of being attached to the classroom. These similarities in combination establish that empathy is a relational process that can also allow one to be inclusive and not alienated at a learning environment.

Additionally, CB also had a strong predictive value of SW, which is consistent with the results of Awad and Mahmoud (2024) and Al-Batah et al., (2024), that also confirmed that belongingness has a direct correlation with life satisfaction and emotional well-being. Alqaraleh et al., (2024) further explained that the sense of belonging reduces distress and forms a sense of optimism but Khan et al., (2023) found out that social connectedness is an important factor that helps people adapt to their culture in Asians. The same is determined by Mahmoud et al., (2025) who assert that belongingness is advantageous to resilience of the students, and by Ghonim et al., (2025) who determined that it reduced the stereotype threat and resulted in thriving. These overlaps indicate that belongingness has proven to be a universal determinant of well-being but the degree of correlation in the current study suggests that it is especially salient in collectivist cultures like Pakistan where group identity and community is highly esteemed. The mediation analysis proved that CB is a mediator that has a significant role in translation of TE into SW. This concurs with Aldabousi (2024) and Aldabousi (2023) who theorized that belongingness is a psychological mediator between teacher assistance on one end and student results on the other. It is also based on the findings of Awad et al., (2023), authors of Wahed et al., (2025) who managed to prove the impact of interaction between teacher behaviors and mental health and academic engagement

through CB. It is significant to note that the result of the mediation is an incremental addition to the literature given the fact that it offers empirical validation in a South Asian setting whereby such integrative models have largely not been tested. In this aspect, the findings are the continuation of Hussain (2023) culture model, and close to the research where Hussain et al., (2023) found out that the role of empathy on well-being was mediated through belongingness in Turkish schools.

Thus, the study provides a solid argument that empathy is not only a direct factor which defines well-being, but an indirect factor, which can be implemented in the classroom during social processes. Though it is certainly much congruent with the majority of the existing literature, there are some differences that should be noticed. Hussain (2022) presented less significant correlations between empathy and well-being in some of their Western samples as an example: maybe due to forces of structure, such as competitiveness or standardized testing, blocking the association effect of empathy. Similarly, Qadeer et al., (2025) and Qadeer et al., (2025) also reported that empathy per se was no longer sufficient to promote results in the high-academic pressure settings. These counterarguments underline the concept that the strength of empathy is different in terms of its context. Being both teachers and guides in virtually everything that happens in Pakistan, empathy may be more potent than in individualistic situations. The finding confirms the importance of cultural sensitivity within the educational psychology context and cautions against the chances of the same effects on cultural settings. Taken together, the findings of this paper may be considered as powerful signals that TE is a basis of SW, either directly or indirectly on the moderating role of CB. The research can make contributions to the current body of literature on the workings of relational processes in the learning process because it demonstrates that the phenomena of caring teaching can generate inclusive classroom-based learning environments that, in turn, enhance the psychological well-being. To further the point, by contextualizing the findings within the frames of the Pakistani educational setting, the article also highlights the point that the interventions that rely on empathy may be particularly useful in collectivist cultures. Thus, the current research is based on the earlier research but, simultaneously, validates it, giving new facts concerning the mechanisms of how TE can assist students in prospering.

### **5.1 Theoretical and Practical Implications**

The implications of the results of this paper are rather significant in respect to theory because they help us know more about the functioning of TE as a multidimensional construct, which is not only confined to the specific teacher-pupil interaction but also a systemic determinant of SW. Through SST, SDT and belongingness theory, this study demonstrates that TE is a relational activity and not a personal trait that creates the phenomenon to psychological safety, motivation and prosperity. The fact that CB is a mediating process is a contribution to the theoretical sophistication of the current models, as it provides empirical evidence on the fact that the effect of empathy is mediated by the processes of social inclusion and is not a direct one. This substantiates the implication that in learning contexts, well being is generated within the teacher student dynamics and peer interaction. Moreover, as the current research confirms the relationships between empathy and belongingness in the Pakistani context, the current research

contributes to the research on cross-cultural educational psychology by showing that empathy and belongingness are cross-cutting constructs, yet the extent of their expression and demonstration will rely on the cultural values of collectivism, respect to authority, and learning oriented community. By so doing, the study is part of the theoretical discourses of the problem of whether psychosocial determinants of well-being are global or culture-specific and indicates that the further studies need to apply context-sensitive models.

In practice, the results point to the necessity of developing empathy as the basis of the teacher training and professional development program. Active empathy by the teachers may lead to the introduction of a more effective inclusive classroom environment where students feel valued and affiliated which may ultimately improve their emotional well-being and academic interest levels. This study provides a supported reasoning of a pedagogical shift towards a more relational level where care, listening, and respect of one another are centralized, and where, in Pakistan, the school systems are more inclined to ignore the fact that students are taught to memorize facts and show performance in terms of results. It is also recommended that schools should include systematic empathy building programs in teacher training programs and provide lasting in-service training workshops to keep such practices. Furthermore, the fact that CB is the one, which makes the impact of empathy possible, presupposes that the school administrators must help to establish the environment, in which collaborative learning, peer acceptance, and participation will take place. Policies facilitating the small classes and mentorship system and collaborative learning methods could be applied to enhance the sense of belonging in the students and hence psychological well-being. It also repercussions to the educational policy makers who must realise that well being is not a collateral goal but a core element of quality education. The national education systems in Pakistan may also incorporate well being indicators so as to be in line with global agenda which is the inclusion and equitable quality education by the United Nations sustainable development goal 4. The teacher empathy and student belongingness programs would not just enhance the learning outcomes but also contribute to the overall social objectives of coming up with strong and socially responsible citizens. The originality of the research is also in the fact that it shows that the effect of empathy-based educational interventions can be deemed as important in the context of enhancing SW in a South-Asian context, in which the amount of empirical research connected with the problem is limited. In this way, it offers useful information to teachers, school leaders and policymakers that seek to improve the socio-emotional developments of the learning process. On the whole, the given study contributes to the field of theory rather well, both describing how empathy can enhance SW, and situating it in the context of a culturally based paradigm, and its practical implications show the significance of the fact that the educational practices and policies need to be inverted and oriented to empathy, belongingness, and holistic growth as soon as possible. The study, through the synthesis of both the theory and practice, defines empathy as a pedagogical skill, and an agent of learning transformation that will be in a position to reorganize learning environments and enhance student well-being in Pakistan and other places.

## **5.2 Limitations and Future Research Directions**

Although the current research offers some significant information on the role of TE, CB and SW in the Pakistani educational environment, one must consider a number of limitations that can help him/her interpret the findings and opens the way to further research. First, cross-sectional design limits the possibility of coming up with causal links between the constructs. Even though SEM offers strong statistical data of directional associations, it does not exclude entirely the possibility of reciprocal effect, not to mention that students who have better levels of well-being can also view their teachers as more empathetic or experience stronger belongingness. The identification of the causal paths in this study would therefore require longitudinal studies or experiment interventions to ascertain the cause and effect relationships. Secondly, the use of self-reported measures encourages social desirability bias and common method variance, despite the adoption of methodological measures like the use of anonymity and statistical controls. Students might have replied in a manner that could demonstrate a socially acceptable perception of teachers and not what they actually went through. This may be improved in future studies by utilizing multi-informant designs, including teacher self-report, peer ratings or classroom observations, and thus triangulate data sources to increase validity. Third, the sample, though large enough and diversified in the aspect of demographics, was restricted to schools in selected areas in Pakistan. Pakistan has a very heterogeneous system of education, which includes urban and rural differences, state and privately-owned schools, and different socioeconomic statuses. The results, thus, cannot be entirely extended to all situations in the country especially the underserved rural regions where teacher-student relationship might be significantly different. It would be beneficial to extend the future studies to a national sample to gain a better picture of the phenomena. Fourth, the paper concentrated on empathy and belongingness as the most significant predictors of well-being, but other related psychosocial variables and structural variables have not been mentioned. As an example, these relationships can be moderated or interact with family support, peer relationships out of the classroom, school climate, and cultural values. Incorporating these variables in future studies would create more sophisticated models that indicate complexity of the well being of students living in collectivist societies. Moreover, modulating factors of gender, socioeconomic status, or school type may be a fruitful area to investigate whether the studies found in this research are equally good in the subgroups. Lastly, the research was placed in the cultural backdrop of Pakistan that makes significant contributions to the literature but fails to extend external validity to other areas. Although the results can be considered to be in line with international evidence, the cultural values of teacher authority, respect, and collectivism might have increased the effects of empathy and belongingness that have been observed. The cross-cultural comparison and contrast studies would be beneficial in establishing the existence of the same mechanisms with the same amount of strength in the societies that are more individualistic, thus contributing to the global discussion of TE and SW. Given these shortcomings, a longitudinal, experiential, design, should be followed in future studies that would expand the sampling methods to include varying learning environments, other psychosocial and situational factors and cross-cultural comparison of the same. This work would not only confirm and expand the study findings but also enhance our knowledge regarding how empathy-based educational activities can promote the sense of belongingness and improve SW in a diverse cultural and institutional setting.

## **6. Conclusion**

This paper aimed to examine how TE influences SW with a focus on the mediating effect of CB to the Pakistani learning environment. The results were a strong argumentation of the proposed model as they proved that empathetic instructors have a direct positive impact on the psychological well-being of students, as well as contributing to the development of a sense of belonging further strengthening successful results. This evidence proved that TE is not only a character trait but a transformative practice that changes the culture in the classroom and empowers students to achieve success in the classroom, emotionally, and socially. The identification of CB as a key mediating variable contributes to the current theoretical literature and makes it obvious that well-being is not developed in individual teacher-student relations only, but is present in a classroom context as well. The works of this paper are of great importance on several levels. Theoretically, it connects and expands empathy, belongingness, and well-being models, and the latter prove to be appropriate in a South Asian cultural environment where reduced individualism and collectivism rules are powerful. In practice, it offers evidence-based advice to teachers, school administrators and policymakers and shows that compassionate actions and inclusive classrooms are the keys to improving student welfare. Notably, as it addresses the situation in Pakistan, where educational research has been compelled to heavily focus on academic performance as opposed to social-emotional growth, the article makes a vital contribution to the existing literature and demonstrates the necessity to redefine the purpose of education to focus on more than cognitive performance. Finally, the results also support the idea that the development of empathy and belongingness in the classroom is not a fringe benefit, but an essential requirement of student success. The paper demonstrates that, by being compassionate and encouraging a sense of belongingness, teachers create the basis to having resilient, motivated, and emotionally secure learners. With the emergence of the fast moving and highly competitive education environment, such relational practices are mighty mechanisms of individual development and group welfare. In this sense, this study is part of an emerging world trend that demands humanization of education, placing Pakistan in a wider international context, and providing the channels of developing education systems that not only foster achievement but also the SW in its entirety.

### **Declarations**

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#### ***Competing Interests***

None.

#### ***Ethical Approval***

This study was granted an exemption from requiring ethics approval as it does not involve human participants or the collection of sensitive personal data. The research is based on the perceptions

of teachers via a questionnaire. As such, it adheres to institutional guidelines that classify this type of study as low-risk and not subject to formal ethics approval.

### ***Author's Contribution***

Rizwan Ahmed : Conceptualization, Data curation, Formal analysis, Writing – original draft, Methodology, Resources, Software, Writing – Review and editing, Validation, Investigation

### ***Data availability***

The data was collected and analyzed using descriptive statistical methods, as detailed in the Method section of this study. The dataset is not publicly available but can be obtained from the corresponding author upon reasonable request.

### **References**

- Alzboon, M. S., Al-Shorman, H. M., Alka'awneh, S. M. N., Saatchi, S. G., Alqaraleh, M. K. S., Samara, E. I. M., ... & Haija, A. A. A. (2025). The Role of Perceived Trust in Embracing Artificial Intelligence Technologies: Insights from SMEs. In *Intelligence-Driven Circular Economy: Regeneration Towards Sustainability and Social Responsibility—Volume 2* (pp. 1-15). Cham: Springer Nature Switzerland.
- Alqaraleh, M. (2024). Emerging technologies in the Middle East: artificial intelligence adoption and performance expectancy in Jordanian SMEs. *Studies in Computational Intelligence*.
- Alzboon, M. S., Al-Batah, M. S., Alqaraleh, M., Abuashour, A., & Hamadah Bader, A. F. (2023). Early Diagnosis of Diabetes: A Comparison of Machine Learning Methods. *International Journal of Online & Biomedical Engineering*, 19(15).
- Alzboon, M. S., Bader, A. F., Abuashour, A., Alqaraleh, M. K., Zaqaibeh, B., & Al-Batah, M. (2023, November). The Two Sides of AI in Cybersecurity: Opportunities and Challenges. In *2023 International Conference on Intelligent Computing and Next Generation Networks (ICNGN)* (pp. 1-9). IEEE.
- Alzboon, M. S., Al-Batah, M., Alqaraleh, M., Abuashour, A., & Bader, A. F. (2023, November). A Comparative Study of Machine Learning Techniques for Early Prediction of Prostate Cancer. In *2023 IEEE Tenth International Conference on Communications and Networking (ComNet)* (pp. 1-12). IEEE.
- Awad, A. (2024). Artificial intelligence and marketing innovation: The mediating role of organizational culture. *Innovative Marketing*, 20(3), 170.
- Al Tal, S., Al Salaimh, S., Alomari, S. A., & Alqaraleh, M. (2019). The modern hosting computing systems for small and medium businesses. *Academy of Entrepreneurship Journal*, 25(4), 1-7.
- Alzboon, M. S., Aljarrah, E., Alqaraleh, M., & Alomari, S. A. (2021). NodeXL tool for social network analysis. *Turkish Journal of Computer and Mathematics Education*, 12(14), 202-216.
- Alqaraleh, M., Alzboon, M. S., Al-Batah, M. S., Wahed, M. A., Abuashour, A., & Alsmadi, F. H. (2024). Harnessing Machine Learning for Quantifying Vesicoureteral Reflux: A Promising

Approach for Objective Assessment. *International Journal of Online & Biomedical Engineering*, 20(11).

- Alzboon, M. S., Qawasmeh, S., Alqaraleh, M., Abuashour, A., Bader, A. F., & Al-Batah, M. (2023, October). Machine Learning Classification Algorithms for Accurate Breast Cancer Diagnosis. In *2023 3rd International Conference on Emerging Smart Technologies and Applications (eSmarTA)* (pp. 1-8). IEEE.
- Alzboon, M. S., Qawasmeh, S., Alqaraleh, M., Abuashour, A., Bader, A. F., & Al-Batah, M. (2023, October). Pushing the Envelope: Investigating the Potential and Limitations of ChatGPT and Artificial Intelligence in Advancing Computer Science Research. In *2023 3rd International Conference on Emerging Smart Technologies and Applications (eSmarTA)* (pp. 1-6). IEEE.
- Awad, A., Shemais, M., & Al-Embabi, M. (2024). Driving HR performance through digital transformation in educational directorates: A strategic imperative. *Problems and Perspectives in Management*, 22(4), 163.
- Al-Batah, M., Alzboon, M. S., Alqaraleh, M., & Alzaghoul, F. A. (2024). Comparative Analysis of Advanced Data Mining Methods for Enhancing Medical Diagnosis and Prognosis. *Data Metadata*, 3, 465.
- Awad, A., & Mahmoud, M. (2024). Impact of electronic customer relationship management on competitive advantage: Mediating role of customer satisfaction in EgyptAir. *Problems and Perspectives in Management*, 22(3), 276.
- Al-Batah, M. S., Alzboon, M. S., Migdadi, H. S., Alkhasawneh, M., & Alqaraleh, M. (2024). Advanced Landslide Detection Using Machine Learning and Remote Sensing Data. *Data Metadata*, 3.
- Aldabousi, A. M. (2023). The legal problems facing the conclusion of cloud computing contracts. *University and Society*, 15 (3), 602-611.
- Alqaraleh, M., Al-Batah, M., Alzboon, M. S., & Alzaghoul, E. (2025). Automated quantification of vesicoureteral reflux using machine learning with advancing diagnostic precision. *Data Metadata*, 4, 460.
- Alqaraleh, M., Alzboon, M. S., & Al-Batah, M. S. (2024). Skywatch: Advanced Machine Learning Techniques for Distinguishing UAVs from Birds in Airspace Security. *Int J Adv Comput Sci Appl [Internet]*, 15(11), 1065-78.
- Alqaraleh, M. (2024, June). Enhanced Resource Discovery Algorithm for Efficient Grid Computing. In *2024 3rd International Conference on Applied Artificial Intelligence and Computing (ICAAIC)* (pp. 925-931). IEEE.
- Aldabousi, A. M. (2022). Legal problems of conclusion of intelligent software agent for smart commercial contracts in the era of Blockchain UAE as model. *Universidad y Sociedad*, 14(S3), 713-728.
- Alqaraleh, M., Alzboon, M. S., Al Batah, M. S., & Migdadi, H. S. (2025). From Complexity to Clarity: Improving Microarray Classification with Correlation-Based Feature Selection. *LatIA*, (3), 1.
- Alzboon, M. S., Alqaraleh, M., Wahed, M. A., Alourani, A., Bader, A. F., & Al-Batah, M. (2024, November). AI-Driven UAV Distinction: Leveraging Advanced Machine Learning. In *2024 7th International Conference on Internet Applications, Protocols, and Services (NETAPPS)* (pp. 1-7). IEEE.

- Aldabousi, A. M. (2022). Legal Problems of Electronic Pollution According to UAE and Egyptian Law. *The Arab World Geographer*, 25(2-3), 154-168.
- Alqaraleh, M. (2024, June). Enhancing Internet-based Resource Discovery: The Efficacy of Distributed Quadtree Overlay. In *2024 3rd International Conference on Applied Artificial Intelligence and Computing (ICAAIC)* (pp. 1619-1628). IEEE.
- Al-Batah, M. S., Alzboon, M. S., Migdadi, H. S., Alkhasawneh, M., & Alqaraleh, M. (2024). Advanced Landslide Detection Using Machine Learning and Remote Sensing Data. *Data Metadata*, 3.
- Alqaraleh, M., Alzboon, M. S., Al-Batah, M., Migdadi, H. S., Saleh, O., Alazaidah, R., & Elrashidi, A. (2024, December). Innovative Machine Learning Solutions for Automated Kidney Tumor Detection in CT Imaging Through Comparative Analysis. In *2024 25th International Arab Conference on Information Technology (ACIT)* (pp. 1-9). IEEE.
- Alazaidah, R., Samara, G., Katrawi, A., Hadi, W., Al-Safarini, M. Y., Al-Mamoori, F., ... & Alzoubi, H. (2024, December). Prediction of Hypertension Disease Using Machine Learning Techniques: Case Study from Jordan. In *2024 25th International Arab Conference on Information Technology (ACIT)* (pp. 1-6). IEEE.
- Awad, A., Aziz, A. F., & Shma, T. R. (2025). Investment behavior in the Egyptian stock market: The impact of social media on investor decision-making. *Investment Management & Financial Innovations*, 22(1), 203.
- Aldabousi, A. M., Awad, A., Hassan, H. E. M., Abdullah, S. S., & Ghonim, A. (2025). Arbitration in Islamic banking: Exploring legal and practical implications for dispute resolution. *Banks and Bank Systems*, 20(2), 15.
- Awad, A., & Alharthi, B. (2025). The role of digital marketing tools in promoting tourism: An applied study on online marketing strategies. *Innovative Marketing*, 21(2), 14.
- Alzboon, M. S., Alqaraleh, M. K., Aljarrah, E. M., & Alomari, S. A. (2022). Semantic image analysis on social networks and data processing: Review and future directions. *Handbook of Research on Foundations and Applications of Intelligent Business Analytics*, 189-214.
- Alzboon, M. S., Alqaraleh, M., & Al-Batah, M. S. (2024). AI in the Sky: Developing Real-Time UAV Recognition Systems to Enhance Military Security. *Data Metadata*, 3(417).
- Alzboon, M. S., Alqaraleh, M., & Al-Batah, M. S. (2024). AI in the Sky: Developing Real-Time UAV Recognition Systems to Enhance Military Security. *Data Metadata*, 3(417).
- Awad, A., Kordey, A., Hassan, A., & Aal, H. A. (2025). The role of blockchain technology in advancing supply chain innovation: A descriptive-analytical study.
- Awad, A., & Aldabousi, A. M. (2024). Analyzing the impact of viral marketing on brand equity dimensions in Egypt's home appliances sector: A customer and legal perspective. *Innovative Marketing*, 20(4), 100.
- Awad, A., & Ghonim, A. (2025). Data-Driven Marketing in Banks: The Role of Artificial Intelligence in Enhancing Marketing Efficiency and Business Performance. *International Review of Management and Marketing*, 15(5), 422.
- Aldabousi, AM (2023). Legal problems facing the conclusion of cloud computing contracts. *Journal of University and Society*, 15 (3), 602-611.

- Awad, A. (2025). The role of universities' social responsibility in enhancing business sustainability: Mediating role of entrepreneurial culture. *Problems and Perspectives in Management*, 23(1), 181.
- Al-Sherman, N., & Aldabousi, A. M. (2024). The Complementary Penalties Enforced to Combat Corporate Crimes in UAE Law. *Pakistan Journal of Criminology*, 16(3).
- Awad, A., Aldabousi, A. M., & Albatal, S. (2025). The Influence of Social Media Marketing on Customer Knowledge Management: The Role of Confidentiality in UAE Public Banks. *Banks and Bank Systems*, 20 (1), 1–10.
- Awad, A., Aldabousi, A. M., & Albatal, S. (2025). The influence of social media marketing on customer knowledge management: The role of confidentiality in UAE public banks. *Banks and Bank Systems*, 20(1), 1.
- Al-Ramahi, N., Kreishan, F. M., Hussain, Z., Khan, A., Alghizzawi, M., & AlWadi, B. M. (2024). Unlocking sustainable growth: The role of artificial intelligence adoption in Jordan retail sector, moderated by entrepreneurial orientation. *International Review of Management and Marketing*, 14(6), 143.
- Alghizzawi, M., Hussain, Z., Abualfalayeh, G., Abu-ALSondos, I. A., Alqsass, M., & Chehaimi, E. M. (2025). The impact of AI-driven strategy on salespeople training and performance. *International Review of Management and Marketing*, 15(2), 1.
- Awad, A., Al-fil, N. Z., Dganni, K. M., Aldabousi, A. M., & Obeidat, M. A. (2024). Optimizing dormant account management in UAE banking: Legal gaps and proposed reforms. *Banks and Bank Systems*, 19 (4), 124.
- Aldabousi, A. M. (2024). The Joint Responsibility of the Air Carrier Established in accordance with International Conventions on the Status of Air Terrorism. *Pakistan Journal of Criminology*, 16(2), 135.
- Awad, A. (2025). Augmented Reality as a Tool for Customer Engagement: Impact on Brand Perception in Retail. *TEM Journal*, 14(3).
- Aldabousi, A. M. (2023). The Artificial Intelligence as an Inventor Legal Study. *Russian Law Journal*, 11(3S), 105-111.
- Aldabousi, A. M., Awad, A., Hassan, H. E. M., Abdullah, S. S., & Ghonim, A. (2025). Arbitration in Islamic banking: Exploring legal and practical implications for dispute resolution. *Banks and Bank Systems*, 20(2), 15.
- Aldabousi, A. M. (2025). Managing commercial space activities: Legal and regulatory challenges in the UAE's space sector. *Problems and Perspectives in Management*, 23(2), 423.
- Ghonim, A., & Awad, A. (2025). Shaping customer insights through e-marketing: An applied study in the banking sector.
- Ghonim, A., & Awad, A. (2024). Leveraging E-Marketing for enhancing customer knowledge management: A systematic review of tourism strategies in the Saudi Arabian context. *Journal of Ecohumanism*, 3(8), 11693-11709.
- Ghonim, A., Awad, A., Shemais, M., Shma, T., & Aziz, A. (2025). Exploring the impact of flexible work arrangements on employee engagement in telecommunications: case of Egypt. *Problems and Perspectives in Management*, 23(2), 198.

- Hussain, Z. (2022). Intention to purchase halal cosmetic products in an Islamic Pakistani culture. *Journal of Islamic Economics and Finance Studies*, 3(1), 1-11.
- Hussain, Z., Sultan, R., Asadullah, A., Arif, M., & Ali, A. (2022). The Impact of Zakat Literacy, Trust, and the Accessibility of Digital Payments on Generation Z and Y's Intention to Pay Zakat to Central Zakat Fund, the State Bank of Pakistan. *International Journal of Zakat*, 7(2), 105-114.
- Hussain, Z., Khan, A., & Ali, A. (2023). The impact of user-generated content, social interactions and virtual economies on metaverse environments. *Journal of Sustainable Economics*, 1(2), 34-44.
- Hussain, Z. (2023, April). Analyzing the emerging trends of digital literacy among Muslim students Zahid Hussain. In *The 1st Annual Conference of Islamic Education* (pp. 125-134). Atlantis Press.
- Hussain, Z. (2023). The Use of Web 3.0 in University E-learning, Quality Assurance, and Knowledge Management. In *Advances in Distance Learning in Times of Pandemic* (pp. 155-176). Chapman and Hall/CRC.
- Hussain, Z. (2023). Examining the impact of green marketing strategies on organizational performance and competitive advantage. *NUST Business Review*, 5(1), 1-18.
- Khan, A., Hamid, A. B. A., Saad, N. M., Hussain, Z., & Arif, A. R. (2023). Effectiveness of artificial intelligence in building customer loyalty: investigating the mediating role of chatbot in the tourism sector of Pakistan. *International Journal of Academic Research in Business and Social Sciences*, 13(9), 657-671.
- Muhyeeddin, A., Mowafaq, S. A., Al-Batah, M. S., & Mutaz, A. W. (2024). Advancing medical image analysis: the role of adaptive optimization techniques in enhancing COVID-19 detection, lung infection, and tumor segmentation. *LatIA*, 2, 74-74.
- Mahmoud, M., Shma, T., Aziz, A., & Awad, A. (2025). Integrating knowledge management with smart technologies in public pharmaceutical organizations. *Knowledge and Performance Management*, 9(1), 31.
- Muhyeeddin, A., Mowafaq, S. A., Al-Batah, M. S., & Mutaz, A. W. (2024). Advancing medical image analysis: the role of adaptive optimization techniques in enhancing COVID-19 detection, lung infection, and tumor segmentation. *LatIA*, 2, 74-74.
- Nader Abdelrehim Ismail Awad, A. (2025). Leveraging Digital Fan Engagement for Sports Brand Loyalty: A Study of Emerging Marketing Strategies in Saudi Arabia. *المجلة العلمية للدراسات التجارية*. 1256-1219), 2(16, البيئية).
- Nazil, A. R., Jony, M. A. M., Hosen, M. M., akter Priya, M., & Arafat, Y. *Information Technology Perspective on Business*.
- Nazil, A. R. (2025). AI-Powered Visualization is Transforming Modern Healthcare. *International Journal of Research Publication and Reviews*, 6(8), 1474-1478.
- Nazil, A. R. (2025). AI at War: The next revolution for military and defense.
- Obeidat, M. A., AlFil, N. Z., Aldabousi, A. M., & DGANNI, K. M. (2024). Criminal Protection for the Merchants from the Crimes of Electronic Publishing about Invasion of Privacy in UAE Legislation. *Pakistan Journal of Criminology*, 16(3).

- Qadeer, A., & Awad, A. (2025). AI-Powered ChatGPT in Branding: Benefits, Challenges, and Future Directions. In *Impacts of AI-Generated Content on Brand Reputation* (pp. 1-26). IGI Global Scientific Publishing.
- Qadeer, A., Awad, A., & Ali, A. (2025). Understanding Generative AI Implementation in Digital Advertising Among Retail SMEs in Pakistan. In *Impacts of AI-Generated Content on Brand Reputation* (pp. 177-202). IGI Global Scientific Publishing.
- Qadeer, A., & Awad, A. (2025). Generative AI in Advertisements: A Conceptual Framework Based on the Technology Acceptance Model. In *Impacts of AI-Generated Content on Brand Reputation* (pp. 109-128). IGI Global Scientific Publishing.
- Saad, M., Awad, A., Aziz, A. F., & Shma, T. R. (2025). Influencer marketing's impact on credibility and purchase intention: A study on University of Bisha students in Saudi Arabia. *Innovative Marketing*, 21(1), 326.
- Saeed Almanbahi, F., Awad, A., Ghonim, A., Mohammed Alabsy, N., & Shemais, M. (2025). Ethical leadership and organizational excellence: the mediating role of citizenship behavior in healthcare. *Humanities and Social Sciences Communications*, 12(1), 1-14.
- Wahed, M. A., Alqaraleh, M., Alzboon, M. S., & Al-Batah, M. S. (2025). Evaluating AI and Machine Learning Models in Breast Cancer Detection: A Review of Convolutional Neural Networks (CNN) and Global Research Trends. *LatIA*, 3, 117-117.
- Wahed, M. A., Alzboon, M. S., Alqaraleh, M., Halasa, A., Al-Batah, M., & Bader, A. F. (2024, November). Technological Innovations in Autonomous Vehicles: A Focus on Sensor Fusion and Environmental Perception. In *2024 7th International Conference on Internet Applications, Protocols, and Services (NETAPPS)* (pp. 1-7). IEEE.
- Wahed, M. A., Alqaraleh, M., Alzboon, M. S., & Al Batah, M. S. (2025). Application of Artificial Intelligence for Diagnosing Tumors in the Female Reproductive System: A Systematic Review. *Multidisciplinar (Montevideo)*, (3), 15.
- Wahid, A., & Awad, A. (2025). Role of AI Chatbots in Enhancing Customer Satisfaction and Customer Loyalty. In *Impacts of AI-Generated Content on Brand Reputation* (pp. 129-148). IGI Global Scientific Publishing.
- Wahed, M. A., Alzboon, M. S., Alqaraleh, M., Halasa, A., Al-Batah, M., & Bader, A. F. (2024, November). Technological Innovations in Autonomous Vehicles: A Focus on Sensor Fusion and Environmental Perception. In *2024 7th International Conference on Internet Applications, Protocols, and Services (NETAPPS)* (pp. 1-7). IEEE.
- Wahed, M. A., Alzboon, M. S., Alqaraleh, M., Al-Batah, M., Bader, A. F., & Wahed, S. A. (2024, November). Enhancing Diagnostic Precision in Pediatric Urology: Machine Learning Models for Automated Grading of Vesicoureteral Reflux. In *2024 7th International Conference on Internet Applications, Protocols, and Services (NETAPPS)* (pp. 1-7). IEEE.
- Wahed, M. A., Alzboon, M. S., Alqaraleh, M., Halasa, A., Al-Batah, M., & Bader, A. F. (2024, November). Comprehensive Assessment of Cybersecurity Measures: Evaluating Incident Response, AI Integration, and Emerging Threats. In *2024 7th International Conference on Internet Applications, Protocols, and Services (NETAPPS)* (pp. 1-8). IEEE.
- Wahed, M. A., Alzboon, M. S., Alqaraleh, M., Ayman, J., Al-Batah, M., & Bader, A. F. (2024, November). Automating web data collection: Challenges, solutions, and python-based

strategies for effective web scraping. In 2024 7th International Conference on Internet Applications, Protocols, and Services (NETAPPS) (pp. 1-6). IEEE.

Wahed, M. A., Alqaraleh, M., Alzboon, M. S., & Al Batah, M. S. (2025). Application of Artificial Intelligence for Diagnosing Tumors in the Female Reproductive System: A Systematic Review. *Multidisciplinar (Montevideo)*, (3), 15.

Yusuf, A., Ayus, A. K. M., Shiddieqy, D. F., & Awad, A. (2025). The Role of Sukuk Financing in Economic Growth and Poverty Reduction: Empirical Evidence from Selected ASEAN Countries. *Public and Municipal Finance*, 14, 42-50.

Yahia Shams Eldin, A., Elnour, A., Omer Ahmed Hassan, R., & Awad, A. (2025). The role of technological and environmental factors in creating business value from social media dynamic capabilities for SMEs in Saudi Arabia. *Humanities and Social Sciences Communications*, 12(1), 1-11.

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