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Article

Career education and faculty outcomes in higher education: The mediating role of career development in turnover intention and organizational citizenship behaviour

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Abstract: The study examines the relationships among career education (CE), career development (CD), turnover intention (TI), and organizational citizenship behaviour (OCB) of faculty members working in private higher education institutions (HEIs) in Sindh province of Pakistan. Using a stratified random method, data were collected across 43 universities including 384 faculty members. Guided by Social Exchange Theory (SET), this study tested a mediation model in which CD carries the impact of CE to the key behavioural outcomes. The hypothesized relationships were assessed using PLS-SEM (Partial Least Squares Structural Equation Modelling). The findings revealed that CE has a significant positive impact on CD and that CD, in turn, has a negative impact on TI while positively impacts OCB. This means that faculty members who perceive more development opportunities have a lower intention to leave and a higher likelihood to contribute in OCB. However, CE has positive indirect effects on both outcomes through CD, the direct effect of CE on TI is weak and statistically non-significant, which confirms the importance of CD as a key mediating variable. This study suggests the importance of career-oriented Human Resources (HR) practices in the private HEIs of the Sindh province of Pakistan and suggest that by enhancing the career education initiatives among the faculty members will improve retention and OCB simultaneously. The discussion covers HR policy implications, planning for faculty development, and institutional performance.

Keywords: career education; career development; turnover intention; organizational citizenship behaviour; social exchange theory; PLS-SEM

1. Introduction

Faculty turnover has become a serious challenge for academic institutions worldwide. High turnover rates among faculty members are often attributed to limited institutional resources, insufficient opportunities for career advancement, and intense competition in the academic job market in Pakistan (Baurer et al., 2023; Maryam et al., 2021; Nawaz et al., 2019). These turnovers lead to high recruitment costs, loss of institutional experience, and negatively influence the quality of education and academic productivity (Jiaying & Muda, 2023). While, OCB which can be explained as voluntary and extra-role behaviour that leads to institutional success is also important in boosting performance. However, reduced OCB in the higher education institutes (HEIs) is often linked to a loss of job satisfaction, work overloads, and recognition, which undermine the spirit of teamwork, collaboration, and the morale of the faculty (Dewangan & Goswami, 2025; Atiq & Usmani, 2023).

Faculty turnover in Pakistan, particularly in private HEIs, is strongly associated with weak career development provision, dissatisfaction with employment terms, and limited institutional support (Zeng et al., 2025; Kamran et al., 2025; Moin, 2021). At the same time, OCB appears to be deteriorating, with faculty increasingly reluctant to engage in extra-role contributions such as supporting colleagues or participating in additional academic initiatives (Shah et al., 2021). Because such behaviours sustain collaboration and a constructive academic climate, declining OCB can constrain institutional engagement, performance, and long-term sustainability.

According to Joarder et al. (2020), career education can influence faculty career development by offering appropriate skills-based initiatives, opportunities, and encouragement that can support in the achievement in academia. To retain the motivated faculty, institutions focus on career development that involves structured initiatives such as mentoring, professional training, leadership development and career counselling (McDonald & Hite, 2023; Ayodo, 2022; Githu, 2018). However, considering career development as important mechanism faculty recognition, its mediating role linking career education with its outcomes i.e., turnover intention and OCB remains underexplored in Pakistani HEIs.

Previous research in Pakistan has focused on job satisfaction, compensation and institutional culture as determinants of OCB and TI. (zeng et al., 2025; Aldhafeeri & Alanazi 2024; Mehboob, 2020), yet career education has received limited attention. Conceptually, career education builds career based competencies and may have the potential to reduce turnover intention while increasing OCB level (Worku, 2024; Ayodo, 2022). Consequently, this study investigates the relationships among CE, TI and OCB of faculty members in Pakistani private HEIs, where turnover interrupts long term continuity, organizational efficiency, and leaves negative impact on student outcomes (Boamah et al., 2022). Declining discretionary behaviours that support functioning of institutions may further intensify these challenges (Fernandes, 2024; Shah et al., 2021).

Social exchange theory effectively describes the way an organization' investment in employees can lead to positive attitudinal and behavioural reciprocity. Similarly, organizational investments in career education (CE) create a sense of reciprocal obligation among faculty members (Blau, 1964; Ahmed et al., 2023). As faculty members receive CE, they are expected to feel motivated to engage in career development, which enhances their commitment, increases organizational citizenship behaviour (OCB), and reduces turnover intentions. However, the relationship between CE, CD, and these outcomes (TI and OCB) remains underexplored in higher education (Bogler & Somech, 2023; Zeng et al., 2025). Keeping this in view, this study seeks to accomplish the following objectives:

i. To examine the direct effects of career education and career development on turnover intention and organizational citizenship behaviour.
ii. To test the mediating role of career development in the relationship between career education and turnover intention and between career education and organizational citizenship behaviour.

The outcome of this study is expected to provide practical insights for higher education institutions, policy makers, and human resource professionals linked with the field of human resource development in Pakistan. By examining the relationships

between the constructs of the study if it reduces the turnover intention and enhances the OCB, it will definitely provide the ways how institutions can improve retention, engagement and performance. The finding may suggest more effective faculty development initiatives to enhance faculty satisfaction, institutional effectiveness and long term outcomes (Maryam et al., 2021; Shah et al., 2021). Furthermore, the study is likely to contribute to broader literature by evaluating the career development as a mediator by clarifying the pathways through which career oriented practices influence faculty retention and OCB in Pakistani HEIs.

2. Theoretical framework and the literature review

2.1. Theoretical framework

This study is grounded in Social exchange theory (SET) serves, introduced by Blau (1964). The theory explains the workplace behaviour through the norm of reciprocity. SET proposes that relationships within organisations evolve through repeated exchanges of valued benefits, where individuals feel obligated to respond to favourable treatment with positive attitudes and behaviours. In this perspective, organisational interactions are not only economic but also social and developmental, and employees continuously evaluate whether the organisation is investing in them in meaningful ways. As Luthra et al. (2024) explains, social exchange involves cooperative interactions through which mutual benefits are achieved, and these perceived benefits shape employees' expectations and behavioural responses.Within SET, employees interpret organisational actions such as support, resources, and opportunities as signals of organisational commitment. When employees perceive high-quality relational exchanges, they become more motivated and are more likely to reciprocate constructively (Kamau et al., 2020). This reciprocal mechanism is strengthened when employees believe the organisation is fair and supportive, and it includes expectations related to rewards, emotional support, and career-related opportunities (Galanis et al., 2024). When these expectations are met, faculty members respond with positive attitudes and behaviours and surely go beyond the formal job requirements. On the other hand, when these members feel overlooked or any inequality is observed, they are likely to exhibit withdrawal behaviours such as dissatisfaction and an increased propensity to leave.

This logic is highly relevant to TI and OCB as key behavioural outcomes of this study. Regarding this context, SET suggests that employees who perceive a beneficial exchange and supporting atmosphere will show stronger commitment, collaboration and discretionary contributions that can benefit the organization. Empirical work also supports this logic. For instance, Galanis et al., 2024 argued that employees will show increased effort in their work when they are satisfied with the organization and perceive the exchange as supportive one. On the other hand, low quality exchanges can result in psychological withdrawal and an increased intention to leave the organization. In this context, OCB denoted positive reciprocity and TI denotes an absence of reciprocity which signal the withdrawal.

In this research work, CE and CD are framed as critical organizational resources that operates within the SET as exchange benefits. From the organizational perspective, the career education initiatives aimed at improving employees' skills, knowledge and

competencies, is viewed as investing in the employees' career development. These initiatives foster a stronger sense of obligations and engagement to the organization, resulting in increasing the likelihood of positive reciprocal behaviours such as OCB and reducing the turnover intent. Career Development in this framework providing mediating mechanism through which CE is transformed into behavioural outcomes. In the context of SET, CE is the foundation of positive perceptions of organizational development and future career prospects, and these perceptions determine employee behaviours, such as decreased turnover intention and increased OCB. In support of this statement, Cohen, (2022) illustrated that employees who perceive authentic and sincere support for their development are more likely to demonstrate increased active engagement, loyalty and OCB. Moreover, Xu et al. (2022) asserted that OCB in employees are more probable when the benefits gained from the organization are perceived to meet or exceed the employees' contributions.

SET has been widely used across social sciences, management and social psychology to explain how supportive organizational initiatives can influence employee behaviour, making it robust lens for explaining the reciprocal behavioural outcomes (Ahmed et al., 2023; Cropanzano et al., 2017). The recent studies within the organizational context of social exchange relationships show the development of OCB through exchange relationships between the employee and the organization. This illustrates to understand the organizational relationship building initiatives and employees discretionary behaviours contributing to SET. This framework explains how the investment in CE is perceived as exchange mechanism, leading to increased OCB and decreased TI in the light of SET.

2.2. Literature review

2.2.1. Career education and career development

Career education involves organized learning programs that strengthen employees' skill, knowledge, and competencies to support professional growth (Okolie et al. 2020). CE contributes to the way employees perceive career progress, encouraging them to develop and ability to cope with career changes (Otu, 2025; Chang et al., 2023). Peng et al. (2025) examined the impact of digital innovation on organizational performance. Their findings emphasize the importance of continuous skill development and education in fostering employee growth, which aligns with the notion that career education enhances employee performance and fosters career progression." Similarly, Li et al. (2025) examined the factors influencing employees' sustainable innovative behaviour in Chinese technology-based enterprises. Their study underscores the role of career development opportunities in enhancing employee engagement and innovation, supporting the idea that career education initiatives reduce turnover intentions and promote organizational loyalty. It also supports employees in overcoming career challenges and taking advantage of opportunities to progress in their career. Ulaş-Kılıç and Peila-Shuster (2023) argued that CE fosters the development of intellectual mastery that enables one to manage career paths more effectively. CE has been confirmed to positively relate to CD. For instance, Hitka et al. (2021) reported that CE had a substantial effect on CD of employees in in Slovakia,

whereas Němec et al. (2017) showed that further education increases job performance and productivity, which enhances career development.

It is evident that career education is a significant predictor of CD as it strengthens employees' professional skills and facilitate the career progression within organizations either it formal or informal. Laras et al. (2022) argued that intellectual competence of employees contributes to career advancement, as higher educational attainment is associated with stronger work performance and more future-oriented career planning. Prior research shows that CE positively influences employees' career development by equipping them with relevant skills and competencies to manage career challenges and explore more career advancement (Chang, 2025). Therefore, the following hypothesis is proposed:

H1: *Career education has a positive impact on career development.*

2.2.2. Career education and turnover intention

Turnover intention is an employee's willingness to quit the job within specified period of time. Soomro (2020) illustrates that, education level can play an influential role in whether an employee stays or leaves. Research presents mixed finding as some of the studies suggest that highly educated employees are more likely to quit their jobs because they have more external opportunities, while others indicate that limited education can also increase turnover intention, particularly when career prospects appear constrained. In private universities, weak and unplanned HRM practices can undermine educational quality and contribute to higher faculty turnover (Dewangan & Goswami, 2025; Ikram & Kenayathulla, 2023; Maryam et al. 2021; Pham-Thai et al., 2018). In Pakistan, turnover intention is also reported to be higher in private universities due to inadequate institutional support (Aldhafeeri & Alanazi, 2024), and unstructured HRM practices further intensify turnover intentions among faculty (Joarder et al., 2020). Overall, the literature implies that career education programmes may help reduce turnover intention by enhancing job satisfaction and strengthening organizational commitment.

It is also highlighted that one third of all future jobs will require CE, which focuses on career preparation, skilled trades, and applied sciences and technologies, otherwise the intention to leave the organization may have more chances to be developed (Jackson & Johnson, 2020). Turnover intention also has a close relation with career education. When employees feel there is hope of professional advancement and growth, they will not plan to leave the organization. CE also leads to high job satisfaction and organizational commitment, hence, lower TI (Ngatuni & Matoka 2020; Gessesse & Premanandam, 2023; Mobley, 1979). According to this, we will state the following relationship hypothesis:

H2: *Career education has a negative association with turnover intention.*

2.2.3. Career education and organizational citizenship behaviour

Organizational citizenship behaviour refers to voluntary actions that go beyond formal job requirements yet enhance organizational effectiveness (Organ, 1988). Hanson (2022) states that when employees perceive CE as an organizational support, they become more likely to show OCB, which includes assisting coworkers, taking on extra work, and proactively changing work conditions for the betterment. Worku (2024) similarly found that employees supported through career education

programmes exhibit stronger extra-role behaviour because they feel valued and connected to the organization. This aligns with SET, which suggests employees reciprocate organizational investments with behaviours that improve organizational functioning. In Pakistan, Shah et al. (2021) reported that faculty OCB improves institutional outcomes and supports retention. Osman & Yatam (2024) likewise emphasized OCB's importance in Pakistani HEIs and noted that career education can strengthen such positive behaviours.

It is predicted that CE will affect the OCB in a positive manner. The more the employees feel that their organization supports them by providing career education programs, the higher their likelihood of being involved in discretionary behaviours in the benefits of the organization (Worku, 2024; Al Balushi, 2022). Liang et al. (2023) found that CE programs enhance employees' creative self-efficacy, which is linked to proactive behaviour, including OCB. Such an association is founded on the SET, which assumes that people enter into agreements with their organizations on a reciprocal basis. Employees are compelled to give back to their organizations by acting out positively like OCB when the organizations invest in the development of employees by educating them on career growth. Therefore, we hypothesize:

H3: *Career education has a positive relationship with organizational citizenship behaviour.*

2.2.4. Career development and turnover intention

Studies indicate that CD is a key factor associated with TI. When employees perceive that their organization invests in their CD, they are less likely to consider leaving. Jiang et al. (2024) found that CD opportunities reduce TI because employees who perceive progress and future prospects are more likely to remain with their employer. Likewise, Manthi et al. (2018) found a significant negative relationship between CD and TI among faculty members in HEIs. This supports SET, which posits that organizational investment in employees' advancement fosters reciprocal commitment and loyalty, thereby reducing TI. Employees whose professional development is underpinned by career development programs tend to perceive the organization as a career destination. In similar way, Out and Sefotho (2025) contend that CD initiatives positively influence employees' perception of future opportunities within the organization, consequently reducing the intention to leave.

Career development also has a high impact on turnover intention. If employees perceive that their organization offers them an opportunity to grow their career, they will be less likely to leave the organization. In particular, training and other CD initiatives can reduce TI by providing employees with the possibility of career advancement (Aldhafeeri and Alanazi, 2024; Zahra et al., 2018). Therefore, the following hypothesis is proposed:

H4: *Career development has a negative impact on turnover intention.*

2.2.5. Career development and organizational citizenship behaviour

Many studies have researched the connections between CD, and OCB. According to Hamzah et al. (2020), CD might affect OCB indirectly through organizational commitment. When employees perceiving their career growth is being supported by organization are more likely to engage in discretionary behaviours like mentoring peers, assisting others, and aiding the organization as a whole. SET is consistent with

this. It states that employees develop OCB in exchange for support. In academic settings, faculty who perceive credible advancement opportunities are more inclined to perform extra-role behaviours that strengthen institutional effectiveness (Kamar et al., 2024; Chang et al., 2023). Evidence from Pakistan is consistent. Hasan (2024) found that CD initiatives enhance OCB among faculty, supporting better organizational performance. Therefore, we hypothesize:

H5: *Career development has a positive impact on organizational citizenship behaviour.*

2.2.6. Career development as a mediator between career education and turnover intention

The latent variable career development has the capacity to be used as a mediator between independent and dependent variables i.e., career education and turnover intention. From numerous research studies, it has been explored that career development (mediator) is being used as a mediator between career program (career planning and career management) and personal outcomes (Karunia et al., 2023; Kasdorf & Kayaalp, 2022; Ismail et al. 2013). Considering the mediating role of career related intervening variable, career development is taken as a mediator in this study to see relationships between the career education and turnover intention that will bring novelty in work.

Further, Jiaying and Muda (2023) conducted research among faculty members in Pakistan's private universities found career growth (mediator) between HRD factors and turnover intention relating positively and significantly and suggested to take mediation role of other career related aspects from career management side. The extensive literature has further revealed that career development has not been used as a mediator between CE and TI, whereas career development has the tendency to be used as a mediator, therefore present study has hypothesized the relationship between mentioned variables with the inclusion of CD has a mediator in between; under the social exchange theory perspective. Therefore, we hypothesize:

H6: *Career development positively mediates between career education turnover intention*

2.2.7. Career development as a mediator between career education and organizational citizenship behaviour

From numerous research studies, it has been explored that career development is being used as a mediator between organizational culture and OCB (Hasan et al., 2024). Based on this, this study proposes Hypothesis 7, which explains that there is a positive relation of CE on OCB mediated by CD when an employee is supposed to perceive that organisation is investing for their development can tend to generate more OCB. The novelty in this study lies in the use of variables, particularly the Organizational Citizenship Behaviour from career education point of view. There is still limited research on OCB from and career education perspective, especially within in the cultural context of Pakistan. Prior research supports this indirect mechanism. Worku (2024) and Hanson (2022) note that career development initiatives emerging from career education efforts indirectly foster OCB by enhancing faculty engagement and professional identity. In this view, career development serves as a behavioural pathway through which career education exerts its influence on OCB, consistent with

the mediation effects proposed in the present study in the context of Pakistani HEIs. This is another element of novelty can be observed from the perspective of the research model. This research model is quite intricate, with each variable selected based on the specific issues prevalent in educational institutes of Pakistan. In this way, we formulate the hypothesis as follows:

H7: *Career development positively mediates the relationship between career education and organizational citizenship behaviour.*

3. Research framework

The conceptual framework guiding this study is based on the SET, which posits that organizational investments, such as career education, lead to reciprocal employee behaviours. The relationships between CE, CD, TI, and OCB are hypothesized to follow a sequential and reciprocal pattern, with career development serving as a key mediator between career education and both turnover intention and organizational citizenship behaviour. **Figure 1** shows the framework that suggests the organizations invest in career education can improve employee career development, redu ce turnover intention, and enhance OCB.

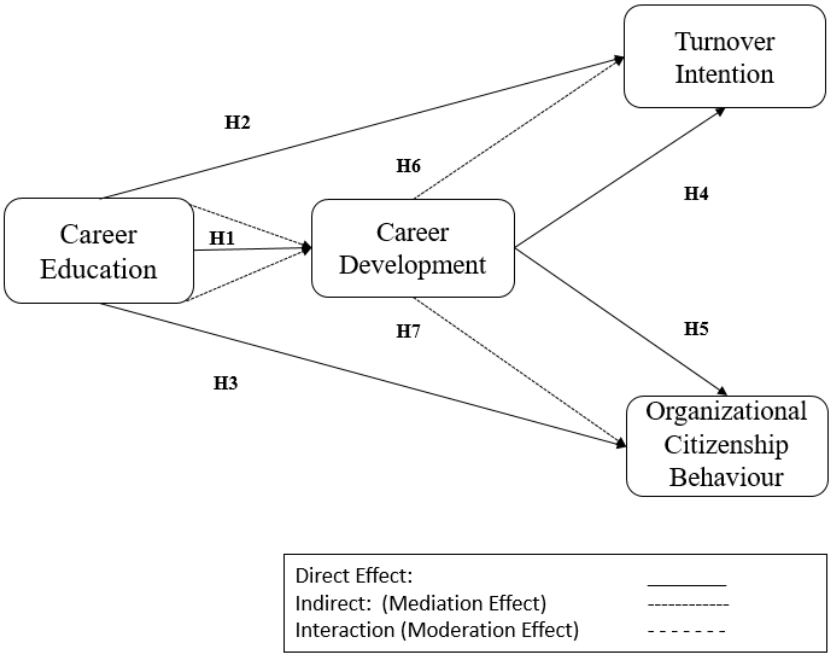

Figure 1. Hypothetically conceptualized model.

4. Methodology

4.1. Research design

This study adopts a quantitative research design to explore the relationships between CE, CD, TI, and OCB. The quantitative approach is appropriate for examining the relationships between independent and dependent variables and is effective for generalizing findings from a relatively small sample to the broader population. PLS-SEM (Partial Least Squares Structural Equation Modeling) is

employed for hypothesis testing and structural analysis, allowing for the analysis of complex models with multiple variables and their interrelationships.

4.2. Population, sampling and data collection

The targeted population for this study consisted of 7,600 full-time faculty members across 43 universities in the Sindh province of Pakistan, including Professors, Associate Professors, Assistant Professors, Lecturers, and Research/Teaching Assistants. To ensure a high response rate and authentic data, an online survey was conducted using stratified random sampling through the HR department of each participating university. This approach ensured the inclusion of a representative sample from the different faculty ranks and universities (Large, Medium & Small). A total of 432 questionnaires were sent out, with 384 responses received, yielding an impressive response rate of 88.89%. After performing data screening, including the removal of extreme outliers and suspicious responses, 380 valid questionnaires were retained for analysis. This results in an effective response rate of 87.95%, which is more than adequate for PLS-SEM analysis and adheres to the ten-time rule (Hair et al., 2017). According to Krejcie and Morgan's (1970) sample size determination table, the required sample was 367, and the included sample of 380 faculty members exceeded that threshold. This ensures that the sample is statistically robust, providing the necessary power for the PLS-SEM analysis and enhancing the reliability and validity of the results.

4.3. Measurement of instruments

The measurement instruments for CE, CD, TI and OCB were adapted from already established studies. All constructs were measured on a 5-point Likert scale (1 = strongly disagree, and 5 = strongly agree). Career education items were adapted from Vilhajlmsdottir (2007) to capture faculty perceptions of institutional education programs and career guidance. Career development was adapted from Lee and Bruvold (2003) and Rothwell and Arnold (2005), assessing perceived opportunities for skill acquisition, advancement, and professional growth. Turnover intention was adated from Roodt (2004) to measure faculty intentions to leave the institution. Finally, OCB was adapted from Somech and Drach-Zahavy (2004) to assess discretionary behaviours beyond formal job duties, such as helping colleagues and contributing to institutional activities.

4.4. Reliability and validity assessment

Before testing the hypothesis, a multi-faceted validation approach was used to confirm the measurement reliability as well as construct validity. Although the measurement items were refined from previous developed scales. Exploratory factor analysis (EFA) was conducted first because the original instruments were created in different empirical and institutional settings. Measurement properties differ depending on cultural and organizational context. As a result, this approach confirmed the factor structure and discarded items with low loadings before the confirmatory process. With the item revision, the measurement model was assessed through the established criteria of reliability and validity. Convergent validity was confirmed because Average

Variance Extracted (AVE) was greater than 0.50 and composite Reliability (CR) was greater than 0.70. Discriminant validity was established through HTMT (HTMT < 0.85) and cross-loading (Hair & Alamer, 2022). Hair et al. (2017) discussed the importance of preliminary data screening to identity issues such as missing data, repetitive data, and data that does not follow normal distribution prior to estimating a structural model. The Collinearity assessment was made possible using variance inflation factor (VIF) as the data was collected from a single source. Kock (2015) indicated that, the VIF values of 2.05 and 2.48 fall below 3.3 and such multicollinearity and common method bias (CMB) are not serious issues. The sample was stratified by university size and faculty rank, ensuring a diverse representation.

However, factors such as gender and years of experience were not included, which could introduce potential bias, as faculty perceptions of career education and career development may differ across these factors. Stratification by rank and university size mitigated this bias. However, Harman's single factor test results also showed that the first factor accounted for less than 50% of the variance, further supports the evidence of common method bias not being a major contributor to the results of the study. Overall, model was considered fit after conducting these tests.

4.5. Software tool for analysis

Taking into account the PLS-SEM requires a smaller sample size, Cheung et al. (2024) states that PLS-SEM is able to estimate effects of indirect and interaction relationships and make prediction-oriented research. Therefore PLS-SEM is used to analyze the data in SmartPLS. PLS-SEM is the most applicable to models which include moderation and mediation, and other such paths. As such, PLS-SEM is able to analyze the relationships of latent variables, and measure the relationships of observable variables (Cheung et al., 2024). The relationship of latent variables, and organizational, contextual and individual in nature, which are represented in the indicators of the surveys (Cheung et al., 2024; Hair et al., 2017).

Since PLS-SEM 4 is the latest version, and is able to implement the latest PLS-SEM techniques in addition to measuring both formative and reflective models. It has been chosen for this research analysis. PLS-SEM is able to analyze the research hypothesis, and evaluate both the measurement and structural theories of the research analysis (Memon et al., 2021). It also provides essential functions for rigorous evaluation, including bootstrapping for significance testing, mediation and moderation analysis, and assessment of measurement quality and model adequacy (Memon et al., 2024). PLS-SEM is well-suited for analyzing cross-sectional data and examining the relationships between constructs at a given point in time.

However, it is important to note that while PLS-SEM supports causal analysis, the cross-sectional nature of the data limits the ability to fully establish causal relationships. For example, while CE is expected to influence CD, reverse causality cannot be ruled out, such as faculty with higher OCB being more likely to perceive more CD opportunities. Additionally, endogeneity concerns were addressed by controlling for key factors such as faculty rank and university size, which may influence the relationship between CE and CD. These controls help mitigate potential bias from omitted variables that could distort the results. Despite these controls, the

potential for reverse causality or omitted variable bias remains. Further studies using longitudinal or experimental designs would provide stronger evidence for the causal claims made in this study. Moreover, the potential for common method bias (CMB) was assessed, and steps were taken during the survey design phase to mitigate CMB risks, such as ensuring anonymity and reducing social desirability bias (Podsakoff et al., 2003).

4.6. Statement of ethics and consent

The relevant department ethics committee provided ethical approval for this study on July 28, 2025. An online survey was carried out with members of the teaching faculty of the private universities of Sindh Province, Pakistan. Participation was voluntary and based on informed consent. Data was collected anonymously and stored securely and treated confidentially. The study was conducted for academic purposes only.

5. Data analysis and results

5.1. Descriptive statistics

This section provides descriptive statistics related to the key constructs of this research, such as respondents' profiles as well as demographic data, means, standard deviations, and the correlations among the constructs. Before analysis, the data was examined for missing values and tested for normality for completeness to determine appropriateness for PLS-SEM estimation.

5.2. Respondents' profile

The demographic distribution of 380 respondents after removal of outliers and suspicious ones in terms of gender, age, academic qualification, current job position, and teaching experience is included in this study. **Table 1** shows the complete demographic details of respondents. The data reveals a higher percentage of male respondents (64%) compared to females (36%). In terms of age, the majority of respondents are between 31–35 years (27%), with decreasing numbers in older age groups. For academic qualification, the majority hold a Master's degree (31%) or an MPhil (28%). The current job position distribution shows that most respondents are Lecturers (42%), with Assistant Professors comprising 29%. In terms of teaching experience, 40% of the respondents have 4–6 years of teaching experience.

5.3. Measurement model assessment

In this study, the questionnaire was adapted from past studies and it is recommended before testing the hypothesis proposed. The validity and reliability of the questionnaires as research instruments should be verified (cheung et al., 2024). The decision criteria should be equal to or greater than 0.7 and it is noticed that all the values are more than suggested value as shown in **Figure 2** and **Table 2**. Reliability is confirmed via two values of Cronbach alpha and composite reliability and discriminant validity is confirmed through average variance expectation (AVE) and

Heterotrait-Monotrait Ratio (Cheung et al., 2024). **Table 2** shows that how these reliability and validity are connected.

Table 1. Responded profile.

Gender		
Gender	**Count**	**%**
Male	244	64%
Female	136	36%
Age		
Range	**Count**	**%**
Between 31–35 Years	102	27%
Between 36–40 Years	77	20%
Between 26–30 Years	65	17%
Between 46–50 Years	49	13%
Between 41–45 Years	34	9%
Between 21–25 Years	23	6%
Between 51–55 Years	19	5%
56 Years and above	11	3%
Academic Qualification		
Degree	**Count**	**%**
Masters	118	31%
Mphil	106	28%
PhD	92	24%
Bachelors	64	17%
Current Job Position		
Designation	**Count**	**%**
Lecturer	161	42%
Assistant Professor	112	29%
Others (Research Assistant /Teaching Assistant)	53	14%
Professor	30	8%
Associate Professor	24	6%
Teaching Experience		
Professional Experience	**Count**	**%**
4–6 Years	153	40%
10 Years and Above	93	24%
7–9 Years	82	22%
1–3 Years	52	14%

Table 2. Measurement model assessment.

Construct	Items	Outer loadi-ng	Cronbach's alpha	Composite reliability (rho_a)	Average variance extracted (AVE)
CE					
	CE1	0.738	0.829	0.832	0.539
	CE2	0.717			
	CE3	0.761			
	CE4	0.759			
	CE5	0.732			
	CE6	0.698			
CD					
	CD1	0.841	0.924	0.930	0.606
	CD2	0.867			
	CD3	0.777			
	CD4	0.806			
	CD5	0.847			
	CD6	0.755			
	CD7	0.548			
	CD8	0.537			
	CD9	0.847			
	CD10	0.866			
OCB					
	OCB1	0.799	0.940	0.941	0.650
	OCB2	0.751			
	OCB3	0.845			
	OCB4	0.804			
	OCB5	0.789			
	OCB6	0.820			
	OCB7	0.810			
	OCB8	0.788			
	OCB9	0.832			
	OCB10	0.822			
TI					
	TI1	0.837	0.931	0.933	0.618
	TI2	0.838			
	TI3	0.749			
	TI4	0.747			
	TI5	0.838			
	TI6	0.754			
	TI7	0.745			
	TI8	0.837			
	TI9	0.753			
	TI10	0.744			

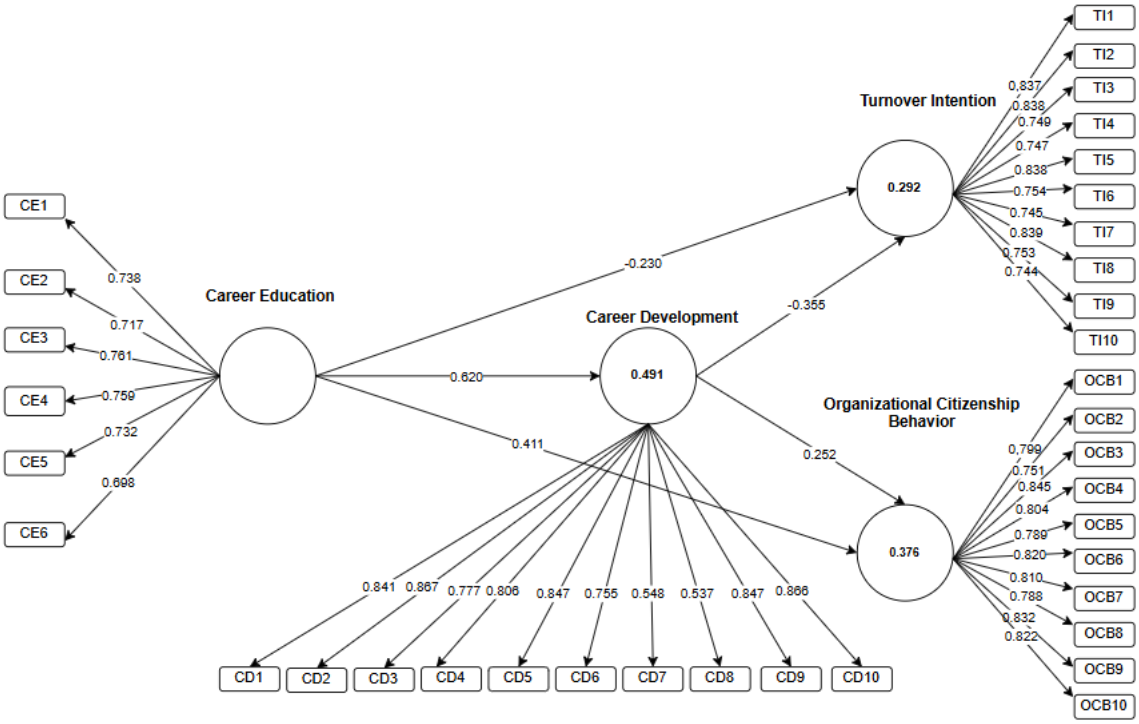

Figure 2. Measurement model.

The results show that all HTMT ratios are below 0.85, confirming that discriminant validity is established and that CE, CD, TI, and OCB are sufficiently distinct with no meaningful construct overlap. In conclusion, by using the HTMT ratio as an alternative method for discriminant validity assessment, this study ensures a more accurate and reliable representation of the relationships between the latent variables in the proposed model.

Table 3. Discriminant Validity (HTMT Ratio).

Constructs	CD	CE	OCB	TI
Career Development				
Career Education	0.785			
Organizational Citizenship Behaviour	0.575	0.656		
Turnover Intention	0.560	0.539	0.486	

5.5. Interpretation of f ²(effect size)

The f^2 statistics determines the size of the effect of a predictor on the outcome variable. According to standards, 0.02 = small effect, 0.15 = medium effect, and 0.35 = large effect. By these standards, the f^2 values of this study as reported in **Table 4**, where career education has large effect on CD which means it is a strong predictor and explains a considerable amount of variance in CD. Thus, it can be said that strengthening CE initiatives can greatly facilitate career growth and progression. In contrast, CE on TI and CE on OCB demonstrate small effects which means that they offer even less predictive values for those paths, While these relationships are statistically significant, their small effect size indicates that other variables such as job satisfaction, the workplace environment, and career opportunities are more important

in influencing employees' intention to leave and discretionary organizational behaviour.

However, CD is having small effects on both TI and OCB, while CD contributes to reducing TI and promotes OCB. It is not among the strongest predictors in the model but suggesting that additional organizational and psychological determinants may account for a larger share of variation in these outcomes.

Table 4. f-square results.

Relationships	F square	Effect size
Career Education–Career Development	0.490	Large
Career Education–Turnover Intention	0.039	Small
Career Education–Organizational Citizenship Behaviour	0.141	Small
Career Development–Turnover Intention	0.092	Small
Career Development–Organizational Citizenship Behaviour	0.053	Small

5.6. R^2 variance explained-coefficient of determination

R^2 reflects the coefficient of determination that specifies the degree variance and significance of endogenous latent variables (Sarstedt., 2021). Values of 0.49, 0.37, and 0.29 of R2 are considered as moderate and weak respectively (Hair & Alamer, 2022). Results of current study can be viewed in **Table 5**.

Table 5. R-square variance explained.

Constructs	R-square	Variance explained
Career Development	0.491	49.1%
Organizational Citizenship Behaviour	0.376	37.6%
Turnover Intention	0.292	29.2%

The R^2value of 0.491 indicates that 49.1% of the variance in Career Development is explained by the predictor variables in the model. This suggests a moderate explanatory power of the model for CD, meaning that slightly less than half of the variation in CD can be accounted for by the factors included in the analysis.

The R^2value of 0.376 indicates that 37.6% of the variance in OCB is explained by the independent variables in the model. This represents a moderate level of explanatory power, suggesting that the model explains a substantial portion of the variability in OCB but leaves room for other factors. The R^2value of 0.292 indicates that the model explains 29.2% of the variance in TI.

This is a moderate to weak explanatory power, meaning that while the model does explain some of the variation in TI, other factors not included in the model likely play a more significant role in predicting employees' intention to leave their jobs.

5.7. Blinded folding for in sample data

Blindfolding reuse in-sample data matrix by omitting a part of it, which calculates the Stone-Geisser's Q^2value (Jony & Serradell-López, 2021) representing criteria to evaluate cross-validated predictive relevance of the model. This procedure is employed in present study by using the omission distance 7, as it should be between 5 and 10 (Hair & Alamer, 2022). This is typically optimal and often used in many studies.

It ensures a reasonable balance in cross-validation without being too aggressive.Q2 greater than zero (Q2 > 0) is considered to have predictive relevance Hair & Alamer, 2022). However, when Q2 less than or equal to zero, the model fails to predict better than naive mean predictions. The predictive relevance of the model as the Q2 value of all endogenous variables is above zero. **Table 6** shows how sized is the predictive relevance in terms of large, medium or small.

Q^2thresholds of 0.02 (weak), 0.15 (moderate), and 0.35 (strong) indicate different levels of predictive relevance (Fauzi, 2022). Stone-Geisser's Q^2 values for the endogenous constructs were computed using the blindfolding procedure to assess the model's predictive relevance. The results show moderate to strong predictive relevance overall. Specifically, CD (Q^2 = 0.478) demonstrates strong predictive relevance, indicating substantial predictive validity for CD. The Q^2values for OCB (0.343) and TI (0.237) indicate moderate predictive relevance, suggesting the model predicts both constructs at an acceptable level. Overall, the Q^2results support good predictive validity, with the strongest relevance for CD and moderate relevance for OCB and TI.

Table 6. Predictive Relevance.

	Q^2predict	**Predictive relevance**
Career Development	0.478	Large
Organizational Citizenship Behaviour	0.343	Medium
Turnover Intention	0.237	Medium

5.8. PLS predict

Assessing out of sample predictive performance is essential in PLS path modelling to evaluate how well a model generalizes beyond the estimation sample (Hair & Alamer, 2022). Therefore, this study applied PLS-Predict, a holdout sample-based procedure that generates case-level predictions. Following Shmueli et al. (2019), a 10-fold cross-validation was used, where the dataset was split into 10 subsets; each subset served as a test set while the remaining data were used to estimate the model. Predictive accuracy was evaluated using RMSE and MAE, and results were compared between the PLS model and a Linear Model (LM) benchmark.Predictive relevance was judged by examining whether the PLS errors (RMSE/MAE) were lower than LM for most indicators of the endogenous constructs (OCB and TI). Overall, the results indicate moderate predictive relevance, with OCB Q^2= 0.249 and TI Q^2= 0.161. The RMSE and MAE comparisons suggest that the PLS model predicts out-of-sample outcomes with reasonable accuracy, and the PLS-LM differences were generally moderate rather than consistently large. According to Shmueli et al. (2019), the model's predictive ability is thus classified as moderate for both of the main endogenous constructs.

5.9. Structural model and hypothesis analysis

To analyze the hypothesized relationships, the structural model was estimated using the partial least squares structural equation modeling (PLS-SEM) technique. Bootstrapping with 5,000 subsamples was used to obtain estimates of standard errors, t-values, *p*-values, and percentile-based confidence intervals, as required by the PLS-SEM inference guidelines (Hair & Alamer, 2022; Hair et al., 2017). The findings for

direct effects are displayed in **Table 7**, indirect effects in **Table 8**, and **Figure 3** depicts the estimated inner model.

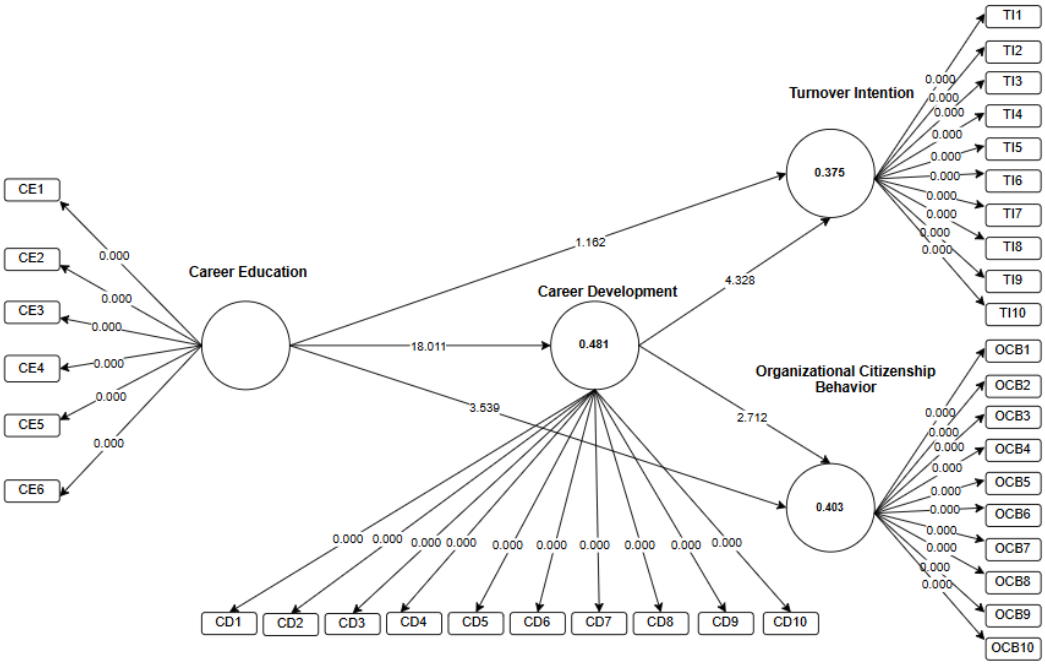

Figure 3. Structural Model.

Table 7. Structural model – direct effect hypothesis analysis.

	Beta	Standard deviation (STDEV)	T statistics (|O/STDEV|)	*p* values	LCI 5%	UCI 95%	Status
Career Education -> Career Development	0.693	0.038	18.011	0.000	0.605	0.757	Accepted
Career Education -> Turnover_ Intention	−0.112	0.097	1.162	0.245	−0.312	0.076	Rejected
Career Education -> Organizational Citizenship _Behaviour	0.311	0.088	3.539	0.000	0.136	0.477	Accepted
Career Development -> Turnover_ Intention	−0.345	0.08	4.328	0.000	−0.491	−0.181	Accepted
Career Development -> Organizational Citizenship _Behaviour	0.222	0.082	2.712	0.007	0.055	0.376	Accepted

β indicates the direction and magnitude of the relationship; values ≥ 0.10 are typically considered meaningful. A path is significant when |t| (|O/STDEV|) ≥ 1.96 and $p < 0.05$ (two-tailed), and when the bootstrap CI excludes zero (i.e., LCI 5% and UCI 95% are both on the same side of 0).

H1 proposed that Career Education (CE) positively influences Career Development (CD). **Table 7** shows that CE is positively and significantly associated with CD (β = 0.693, t = 18.011, p = 0.000). The bootstrap confidence interval (0.605, 0.757) does not include zero, supporting the stability of the estimate (Cheung et al., 2024). Therefore, H1 is accepted.

H2 proposed that CE is negatively related to TI. **Table 7** shows the relationship between CE and TI is negative but not statistically significant (β = −0.112, t = 1.162, p = 0.245). The confidence interval (−0.312, 0.076) overlaps zero, indicating insufficient evidence for a direct effect (Cheung et al., 2024). Thus, H2 is rejected.

H3 proposed that CE positively influences Organizational Citizenship Behaviour (OCB). As reported in **Table 7**, CE has a positive and statistically significant effect on

OCB (β = 0.311, t = 3.539, *p* = 0.000), with a confidence interval (0.136, 0.477) that excludes zero (Cheung et al., 2024). Hence, H3 is accepted.

H4 proposed that Career Development (CD) is negatively related to Turnover Intention (TI). **Table 7** indicates that CD is negatively and significantly associated with TI (β = −0.345, t = 4.328, *p* = 0.000). The confidence interval (−0.491, −0.181) excludes zero, supporting H4.

H5 proposed that Career Development (CD) positively influences Organizational Citizenship Behaviour (OCB). **Table 7** further shows that CD is positively and significantly associated with OCB (β = 0.222, t = 2.712, *p* = 0.007), and the confidence interval (0.055, 0.376) does not include zero (Cheung et al., 2024). Therefore, H5 is accepted.

In addition to the direct paths, mediation was assessed using bootstrapped indirect effects as shown in **Table 8**. H6 proposed that CE indirectly affects TI through CD. The indirect effect of CE on TI via CD is negative and statistically significant (β = −0.239, t = 4.300, *p* = 0.000). The confidence interval (−0.348, −0.130) excludes zero, supporting H6 (Cheung et al., 2024).

Table 8. Structural model-indirect effect hypothesis analysis.

	Beta	**Standard deviation (STDEV)**	**T statistics (|O/STDEV|)**	***p* values**	**LCI 5%**	**UCI 95%**	**Status**
CE-CD-TI	−0.239	0.056	4.300	0.000	−0.348	−0.130	Accepted
CE-CD-OCB	0.154	0.059	2.624	0.009	0.038	0.268	Accepted

H7 proposed that CE indirectly affects OCB through CD. **Table 8** shows that the indirect effect of CE on OCB via CD is positive and statistically significant (β = 0.154, t = 2.624, *p* = 0.009). The confidence interval (0.038, 0.268) excludes zero, supporting H7 (Cheung et al., 2024).

While these indirect effects are statistically significant with moderate effect, it is also important to assess their practical magnitude. A Beta value of −0.239 for CE on TI via CD suggests that a moderate improvement in CD could lead to a meaningful reduction in TI. For example, if faculty members' perceptions of career growth opportunities increase by 10%, this could potentially result in a significant reduction in turnover intentions. In terms of OCB, the Beta value of 0.154 suggests that a moderate increase in CD) can result in a positive shift in OCB, with faculty members demonstrating more proactive and helpful behaviors within the organization. These improvements in CD could have significant implications for employee engagement and organizational performance. For HR practitioners, these findings suggest that initiatives aimed at improving CD opportunities for faculty members could lead to substantial benefits, such as reduced turnover intentions and enhanced organizational citizenship behaviours. A focus on career education programs that promote professional growth and development can thus yield tangible organizational benefits, offering a clear return on investment (ROI).

By summarizing the results, the structural model supported H1, H3, H4, H5, H6, and H7, while H2 was unsupported. This research focused on the relationships between CE, CD, TI, and OCB in the context of faculty of private higher education institutions in Sindh, Pakistan. The results provide a clear pattern, where CE shows a

significant positive relationship with CD. CD acts as an important mediating mechanism through which CE contributes to lower the TI and increase the OCB.

6. Discussions

The results provide the distinction between direct and indirect effects, especially concerning turnover intention. The most demanding outcome is large and statistically significant effect of CE on CD. This shows that faculty members who perceive a stronger institutional focus on career education, report greater career development. Within HEIs, career education initiatives like structured training and mentoring, along with career guidance and development planning, help to strengthen the perception of competence building and progression. This aligns with career development theories that highlight the significance of supportive learning experiences and career-related assistance in influencing people's career development and resulting outcomes (Ulaş-Kılıç, & Peila-Shuster, 2023; Talib et al., 2015). Findings show that CE is not just a ceremonial activity; among faculty, CE is visibly connected to development outcomes.

However, CE shows a negative coefficient for TI that direct association is not statistically significant. This pattern is theoretically and contextually acceptable. Within private HEIs, turnover intention can be influenced by factors that career education possibly does not directly affect such employment stability, pay scales, workloads, and the availability of alternative jobs in market. Prior work on turnover intention indicates that withdrawal-related attitudes often respond more strongly to broader employment conditions and perceived organizational support or commitment than to isolated training or education initiatives (Zeng et al., 2025; Galanis et al., 2024). Therefore, the non-significant relationship between CE and TI should not be viewed as CE being irrelevant; instead it constitutes that CE does not function as a direct and autonomous predictor of TI in this context.

The finding shows a statistically significant positive relationship between CE and OCB that suggest that career education may foster supportive behaviours. It can help the organizations, such as assisting coworkers, taking on extra duties voluntarily, and helping create a positive culture at work. From the viewpoint of the organization, positive developmental practices may foster other positive behaviours and a willingness to work beyond the limits of their defined roles, which is in line with previous OCB studies and the exchange theory on citizenship behaviour (Xu et al., 2022; Worku, 2024). In private higher education institutions where resources and formal rewards may be limited, visible commitment to employee development may be particularly significant in maintaining extra-role behaviours.

Career development plays a vital role in influencing the both outcome as decreases TI and increasing the OCB significantly. This shows the perceptions of development are close predictors of both withdrawal intentions and positive discretionary behaviours. When there are perceptions of career advancement and that the institution is investing in the development of the faculty, they are less likely to consider leaving and more likely to display constructive, voluntary behaviours. This explanation is consistent with the fact that perception of development opportunities and career advancement are closely linked with employee attitudes and behaviours that are associated with commitment, retention, and citizenship (Worku, 2024; Wong

& Wong, 2017). In the current model, CD is not only an intermediary variable; it seems to be a central definitional variable that integrates institutional practices with both diminished TI and increased OCB.

Mediation explains the internal mechanism of the model. There is a statistically significant indirect effect of career education (CE) on turnover intention (TI) through career development (CD), despite the direct path from CE to TI being non-significant. Empirically, this study demonstrates that career development fully mediates the relationship between CE and TI. Faculty members who perceive organizational support through CE are more likely to engage in CD, which in turn lowers their intention to leave the organization. This indirect-only effect relationship remained underexplored in higher education (Bogler & Somech, 2023; Zeng et al., 2025). While CE helps reduce TI, it does so primarily through fostering greater career development opportunities. Practically, this means that CE can reduce turnover intentions by enhancing faculty perceptions of career growth and advancement. This study aims to address this gap in the literature.. Similarly, CE exerts a statistically significant indirect effect on OCB via CD and still maintains a significant direct relation to OCB. This combination is illustrative that CE may encourage citizenship behaviour via two mechanisms: (i) via enhanced career development that stimulates positive and proactive behaviour, and (ii) via additional direct mechanisms, for instance, increased perceptions of organizational support or improved work environment resulting from career education programs (Xu et al., 2022).

Finally, the findings suggest that private HEIs aiming to improve retention and increase the OCB level among the faculty members should foster career education initiatives either formal or informal that transform into their career development. Career education is expected to yield the most positive results when incorporated into long-term developed systems. These would include, and are not limited to, mentoring, clear promotion structures, development plans, and ongoing professional development. Additionally, studies indicate that to reduce turnover intention, career education must be complemented by organizational constraints that touch more directly on the employment situations that encourage withdrawal (Zeng et al., 2025).

7. Conclusions

This study analyzed the relationship of career education, career development, turnover intention and organizational citizenship behaviour of faculty members of private higher education institutions of Sindh, Pakistan. The study uses Social Exchange Theory and found that education is closely related to development and that higher education institutions' investment in career education is important. While it is true that the faculty turnover intention is not directly related to career education, the phenomenon is negatively impacted, meaning that the intentions for faculty turnover decreases when the faculty members see the potential for development. The results also show that, in terms of OCB, institutions that positively support career development are likely to have faculty members that show enhanced OCB through performances that are not directly rewarded by the institution and through increased collaboration in the institution. The above results also indicate that career development has a positive buffering effect and that career education alone cannot strengthen

retention and OCB when there is little to no career progression. Therefore, the study has concluded that, when considering the need for the sustainability of private higher education institutions in Pakistan, a more systematized and developed career progression system is preferable in order to mitigate the intention of faculty turnover. This study has also provided the field of HRD and higher education in Pakistan with relevant evidence to show how faculty career development impacts the way faculty perceive and act in an institution, and in so doing has contributed to the more effective management of faculty in higher education in Pakistan.

7.1. Theoretical implications

From the theoretical perspective, this study showcases the validity of applying the social exchange theory in order to understand the faculty in higher education system. According to this theory, employees' attitudes and behaviours are a reflection of the organizations' efforts. When organizations invest in career education, career development of faculty members is likely to improve significantly, leading to the better organizational outcomes. Developing a career profile emerges as a key mediating mechanism in the equation. This means career education does not directly lead to a decrease in turnover intention, but rather, increases perceived career development engendering a sense of loyalty to the organization. This is also a contribution to the SET, as it postulates that the perceived potential of cross-functional career moves within the organization increase organizational loyalty and employee retention. The study also shows that faculty members are more likely to exercise organizational citizenship behaviour when they perceive strong organizational support for their career development.

7.2. Practical implications for higher education institutions

The practical findings particularly provide insights to university administrators, HR managers, and academic leaders about what actions can be taken to mitigate TI and enhance OCB. First, the strong positive correlation between career education and career development implies that private universities can improve faculty development perceptions by implementing systematized initiatives like professional training, mentoring, leadership, teaching, and academic skill development. Second, given that while career education did not have a direct impact on turnover intention, career development did, retention strategies should go beyond training initiatives and include comprehensive career development strategies, that is, established career progression, promotion criteria, support for research, and recognition. Third, the positive impact on OCB suggests that faculty engagement and collaboration, and academic culture, are improved by OCB resulting from faculty OCB that stems from significant constructive engagement OCB opportunities. Lastly, as turnover intention stems from workload, remuneration, governance, and job security, career development should be complemented with HR policies to address these elements structurally to develop a comprehensive retention solution.

7.3. Policy implications

This study presents the critical implications for policy makers and HEIs in Pakistan. Indeed, faculty turnover is alarming situation that disrupts academic continuity, undermines institutional performances, and negatively impacts student outcomes as well. To overcome this challenge, regulators can strengthen quality assurance frameworks by actively encouraging private HEIs to establish formal career education and development systems. Furthermore, national faculty career development initiatives should expanded to broaden professional growth opportunities, particularly in provinces such as Sindh, where the private HEIs is experiencing rapid expansion. However, OCB has also great impact of career education directly as well as indirectly. This is also main aspect to be covered through such developmental initiatives which is overlooked in HEIs.

7.4. Limitations and future research

Despite having contributed in the research work, this study also has some limitations and future works to be taken into consideration. First, the cross-sectional research design limits the ability to draw causal conclusions; therefore, future studies should employ longitudinal designs to examine the relationships among career education, career development, and turnover intention over time to get the stronger causal evidences. Second, the sample was limited to private HEIs (HEIs) in Sindh, which may restrict the generalizability of the findings and the results can not directly be applied to public sector universities in other provinces. Future research should include public universities and institutions from different regions of Pakistan because faculty perceptions of CE and CD might differ in other settings. Future research could include public universities and other provinces for broader applicability and increase generalizability. Third, the study relied on self-reported data, which might introduce common method bias. Future studies could address this issue by using multiple data sources. Such as supervisor-rated OCB and institutional turnover records. Fourth, non-significant relationship between career education and turnover intention suggests that future research should consider additional factors such as job satisfaction, compensation, leadership support, workload, and organizational commitment. Finally, future studies could explore potential moderating variables, including age, academic rank, tenure, and perceived organizational support, and may also adopt qualitative or mixed-method approaches to gain deeper insights into faculty experiences. Addressing these limitations will help strengthen future research on career-related HR practices and faculty retention in higher education.

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