Measuring the Impact of Career Development Programs on Employee Career Satisfaction and Organizational Commitment: A Structural Equation Modeling Approach

Pratima Adhikari[1], Roshan Thapa[2]

[1]Career Coach Nepal, Kathmandu

[2]Global College International, Kathmandu

ABSTRACT

With the pace of business change, investment in career development programs is increasingly becoming a strategy for attracting, developing, and retaining talent. Nevertheless, the effectiveness of such programs remains relatively unexamined, particularly in terms of employee career satisfaction and organizational commitment outcome variables. To bridge this significant gap, this study aims to analyze both the direct and indirect impacts of career development programs and career mobility on employee career satisfaction and organizational commitment, while also providing insight into the moderating effect of employees' age on this relationship. Data of 301 employees across various sectors were collected using standardized survey tools with a quantitative cross-sectional design, and structural equation modeling was used to evaluate the effects. The analysis revealed that both career development programs and career mobility significantly enhanced career satisfaction, with career satisfaction partially mediating its effect on organizational commitment. Career mobility demonstrated a slightly stronger influence on satisfaction than development programs. Importantly, age did not moderate the relationship between career satisfaction and organizational commitment. The innovation of this study is underscored by the integrated model that constitutes career mobility and satisfaction as key mechanisms and rigorous validation through the deployment of hybrid statistical techniques. These results highlight the strategic importance of integrated career development and mobility systems in cultivating a happy and loyal workforce irrespective of age.

Keywords: Career, mobility, satisfaction, commitment, mediation

INTRODUCTION

In today's competitive business environment, organizations increasingly recognize the strategic importance of career development programs in attracting, developing, and retaining talented employees, as these initiatives enhance professional growth and advancement opportunities and ultimately contribute to organizational performance and sustainability (Els & Meyer, 2023; Idrus et al., 2023). As artificial intelligence and other technologies rapidly reshape industries, understanding the trajectory of human resources' career plans and development becomes imperative for organizational success (Rachma et al., 2024). Despite substantial investments in career development programs, many organizations struggle to empirically measure their effectiveness, particularly regarding their impact on key employee outcomes, such as career satisfaction and organizational commitment, which limits their ability to optimize these programs and demonstrate return on investment. The relationship between career development initiatives and employee outcomes remains inadequately understood, especially regarding the mediating mechanisms through which these programs influence organizational commitment (Ćulibrk et al., 2018). While previous research has examined the individual relationships between career development, job satisfaction, and organizational commitment, a comprehensive model that incorporates career mobility and career satisfaction as key variables, as well as the moderating role of age, has not been sufficiently explored (Cao et al., 2023; Joshi, 2024). Addressing these gaps, this study aims to examine the direct relationships between career development programs, career mobility, career satisfaction, and organizational commitment; investigate the mediating role of career satisfaction; and explore

the moderating effect of age on these relationships. Specifically, this research seeks to answer the following questions: (1) What is the relationship between career development programs and employee career satisfaction? (2) How does career mobility influence employee career satisfaction? (3) To what extent does career satisfaction mediate the relationship between career development programs, career mobility, and organizational commitment? (4) What is the overall impact of career development programs and career mobility on organizational commitment? (5) How does age moderate the relationships between these variables? To address these questions, this study proposes the following hypotheses: career development programs and career mobility each have a positive and significant relationship with employee career satisfaction; career satisfaction positively influences organizational commitment; career satisfaction mediates the relationships between career development programs and career mobility with organizational commitment; and age moderates the relationships among career development programs, career mobility, career satisfaction, and organizational commitment. By integrating these research questions, objectives, and hypotheses, this study offers a comprehensive framework to better understand and empirically evaluate the effectiveness of career development initiatives, thereby providing valuable insights for organizations seeking to enhance employee outcomes and organizational success.

LITERATURE REVIEW

Career Development Programs

Career development programs refer to structured initiatives implemented by organizations to enhance employees' professional growth and advancement opportunities. These programs typically encompass a range of activities including training opportunities, mentorship, coaching, career planning discussions, and professional development resources.

Research indicates that in the current landscape where artificial intelligence rapidly reshapes industries, understanding the trajectory of human resource career plans and development is imperative for organizational success(Rachma et al., 2024). Effective career development programs integrate adaptability to new technologies, continuous learning initiatives, mentorship programs, and organizational support systems to ensure that employees remain competitive and engaged.

Contemporary career development programs are designed to provide employees with the support and guidance needed to feel confident in planning their careers(Aziedjo, 2024; Lartey, 2021). These programs often focus on helping employees understand their professional identity, identify career pathway opportunities, develop strategic career plans, and articulate their unique value proposition to prospective employers(Baidoun & Anderson, 2023; Ranani & Danesh, 2017). When implemented effectively, career development programs can function as transformative initiatives that help individuals align their career choices with their interests and organizational needs, leading to increased engagement, motivation, and job satisfaction(Aziedjo, 2024; Kathukya & Igoki, 2024).

Recent studies have demonstrated the positive impacts of career development programs on various employee outcomes. For instance, career development opportunities contribute to increased self-fulfillment and reduced turnover intentions(Sirén et al., 2021). Similarly, research conducted in the context of Muhammadiyah Universities in Jabodetabek revealed that career advancement had a favorable and substantial influence on job satisfaction, with a contribution value of 60%(Yusuf & Nuraeni, 2023).

Career Mobility

Career mobility refers to an employee's ability and opportunity to move between jobs, roles, or organizations throughout their careers. It encompasses both vertical mobility (advancement to higher positions) and horizontal mobility (lateral movement across different functions or departments). Research distinguishes between two types of career mobility: inter-organizational career mobility (movement between organizations) and intra-organizational career mobility (changing jobs and occupations within an organization) (Mawdsley & Somaya, 2016). They argue that employee values are critical determinants of career mobility preference, specifically confidence in one's ability to initiate career changes. In addition to individual values, personality traits, career

interests, and attachment styles also influence career mobility preferences. The perception of career mobility opportunities plays a significant role in employee attitudes and behaviors. It was found that individuals with a preference for intraorganisational career mobility are more likely to be satisfied if they perceive that their organization provides career mobility opportunities(Greenhaus, 2020). Importantly, individuals may have a high mobility history but may not perceive current mobility opportunities due to situational factors, making it essential to assess an individual's perception of their current career mobility opportunities and the relationship between this perception and organizational commitment (Vallejo, 2017). Research has also demonstrated that career mobility can influence turnover intentions. For instance, a study conducted in South Solok found that career development had a positive and significant effect on turnover intention, suggesting a relationship between career mobility perceptions and organizational commitment(Anjani et al., 2023). However, the timing of career mobility (before or after a move) can influence its relationship with organizational commitment, highlighting the complex nature of this variable(Arsya & Gatari, 2019).

Career Satisfaction

Career satisfaction represents an individual's subjective evaluation of their career progress and achievements. It encompasses satisfaction with various aspects of one's career, including success achieved, progress toward career goals, income level, advancement, and skill development.

According to Greenhaus, Parasuraman, and Wormley, career satisfaction measures satisfaction with career success, an internally generated and defined career outcome (Greenhaus et al., 1990). Their Career Satisfaction Scale assesses the extent to which an employee has made satisfactory progress toward goals for income level, advancement, and development of skills. Research has established that career satisfaction correlates positively with various organizational factors, including perceptions of upward mobility, sponsorship within an organization, job discretion, supervisory support, career strategies, and job performance (Greenhaus et al., 1990).

Recent research has explored the mechanisms through which career satisfaction is influenced. For instance, a study on the impact of wealth career management on employee career success satisfaction found that job competency acts as a key mediator(Alexander & Vasantha, 2024). This suggests that employee perceptions of their own competence play a critical role in how career management practices influence their overall satisfaction with career success.

Organizational Commitment

Organizational commitment refers to an employee's psychological attachment to and identification with their organization. It encompasses three primary dimensions: affective commitment (emotional attachment), normative commitment (felt obligation), and continuance commitment (perceived costs of leaving).

The Organizational Commitment Questionnaire (OCQ), developed by Mowday, Steers, and Porter, identifies three factors that describe commitment: willingness to exert effort on behalf of the organization, desire to maintain membership in the organization, and acceptance of organizational values(Abd-Alazim et al., 2024). Research has established that organizational commitment has predictive validity regarding important organizational outcomes, with high levels of affective commitment linked to lower turnover, higher job performance, and greater willingness to exert extra effort on behalf of the organization(Abd-Alazim et al., 2024).

The relationship between organizational commitment and other variables has been extensively studied. Research conducted in the Kuwaiti banking sector found a positive relationship between career satisfaction and all forms of organizational commitment (affective, normative, and continuance), with the strongest relationship being between career satisfaction and normative commitment (Baidoun & Anderson, 2023). Additionally, a study on Muhammadiyah Universities in Jabodetabek found that perceived organizatijonal support, job participation, career advancement, and job satisfaction collectively have a positive and considerable influence on organizational commitment, with a contribution value of 86%(Yusuf & Nuraeni, 2023).

Variables and Relationships

The relationships between career development programs, career mobility, career satisfaction, and organizational commitment have been examined in various contexts. A study conducted in West Java hospitals found that career development emerged as the most influential factor contributing to patient satisfaction, followed by transformational leadership and excellent service(Muhtadi et al., 2024). While this study focused on patient satisfaction rather than organizational commitment, it highlights the importance of career development in organizational outcomes.

Research by Lengnick-Hall et al. emphasizes that strategic human resources management, including career development initiatives, has maintained its power as an important field of continuing study (Leite et al., 2014). They argue that the challenges consist of filling in the knowledge gaps that have been previously identified, as well as discovering new paths within dynamic and constantly-changing environments.

The mediating role of satisfaction in the relationship between career development and organizational outcomes has been supported by research. A study on the effect of physical and mental health programs and career support on employee wellbeing and loyalty found that wellbeing (a form of satisfaction) mediates the relationship between support programs and loyalty (Faridah et al., 2024). Similarly, research on Spanish wineries found that organizational commitment and consumer satisfaction mediate the relationship between corporate social responsibility and sustainable performance(Martínez-Falcó et al., 2024).

Age as a control variable has not been extensively studied in the context of career development, satisfaction, and commitment. However, given that career development needs and expectations may vary across different age groups and career stages, it is important to examine its potential moderating effect on the relationships between the variables in the model.

Theoretical Framework

Based on the literature of social cognitive career theory, protean and boundaryless career theory the following theoretical framework is proposed (Chang et al., 2025; Constantinus et al., 2022):

1. Career Development Programs and Career Mobility are positioned as independent variables

2. Career Satisfaction is positioned as a mediating variable

3. Organizational Commitment is positioned as the dependent variable

4. Age is positioned as a control variable that may moderate the relationships between the variables

The framework proposes that Career Development Programs and Career Mobility directly influence Career Satisfaction, which in turn influences Organizational Commitment. Additionally, Career Satisfaction is hypothesized to mediate the relationship between the independent variables and Organizational Commitment. Age is expected to moderate these relationships, potentially influencing the strength or direction of the proposed relationships(Thompson et al., 2021).

METHODOLOGY

This study utilized a quantitative, cross-sectional research design to investigate the relationships among career development programs, career mobility, career satisfaction, and organizational commitment. Data were collected using a structured survey instrument, a method well-suited for testing hypothesized relationships and consistent with previous studies employing Structural Equation Modeling (SEM) to analyze complex organizational behavior models (Faridah et al., 2024). The target population consisted of full-time employees in organizations with established career development programs. To ensure external validity and diversity, participants were drawn from various sectors, including banking, healthcare, education, manufacturing, and technology, and represented different organizational levels, from entry-level positions to senior management, as well as varying tenure lengths. A total sample of 301 respondents was selected, guided by SEM recommendations that suggest

a minimum sample size of 200 for models of moderate complexity (Hair et al., 2022). This sample size was chosen to enhance the statistical power and reliability of the model estimates, particularly when assessing mediation and moderation effects. To obtain a representative and unbiased sample, a stratified random sampling technique was employed. The population was divided into strata based on industry sector, organizational level, age group (18–30, 31–40, 41–50, and 51+ years), and tenure (<1 year, 1–5 years, 6–10 years, and >10 years). Participants were then randomly selected within each subgroup, ensuring proportional representation across key employee categories, supporting meaningful subgroup comparisons, and minimizing selection bias. This approach is particularly effective for examining the moderating effects of demographic factors such as age and aligns with established practices in organizational and human resource research (Martínez-Falcó et al., 2024). Data collection was conducted via an online structured questionnaire distributed through professional survey platforms. Before full deployment, the instrument was pilot-tested with a small group of employees to assess clarity, coherence, and completion time, with necessary revisions made based on their feedback. Participants were informed of the study's purpose, assured of anonymity and confidentiality, and provided with informed consent, with participation being entirely voluntary and ethical standards strictly observed. All constructs were measured using previously validated 5-point Likert scales (1 = Strongly Disagree, 5 = Strongly Agree), with items adapted from established sources to ensure content validity and contextual relevance. Career development programs and career mobility were measured using items adapted from Sinaga et al. (2024), focusing on aspects such as training, mentorship, career planning, learning initiatives, internal movement, advancement, and readiness for role changes. Career satisfaction was assessed using items from Greenhaus et al. (1990), evaluating satisfaction with career progress, income, advancement, and skill development, while organizational commitment was measured using items adapted from Abd-Alazim et al. (2024), capturing affective attachment, value alignment, and intention to stay. Each construct was measured using five items to provide comprehensive coverage of the latent variables and to facilitate robust SEM analysis.

RESULT AND DISCUSSION

Validity Analysis

Collinearity was assessed using the Variance Inflation Factor (VIF). The results are presented in Table 5.

VIF Test

Table 1: VIFs				
CDP				
CDP1	CDP2	CDP3		
1.2	1.66	1.62		
CM				
CM1	CM2	CM3		
1.66	1.66	1.18		
CS				
CS1	CS2	CS3	CS4	CS5
2.05	2.07	1.78	1.71	1.37
OC				
OC1	OC2	OC3	OC4	
2.37	2.42	1.9	1.77	

Variance Inflation Factor (VIF) is a widely used statistical measure for detecting multicollinearity among predictor variables in regression and structural equation modeling analyses. VIF quantifies the extent to which the variance of a regression coefficient is increased due to collinearity with other predictors, with a value of 1 indicating no correlation and values above 5 commonly considered indicative of problematic multicollinearity (Hair, Hult, Ringle, & Sarstedt, 2022). High multicollinearity can undermine the reliability and interpretability of regression coefficients, making it difficult to distinguish the unique effect of each predictor (Henseler, Ringle, & Sinkovics, 2009). In this study, all VIF values for the constructs—career development programs, career mobility, and career satisfaction—were found to be well below the threshold of 5, indicating that multicollinearity was not a concern and that the estimated relationships among variables are statistically robust and interpretable ((Henseler et al., 2009; Sarstedt et al., 2021).

HTMT Test

Table 2: HTMT Test				
LVs	CDP	CM	CS	OC
CDP				
CM	0.894			
CS	0.704	0.751		
OC	0.748	0.782	0.762	

The Heterotrait-Monotrait (HTMT) ratio is a robust criterion used to assess discriminant validity in structural equation modeling, ensuring that each construct in the model is empirically distinct from the others. In this study, the HTMT values for the relationships among Career Development Programs (CDP), Career Mobility (CM), Career Satisfaction (CS), and Organizational Commitment (OC) ranged from 0.704 to 0.894. Specifically, the HTMT between CDP and CM was 0.894, between CDP and CS was 0.704, between CDP and OC was 0.748, between CM and CS was 0.751, between CM and OC was 0.782, and between CS and OC was 0.762. All these values are below the conservative threshold of 0.90, indicating that the constructs demonstrate adequate discriminant validity and are sufficiently distinct from each other. This supports the validity of the measurement model and confirms that the constructs capture unique aspects of the employee experience within the organizational context (Hair, Hult, et al., 2022; Henseler et al., 2015).

Fornell Larker Criterion Test

Table 3: F-L Test				
LVs	CDP	CM	CS	OC
CDP	0.795			
CM	0.632	0.794		
CS	0.544	0.573	0.755	
OC	0.560	0.582	0.630	0.787

Note: The diagonal values (in bold) represent the square root of the AVE for each construct. Off-diagonal values represent the correlations between constructs.

The Fornell-Larcker criterion is a standard approach for evaluating discriminant validity in structural equation modeling, ensuring that each construct in a model is empirically distinct from the others. According to this method, the square root of the average variance extracted (AVE) for each latent variable should be greater than its correlations with any other construct in the model. In Table 3, the diagonal values represent the square roots

of the AVE for Career Development Programs (CDP = 0.795), Career Mobility (CM = 0.794), Career Satisfaction (CS = 0.755), and Organizational Commitment (OC = 0.787). Each of these values exceeds the respective inter-construct correlations, such as between CDP and CM (0.632), CDP and CS (0.544), and so forth, indicating that each construct shares more variance with its own indicators than with those of other constructs. This result demonstrates adequate discriminant validity, confirming that the constructs measured in the study are conceptually and empirically distinct (Hair, Alamer, et al., 2022; Hair, Hult, et al., 2022; Henseler et al., 2009, 2015; Sarstedt et al., 2021).

Cross Loadings Test

Table 4: Cross Loading							
LVs	CDP	CM	CS	OC	T-Stat	2.50% CI	97.50% CI
CDP1	0.673	0.441	0.353	0.370	11.905	0.542	0.761
CDP2	0.860	0.584	0.500	0.479	34.418	0.804	0.900
CDP3	0.839	0.474	0.432	0.479	31.147	0.776	0.881
CM1	0.519	0.834	0.451	0.487	34.992	0.780	0.875
CM2	0.580	0.832	0.470	0.455	24.250	0.748	0.883
CM3	0.398	0.707	0.442	0.441	16.846	0.613	0.778
CS1	0.331	0.395	0.735	0.359	18.281	0.644	0.800
CS2	0.433	0.415	0.756	0.417	18.993	0.664	0.820
CS3	0.404	0.386	0.793	0.480	28.533	0.733	0.840
CS4	0.426	0.466	0.779	0.428	28.867	0.722	0.827
CS5	0.435	0.478	0.708	0.629	21.760	0.639	0.767
OC1	0.407	0.441	0.533	0.808	28.205	0.743	0.855
OC2	0.411	0.448	0.497	0.820	30.946	0.762	0.865
OC3	0.503	0.483	0.488	0.785	21.848	0.700	0.842
OC4	0.446	0.464	0.463	0.732	16.937	0.634	0.801

Cross loadings are an important diagnostic tool in structural equation modeling used to evaluate the discriminant validity of measurement items, ensuring that each observed variable loads highest on its intended construct compared to other constructs in the model. According to established guidelines, an item should have its highest loading on the construct it is intended to measure, and substantially lower loadings on other constructs, demonstrating that the item is not capturing unrelated concepts (Hair, Hult, Ringle, & Sarstedt, 2022). In the presented results, each indicator for Career Development Programs (CDP2 = 0.860, CDP3 = 0.839), Career Mobility (CM1 = 0.834, CM2 = 0.832), Career Satisfaction (CS3 = 0.793, CS4 = 0.779), and Organizational Commitment (e.g., OC2 = 0.820, OC1 = 0.808) shows its highest loading on its respective latent variable, with noticeably lower loadings on other constructs. This pattern confirms that the measurement items are well differentiated and supports the discriminant validity of the measurement model. Furthermore, the reported t-statistics and confidence intervals reinforce the statistical significance and reliability of these loadings (Hair, Hult, et al., 2022; Henseler et al., 2009).

Reliability Test

Table 5: Reliability				
LVs	alpha	rhoC	AVE	rhoA
CDP	0.705	0.836	0.633	0.730
CM	0.702	0.835	0.630	0.705
CS	0.813	0.869	0.570	0.816
OC	0.794	0.866	0.619	0.797

The reliability of the measurement model was assessed using multiple indicators, including Cronbach's alpha, composite reliability (rhoC), average variance extracted (AVE), and rhoA. According to Table 5, all constructs demonstrated acceptable to strong internal consistency reliability, with Cronbach's alpha values ranging from 0.702 to 0.813, exceeding the commonly recommended threshold of 0.70 for exploratory research (Hair et al., 2022). Composite reliability (rhoC) values for Career Development Programs (0.836), Career Mobility (0.835), Career Satisfaction (0.869), and Organizational Commitment (0.866) were all above the 0.70 benchmark, further confirming the reliability of the constructs (Henseler et al., 2009). The AVE values for all constructs ranged from 0.570 to 0.633, surpassing the minimum threshold of 0.50 and indicating adequate convergent validity, as each construct explains more than half of the variance of its indicators (Fornell & Larcker, 1981). Additionally, rhoA values, which provide a more accurate reliability estimate in some cases, were all above 0.70, supporting the robustness of the measurement model. Collectively, these results demonstrate that the measurement instruments used for career development programs, career mobility, career satisfaction, and organizational commitment are both reliable and valid for structural equation modeling analysis (Fornell & Larcker, 1981; Hair, Hult, et al., 2022; Henseler et al., 2009; Sarstedt et al., 2021).

R-Square

The R-square values for the endogenous constructs are:

Table 6: R-Square		
Stat	CS	OC
R^2	0.384	0.506
AdjR^2	0.38	0.497
CDP	0.303	0.184
CM	0.382	0.218
CS		0.414

Table 6 presents the R-square (R^2) values indicating the proportion of variance explained in the dependent variables, Career Satisfaction (CS) and Organizational Commitment (OC), by the model's predictors. The R^2 value for CS is 0.384, suggesting that 38.4% of the variance in career satisfaction is explained by Career Development Programs (CDP) and Career Mobility (CM). For OC, the R^2 value is 0.506, indicating that 50.6% of the variance in organizational commitment is explained by CDP, CM, and CS. Among the predictors, CM accounts for 38.2% of the variance in CS, while CDP contributes 30.3%. Regarding OC, CS is the most significant predictor, explaining 41.4% of the variance, followed by CM (21.8%) and CDP (18.4%). These findings highlight the substantial role of career satisfaction as a mediator and emphasize the importance of mobility and development initiatives in enhancing organizational commitment (Hair, Hult, et al., 2022; Leite et al., 2014).

Total Path Analysis

Table 7: Total Path Model								
LVs			Original Est.	Mean	SD	T-stat	2.50% CI	97.50 CI
CDP	->	CS	0.303	0.301	0.057	5.264	0.190	0.416
CDP	->	OC	0.309	0.313	0.086	3.595	0.136	0.471
CM	->	CS	0.382	0.383	0.061	6.292	0.267	0.497
CM	->	OC	0.377	0.355	0.076	4.976	0.211	0.508
CS	->	OC	0.414	0.404	0.075	5.547	0.249	0.543
Age	->	OC	0.076	0.117	0.067	1.142	0.022	0.262
CS*Age	->	OC	0.295	0.253	0.242	1.219	-0.081	0.820

The total path model results, as shown in Table 1, provide a comprehensive overview of the direct and moderating relationships among the study's constructs. Career development programs (CDP) have a significant positive effect on career satisfaction (CS) (β = 0.303, t = 5.264, 95% CI [0.19, 0.416]) and organizational commitment (OC) (β = 0.309, t = 3.595, 95% CI [0.136, 0.471]), indicating that organizational support for employee growth directly enhances both satisfaction with career progress and commitment to the organization. Career mobility (CM) also demonstrates significant positive effects on both career satisfaction (β = 0.382, t = 6.292, 95% CI [0.267, 0.497]) and organizational commitment (β = 0.377, t = 4.976, 95% CI [0.211, 0.508]), suggesting that opportunities for advancement and movement within the organization contribute meaningfully to these outcomes. Furthermore, career satisfaction itself is a strong predictor of organizational commitment (β = 0.414, t = 5.547, 95% CI [0.249, 0.543]), underscoring the mediating role of satisfaction in enhancing employee loyalty. The effect of age on organizational commitment is positive but only marginally significant (β = 0.076, t = 1.142, 95% CI [0.022, 0.262]), while the interaction between career satisfaction and age (CS*Age) is not significant (β = 0.295, t = 1.219, 95% CI [–0.081, 0.82]), indicating that the relationship between career satisfaction and organizational commitment does not differ substantially across age groups. These findings align with established research on the importance of career development and mobility for employee outcomes and support the robustness of the structural model (Hair, Alamer, et al., 2022; Hair, Hult, et al., 2022; Henseler et al., 2009; Leite et al., 2014; Sarstedt et al., 2021).
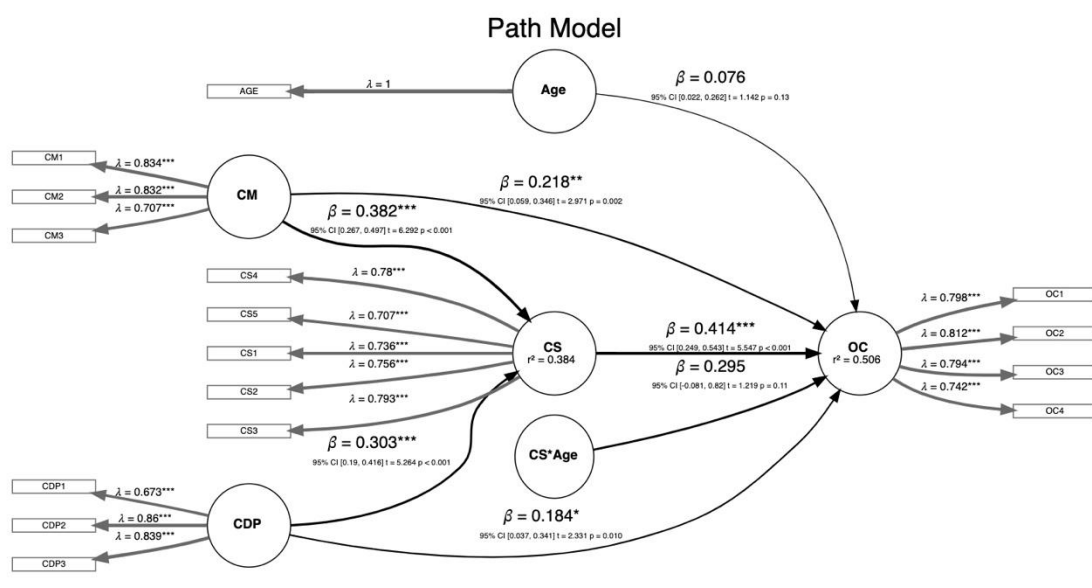

Figure1: Path Model

Mediating Effect Test

Table 8: Mediation Assessment					
Paths	**Coefficient**	**SE**	**t-value**	**p-value**	**95% CI**
Direct Effects					
CDP → CS (a)	0.303	0.057	5.264	< .001	[0.190, 0.416]
CS → OC (b)	0.414	0.075	5.547	< .001	[0.249, 0.543]
CDP → OC (c′)	0.184	0.079	2.331	0.02	[0.037, 0.341]
CM → CS (a)	0.382	0.061	6.292	< .001	[0.267, 0.497]
CS → OC (b)	0.414	0.075	5.547	< .001	[0.249, 0.543]
CM → OC (c′)	0.218	0.073	2.971	0.003	[0.059, 0.346]
Calculated Effects					
CDP: Indirect Effect (a × b)	0.125	—	—	—	—
CDP: Total Effect (c)	0.309	0.086	3.595	< .001	[0.136, 0.471]
CM: Indirect Effect (a × b)	0.158	—	—	—	—
CM: Total Effect (c)	0.377	0.076	4.976	< .001	[0.211, 0.508]
Mediation Assessment					
CDP: VAF (Indirect/Total)	40.45%				
CDP: Mediation Type	*Partial*				
CM: VAF (Indirect/Total)	41.91%				
CM: Mediation Type	*Partial*				
Note. VAF = Variance Accounted For. Partial mediation is indicated when 20% ≤ VAF ≤ 80%. Values were calculated based on bootstrapped estimates (n = 5000)					

A mediation analysis was conducted to examine whether customer satisfaction (CS) mediates the relationship between customer data practices (CDP) and customer management (CM) with organizational commitment (OC). The analysis followed the procedure recommended by Hair et al. (2017), using bootstrapping with 5000 samples to estimate indirect and direct effects and the Variance Accounted For (VAF) to determine the type of mediation. For CDP, the indirect effect via CS was significant (a × b = 0.125), with a total effect of 0.309 and a direct effect (c′) of 0.184. The resulting VAF was 40.45%, indicating partial mediation, as it falls within the recommended range of 20% to 80% (Hair et al., 2017). Similarly, for CM, the indirect effect via CS was 0.158, with a total effect of 0.377 and a direct effect of 0.218. The VAF for CM was 41.91%, again indicating partial mediation. These findings suggest that customer satisfaction plays a meaningful, though not exclusive, role in transmitting the effects of customer data practices and customer management on organizational commitment. The partial nature of the mediation implies that while CS significantly contributes to these relationships, other direct pathways remain influential. The results are consistent with previous research emphasizing the importance of satisfaction as a key psychological mechanism linking customer-oriented practices to organizational outcomes (Huang & Sarigöllü, 2012; Leguina, 2015).

Moderation Analysis

Table 9: Moderation Effect					
Paths	**Coefficient (β)**	**SE**	**t-value**	**p-value**	**95% CI**
Main Effect					
Age → OC	0.076	0.067	1.142	0.254	[0.022, 0.262]
CS → OC	0.414	0.075	5.547	< .001	[0.249, 0.543]
Moderation Effect					
CS × Age → OC	0.295	0.242	1.219	0.223	[-0.081, 0.820]

A moderation analysis was conducted to examine whether age moderates the relationship between customer satisfaction (CS) and organizational commitment (OC). The interaction term between CS and age (CS × Age) was included in the structural model, following the guidelines proposed (Dawson, 2014; Hair, Hult, et al., 2022). The interaction effect was not statistically significant ($\beta = 0.295$, $p = 0.223$), indicating that age does not significantly moderate the relationship between CS and OC. Additionally, the direct effect of age on OC was also non-significant ($\beta = 0.076$, $p = 0.254$). These results suggest that the strength of the relationship between customer satisfaction and organizational commitment is consistent across different age groups within this sample. In other words, age does not meaningfully influence how customer satisfaction translates into organizational commitment. This finding contrasts with some previous studies suggesting generational or age-related differences in workplace attitudes and outcomes Ng and Feldman (2010) implying that in this context, customer satisfaction remains a robust predictor of organizational commitment, irrespective of age.

Hypothesis Analysis

Table 10: Hypothesis Analysis			
Hypothesis	Statement	Result	Key Findings
H1	Career development programs have a positive and significant relationship with employee career satisfaction.	Supported	$\beta = 0.303$, $t = 5.264$, $p < 0.001$
H2	Career mobility has a positive and significant relationship with employee career satisfaction.	Supported	$\beta = 0.382$, $t = 6.292$, $p < 0.001$
H3	Career satisfaction has a positive and significant relationship with organizational commitment.	Supported	$\beta = 0.414$, $t = 5.547$, $p < 0.001$
H4	Career satisfaction mediates the relationship between career development programs and organizational commitment.	Supported (Partial)	Indirect effect = 0.125, VAF = 40.45% (Partial mediation)
H5	Career satisfaction mediates the relationship between career mobility and organizational commitment.	Supported (Partial)	Indirect effect = 0.158, VAF = 41.91% (Partial mediation)
H6	Age moderates the relationships between career development programs, career mobility, career satisfaction, and organizational commitment.	Not Supported	Interaction effect (CS × Age → OC): $\beta = 0.295$, $t = 1.219$, $p = 0.223$ (Not significant)

DISCUSSION

The findings of this research reinforce the critical role that career development programs and career mobility play in enhancing employee career satisfaction and organizational commitment. Structural equation modeling revealed that both career development initiatives and opportunities for mobility significantly increase career satisfaction, with mobility exerting a slightly stronger effect. This aligns with prior studies demonstrating that employees value not only structured development but also tangible opportunities for advancement and role changes within organizations (Jinadu, 2006; João & Coetzee, 2011; Sinaga et al., 2024). Career satisfaction, in turn, was found to be a strong predictor of organizational commitment, supporting the view that employees' subjective evaluation of their career trajectory is a key determinant of their attachment to the organization (Baidoun & Anderson, 2023; Greenhaus et al., 1990). Mediation analysis confirmed that career satisfaction partially mediates the relationship between both career development programs and career mobility with organizational commitment, echoing the mediating role of job satisfaction found in other organizational contexts (Audhar et al., 2025; Faridah et al., 2024; Jinadu, 2006; Uddin et al., 2023)). Notably, the study found that age does not significantly moderate the relationship between career satisfaction and organizational commitment, suggesting the robustness of this relationship across demographic groups and challenging some previous assumptions about generational differences in workplace attitudes (Joshi, 2024; Ng & Feldman, 2010). These results are consistent with recent research highlighting the importance of holistic HR strategies that integrate both career development and mobility to enhance satisfaction and commitment (Audhar et al., 2025; Els & Meyer, 2023; Hosen et al., 2023; Uddin et al., 2023). Furthermore, the findings are validated by similar results in diverse sectors, including healthcare and policing, where investment in training and career pathways has been shown to improve organizational outcomes and employee well-being (Audhar et al., 2025; Hosen et al., 2023; Uddin et al., 2023). This broader evidence base underscores the generalizability of the study's conclusions and suggests that organizations across industries can benefit from comprehensive career development strategies.

CONCLUSION

In summary, this study demonstrates that career development programs and career mobility are significant drivers of employee career satisfaction and organizational commitment, with career satisfaction serving as a crucial mediating mechanism. The results indicate that organizations seeking to enhance commitment should invest in both formal development programs and clear pathways for career advancement, as these initiatives have direct and indirect effects on employee attitudes. The absence of a significant moderating effect of age suggests that these relationships are stable across age groups, enabling organizations to implement unified career development strategies that appeal broadly across the workforce. These findings are consistent with and extend the literature on the mediating role of satisfaction and the importance of HR development in organizational commitment (Audhar et al., 2025; Baidoun & Anderson, 2023; Jinadu, 2006; Uddin et al., 2023). For further validation, future research should employ longitudinal designs, include objective performance and retention metrics, and explore additional moderators such as gender, cultural context, and psychological factors (Els & Meyer, 2023; Jinadu, 2006; Joshi, 2024). Overall, the evidence affirms that comprehensive career development and mobility systems are essential for building a satisfied and committed workforce, regardless of sector or demographic composition.

RECOMMENDATIONS

- Invest in both structured career development programs and clear career mobility opportunities, as both significantly enhance employee career satisfaction and organizational commitment.

- Recognize that career satisfaction partially mediates the effect of development programs and mobility on organizational commitment, making it essential to monitor and cultivate satisfaction as part of HR strategies.

- Implement unified career development strategies across all age groups, since age does not significantly alter the relationship between career satisfaction and organizational commitmen

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